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This volume is the second issue after getting ISSN which has come up with a lot of difficulties and constraints. It is heartening to note that there is a growing interest shown by the students and research scholars of the Department of Anthropology to contribute papers. So, seeing the enthusiasm of the contributors we are making sincere efforts to keep the publication on a continuation basis. In this volume, there are a total of fourteen papers covering different branches of Anthropology and all of them are research based and informative in nature.

The author of the article, "Ghost Friendship: The Dynamics of Ritual Kinship among the Santals," Shri Rajakishor Mahana has made an honest attempt to understand and analyze the different types, nature and dynamics of ritual friendships that are solemnized by means of ceremonies, rituals, obligations and mutual exchange of gifts and faith by which the relation turns to an institution among the Santals of Mayurbhanj, Odisha. The paper also explores an interesting and peculiar kind of institutionalized ties of relationship known as Goj Phul (dead friend). The paper further argues that the relationship of Goj Phul, what is also called ghost friendship, is beyond kinship, or at best pseudo kinship.

Ms. Shyamasri Mohanty in her article, "Land Reforms scenario in Odisha: A Study on Distribution & Access among rural poor in two districts of Odisha" has depicted how during pre-independence time access to land was restricted to millions of people from rural area. She has made her study on two districts of Odisha.

Dr. Mamata Dash has mentioned in her article that art is not necessarily the manifestation of mind of the artist alone rather it owes its inception to entire social and cultural setting where the artists belong to. In the article, "The symbiotic relationship between Art and Religion - A case study of Patta Painting of Odisha" she has explained how the artists unconsciously adopt the ideals of their society and express them in a socio-cultural context. In her paper she has explored and unveiled such a relationship that exists between Patta painting, one of the traditional art of Odisha and Jagannath cult of the state.

In her article entitled, "Situation of Aged Women among Scheduled Caste and Scheduled Tribe communities of Kandhamal district of Odisha", Professor Sabita Acharya has explained how age is a significant social determinant in society and old age is generally accompanied by a number of problems that aged have to face and adjust with varying degrees. She has made a situation analysis of aged women among Scheduled Caste and Scheduled Tribe communities of Kandhamal district of Odisha.

Smt. Bidya Bharati Sahoo, Dr. K. C. Satapathy and Prof. P. K. Das have touched upon the sex determination from the skeletal remains, particularly from unknown human bone in their article entitled, "Morphometric Analysis and Sex determination of Human Mandibles of East Indian population". They have made an attempt to measure bigonial breadth, Mandibular length, bicondylar breadth of 72 dry human mandibles present in the physical laboratory of the Department of Anthropology, Utkal University, Bhubaneswar, Odisha. As per their study the values in the
male mandible have been found to be lesser as compared to that obtained in females.

In his paper “Technique of display in museum”, Dr. S. Mohanty has given a detailed systematic elaboration about different methods being adopted for scientific display of artefacts.

Dr. Dillip Mishra has lucidly explained the socio economic study of traditional bone sector and their protection of Intellectual property rights. He has tried to understand how in spite of being a highly literate district and a religious town this cultural pattern towards preserving their intellectual rights still pervades amongst the people.

In the article, "Forest Livelihood & Poverty: A study on Munda Tribe", Dr. Abhijita Das and Shri Arakshit Patra have made an empirical study on Munda tribe of Mayurbhanj district of Odisha and their paper has been designed to highlight Munda tribe livelihood pattern in relation to forest dependency. They have also highlighted how poverty has been the main constraint which breaks their social, economic and cultural development.

Ms. Swagatika Kanungo and Shri Sunil Kumar Gouda have made attempts to highlight the nutritional status of a schedule caste community inhabiting in slums of Bhubaneswar. In their article, entitled, "Nutritional Status of a Migrant Schedule caste Community in Slums of Bhubaneswar, Odisha, India", they have found how urban poor people residing in slum areas are not aware about the nutrition due to their poor educational and economic status which is also manifested by their body mass index and the study reveals that the community is still nutritionally vulnerable.

Shri Deepak Kumar Ojha, in his article, "Involuntary Resettlement and Violation of Indigenous Rights (A Case of Kutia Kondh Resettlers of Lanjigarh, Odisha) has touched upon a very sensitive aspect, i.e. wherever the development process leads to involuntary displacement it causes much trauma to the affected persons. In his research work he tries to explore and understand the violation of indigenous rights that have taken place within the Kutia Kandha resettlers who have been displaced due to the Vedanta Aluminium industry in Lanjigarh of Odisha. Significant changes have been noticed in Kutia Kandha traditional knowledge system in terms of disruption in ethno-medicine, healing practice, belief pattern and cultivation pattern after their rehabilitation in a new place.

Ms. Sonali Pattanaik in her article, "Surviving of the Traditional Crafts of Dhokra: A Case Study from the artisans making Kondh Dhokra", has highlighted how tribal communities of Odisha and Chhatisgarh continue to hold their traditional economy of Dhokra making. They in her study she has found that these communities have been trying to preserve Dhokra as an alternative for sustainable livelihood in the present times as well to cope up with the inflationary pressures that these communities have been facing.

The author of the paper entitled, "Traditional Knowledge System and Access to Modern Healthcare Facilities among the Juangs of Kundhei village, district Keonjhar, Odisha", Ms. Gulsan
Khatoon outlines an attempt to study the traditional knowledge system and access to modern health care facilities among the primitive Juang tribes of Odisha. The objective of this paper is to explore different indigenous methods of diagnosis and treatment of diseases, identification of specific plants used in medicine and cure of diseases, and to document their perception regarding the origin and cause of illness and disease as revealed by in their system of disease classification. The author has generated documentation on indigenous knowledge system of Odisha, pertinent to indigenous healing systems.

In his paper entitled, "Implementation of Micro Planning Projects towards the development of Juangs in Banspal block of Keojhar district, Odisha", Shri Paramananda Naik has tried to identify the development scenario like livelihood, education, health and hamlet infrastructure of Odisha tribes by carrying out an empirical study amongst the Juang tribe in Banspal block of Keonjhar district. The author has systematically analyzed the effects of micro projects towards the modern era development of "Juang" people's living pattern in present arena.

In her paper, "Intervention of culture and community of multilingual education among the Juang tribe of Keonjhar, Banspal Block, Odisha", the author Ms Liza Swain examines the new programme initiatives have focused on the improvement of quality as well as quantity aspects amongst Juang children, who have their own culture. In her study she has discounted the claims that have been made about the improvement of children of Juang with regard to their enrolment, retention and learning and found out that much more efforts are required to uplift their learning abilities.

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Ghost Friendship:
The Dynamics of Ritual Kinship among the Santals

RAJAKISHOR MAHANA*

Abstract: This article makes a humble attempt to understand and analyse the different types, nature and dynamics of ritual friendships that are solemnised by means of ceremonies, rituals, obligations and mutual exchange of gifts and faith by which the relation turns to an institution among the Santals of Mayurbhanj, Orissa. Importantly, the paper explores an interesting and peculiar kind of institutionalised ties of relationship known as Goj Phul (dead friend). The paper further argues that the relationship of Goj Phul, what I call ghost friendship, is beyond kinship, or at best pseudo kinship.

Introduction

Perhaps, the most original and brilliant single achievement of L.H. Morgan in the history of Anthropology, the organising principle of social grouping which is essential to understand the social organisation, to examine the behaviour of kins and affines towards one another in domestic life, economic affairs, legal disputes, birth, initiation and marriage ceremonies, funerals and other occasions of social life, above all which maintains peace, harmony, fraternity and tranquility in the society is kinship. The study of domestic life in hundreds of cultures all over the world has led anthropologists to conclude that two ideas or mental principles are involved in the organisation of domestic life everywhere. The first one is the idea of descent, or parentage. The second of these is the idea of affinity, or relationship through marriage. People who are related to each other through descent or a combination of affinity and descent are relatives or kin.

According to Murdock, "A kinship system, however, is not a social group, nor does it ever correspond to an organised aggregation of individuals. It is merely, as the name implies, a structured system of relationship, in which individuals are bound one another by complex interlocking and ramifying ties" (1965: 91-92). Paul Bohannan opined, "Every culture provides a set of concepts or images for reviewing the situations of reproduction, care for the young and the passage from generation to generation. Anthropology has summed all these up as kinship". It can be defined briefly "As a study of the cultural interpretations of social relationship, social categories and social groups that are formed among people who stand in biological or quasi-biological relationships or chains of relationship to one another" (Bohannan, 1963: 54-55). John Beattie defined "Kinship has to do with consanguinity, relationships by blood and affinity, relationships brought about by marriage" (Beattie, 1964: 33).

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1 The paper builds on my M.A. Degree thesis titled "Kinship Organisation among the Santal" and submitted to the Department of Anthropology, Uktal University, Bhubaneswar, in 2001.
In a strict sense, as all the definitions show, no relationship beyond consanguine and affine is actual kinship. Julian Pitt-Rivers, an eminent author of “Pseudo-Kinship”, suggests that “any relationship which employs a kin term is kin” (1968: 408) and in that sense there would be no pretext for the notion of Pseudo Kinship. Nevertheless, there exist, throughout the world, institutions, which establish ties analogous to kin ties. The participants recognise a bond, which is likened to, though it is not confused with, kinship. Such relationships, beyond and above kinship, may be structured or unstructured, are best classified as ritual kinship.

Mandelbaum reports about a pattern of institutionalised friendship among the plains Cree Americans, which involves both the families in a brotherly relationship of obligations continuing beyond death of one of the friends, though no ritual is performed for sealing this type of friendship (1936: 206). S.C. Roy has reported two such alliances as the iar and sangi among the Oraons (1915: 404-5) and three types as phul (flower), karamdair (friendship established in Karama festival by exchanges of Karama leaf) and jitiadair (friendship solemnised on Jitia Puja by exchange of Jitia leaf) among the Birhors. (1925: 527-529). A vivid account of the Phul friendship among the Baiga is provided by Verrier Elwin in his monograph The Baiga (1939). He explains the theory and organisation of friendship among the Baigas is somewhat of as the Hindu model. (Elwin, 1939: 234). These friendships are of many different titles as kodon-karil (shoot of the Kodon), char-maur (flower of the buchanania latifolia), the lalbhaji (red spinach), the gulab-phul (rose flower), amarbel (the never-dying creeper), the kelapan (leaf of the plantain), the amamaur (the flower of the mango), the tilwan-phul (the flower of the wendlandia exserta). A brief, but good, note of Santal ritual friendship is furnished by W.G. Archer in his article “Ritual friendship in Santal Society” (1947: 57-60) where he has described three types of friendship among the Santal boys as phul, karamu dharmu and jom nu gate and three alliances among the girls as phul, karamdar and baha phul. L.K. Mohapatra, for the first time, made an attempt to study ritual friendship in Orissa systematically and scientifically and distinguished between ritual friendship and ritual kinship (1973-74: 31-49). He differentiates, in case of ritual friendship families are confined to merely giving and receiving of gifts in important ceremonial occasions and in ritual kinship a stronger tie is symbolised through the obligation of observing ritual pollution at the time of birth or death in the other friend's family (ibid: 31). P.M. Nanda in his article, “A note of Institutionalised Bond-friendship system among the Tribes of Orissa” has given a short note on the ritual friendships among the tribes like Baiga, Bhumiya, Birhor, Didayi, Dongria Kondh, Gadaba, Jhodia Paroja, Munda, Oraon and Santal of Orissa. (1987: 15-20). Besides these, ritual friendship or kinship has also been reported among Indian peasantry (Sinha and Mayer), North American Indians (Mendelbaum, 1936), African tribes (Nadel), Indian tribes (Roy, Elwin, Bandhopadhyay, Srivastava, Tandon, Mohapatra etc.), Polynesian Tikopia (Firth, 1936) and may be among several other tribes of the world (see Mohapatra, 1973-74: 44).

Against this background, this article makes a humble attempt to understand and analyse the different types, nature and dynamics of ritual friendships that are solemnised by means of ceremonies, rituals, obligations and mutual exchange of gifts and faith by which the relation turns to an institution among the Santals of Mayurbhanj, Orissa. Importantly, the paper explores an interesting and peculiar kind of institutionalised ties of relationship known as Goj Phul (dead friend). The paper further argues that the relationship of Goj Phul, what I call ghost friendship, is beyond kinship.
Structure and Definition of Ritual Friendship

All the forms of ritualised friendship, whether or not they use the terminology of kinship, derive not from birth but from the mutual feelings of individuals, guaranteed by magical power of blood or the sacrosanct of the rite. In ritual kinship, choice operates as a rule where an appropriate sentiment plays a role for the selection of ritual kinsmen. Unlike natural kinship, the ritual kinship never forms a part of kinship because the origin of the later is neither rooted in descent nor the ritual kinsmen possess the right of property and inherit it though there is a popular saying in this regard "All that in mine is thine". Again, "it does not depend upon a network of rights and duties, but upon a reciprocal claim to favour and benevolence; it makes requests (not demands) and gifts (not payments) even where custom may define what these should be, and it is reinforced by supernatural sanctions only". (Pitt-Rivers, 1968: 412). Osella and Osella (1998) argue that there exists no hierarchy in friendship (especially among the young) as against the theory of Dumont (1980) who argues that hierarchy stands at the centre of Indian social life. Contextually, in Santal society we hardly find hierarchy among the ritual friends of same age-grade but an informal hierarchy is maintained among the ritual kinsmen.

So many scholars have put their heart and soul to know ins and outs of ritual kinship. In doing so, they have their own views regarding its nature, structure and definition. Benjamin D. Paul defines, in ritual kinship "unrelated individuals enter into a ritual compact to maintain an enduring relationship of a kin like order other than marriage". L.K. Mohapatra (1973-74), in his article, "Ritual kinship in peasant societies", explains that ritual kinship is a wider concept than ritual friendship (as we have discussed earlier).

Importance of Ritual Friendship

Ritual friendship is solemnized for the following reasons.

1. Generally a tie of ritual kinship is formalised on the pact of mutual attraction, affection and sentimental choice. Ritual kinship followed by some ritual and ceremonial practices, called "Conditional Course" by Evans-Pritchard (1951) and "Crisis Kinship" by Mohapatra (1973-74) promulgates the essence where both the friends stand by each other at the need of the hour.

2. Friendship is established during different needs of life, such as economic crisis, political needs, religious functions, ceremonial occasions, social practices etc. Its essence is intrigued for mutual help, co-ordination and merry making.

3. It prescribes reciprocal gifts and mutual assistance. In some instances it imposes an incest prohibition between the children of the comrades and even between their descendants, in others it enjoys a preference for their union.

4. Such pacts are frequently a means of cementing peaceful relationships putting an end even to a feud or a personal enmity and it acts like a mechanism of social control (Eisenstadt 1956: 94).

Ritual Friendship among the Santal

Besides consanguineal and affinal relationships, the Santals are fond of making phul pela (flower friendship). During birth, marriage and death ceremonies, forest collections and other economic activities Santals come across one another. Two would be friends may feel a sudden wave of affection for each other and establish a tie of relationship in due procedure. The Santals
need for phul pela in the nature of durable friendship to continue the relationship of exchange, credit and interdependence, to guarantee the safety of life, property and credit repayment and to help in socio-religious and economic activities of day to day life because they believe it is the strongest bond than consanguineal and affinal. Really the ritual friends in Santal Society are made for each other; one never leaves the other in lurch.

However, Santal ritual friendships among the boys are formalised in three different institutions namely phul, karamu dharmu and jom nu gate. The most important is the phul friendship in which the two would be friends (along with the consent and active participation of the parents and relatives of both the friends) garland and feed each other, exchange naya datta (new dress) and all other things they have brought for the occasion. This friendship is usually solemnised at Sibrat mela, a Hinduised festival celebrated on the eve of Sivaratri worshiping Lord Siva on the month of Phalguna (February- March).

The alliance type of ritual friendship known as karmu dharmu is established on the Dagua Karma festival, which is cerebrated once in every five year. Here the would be friends known as karmu dharmu are asked to erect the Karma branch and at the end of the festival they take the branch away and report themselves to the Majhi (spiritual head) where they are served with watered rice and since then they become friends for ever.

The last type known as jom nu gate is a non-formal and non-ritualised friendship. When two boys come very close to each other, wander together, eat and drink together from the same plate, people call them jom nu gate. This comradeship lasts as long as they wish.

Similarly the ritual friendship among Santal girls is ritualised in three different institutions known as phul, karmdar and bahaphul. These are parallel to phul, karmu dharmu and jom nu gate friendship of boys and solemnised in the similar fashion respectively.

Goj Phul (dead friend) among the Santal:

Besides the above mentioned friendships there is another most interesting and peculiar ritual friendship among the Santal called as Goj Phul (dead friend). After the death of a person, another person having similarities in physical appearance (though not a strict rule) with the deceased is considered as Goj Phul with after a complex series of ritual rites. The last ritual rites of the death ceremony of Santal is Jilin dahar, popularly known as Damodar while a piece of jangbaha (bone) of the cremated-dead or a puisa (coin) touched on the head of the buried-deceased, collected earlier, is immersed in a holy river, preferably in the river Damodar just after Makar festival.

Why the Santals immerse bone in Damodar and why they worship it? The myth runs like this. Originally the Santals were living in Santal Pargana (now in Jharkhand). The river Damodar was very close-by. One day a great giant king named Jangaraj, along with his force, tried to attack the kingdom of Santals from the opposite side of the river Damodar. The Santals were frightened. They prayed their Marangaburu (the supreme God). They prayed the river Damodar to save them from Jangaraj. The river God Damodar pleased. All at a sudden the Damodar started expanding and over-flowing. The giant king could neither succeed in crossing the river nor able to conquer the Santal Paragana. The Santals were saved. And since then the Santals pray and worship the Damodar as a God and savior of their community. Moreover, as the Santals believe
life after death and rebirth, throwing of bone in Damodar is for attending salvation also. And that is why they observe and worship Damodar.

Before some days of Makar, rum daka (spirit call) is done at the deceased house. Two would be possessed individuals, may be the relatives of the deceased or pure strangers, but Santals, from outside are brought on hire. Both with sun-dried rice on winnowing-fans sit inside a room and others (villagers and relatives) sit outside the room. The possessed individuals rub the rice, pray and invoke the spirit of the deceased and the supreme God respectively to appear on them. As soon as the Haplam Bonga (spirit of the dead) and the Marangluru (the Supreme God) appear on them, they accentuate hinsaha by which the persons sitting outside become aware of the fact that the spirit and God appeared.

Then all the persons sitting out ask the Haplam Bonga about the causes of death and what he needs more. If the deceased had a natural death, the Haplam Bonga answers, "I had put that much of rice in the pot, it finished and I went away". In case he was witched to death, he unravels the mystery. However, it is believed, he calls a spade a spade. After that he may wish to drink water or liquor from the relatives and he is served. In the long run he may ask for what he likes or needs like wrist watch, cycle, radio, musical instrument, book, dress, food materials and so on. If somebody expresses his/her doubt in regards to the answers of the Haplam Bonga, then the Marangburu clarifies the doubts and makes the matter clear and unambiguous. All obey him and become satisfied with the answer, as he is the supreme God. All the things begged by the Haplam Bonga are arranged and relatives prepare themselves for Damodar.

After two days of Makar either on Sunday, Monday, Wednesday or Friday, the relatives of the deceased along with the jangbaha (bone) or puisa (coin) and things begged by the Haplam go for a holy deep in a holy river where they immerse the janghaha or the puisa. Some of the things, after worship, are exchanged for goat, sheep or cock and some other things, the most basic demands of the Haplam, are offered to a person, if found, similar to the deceased in appearance. Then the person accepts the gift, even though the things are of no use to him, and in return he gives back a cock, a goat or a sheep for worship.

Since then the person is treated as Goj Phul (dead friend) i.e. the person who accepted the offers is treated as the person who died and he is addressed by the same kin term, which was employed to the deceased. For example, if the father dies, he will be called as father (though the person is not biologically related, even may be an unmarried). On the same day all with Goj Phul and some other additional relatives of the later return home. Reaching at home, again they appease the Haplam Banga and Marangburu with sacrifices and offerings. At night a feast is arranged where all the relatives and the Goj Phul take part. After some days the Goj Phul leaves for his own home but the relationship becomes fond and fair and never breaks. He becomes the kinsman forever.

And even today the Santals of Mayurbhanj observe this ritual every year. But those who are unable to visit Damodar, they may perform the rituals and rites in Baitaranri or Machhakund, two nearby rivers, but in the name of Damodar only.

The Santals follow their custom honoured tradition, rules and regulations to formalise Goj Phul. Some of these beliefs, customs, traditions, rules and regulations are recapitulated below.

1. One can establish ritual friendship with another person of the same sex where an appropriate sentimental choice pays a vital role.
2. This bond cannot relate consanguineal and affinal kismen and clan members.
3. Once ritual friendship is solemnised, the friends cannot address each other and their relatives by their names but by the term of relationship and by kin terms respectively.
4. All sorts of kinship usages do exist among the ritual kinsmen.
5. Marriage among the phul pela (ritual kinsmen) is prohibited.
6. They hold a strong belief that if they do break the relationship, the spirit and God will punish them.
7. It is believed that the relationship exists for about 300 years.

Conclusion:

It is clear from the above discussion that Goj Phul, in a strict sense of the term, never falls under the category of natural kinship but pseudo kinship or beyond kinship, if I would be allowed to use a term. In 'ghost marriage', as in vogue among the Nuers of Africa (Evans-Pritchard, 1951), the genitor acts only as a suitor but in the name of the spirit. Even the children produced by the genitor are considered as the children of the spirit, the dead. Similarly, in the relationship of Goj Phul of Santals of Mayurbhanj we found that the Goj Phul, represents the spirit and acts, with certain limitations, like the dead person. The Goj Phul is never allowed to be a genitor to the wife of the dead, to inherit the property of the deceased and his clan name. Nevertheless, he is recognised and regarded as the father to the children of the deceased, as the brother to the departed brothers, moreover as a relative to the relatives of the deceased. The Goj Phul is addressed and referred only by same kin-term as was the dead and he participates in all socio-economic and religious activities of the family of the deceased. Thus, like ghost marriage, it seems "ghost friendship" will be an appropriate name for Goj Phul.

References

♦ Elwin, Verrier, 1939. The Baiga, Delhi; Gian Publishing House.
♦ Firth, Raymond 1936. We the Tikopia. London: George Allen and Unwin Ltd.


Abstract: The present paper aims at highlighting the land reform scenario in Odisha. Land is an important resource in agrarian society, thus plays an important role towards the livelihood security of people. Access to land distribution occupies a significant element for the economic life of people. Keeping this in mind the present report describes the land accessibility and distribution pattern prevailed among the people of Koraput and Puri.

Introduction

Land is the most important resource in an agrarian society as it enables its population to live with the food security and dignified life. But unfortunately access to land is very much limited for millions of rural poor in our country. Pre-independence period was marked by confusion as to how the land rights were conferred in the absence of proper records. Neither hereditary ownership nor customary authority constituted a legal claim to ownership of land. Defining and classifying land was also extremely difficult. Different Presidencies, kings, tribal chieftains had different procedures for land administration. Land distribution during the time of independence was extremely tilted. 53 percent of the land was held by 7 percent of the land owners, whereas 28 percent of the land owners with sub-marginal holdings owned about 6 percent (Despande, 2001). Exploitation of the tenants were rampant.

In Orissa there were 24 princely states controlled by different tenancy laws. The tenants like other parts of India were highly exploited. After independence policies were adopted to bring reforms to the existing exploitative system. The First Five Year plan 1951 emphasized on abolition of intermediaries, tenancy rights and related measures for agrarian reforms. Following the reform measures, Orissa Estate Abolition Act -1952, Orissa Schedule Areas Transfer of Immovable Property Act-1956 (amended in 2002), Orissa Land Reforms Act-1960, Orissa Survey and Settlement Act-1958, Orissa Consolidation of Holdings and Prevention of Fragmentation of Land Act-1972, Orissa Prevention of Land Encroachment Act-1972 (amended in 1982) etc were formulated to bring an end to the exploitative system and remove the intermediaries. However these legislations had some inherent limitations too. In the absence of strict implementation, updated land records there was a huge gap in the record and actual ownership. The table below gives a quick understanding of the provisions made for land reforms in Orissa and its impact.
## Main Provisions and Impact of Land Legislation

<table>
<thead>
<tr>
<th>Name</th>
<th>Year</th>
<th>Provision</th>
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<tr>
<td>Orissa Estate Abolition Act</td>
<td>1952</td>
<td>Abolition of intermediaries&lt;br&gt;Vesting of all the rights in the state&lt;br&gt;Agricultural land less than 33 acres to remain with the intermediaries for personal cultivation</td>
<td>No provision of protection for tenants.&lt;br&gt;Eviction of tenants as the zamindars was allowed land, less than 33 acres, for personal cultivation.&lt;br&gt;Abolition of intermediaries could not be completed until 1974</td>
</tr>
<tr>
<td>Orissa Land Reforms Act</td>
<td>1960</td>
<td>Permanent habitable and transferable rights in land for the tiller.&lt;br&gt;Ban on leasing of land except under special condition (in 1972.)&lt;br&gt;Under adverse possession, land in continuous cultivation for 12 years or more by a person other than its owner shall pass to the cultivator. Rent not to exceed one fourth of the gross produce.&lt;br&gt;Ceiling on individual holdings at 33 standard acres, later reduced to 20(in 1965), and 10(in 1972).</td>
<td>Delay in the enactment and actual implementation of the act provided sufficient opportunities for large land owners to escape ceiling restrictions.&lt;br&gt;By explicitly banning tenancy, the law is unable to address the problems of share-cropping.&lt;br&gt;No provision was made to record concealed tenancies.</td>
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<tr>
<td>Orissa survey and settlement Act</td>
<td>1958</td>
<td>Different Laws relating to survey, record of rights and settlement amended and consolidated into one uniform law</td>
<td>Establishment of uniform though defective systems-rights of tenants not recorded during settlement operations.</td>
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<td>Orissa prevention of land Encroachment Act(Amended in 1982)</td>
<td>1972</td>
<td>Unauthorized occupation of government land prohibited. Penalties on encroachers to be followed by eviction. The 1982 amendment for settlement of two (later amended to one) standard acre of unobjectionable land (i.e. government waste land) with eligible beneficiaries (e.g. landless)</td>
<td>Disregard of the Act with widespread encroachment on both government and common lands, often by powerful groups. Penalties too low to act as a disincentive to encroachers. The 1982 amendment not a ‘proactive’ right-encroacher, cannot apply to be regularized as illegal in the first place. Only Revenue Inspectors can initiate regularization of rights. Considerable scope for rent seeking by revenue officials.</td>
</tr>
</tbody>
</table>

The table reveals some of the main features of the legislations made for agrarian reforms. Among these the Land Reforms Act-1960, was the most progressive one as far as the land reforms legislations are concerned. This law aimed at ensuring rights of raiyats, provide better rights in favour of temporary lease share-croppers and other tenants, settle disputes between land lord and tenant, occupancy right on homestead land, regulate rent, protect Schedule caste and Schedule tribe raiyats from illegal alienation of land, limit the power of land lords, fix a ceiling on land holdings and to distribute ceiling surplus lands among the weaker section of the community. This act was amended several times from 1965 to 1992. However, the process of implementation had loopholes in it which were conveniently exploited by the rich and the powerful. Among the major loopholes: retrospective transfer, fixing ceilings were exploited mostly. This law initially continued with the ceiling of 33 standard acres, then reduced to 20acres in 1965 and 10 standard acres in 1972. This provided the big land owners an opportunity to transfer their land in the name of their relatives, while maintaining control over it. According to the annual report of the Ministry of Rural Development, March 2003, 1,57,482 acres of ceiling surplus land has been provided to 1,40,158 land less families in Orissa, of whom 51,611 belong to the ST and 48,196 belong to the SC category. Besides, 7.26 lakh acres of government waste land has been provided to the land less in the state. In addition, 5.80 lakh acres of Bhoo dan land has been distributed to the poor people in Orissa. As per Government of Orissa, Revenue Department sources, 1,59,384 acres has been distributed to 1,42,616 beneficiaries. In spite of the efforts made by the government, access to the distributed land is still far from reality.

Ceiling Surplus and Government Waste land Distribution: Cases from Koraput and Puri Districts of Orissa

Though the officials figures of the Ceiling surplus and government waste land distribution looks very promising, actual field situation is quite different. Study findings reveal that issues like actual possession, land quality, issue of patta (Records of Rights) as the main hindrance in the way of access to land. In case ceiling surplus land actual possession is the key issue. Land declared as surplus though officially distributed, remains in control of the earlier owners. Being rich and influential, the previous owners are able to be in actual possession of the land. Study carried out in Koraput reveals such situation. Here government waste land category remains unutilized as the land quality is undulating and rocky. Beneficiaries find it difficult to process it and make it cultivable. In Puri the beneficiaries are in the process of fighting a legal battle against the previous owners. Distributed government wasteland follows no rule in this district. In Puri exceptions are rules.

Case from Koraput

A study was conducted in 12 selected villages of 7 panchayats in Koraput district which includes Koraput, Laxmipur and Dasmantpur blocks. The study villages have 65 percent Schedule Tribes and 90 percent families below poverty line. Of the total land allotted 72.5 percent belong to ceiling surplus and the rest government waste land category. The total number of house hold surveyed was 319. The main issue relating to ceiling surplus land was non possession of the land by the allottees though they have been paying land tax (khajana) since 1976-77. The issues in case of allottees of government waste land was different. The land distributed was rocky, undulating and uncultivable type. Over all the purpose of getting livelihood support from the land is far to achieve. Given below are the key findings of the study.
Total HH surveyed 319, out of 1850 HH in 12 villages
42% cultivating while about 58% unutilised.
Under ceiling surplus- 72% HH without possession.
Under Govt wasteland - 100% allotment to men
Entitlement status - 82% received patta (RoR).
Sale and mortgage - 6.6%
Government acquired - 4.5%
Litigated - 7% (provided under Ceiling Surplus)

Case from Puri

The study was conducted in 10 selected villages of 5 panchayats in Puri and Brahmagiri Tahsils of Puri district. Total households surveyed for the study was 272. The village had 15 percent Scheduled Caste, 4 percent Scheduled tribe and rest 81 belongs to Other Caste group. As per revenue records, total land declared as surplus is 7938.081 acres, out of which 2101.423 acres had been distributed which is only 26 percent of the total area. Most of these lands were found to have litigation based. As per the study in Puri Tehsil, the poor beneficiaries could not get possession over the received land rather spent a lot of money to fight in the court of law for the patch of land. The land being very fertile the previous owners showed their muscle power to remain in possession over the land.

Government waste land was distributed in many revenue circles in Puri during 1974 to 1976. Brahmgiri Tehsil is one of them. Hundreds of acres of lands were settled in the name of persons encroaching these lands. The beneficiaries were in possession of the land as per the 1974/76 lease record. While some of the beneficiaries got their RoR corrected some could not. Though all the beneficiaries were found in possession of the land, the RoR remained uncorrected in four selected villages. Given below are the key findings of the study.

Total HH surveyed 272, out of 1434 HH in 10 villages.
Under ceiling surplus- 100% HH without possession.
Under ceiling surplus -100% women allottees
Entitlement status - 41% received patta.
Litigated - 100% (provided under Ceiling Surplus)
Allotees do not have physical possession of their land but are in process of fighting a legal battle since 2000.

Presently, other than ceiling surplus and government waste land distribution there are schemes to distribute Homestead Land under Vasundhara Scheme(2005), Bhoolan land, Forest land under Schedule Tribes and Other Traditional Forest Dwellers (Recognition of Rights) Act-2006 for safeguarding the rights of the tribes and other economically backward communities. On the top of it, the state government is trying to ensure access to land and control land alienation through various campaigns and notifications from time to time. Provision of issuing Land Passbook...
(2006), 'Mo Jami Mo Diha' campaign (2007), conferring' Dafayati 'rights (2008) etc are some of the important steps taken to restore land to the poor. However, poor implementation of these programmes has raised many question marks. Unless the gap between the law and the practice is bridged access to land would always remain a distant reality.

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The symbiotic relationship between art and religion: A case study of Pattachitra of Odisha

MAMATA DASH *

Abstract: Art is a product of culture, and explicitly or implicitly explains various ethos and eidos of the culture one lives in. Art, thus, is not necessarily the manifestation of mind of the artist alone rather it owes its inception to entire social and cultural setting where the artists lives in. It constitutes an indispensable part of culture and therefore it calls for the attention of anthropologists for a better understanding of any society. Artist, the creator of art, himself is born and brought up under the prevailing norms of the existing institutions of the society. The artist unconsciously adopts the ideals of his society and expresses them in a socio-cultural context. Art reflects some of the attitudes of the society which may be found in social, economic or religious behaviour. In certain cases art is known for its religious significance. Religious context not only predominates the esthetic dimension of the art and the artistic skill of the artist but becomes major source of livelihood of for the entire artist community. On the other hand religious beliefs are promoted, sustained and made popular by the art. Thus there develops a symbiotic relationship between art and religion. My paper explores and unveils such a relationship that exists between Patta painting, one of the traditional art of Odisha and Great Jagannath cult or religion of the state.

Key Words: Art, religion, patta painting and Jagannath cult,

Introduction

Art is the manifestation of one's imagination as well as conception of any fact, ideas or beliefs. As Collingwood (1938) puts it, "by creating for ourselves an imaginary experience of activity we express our emotions and this is what we call art".

The emotions or sentiments, expressed through art are moulded and influenced by various aspects of the society one lives in and by one's day-to-day life. Thus, art is a part of life.

"In the widest sense, as Herskovits (1951) says, art is a product of culture, and explicitly or implicitly explains various ethos and eidos of the culture one lives in. Art, in this way is not necessarily the manifestation of mind of the artist alone rather it owes its inception to entire social and cultural setting where the artists lives in. On the other hand religion also constitutes a significant aspect of culture influencing the socio-cultural setting as well as one's belief pattern. Art thus reflects some of the attitudes of the society which may be found in religious behaviour. May be this is the reason for which the traditional art in general and traditional paintings in particular is comparatively religious in nature. Patta Painting, one of the traditional art form of Odisha is not an exception. It owes its origin and popularity from jagannath cult, the dominant

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religious belief of the state. On the other hand patta painting has a special significance in the rituals of Lord Jagannath. It also plays a pivotal role in spreading the Jagannath cult not only among the people and devotees of Odisha, both in rural and urban area, but also carving a space for this religion across the globe.

**The Objectives of this paper is to**

- explore and unveil the symbiotic relationship that exists between Patta painting and Great Jagannath cult or other religious behavior of the state, and
- assess the ritualistic nature of the patta painting

**Study Area**

The study was conducted among the Chitrakaras, the painter community of Raghurajpur village of Puri district of Odisha. Raghurajpur has a homogeneous religious configuration, all the villagers being Hindus. Down the centuries it has attracted pilgrims, artists and traders from all corner of India and other parts of the world for its superb patta paintings, which is best known for its association with Jagannath culture.

Odisha, otherwise known as Utkal, is the region where expertise and excellence in art and craft have reached their pinnacle. The land holds a significant position in the field of traditional paintings one of which is patta painting.

Patta painting has also been categorized as craft. Department of Hindicraft and Industries, Government of Odisha has identified fifty-two crafts in this religious land which have taken the form of cottage industry. These 52 crafts can broadly be classified into five different categories like popular, rare, languishing, special craft and miscellaneous. Patta painting is one of the popular craft, placed in 6th position in the list of Directorate of Handicraft and Industries, Orissa, Odisha, Bhubaneswar.

**i. Religious Aspects in Nomenclature of the Painting**

"Patta Chitra" as the name suggests is an art where *Chitra* (Picture or painting) is done on a piece of 'Patta' which means cloth. But there are also other connotations of the word 'Patta'. According to some people in the remote past, the painting was done with the help of brush prepared from locally available screw pine stick called 'Patta', so the name 'Patta' painting. Some others say that the original nomenclature is Pata Chitra, as the style of painting was traditionally done on plank of wood or 'Patta'. However, the first explanation is more authentic and universally accepted.

It expresses the religious and mythological aspect of the Odia ethos giving a panoramic view of the epic Mahabharat and Ramayan in general and Jagannath culture in particular. the Pattachra Patta developed at a time when the medieval eastern school, flourishing under Palas, Senas and Vermas, had disappeared. Orissa patta paining has many similarities as also dissimilarities with western and eastern Indian painting. Like Buddhist of Bengal and Jain of Gujurat Orissan Patta painting is also strictly religious in context and deals with no secular themes. Similar to the Nathawar painting of Rajasthan, patta painting is the caste occupation of
Chitrakaras. Despite all these similarities the age old patta painting is unique for its indigenous style of preparing canvas, brush, and pigment- the major prerequisites of painting.

ii. The umbilical relationship between Patta Painting and Jagannath Cult

Odisha, the abode of traditional art and craft, is highly esteemed and identified with the cult of Lord Jagannath. The daily ritual of the cult of Jagannath has encouraged many forms of art and craft like appliqué, pottery, and patta painting etc... The artisans are brought to Puri to supply various items required for the rituals of Lord Jagannath Temple (Sahoo: 1988:20). These crafts came to lime light and got worldwide recognition for their close association with the Supreme Lord.

Odisha is well known as one of the four religious centers or 'Dhamas' of Hindu India. From very ancient pilgrims from different parts of the country used to visit Lord Jagannath at Puri. Since the daily visit to Puri was not possible the people or devotees of far-off places used to worship the paintings of Lord Jagannath. In those days the motifs of the trinity were painted on paper which was prepared by the Chitrakaras (Patta painters) of Raghurajpur and very few other places like Tigiria, Paralakhemundi etc. Secondly, generally the pilgrims purchase certain items of religious significance to memorise their pilgrimage. It is believed that the sanctity of pilgrimage to Puri remains incomplete if the pilgrims do not take the sacred items like, Jagannath patti, (jagannath motifs painted on paper) necklace of ocimum sanctum beads (Tulasi) and cane sticks along with some dried rice of Lode Jagannath from Puri. Besides these, the devotees from other states used to take the small paintings of the Trinity for worshipping them at home. Thus, the painting of Lord Jagannath has a great demand among the pilgrims (locally called Jatri). So during early days these paintings are popularly known as Jatri Patti (paintings meant for pilgrims). The small size and an affordable price of these Jatri Pattis had added to its demand by the people in general and by the pilgrims in particular. Depending upon the shape and size these paintings have various names like Panna, Na Khandia, and Thia, Thia badia etc.

Thus, Jatri Patti, meaning painting specifically prepared for Jatris or pilgrims, is the first from of the Patta painting which owes its origin to Lord jagannath or jagannath cult as a whole.

Besides jatri patti, 'Yama Patti', 'Durga Patti', 'Ushakothi Patti' and 'Mangala Patti' etc. ('Patti' means a piece of painting) are still worshipped in the villages of Odisha on particular ritual occasions.

ii.a. Spread of Jagannath Cult through Patta painting down the ages

As mentioned earlier Patta paintings of the Supreme Trinity, painted by the Chitrakaras had a high religious value for the pilgrims and devotees and were being worshipped by the devotees in far-off places. Many of them also used to buy other painting works as a souvenir of their visit to Puri. Though the Chitrakaras were brought by the king for the purpose of painting work in Jagannath temple as well as their royal court, they enunciated the Patta Painting tradition as a devotion to Lord Jagannath as well as to cater to the demand of the pilgrims and kings. The pictorial representations of religious legends, painted in the Patta paintings, were canvassing mostly for Vaishnavism in India. Various activities of Lord Krishna and Lord Ramachandra (the previous incarnations of Lord Jagannath) constitute the prime theme of the Patta Paintings. So either for religious or gift purpose the cult of Jagannath reached far and wide through patta painting.
iii. Inseparable Tie between Lord Jagannath and Patta Painting

The religious fragrance of Lord Jagannath pervades every nook and corner of Odisha and is preserved in its art, craft and culture. It will not be exaggeration to say that the cult of Lord Jagannath is the cradle of the superb art, architecture, and painting traditions of the state. Especially the origin of Pattachitra or Patta painting in Odisha is directly related to Lord Jagannath. Starting from its preparation, painting, marketing to its sustenance down the ages patta painting tradition revolves round the Jagannath cult.

iii. a. Inherent relationship between Painting Style and Jagannatha Cult

Besides its origin there exists a close nexus between Lord Jagannath and Pattachitra, in painting style and the colours used for painting.

Lord Jagannath, in a simple term, is a painted wooden idol, carved out of neem (margosa) wood. The idols of the trinity are unique and different from any other Hindu gods and goddesses in the sense that unlike others the trinities do not have distinct hands and feet. These idols are made out of margosa wooden logs on which several coats of silk cloth, glue (of elephant apple tree) along with chalk powder are applied layer after layer, after which idols are painted with different colours to bring them into the present form. The various colours used for painting work are (1) Kala (black), (2) Sankha (white), (3) Haritala (yellow), (4) Hengula (red), and (5) Pooha (green).

Likewise, in Patta painting, the base or canvas is prepared from a piece of cloth coated with tamarind glue, chalk powder and glue of elephant apple tree, layer by layer on both the sides. After each coat, the cloth is dried in the sun.

The surface of this cloth is made smooth enough for the purpose of painting by rubbing the surface twice or thrice, with the help of a piece of stone called Barada. At first, a rough-stone called Bagada Barada is used to rub the cloth in order to make the surface smooth followed by rubbing with a fine-grain stone called Chikkana Barada, which makes the surface more fine and suitable for painting works. In the same manner, the body of the idol of Lord Jagannath and two other deities are made smooth by rubbing them with materials like resin, lac, etc. in lieu of stones.

After the preparation of base or canvas, preparation of colours for the painting work starts which is similar in both the cases. The 'Kala' (black colour) is prepared from oil and lamp soot. In the remote past, this colour was prepared from the precious stone found in the naval part of 'Kasturi' (deer), 'Sankha' (white colour) is prepared from sea-shell, 'Haritala' (yellow colour) and 'Hengula' (red colour) are prepared from 'hengula' stone and 'haritala' stone respectively found in different forests and hills. They prepare 'Pochha' (green colour) by decomposing various green leaves in water and then filtering the said water.

It is interesting to note that almost all of these colours and the glue are collected from the nature (forest and hills) to corroborate the fact that Lord Jagannath has his origin in tribal culture.

Besides the preparation of colour is concerned, the application of different colours for the painting work has close resemblance with the supreme deity.

The process involved in Patta Painting is same as the painting of the body of Lord Jagannath, only with a variation in the background colours. The background is prepared with white for the Lord Jagannath whereas it is red in colour in case of Patta Painting.
The primary step for outlining the motifs in Patta painting as well as in the supreme deity is called 'Tipana'. For colouring different body parts of the trinity as well as of motifs in the case of Patta painting they use different types of brush. The process of painting is done through various steps like Banaka, Ranga lekha, Akhia gara, Motakata Sorukata and Sankha pata etc in both the cases.

The sequence of application of different colours is also same in both the cases. First of all, Sankha (white) or Hengula (red) is used for the background. The contrast colours for the background like white at the initial stage or red (or ochre), is selected for drawing the outline of motifs. Then the other colours such as neli (blue), pocha (green), hengula (red), geru (ochre / brick colour) haritala (yellow) and kala (black) follow sequentially.

After the application of colours, a first coating of lac glue is applied to the painting in both the cases in order to protect them from moisture and insects.

### iii.b. Religious significance of Patta painting inside the temple

A form of patta-painting called Anasara Patti depicting the images of Lord Jagannath, Lord Balabhadra and Devi Subhadra is worshipped in the temple for fifteen days, during 'Anasar' period (period of rest) of the Lords. According to the beliefs and practices, the three Lords suffer from fever for 15 days shortly after the full-moon day of Jyestha (in month of June-July).

During the absence of the trinity in the sanctum sanctorium separate paintings (depicting three lords) called Anasar Patti are worshipped in the original place of the Lords. After fifteen days when the Lords recover from illness they go back to their respective places and get ready for celebration of Car festival.

Besides these Anasar patties, another form of Patta painting called Nilamadhaba Patti is also prepared by these painters for Lord Patitapaban installed at the main entrance of the temple. The responsibility of preparing of such Pattis is also shouldered by the Chitrakaras of Jagannath Bada.

### iii.c. Jagannath Cult and Social life of the painter community or Chitrakara caste

Preparation of Anasar Patti has a very deep-rooted significance in the social life of the Chitrakaras. The whole Chitrakara community is divided into three sections called 'Bada' after the name of the three deities. Each 'Bada' prepares the Anasar Patti of respective deity under the guidance of the 'Bada' chief. The 'Anasar Patti' of Lord Balabhadra, the eldest among the three, is painted by the chief of 'Bada thakura' or 'Balabhadra Bada'. Since Lord Balabhadra is the eldest among the three, he is called as 'Bada' (eldest) 'Thakura' (God). Similarly the Anasar Pattis of Lord Jagannath and Devi Subhadra are prepared by the chief of Jagannath and Subhadra Badas respectively. Thus, the rights and responsibilities of preparing the Anasara Patti are conferred on the respective chiefs. The post of the chief is hereditary.

### Other Religious Importance of Patta Painting

Besides Jatripattis, the style and techniques, Patta painting has also other religious significance. Mohanty has also given stress on the theme of the patta painting.

Bansidhar Mohanty (1979) has divided the entire gamut of painting into four categories as follows:

Vaishnava painting includes the paintings depicting (a) Krishna-lila (the activities of Lord Krishna), (b) Stories related to Ramayan and (c) Lord Jagannath. Most of the Jatripattis which depict only the supreme trio like pana, nakhandia, karaapatia, mastakia etc. are examples of Vaishnava painting.

Shakta paintings are comparatively older than the Jagannath or Vaishnava paintings where the goddesses are given preference. Shakta themes are very few in Patta painting. Thia badhia, one type of Jatripati is one of the examples of Shakta painting where in the paintings of different goddesses like Sitala, Shyama Kali, Bhubaneswari etc. are painted. Kali and Durga paintings also belong to this category.

Shaiva painting is less in number. Image of Lord Shiva is painted in these paintings. In some of the jatripatis, Lord Shiva is painted with folded hands at the left side of the temple. Besides this painting of Mahadeva, paintings of Ganesh and Bhairava are also used on the doors on the day of Raksha Panchami (Fifth day of the dark fortnight of Bhadrapada).

Paintings on legends depict some popular legends or stories. Two such popular legend paintings are; one on Kanchivijaya and another on Ta-a-poi.

The first one which depicts how Lord Jagannath and Balabhadra helped the king Purushottama Deva the then king of Puri to conquer the neighboring kingdom of Kanchi. On the way to Kanchi, Lord Jagannath and Balabhadra in the disguise of soldiers of Puri Raja asked one milkmaid called Manika for curd to quench their thirst. When Manika asked the soldiers for the price of curd, they gave her a diamond ring and told that she could collect her money from the king, coming next, by showing the ring. In the painting, one female motif symbolising Manika and two soldiers with horses are painted in a conversation posture.

Ta-a-poi painting depicts the miserable story of Ta-a-poi, the only daughter of a rich trader. The trader had seven sons and one daughter Ta-a-poi. Once Ta-a-poi who has being much pampered by the family member, asked for a silver moon. By the time her demand was fulfilled, she lost her parents. Then when all her six brothers went out for trading, the sisters-in-law tortured her by not giving her food, by making her do all the house hold chores. Then Ta-a-poi prayed to goddess Mangala to come to her rescue, and finally succeeded. In the painting, goddess Mangala is painted at the center and the story is painted in small blocks on the sides.

Another such painting is Ushakothi paintings, one of the religious Patta paintings specific to Ganjam district. The term Ushakothi, otherwise known as Kothiusha, (‘Kothi’ means house and ‘Usha’ means ritual celebration). Thus it refers to a community house in the village where wall paintings of gods and goddesses have been painted for commercial propitiation. The paintings to be done on the walls are painted on primed cloth or tassar cloth which can be used in subsequent years. Thus it saves not only time from being repainted each year but also money. The festival starts on the 10th day of shukla Pakshya (bright fortnight) of the month of Aswina (September-October) and continues for 5 days. Originally limited within the Sudras (e.g. washer man etc.) the festival is now observed by all the people of Ganjam district, irrespective of their caste, with much pump and gaiety.
Ideological importance of the painting

While contributing to define and explain the society and culture of the Chitrakaras, Patta painting has had its basic ground firmly established in the Hindu religious values or some sort of ideological sub-system. The use of cloth painting (the earliest form of Patta painting) is very old in Hindu tradition. Due to its light weight it was used by the saints and philosophers to preach their religious beliefs. "Buddhist monks used to carry with them long scrolls of cloth painting on the life and teachings of Buddha. Bana in Harsha Charita makes a reference to the scrolls (most probably on cloth) on the themes of Yama Pata which was being demonstrated to the crowds on the streets" (Dr. Pathy 1976 : 77). However Patta painting, in its present form, became popular in Odisha due to its association with Lord Jagannath, the epitome of Hindu ideology. The idea or belief that all the services of supreme trinity, the painted wooden idols, should be done by the specific caste groups necessitated the incorporation of Chitrakara caste group for painting work required for the Lords. The religious significance of Anasara Patti during the absence of three Lords inside the temple and the occasional worshiping of different paints of various deities throughout the year gave birth to the Patta painting tradition in temple context. Patta painting maintains the temple rituals according to the Hindu ideology.

The raw materials although provide the shape and colour to the diagram, it is the religious ideology which actually defines the iconographical shape and life of the Patta painting. The text of the Patta painting is always selected from the Hindu scriptures consisting of romantic, colourful and philosophical episodes. Patta painting speaks as well as preaches the Hindu ideology and philosophy narrated through small episodes. Each and every symbols used in Patta painting, conceived from the Hindu scriptures, explains the Hindu mythology as well as the precious philosophy inherent in it. For example the Chitrakaras paint the face of the demon Rahu at the four corners of some painting. The reason for this is that Rahu is described as the demon of evil in the Hindu mythology which can control all evils. So they paint the face of Rahu to keep their magnificent creation sate from as evil eyes. Same thing they also do with the iconography of the deities. To cite one of the instances, Lord Jagannath is painted with Sankha (conch) and Chakra (wheel) because it is described in the Hindu scriptures that Lord Jagannath is the incarnation of Lord Vishnu whose main Ayudha (weapons) consist of Sankha and Chakra along with gada (mortar) and padma (lotus). The later two are seen with the motif of Lord Jagannath in Anasara Patti. The body colour of Lord Ramachandra is found to be blue as he is described to be the incarnation of Lord Krishna, who has a blue coloured body. Apart from this, the iconographical postures of different deities described in the Hindu texts are given shape by the excellent craftsmanship of the Chitrakaras through the Patta painting. The craft helps in presenting these ideological iconographies of the text to the common man and keep the ideology alive for generations together. The episodes painted as the basic theme of the Patta painting reminds their place in the great epic. In the particular episode people can imagine the other episodes of the same epic and can establish a strong relationship among these episodes so that the entire picture of the epic can be conceived in mind. Naturally the particular piece of Patta painting describing the episodes acts as the cultural trait in the total epic culture. Naturally these paints strengthen the idea about the epic concerned which are very familiar with Hindu tradition. Thus without addition of ideological or religious values no artisan can be a Patta painter, even though he may be a Chitrakara by caste. It is the basic requirement to internalize all the ideological perceptions before drawing and painting are depicted on a sheet. May be for this reason, traditionally it was...
a part of their daily life to go to listen to Hindu scriptures, read and explained by the Brahmin in front of the village temples in the evening. Now that they are educated they go through the texts or the explanations there of in order to get sufficient knowledge about the Hindu mythology and ideology which will be the basic foundation of their painting. One should be thorough about the detail description of each duty and the chronological sequence of as well as relationship among the events of the episodes before starting the painting work. In other words a Chitrakara is expected to conceive the whole story before the starts to picturise his thought on the canvas. Now they have started quoting the abstracts from the Hindu texts or explaining them in their own words under the concerned paintings which make the understanding easier.

Ideologically Patta painting refers to a tradition of sacred art especially oriented in the little tradition of Odias as in general and that of the Chitrakaras in particular. The spiritual experience is given outward and visual form through Patta painting. On the one hand the craft of Patta painting is the depiction of the religious ideas as perceived by the artisans in the little tradition. On the other hand the craft is having a critical interaction with the great tradition of pan Indian culture. For example, traditionally the iconography of Lord Ganesh was in accordance with a white body colour and four hands holding Pinaka(a chisel type of weapon), Lekhani (iron pen) Pothi(palm leaf inscription ) in three hands, and fourth hand being in ashirbada (blessing ) posture with Lodu(sweets) on it. An art is always found at the feet of the deity usually with a sitting posture. But out side Odisha, especially in South India Lord Ganesh is described in various postures like in standing posture with six hands, each with different weapons, snake and flower etc., Sometimes Gaheesh is also described in dancing posture holding a snake in two hands over the head. These South India iconographies are now seen in Odisha Patta painting in a good number. Similarly the body colour of Ganesh is also seen to differ from place to place as well as according to the choice of the customers. Apart from this the crown, the ornament and dress pattern of various motifs of Patta painting are found to be borrowed from other great traditions. In the same way the paintings of those great traditions borrow the idea from the Patta painting. Thus there develops a sharing or exchange of ideological values and ideas between great tradition and little tradition through Patta painting.

On the whole Patta paintings manifest nothing but the ethics of Hindu ideology. It also expresses the spiritual lessons or messages, the ideological connection among the Goddess, human beings and rest of the living as well as nonliving material through paintings. They take the help of various natural sceneries, animals and birds to depict different stories of Hindu mythology where the inter-relationship between the living beings and non-livings as well as some astral beings is explained symbolically. Hindu mythology or scriptures like the Ramayana and the Mahabharat are the brain child of great social and religious philosophers, who tried to preach the Hindu ideology among the common people through small episodes. So each of these episodes carries and speaks precious spiritual philosophical tenets which reach to the people through Patta painting.

It also helps to erotically perceive the Hindu ideological order through the juxtaposition of the respective motifs. While painting, the artisans, takes care of juxtaposition of various motifs as it reflects the Hindu cultural as well as religious ideology. Hindu society is basically a status based society in the sense that interpersonal relationship as well as the social duties and obligations are defined in terms of one's status. This rule also holds well for the deities for example the position of the supreme trio is fixed and defined in terms of seniority and the
prevailing social custom. Lord Baladeva being the eldest brother (as described in the scripture) occupies the first position; Lord Jagannath occupies the third position. As Hindu society is basically a patriarchal society women are always given protection by the males. May be this is the reason for Devi Subhadra to occupy the second position, a secured place in between two brothers. Similarly while depicting any episode from Ramayana with Lord Ramachandra, Laxman and Devi Seeta, the position of deities is fixed according to their values. The female motifs are always pointed to the left of their male counterparts. Sometimes when the episode is to be painted with a number of motifs where there is no described position, the artisan applies his excellent craftsmanship for the proper juxtaposition to make the painting lively and meaningful.

The idea behind the painting of supreme trio or Lord Ramachandra with Laxman and wife Seeta not only traces the relationship among the lords but also it reflects the pattern of social relationship among the members of the society. The idea of brother and sisterhood is familiar in Indian culture which regulates and controls the social behaviors. Such behaviors, in turn, help in maintaining the social order. In a sense it can be said that the Jagannath culture, the prime theme of Patta painting has developed from the social relationship of the society and is not merely an imposition from the above.

Thus it is quite pertinent to say that the Patta painting is nothing but the pictorial depiction of the Hindu Dharma Shastra (religious scriptures). Though limited in number, it expresses too much about the Hindu social as well as religious ideology.

Initially the Patta chitra was limited within the devotees and the customers who usually do not bargain over the price as it was feared that the price at bargain may reduce the religious sanctity. The Chitrakaras on the other hand feel pleasure to sell their products to devotees who have ritual purity in their mind. Naturally there was a strong religious relationship between the seller and customer as none of them were money-minded. The bond of religious purity was the chief medium for maintaining and developing their relationship.

Patta painting was primarily devised to popularize Hinduism and more particularly the Jagannath culture where Lord Jagannath is said to be the incarnation of Lord Vishnu in the present era. The purity attached and maintained through every stages of painting helps in making the craft more popular and sacred. The devotion and the spiritual consciousness of the craftsmen were real boost for the proper development of Patta painting. The colourful presentations of different episodes are seen to be later development of Patta painting as against the traditional Jatri pattis which furthered Jagannath movement in Odisha.

Apart from this the paintings, which are found in the temple walls enhances the religious support to the devotees while visiting these temples. With the passage of time although the Patta painters have tried to accept and use different machine made materials against the nature made/collected materials, they could be able to preserve the religious epithet in their paintings.

Religion as a Source of Livelihood For the Painters:

The male artists were mainly engaged in decorating the idols and walls of the temple where as the females were engaged in painting Lord Jagannath on paper for pilgrims. The marketing was done by both males and old women at Puri town. Thus, women particularly old women besides contributing to the household economy had also in a way helped in spreading the Jagannath culture world wide. In the early days this trade of Jatri patti was one of the major sources of income.
for the Chitrakaras of puri town and neighbouring villages like Raghurajpur, Dandashhi Khasposa, Malatipatpur etc.

During festivals like ‘Dasahara’ (the annual worshiping of Goddess Durga in the month of September-October), Mangala Puja (the worshiping of Goddess Mangala in the Month of March-April), or Ratha Yatra (the Car festival of Lord Jagannath during the month of June-July) etc. the Chitrakaras of Raghurajpur were invited by the nearby villagers to paint the temple walls and the deities of their villages. For this purpose the artists were provided with the accommodation, food and other minimum facilities by the host villagers. The course of their stay depended upon the extent of the job. On their return they were given food grains, coconuts and such other items as honorarium. While going to host villages on invitation, the Chitrakaras used to carry some paintings with them for the purpose of selling. It was more to advertise their craftsmanship than to earn money. Some times they also got good number of orders of Patta painting from the host villagers. So on to bring not their work, while they returned home, they used to bring not only their earnings in cash or kind but also some orders of painting which they did in their homes. At present most of the paintings are sold in Badadanda (the grand street stretched from the main temple to Mausi-Maa temple) of puri outside the Jagannath temple which attract the attention of pilgrims and devotees. In the past some of the paintings along with such other articles related to household rituals like cotton wicks, Nirmalyas (dried sacred rice) were also sold inside the temple premise (Bedha Mahal). The Chitrakaras also used to sell the paintings on the sacred (Baisi -pahacha or twenty two steps) the main entrance of the temple. For this they have to face a lot of problems including obtaining permission form the temple administrator. A fabulous collection of Patta painting was seen to be displayed and sold at “Chitra Patta Mahal” a shop near the main entrance of the temple. The owner of the shop used to collect the paintings from the Chitrakaras and sell them to the pilgrims and tourists with reasonable price.

Conclusion:

Patta painting is one of the folk arts which preserve the Orissan tradition till today. Not withstanding severe stress and strain, this Patta Chitra tradition has lived through ages, undaunted by time; it has survived to offer a fair chance for revival. Due to close association with the temple culture or rather due to the need of the craft for the temple in general and for Jagannath temple in particular, the Chitrakaras, the craftsmen were found in almost all the place where there is Jagannath temple.

It will not be exaggerating to say that the cult of Jagannath is the fulcrum on which stands the age-old tradition of Patta painting. On the other hand traditionally the cult of Jagannath reached far and wide through Jatri pattis, traditional type of Patta painting. With the advent of globalization and modern technologies patta painting has proved to spread and popularizes the Jagannath tradition across the globe and become a lucrative livelihood for the painters even outside the community. It has given an unique identity to Odisha in the world of art through its symbiotic relationship with age old Jagannath cult.
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Situation of Aged Women among Scheduled Caste and Scheduled Tribe Population of Kandhamal district of Odisha:

SABITA ACHARYA*

Abstract: The present study has explained how age is a significant social determinant in society and old age is generally accompanied by a number of problems that aged have to face and adjust with varying degrees. The study also has made a situation analysis of aged women among Scheduled Caste and Scheduled Tribe communities of Kandhamal district of Odisha. Women constitute nearly half of the world’s population. In India more than 80% people live in villages. In Orissa the number of women is 8.01 millions, which is 49.07% of the total population of the state (2011 census). Out of total women population, 86% live in rural areas. It is observed that the problems of aged women (above 60 years) are many and it varies in different spheres of life. Due to lack of medical facilities and awareness of keeping good health women are suffering from different diseases.

Introduction

Aging as a universal process is connected with biological (or) physiological changes of organisms while aged are the persons who are influenced by the socio-psychological aspect of their culture. According to Birren (1988) Aging refers to an orderly or regular transformation in the time of representative organisms living under representative environments. Age is a significant social determinant in society. Old age is generally accompanied by a number of problems that aged have to face and adjust with varying degrees. A definition of aging from the social sciences considers the individual’s position with regard to a social time table consisting of age norms about which there is broad consensual agreement in society (Hagestad and Neugarten, 1985).

Women constitute nearly half of the world’s population. In India more than 80% people live in villages. In Orissa the number of women is 8.01 millions, which is 49.07% of the total population of the state (2011 census). Out of total women population, 86% live in rural areas. It is observed that the problems of aged women (above 60 years) are many and it varies in different spheres of life. Due to lack of medical facilities and awareness of keeping good health women are suffering from different diseases. They are characterized as ill, tired, unproductive, mentally slow, inefficient, self pitying and unhappy individuals. Feeling of insecurity and dependence compounds these problems.

Socio-cultural condition is the bed rock, playing a significant role in making and moulding of life styles of a person. Old age is the closing period in the life span. The term ‘senility’ is used

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to refer to the period during old age when a more or less complete physical breakdown takes place and when there is mental disorganization. The individual who becomes eccentric, careless, absent minded socially withdrawn and poorly adjusted is usually described as ‘senile’.

The elderly in India face multiple social, political, economic and cultural challenges including suboptimal financial security, decline of traditional extended family systems due to rural-urban migration of young people, and increasing costs of health care. In India, as is the case in many developing countries, the health systems are inadequate to promote, support and protect health and social well-being of the elderly due in part to lack of human and financial resources (B. Krishnaswamy and Co 2008). In India, sixty is usually considered as the dividing line between middle and old age. About 7.6% of India’s population is above 60 years old. Like every other period in the life span, old age is characterized by certain physical and psychological changes. The effects at these changes determine, to a large extent, whether elderly men and women would make good or poor personal and social adjustments. The characteristics at old age, however, are far more likely to lead to poor adjustment than to good and to unhappiness rather than to happiness.

Aging affects different peoples differently. Thus, it is impossible to classify any one as a ‘typically’ old person or any trait as typical old age. People age differently because they have different hereditary endowments, different socio-economic and educational backgrounds and different patterns of living. Decline comes partly from physical and partly from psychological factors. The physical cause of decline is a change in the body cells not due to specific diseases but to the aging process. Decline may also have psychological causes, unfavorable attitudes towards other people and also work and life in general. There are three types of aging like biological and physiological aging, social aging and psychological aging.

One of the basic problems for the large number of aged women all over the world is the protection against insecurity, against economic, social and psychological aspects during the later years of life. With the growth in the process of industrialisation, urbanization family and kinship organisation are fast changing. The inadequacy of the traditional arrangement for providing security and services to the aged is also becoming decreasing now. As per the tradition, the status of the aged women depends upon the the patrilineal status and partitioned household where the aged women live with their married and un married children.

Mita Bhadra described in an article titled "Role less dependency and the economics of aging in India" unravels different facets of the issue concerning the elderly population in our country. It argues that the issue of aging is not just a medical challenge but it is intricately linked with prevailing cultural and socio-economic condition as well. This article presents the concept of role of changing socio-economic and moral contents and there is an urgent need to invest alternative tasks that the older persons can assure for their continued meaningful social contribution.

Ghoshmaulick in his article "Life in old age in Rural Orissa" (2004) highlighted that, in order to understand life condition of elderly, one has to perceive both physical (Psychological)
and socio-psychological aspects of aged. Nalin in his article "Structural functional changes and the need for grand parental support in Indian families, highlights that the elderly men and women acted as the watchdogs of the adolescents of the family. Bond J. Peter Collman, S. Peace (1996) highlighted in his book "The situation of the aging in 20th century and emphasised the different aspects of the aging live the social, biological, psychological aspects of the aged persons.

The present study deals with the problems of aged women particularly their socio-cultural, economic, psychological and health related. Study has been undertaken among the Scheduled Caste (Pano) and Scheduled Tribe (Kondh) communities of different villages of Kandhamal district of Orissa. This is purely an ethnographic study based on empirical data collected from the S.C and S.T women folk through different methods and techniques. The reason for focusing it on women is that they are the inseparable part of our social system and constitute nearly half of the country's population.

Orissa is situated in the eastern part of India and Kandhamal district is located in central Orissa and Phulbani is the headquarters of Kandhamal district. In India more than 70% people live in villages. In Orissa, about 80% of the total population live in remote and rural villages who mainly depend on small agriculture and forest products. The total number of villages is 51349 in Orissa and 2546 in Kandhamal district. The rural population in Orissa is 31287422 and 604107 in Kandhamal district. In Orissa, the scheduled tribe population is 22.13% and the scheduled caste population is 16.53% of the total population i.e. 36,706,920(2001 census). In Kandhamal district the scheduled caste population is 16.89% and the scheduled tribe population is 51.96% of the total population of the district. The sex ratio in rural Orissa is 987 against 972 in the state and in Kandhamal rural area 1014 against 1008 in total district. Orissa has been one of the poorest in economic and in education.

The ancient Indian social structure contains a large number of so called despaired castes known as Harijans, the untouchables, the Panos. They are not original inhabitants of Kondhamal district. They came from the place Soroda from the nearby Ganjam district. The untouchables are regarded as "Hindu" owing to Harijan man means they are born against the role at marriage. In the same context they are also mentioned as Dasyus who are the exterior communities and do not belong to Varna order. They were not following Brahminic ceremonies and rituals as prevalent in the Hindu society. (Das: 1925)

The Kandhas were widely known in the ethnographic world for their earlier permission of human sacrifice and female infanticide. Russel, in his report of 1936 brought these horrible customs of the Kandhas to the notice of the Madras Government. The entire region inhabited by the Kandhas was then in a state of insurrection, discord and violence. Thickest forest with wild animals had made Kandhamal difficult to access for over a century. Courage of Kandha tribe is well known in history. They are brave, fearless, hand working, they have strong believe in their Sardar(leader). Even they sacrifice their life for the life of the Sardars.

There are total 100 respondents interviewed, out of which 50 percent is taken from each category. In these categories Kandha and Pano females are only included for the study. Until 50
years back there was neither Kandha nor Pano female found as service holder in Phulbani block area of Kandhamal district. As this district is surrounded by hills from all sides, it is not easily accessible. Most of the Kandha and Pano women are illiterate and unemployed. In Kandhamal district the males constitute 53% of the population and females 47% only.

The present study shows that the highest percentage of old people i.e. 56% (between 60-65 years), the lowest percentage i.e. 2% aged in both 81-85 and 86-90 age groups found among Kandhas. The highest percentage i.e. 54% aged (60-65 age group) and the lowest 10% found in both 71-75 and 76-80 age groups among pano caste group. If we compare marital status between two communities, we find that there is no unmarried or divorced aged case. Married respondents constitute 54% in case of Kandha against 74% among the Pano respondents. But widower percentage is found to be the highest among Kandha, constituting 18% whereas aged widow Kandha constitute 10% and amongst the Pano 28% are found to be widower against 16% widow aged. There is a tradition prevalent among the Kandha and the Pano communities that wherever there is a case of a divorce, immediate reoccurrence of remarriage is there. That is why there is no divorcée found among the people under study.

In the cases, the Kandha and the Pano male aged respondents staying with children and its percentage is 60% and 68% respectively. The Kandha female respondents staying with their children are less than Pano females by 12%. But 24% Kandha females and 12% Pano females are staying alone away from their children. The aged people are the natives of the village, so they have own houses by marriage. These houses are mostly thatched type. The Kandhas have more landed property than the Panos because Kandhas are original inhabitants of the village.

Socio-cultural problems:

In India the social dependency as conceived by Blanker is a common feature but middle class aged are more independent than the lower class people. The support to the parents and grand parents by the grand children determines a considerable extent by the prevailing cultural values. In Indian family, the parent-child relationship is generally characterized by mutual respect. In the study area such type of case studies are collected from the rural women. One case like a woman named Nidravati Ghatai, aged about 72 years is an illiterate having two sons and one daughter. She was too old and spending her time by stitching Khali Patra (leaves), doing domestic work and looking after her grand children. Her husband was alive but both of them still prefer to live under one roof with their son and daughter-in-laws. Similarly, their son and the daughter-in-law also wanted them to stay together with them. There was a well-knitted relationship amongst all the members of three generations with special emphasis on mutual respect and inter-dependencies.

Inter-generational relationships between aged and young contemporaries are known as “generation gap”. It is observed here that there are differences in the thinking process of all the three generations but the cultural value system preceedes over all the changing attitudes. The stereotype thinking and dynamic thinking in this case co-exist without clashing with each other.
in their day to day lives. Behavioral adjustments even at an appreciable measure are made to bring integration in the kinship.

Another case like Basanti Ghatai, aged about 65 years was an illiterate having one son and she was a widow. She received family pension of about Rs.2,000/- per month. Her husband was working as a police constable. She had good intra-familial relationships with her kin members. But she was not happy with her life and felt lonely without her husband who died some years back. She preferred to stay alone although she had no problem in staying with her son and daughter-in-law. Her son and daughter-in-law also wanted her back to their family system. She liked to take her own decision and did not want to be a burden on her son’s family. Although she generally maintained a good health but felt let down when her solitude was combined with any disease and ageing deficiencies.

The interpersonal relationships of family and kin members with the aged people are different in both the cases. But it is a peculiar characteristic that the relation between grand children with grandparents is highest among both the cases. Grandparents love their grand children very much. They are more liberal and are less involved in family affairs. Liberal attitudes towards their children and a relatively flexible approach in exercising their traditional authority in the family have made them able to adjust well in the family life.

The position of the aged is stronger as they are best protected in kin centered societies. Intergenerational living arrangements supply them a direct contact with the youngsters. Interaction among them creates friendliness, sociability and mutual aids. There is a considerable amount of regular communication and visiting among kin members, which provide aged people links with the outside world. The kinship provides a field of actual and potential sources of support and aid.

**Economic problems:**

As far as income of the aged women is concerned, it is seen that there is no Kandha or Pano without any income because they are very hard working. So, each one earns an amount by Khali stitching and collection of minor forest produces etc. They are the self-employed persons engaged in their own pursuits for earning an income without being under the employment at any formal or informal agency. Most of the informants are daily wage earners. Some of them have agricultural land on which they work for their livelihood. But they are also facing acute financial problems. They realize that they will never be able to recover from the financial crisis in which they have been placed as a large number of respondents are wage laborers. This leads to an adverse effect of financial maladjustment which results in absence of mental peace and self-confidence.

The most commonly found problem is poor economy. So they have restricted their wants and needs and adjust themselves with limited money. Reduction in wants results in lowering down of the standard at living and imposes much restriction on the social participation. Most of the respondents belong to lower income group. Regarding the sources of income of the kandha women, 90% were wage labour whereas in case of Pano caste, 60% were also dependent upon the same as the main income source.
One case like Rambha Behera, a widow of 70 years of age from Schedule Caste (Pano) was one of the respondents. She got Rs.1,800/- per month as family pension. She stayed in her own house. She had reared all her four sons by giving them adequate food and education. Even at this age she kept herself engaged in household were economically independent. She had got two acres of agricultural land and the income coming from its produce was the additional income, which was sufficient for her family. As a mother she had given all types of freedom and took important decisions in family matters. Her health condition was not bad although she had entered her old age faster. She was living with her loneliness as a widow by engaging herself in household work. Too much of household work caused her joint pain and she was not in a position to overcome it. The children who were in government service were not in a position to take care of her on daily basis as they have their own issues and problems.

Problems of aged in the family

Description and explanation of adult behaviour as it evolves over the life span is the subject matter of psychology of aging. This includes the study of capacities, perception, learning, problem solving, feeling emotions, skills and social behaviour as they emerge and change. Although psychological age is related to both chronological age and biological age it is not fully accounted for by the combination at these.

Disease is regarded as an important factor in the adjustment process of old people. In this study, most of the respondents are normal and are free from major diseases. They have some common diseases which are normal among the respondents and male-aged are found to have more ailments than their female counter part. Malnutrition is the major cause of ailment in case of women. The common diseases and morphological changes of the people under study are given below.

Some old-age ailments and morphological manifestations

<table>
<thead>
<tr>
<th>Organ System</th>
<th>Manifestation</th>
<th>Reasons</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Skin &amp; hair</td>
<td>Gets dry, wrinkles and hair grays</td>
<td>Decreased elasticity and increased vascular fragility and sweating reduced hair follicle and de-pigmentation</td>
</tr>
<tr>
<td>2. Eyes</td>
<td>Cataract, glaucoma</td>
<td>Lens elasticity attends, retinal function reduced.</td>
</tr>
<tr>
<td>3. Ears</td>
<td>Hearing decreases felt, dizziness..</td>
<td>Vitreous physiology changes.</td>
</tr>
<tr>
<td>4. Nose and mouth</td>
<td>Decreased taste and food enjoyment, dryness of mouth found.</td>
<td>Loss of taste, bad sensitivity salvation lowers.</td>
</tr>
<tr>
<td>5. Gastrointestinal tract</td>
<td>Pernicious anemia, dysphasia, constipation gastronomes fungal reflux.</td>
<td>Diminished esophagale mobility and sphincter function, decreased intestinal mobility acid pepsin and tyrosine sanction.</td>
</tr>
<tr>
<td>6. Immune system</td>
<td>Increased susceptibility to infection and malignancy, incidence.</td>
<td>Diminished cellular immunity primary response, increased abnormal immuno-goblins and autoimmunity.</td>
</tr>
</tbody>
</table>
The elderly find themselves exposed to harsh realities of globalization; changes in cultural values and beliefs, high disease burden from chronic non-communicable diseases, and weak family and social welfare system. To address the health and welfare needs of this vulnerable section of society, the Government of India in 1999 developed and adopted the National Policy for Older Persons. A National Council for Older Persons and an Inter-Ministerial Committee was set up to implement the policy directions. As on date, Government of India with its partners, have introduced various schemes and initiatives to promote and protect the welfare of the elderly. These initiatives include financial assistance for the construction of and maintenance of old peoples' homes and non-institutional services to the elderly, as well as the provision of nutritious food and appropriate medical services. The Government of India, through the National Rural Health Mission has embarked on efforts to strengthen provision of primary health services and to reorient health care professionals from curative to preventive services at various levels. However, challenges remain for the health system, social welfare and health financing as the elderly population continue to rise.

**Conclusion**

The society, which is though conceived to be an aggregation of individuals seem to work in an organized way not only for the smooth functioning of the society, rather it also helps in its biological perpetuation and enrichment of its culture. The older generation will be there in all societies in all ages as it is a biological process where society and individuals have nothing to prevail upon treatment method to the aged by the younger generation. The presence of old people helps in the formation of a close-knit society by making the younger generations understood their specific role positions and expected role articulations. The present study shows that the respondents mostly belong to labour class. Some of them are working group who get pensions. As most of the families are extended in nature the aged generally get social, economic and emotional support from their family members. As they are mostly wage laborers, it is difficult to work after 60 years of age to earn for self. However, the problem comes to limelight with economic prosperity, health care, expansion of education and breakdown of joint family bonds.

The Kandhas maintain their livelihood mainly through daily wage basis. But it is difficult for the elderly women to work beyond the age of sixty, who normally collect some minor forest produces from near by forests to sell them in the nearby market. Majority of the females consume country liquor prepared from mahua flowers, which lead to various diseases and disorders. They also smoke bidi and pika (tobacco smoking) that cause respiratory disease like Asthma and Tuberculosis in some cases. They are not very much a health conscious lot and the drinking and smoking habits are difficult for them to give up as these are socio-cultural in nature.

As far as the economic problems are concerned the aged people, mostly the women face financial uncertainty due to the low level service holders and high dependence on daily wage. Poverty is the main economic problem. The individual social network decreases because of mobility and other economic constraints amongst the Kandha women as compared to their Pano counterpart. Minor land holding and migration by the youth to the urban areas make the lives of the aged women more lonely and difficult. They are generally characterized as a tired and unproductive lot with slowness in mental ability resulting in self-pitying and unhappiness. The feeling of insecurity and dependence compounds these problems. Due to inadequate medical facility and lack of health and diet awareness they face different diseases and disorders. The hard labour that the females put in throughout their lives without going through a proper dietary habit and health care system causes premature ageing problems.
References

Morphometric Analysis and Sex determination of Human Mandibles of East Indian population.

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P. K. DAS***

Abstract: Sex determination from human skeletal remains is a subject of continuous investigation in the field of physical anthropology. Determination of sex from an unknown human bone is an important part in Biological Anthropology as well as in Forensic Anthropology. Among all the skeletal remains of human the mandible is the largest and hardest facial bone, that commonly resist post mortem damage and forms an important source of information about sexual dimorphism. Metrical parameters like bigonial breadth, Mandibular length, bicondylar breadth give statistical difference between male and female. So in this study an attempt has been made to measure bigonial breadth, Mandibular length, bicondylar breadth of 72 dry human mandibles present in the physical laboratory of the Department of Anthropology, Utkal university, Bhubaneswar, Odisha were studied during the year 2013-2014 as a part of a Mphill dissertation. The mean value of the bigonial breadth of mandible was found to be 9.30 cm in male and 8.82cm in females. The standard deviation for bigonial breadth in male was 0.65 and in female was 0.71. The values in the male mandible was lesser compared to that obtained in females. The mean value of the bicondylar breadth of mandible was found to be 11.38 cm in males and 10.56 cm in females. Standard deviation for bicondylar breadth in male was 0.60cm and in female was 2.40cm. The mean value of the mandibular angle of mandible was found to be 119.85° in males and 119.39° in females. Standard deviation for mandibular angle in male was 10.75 and in female was 14.66. There is no significant difference observed between male and female for mandibular angle.

Key words: Human Mandible, Sex Determination, Bigonial Breadth, Mandibular Length, Angle Of Mandible

1. Introduction

Sex determination of bone is a very important part of study in Anthropology and Forensic science, as further interpretations and analysis will be based on it. Normally morphological and metric methods are used to determine the sex of a bone. The advantage of metric analysis is that obtained data can be easily comparable with the other studies. (G.D Eyrames et al., 2013). Next to pelvis, the skull is the most easily sexable portion of the skeleton. As a component of the skull, mandible shares its own characteristics, but its indices for sex determination are neither as abundant as those of the skull. Mandible is the strongest and largest bone of the skull. It shows various morphological features which may shows changes with references to age, sex and race (V.K. Nirmale et al., 2012). Mandible is the largest, strongest and movable part of the
skull. Mandible identification is important in medico-legal and Anthropological work (Kumar MP et al., 2013). Its morphological features show changes with reference to age, sex, and race. It is the platform for dental surgeons to work with (R. Warwick, 1950). Sex of an unknown individual can be determined based on the data from the morphology and metric features of skull and mandible, soft tissues, forensic odontology, as well as by DNA analysis of teeth (B.Rai et al, 2013). In explosions, warfare, aircraft crasses and earthquake disasters, identification and sex determination of victim is generally established by dental records. When dental records are non-existent or unavailable, sex determination of unknown mandibles are carried out by the usual methods of size, muscular markings become unreliable (KSN Reddy, 2005). Male and female mandibles are distinguished by general size, chin shape; gonial angle and gonial flare (M Vodanovic, 2006). In most females, the ramus retained its straight juvenile shape(AC Oettle,2005). The use of mandibular ramus flexure as a method to distinguish between genders was observed by Loth and Hennerberg and were reaffirmed by the study of Koski, 1996; Indryana et.al., Donnelly et.al., Hill 2000.

2. Materials and methods

After obtaining institutional ethical committee clearance, 72 adult dry, complete, undamaged human mandibles were taken for parametric analysis using the Vernier Sliding Caliper and Mandibulometer. Only well-formed adult mandibles without any deformity were subjected for the study. While taking the measurement each one measured three times and the average was considered for calculation. (Singh and Bhasin, 1968).

2.1 Bi-condylar Breadth

It is the linear distance between two lateral most points on the condyles of the mandible. No specific landmarks are used.

Method: The mandible is held with the left hand and the inner borders of the crossbars of the calliper are adjusted on the lateral ends of the condyles. The value of the measurement is obtained from the scale.

2.2 Bi-gonial Breadth (go-go)

It is the linear distance between two gonions.

Gonion (go): It is the lateral most point on the angle of the mandible.

Method: The mandible is held inverted on a cushion and the inner borders of the crossbars of the calliper are adjusted on the lateral surface of the mandible. The result is obtained from the scale.

2.3 Mandibular length

Mandibular length is the distance of anterior margin of the chin from a centre point on a projected straight line placed along the posterior border of two mandibular angles. It is measured using Mandibulometer.

2.4 Mandibular Index

It is the percent of mandibular length per unit bicondylar breadth, expressed by the formula.

\[
\text{Mandibular Index} = \frac{\text{Mandibular length}}{\text{Bicondylar breadth}} \times 100
\]
2.5 Angle of mandible

The angle formed by inferior border of the body and the posterior border of the ramus measured with Mandibulometer.

2.6 Breadth of Ramus

The distance between the most anterior point on the mandibular ramus and line connecting the most posterior point on the condyle and the angle of the jaw.

3. Results:

Out of 72 mandibles has taken for study in the department of anthropology, Utkal university, Vanivilhar, Odisha, 49 male and 23 female mandibles were categorized on the basis of morphological features (Appendix-1). The parametric data was recorded and the mean and standard deviation were derived. These values are statistically analyzed by student F-test using SPSS software (version20.0) and MS Excel 2007.

Table 3.1: Mean Bigonial Breadth of Mandibles.

<table>
<thead>
<tr>
<th>Details of measurements</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>No of mandibles</td>
<td>49</td>
<td>23</td>
</tr>
<tr>
<td>Mean</td>
<td>9.30</td>
<td>8.82</td>
</tr>
<tr>
<td>Range</td>
<td>9.25-9.83</td>
<td>8.72-8.00</td>
</tr>
<tr>
<td>Standard deviation</td>
<td>0.65</td>
<td>0.71</td>
</tr>
</tbody>
</table>

F (1, 72) =7.962, p =0.006

On analysis of the Bigonial breadth of mandibles, the mean value for male is 9.30 cm and for female is 8.82. Standard deviation for male is 0.65 and in female 0.71. The F-value for bigonial breadth was 7.96. The sex differences in mean values of bigonial breadth for male and female is significant (p<0.1).

Table 3.2: Mean Bicondylar Breadth of Mandibles.

<table>
<thead>
<tr>
<th>Details of measurements</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>No of mandibles</td>
<td>49</td>
<td>23</td>
</tr>
<tr>
<td>Mean</td>
<td>11.38</td>
<td>10.56</td>
</tr>
<tr>
<td>Range</td>
<td>11.37-11.83</td>
<td>10.21-12.00</td>
</tr>
<tr>
<td>Standard deviation</td>
<td>0.606</td>
<td>2.408</td>
</tr>
</tbody>
</table>

F (1, 72) =5.102, p =0.027

On analysis of the Bicondylar breadth of mandibles, the mean value for male is 11.38 cm and for female is 10.56 cm. Standard deviation for male is 0.60 and in female 2.40. The F-value for bicondylar breadth was 5.102. The sex differences in mean values of bicondylar breadth for male and female is significant (p<0.1).
Table 3.3: Mean Mandibular Length of Mandibles.

<table>
<thead>
<tr>
<th>Details of measurements</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>No of mandibles</td>
<td>49</td>
<td>23</td>
</tr>
<tr>
<td>Mean</td>
<td>6.82</td>
<td>6.44</td>
</tr>
<tr>
<td>Range</td>
<td>6.00-6.13</td>
<td>5.45-6.00</td>
</tr>
<tr>
<td>Standard deviation</td>
<td>.590</td>
<td>.507</td>
</tr>
</tbody>
</table>

F (1, 72) = 7.74, p = 0.007

On analysis of the Mandibular length, the mean value for male is 6.82 cm and for female is 6.44 cm. Standard deviation for male is 0.590 and in female .507. The F-value for mandibular length was 7.74. The sex differences in mean values of bigonial breadth of male and female is statistically significant (p<0.1).

Table 3.4: Mean, Range, Standard deviation of Mandibular Index of human dry mandibles

<table>
<thead>
<tr>
<th>Details of measurements</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>No of mandibles</td>
<td>49</td>
<td>23</td>
</tr>
<tr>
<td>Mean</td>
<td>60.207</td>
<td>56.664</td>
</tr>
<tr>
<td>Range</td>
<td>56.53-61.08</td>
<td>53.04-60.32</td>
</tr>
<tr>
<td>Standard deviation</td>
<td>4.71</td>
<td>12.96</td>
</tr>
</tbody>
</table>

F (1, 72) = 2.92, p = 0.092

On analysis of the Mandibular index, the mean value for male is 60.207 and for female is 56.664. Standard deviation for male is 4.71 and in female is 12.96. The F-value for mandibular index was 2.92. The sex differences in mean values of Mandibular index of male and female is not statistically significant (p<0.1).

Table 3.5: Mean, Range, Standard deviation of Angle of mandibles.

<table>
<thead>
<tr>
<th>Details of measurements</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>No of mandibles</td>
<td>49</td>
<td>23</td>
</tr>
<tr>
<td>Mean</td>
<td>119.85º</td>
<td>119.39º</td>
</tr>
<tr>
<td>Range</td>
<td>116.87-118.16º</td>
<td>121.81-125º</td>
</tr>
<tr>
<td>Standard deviation</td>
<td>10.75</td>
<td>14.66</td>
</tr>
</tbody>
</table>

F (1, 72) = .023, p = 0.88

On analysis of the Angle of mandible, the mean value for male is 119.85º and for female is 119.39º. Standard deviation for male is 10.75 and in female is 14.66. The F-value for mandibular index was 0.023. The gender differences in mean values of Mandibular angle of male and female is not statistically significant (p=0.88) for mandible bone.
On analysis of the Breadth of ramus, the mean value for male is 3.59 and for female is 3.04. Standard deviation for male is .496 and in female is 0.208. The F-value for Breadth of Ramus was 25.75. The sex differences in mean values of Ramus breadth of male and female is statistically significant (p<0.1).

4. Discussion

The skull is the second most sexually dimorphic region of the human skeleton apart from pelvis. As a component of the skull, the mandible may also be considered sexually dimorphic (E.Giles, 1964). In general male mandibles are large, prominent muscular attachment sites and slightly more robust than the female mandibles. Several non-metric traits of the mandibles have been associated with sex. Male features include gonial flaring, a broad ascending ramus, high symphysis and small mental eminence (WM Krogman, 1986, JH Schwartz, 1995).

There are many studies of sexual dimorphism in the human mandible including morphologic and morphometric indicators. Loth and Henneberg (1996) described a single morphological feature of the mandible, the presence or absence of a distinct flexure on the posterior border of the ramus at the occlusal plane, as an indicator of sex with up to 90.6-99% accuracy in mandibles without molar tooth loss (Daniel Franklin, et.al., 2007).

The present study was utilized as discriminant function analysis to established mandibular measurement that gives the most reliable information to differentiate males and females in eastern Indian population. Bigonial breadth and mandibular length were selected as the most discriminatory. In general the percentage accuracy obtained in this study is comparable to that for the other groups.

<table>
<thead>
<tr>
<th>Details of measurements</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>No of mandibles</td>
<td>49</td>
<td>23</td>
</tr>
<tr>
<td>Mean</td>
<td>3.59</td>
<td>3.04</td>
</tr>
<tr>
<td>Range</td>
<td>3.51-3.83</td>
<td>3.00-3.09</td>
</tr>
<tr>
<td>Standard deviation</td>
<td>.496</td>
<td>.208</td>
</tr>
</tbody>
</table>

F (1, 72) =25.754, p = 0.000

Vinay G. and Mangala Gowri S.R., 2013, in their study of 220 adult dry human mandible, in the department of Anatomy, medical college, Bangalore, found that the mean for bigonial breadth for male was 9.45 cm and for female was 8.74 cm. Jayakaran et.al., 2000, in their series of 207 mandibles found that the mean for bigonial breadth for male mandible was 9.38 cm and females was 8.71 cm. Standard deviation was 0.54 in males and 0.48 in females. Franklin et.al. 2008, based on measurements of 225 mandibles suggested that the mean for bigonial breadth in males was 9.35 cm and of females was 8.70 cm. Standard deviation was 0.57 in males and 0.56 in females.

Ranganath et.al., 2008 in their study on 111 mandibles (65 males, 46 females) showed that the mean for bigonial breadth for male was 8.68 cm and for females was 8.62 cm.
deviation was 1.37 in males and 0.72 in females. Ongkana et.al. 2009. Studied data on 102 mandibles which showed that the mean value of bigonial breadth for mandible was 9.68 cm and for female was 8.97 cm. Standard deviation for male was 0.77 and for females was 0.59.

The present study showed statistically significant difference between male and female mandible values. The mean value of male mandibles in the present study was almost similar to previous studies. The mean values of females were found to be lesser than males.

**Bicondylar Breadth**

In the present study, the mean value of the bicondylar breadth of mandible was found to be 11.38 cm in males and 10.56 cm in females. Standard deviation for bicondylar breadth in male was 0.60 and in female was 2.40. Vinay G. and Mangala Gowri S.R.; 2013, in their study of 220 adult dry human mandible, in the department of Anatomy, medical college, Bangalore, found that the mean of Bicondylar breadth for male was 11.34 cm and in female 10.82 cm. Jayakaran et al., 2000, in their series of 207 mandibles found that the mean of bicondylar breadth for male mandible was 11.26 cm and for females was 10.77 cm. Standard deviation was 0.53 in males and 0.53 in females. Franklin et al., 2007, based on measurements of 225 mandibles suggested that the mean of bicondylar breadth in males was 11.36 cm and for females was 10.86 cm. Standard deviation was 0.60 in males and 0.58 in females. Ranganath et al., 2008 in their study on 111 mandibles showed that the mean for bicondylar breadth in males was 10.98 cm and for females was 11.51 cm. Standard deviation for male was 1.48 and for females was 0.93. Ongkana 2009, studied data on 102 mandibles which showed that the mean value of bicondylar breadth for male mandible was 12.38 cm and for female was 11.61 cm. Standard deviation for male was 0.63 and for females was 0.59. All of the studies showed statistically significant difference between male and female mandible values. The mean value of male mandibles in the present study was almost similar to previous studies. The mean value of bicondylar breadth of female is lesser than male.

**Mandibular Length**

In the present study the mean value of the mandibular length was found to be 6.82 cm in males and 6.44 cm in females. Standard deviation for mandibular angle in male was 0.59 and in female was 0.507. Vinay G. and Mangala Gowri S.R.; 2013, in their study of 220 adult dry human mandible, in the department of Anatomy, medical college, Bangalore, found that the mean of Mandibular length for male was 7.54 cm and in female 7.25 cm. Jayakaran et al., 2002, in their series of 207 mandible found that the mean of mandibular length for male mandible was 7.44 cm and for female was 7.06 cm. Standard deviation was 0.41 in males and 0.47 in females. Ranganath et al., 2008, in their study on 111 mandibles showed that the mean of mandibular angle in males was 6.78 cm and for females 6.63 cm. Standard deviation for male was 0.94 and for female was 0.76. Ongkana 2009, data on 102 mandibles showed that the mean value of mandibular length for male mandible was 8.94 cm and for female was 8.53 cm. Standard deviation for male was 0.60 and for females was 0.55. The present study showed statistically significant difference between male and female mandible. The mean value of male mandible in the present study was almost similar to earlier studies.

**Mandibular Index**

In the present study, the Mandibular index was calculated. The mean value of the mandibular index was found to be 60.20 in males and 56.22 in females. Standard deviation for mandibular
index in male was 4.71 and in female was 12.96. Vinay G. and Mangala Gowri S.R.; 2013, in their study of 220 adult dry human mandible, in the department of Anatomy, medical college, Bangalore, found that the mean value of mandibular index was found to be 66.52 in males and 66.41 in females. Standard deviation for mandibular index in male was 4.42 and in female was 5.69. Present study is nearby similar with earlier study.

**Mandibular Angle**

In the present study, the mean value of the mandibular angle of mandible was found to be 119.85° in males and 119.39° in females. Standard deviation for mandibular angle in male was 10.75 and in female was 14.66.

Vinay G. and Mangala Gowri S.R.; 2013, in their study of 220 adult dry human mandible, in the department of Anatomy, medical college, Bangalore, found that the mean of mandibular angle for male was 121° ± 6° and for female was 122° ± 7°. The gender differences in mean values of Mandibular angle of male and female is not statistically significant (p=0.99) for mandible. Jayakaran et al., in their series of 207 mandible found that the mean of mandibular angle for male mandible was 121.43° and for female 124.19°. Standard deviation was 6.99 in males and 6.90 in females. Ranganath et al, 2008, found that the mean for mandibular angle in males was 110.68° and for females mean was 114.53°. Standard deviation for male was 15.50 and for female 6.95. In present study there was no statistical significant difference between male and female mandible (Ranganath et al., 2008, J. Flossie et.al; 2000).

**Breadth of Ramus:**

In the present study, the mean value of the ramus breadth of mandible was found to be 3.59 cm in males and 3.04 cm in females. Standard deviation for breadth of ramus in male was .496 and in female was .208.

Vinay G. and Mangala Gowri S.R.; 2013, in their study of 220 adult dry human mandible, in the department of Anatomy, medical college, Bangalore, found that the mean value of maximum breadth of ramus for male was 4.17 cm and for female was 3.89 cm. Standard deviation for maximum ramus breadth in males was 0.32 and in females was 0.32. Ranganath et al;2008 showed that the mean value of maximum ramus breadth in males was 3.88 cm and for females mean was 4.07 cm. Standard deviation for male was 0.52 and for females was 0.54. The present study showed statistically significant difference between male and female mandibles.

5. CONCLUSION

Identification of sex from the available skeletal remains is of great anthropological and medicolegal significance. The traditional nonmetrical method for determination of sex of various parts of the skeleton depends on expert’s ability and experience. The present study has utilized the parametric analysis like bighonial breadth, bicondylar breadth, mandibular length, breadth of ramus and mandibular angle for gender determination of eastern Indian population. The application of these metrical parameters along with morphological features could be an useful tool for mandible. This may be useful in treatment of dentofacial conditions. Thus the present study shows that the mandible is an important bone in gender determination with high accuracy. More studies involving other group of population could be an additional value to assist in identification of racial and ethnic differences by using the mandible. Studies with larger samples may help to correlate gender determination using metric parameters or morphology among eastern Indian population.
References:


Appendix-1

Estimation of sex from the mandible through morphological characters.

<table>
<thead>
<tr>
<th>SL.N</th>
<th>Traits</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cheek bones</td>
<td>Heavier, more laterally arched</td>
<td>Lighter, more compressed</td>
</tr>
<tr>
<td>2</td>
<td>Mandible</td>
<td>Larger, higher Symphysis, broader ascending ramus</td>
<td>Small with less corpal and ramus dimensions</td>
</tr>
<tr>
<td>3</td>
<td>Palate</td>
<td>Larger,broader,tends to U-shape</td>
<td>Small and tends to parabola</td>
</tr>
<tr>
<td>4</td>
<td>Teeth</td>
<td>Large, more often 5 cusped</td>
<td>Small,more often 4 cusped.</td>
</tr>
</tbody>
</table>
Technique of Display in Museums

SUBODHA KUMAR MOHANTY*

Abstract: Display of specimens plays an important function in museum. Museum display is the "spokes men" of a museum and the success of a museum in relation to its popularity can be measured through its gallery. Objects of the museum, however rare and important can be best remembered if they attract the attention of the visitors due to their distinctive presentation as a sequence in the story. The mode of presentation has been changing over the years along with the concept of museum but it's important remains unchanged. It is through the display of meaningful, original objects relating to a particular theme that the museum communicate the message enlighten the general visitors. The present paper highlights some of the important components of displaying specimens in a museum.

Introduction

Display is the most common and powerful medium to project and propagate an idea or theme through the objects by museum all over the world. Presentation of Museum objects in museum galleries, commonly known as museum display. It plays an important function of museum. Museum display is the "spokes men" of a museum and the success of a museum in relation to its popularity can be measured through its gallery. Objects of the museum, however rare and important can be best remembered if they attract the attention of the visitors due to their distinctive presentation as a sequence in the story. The mode of presentation has been changing over the years along with the concept of museum but it's important remains unchanged. It is through the display of meaningful, original objects relating to a particular theme that the museum communicate the message enlighten the general visitors.

Presentation of museum objects is a complex affair and is influenced by the environment of the spaces to be utilised. It has three components namely (a) planning an exhibition gallery, (b)principles of display for museum presentation and (c) design inputs and exhibition techniques.

Planning an Exhibition Gallery

There are different types of exhibitions held in a museum gallery like permanent gallery, temporary or periodic, educational etc. For any of these types, the most important consideration is of spaces available for exhibition in the galleries. One has to find educate space for accommodating the whole lot. If one gallery space is not sufficient than space has to be found in the adjoining gallery and a lay out has to be prepared considering two different areas unifying them for the purpose in a way that there is a natural break in terms of its different sections.

Lighting of the spaces will be another factor influencing the selection of galleries. Stone sculpture and architectural wood carving can utilise natural light profitable but it is not suitable for delicate objects like painting, textiles, manuscripts tec. For painting and textiles, diffused and

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*Curator(I/c), Cultural Museum, P.G.Department of Anthropology, Utkal University, Bhubaneswar, Odisha.
reflected or indirect, artificial lighting is advisable but sculpture and decorative art objects can be brought to life with spot-lights.

Selection of objects, in relation to space and lighting should also consider the feasibility of forming an impressive theme and possibility of linking them in story-like sequences. Objects may also be selected with due consideration of spaces. If the height of the exhibition hall is limited to 8 to 10 feet, such spaces are unsuitable for large size objects like doors, temples or architectural fragments, full size image and sculpture. Likewise small objects like medals or coins will be lost in galleries with more than ten feet height.

Display furniture like show cases, pedestals, panels, should also be planned and designed to provide suitable display spaces according to the nature and condition of objects. Strong textiles can be hung in standing show cases but weak and old textiles, tab'e cases for flat-display should be provided. Two dimensional object like framed painting may be displayed on display panels but small and delicate paintings, manuscripts, clay figures should be displayed behind glass. Valuable objects like jewellery may be displayed in lockable showcases but use of pad-locks on the visible surfaces should not be allowed. Built-in locking devices, mortice and drawer locks should be used.

**Principles of Display for Presentation of Museum Objects**

In the museum world, the term display is not favoured as it has commercial overtones; therefore the term “presentation” is to be denote display in museum. Display means to show, to exhibit, to indicate, to inform, to presentate.

Design of display can be divided into two major sections. Two dimensional objects and three dimensional objects. But for both the categories, besides the variation in volume of the third dimension and space balance, the other principles can be well applied in the same manner. The display design is guided by the same factors applied to drawing, painting and modelling. Composition, lighting, texture, colour and scale are the main principles of design which influence an object of art.

**Composition**

Any painting or layout should have an arrangement of its varying elements in the space which makes an interesting composition. Such arrangement of objects in a display case, whether for two dimensional objects, is the strength of display. If it's not carried out effectively and if it fails to have visual appeal, the purpose of display is defeated. The museum objects which have varied space, sizes, texture, colour and tone should be arranged in a way to bring out the common as well as distinct characteristics of the object within the frame work and spaces of the showcase to create an impact. It should capture, accoutuatc and focus attention of the viewers in order to increase their curiosities. For doing this, the composition should also follow full view of the object to expose it fully. The objects should not be hidden in the composition.

**Lighting**

When a group of objects are displayed together, or even when one single object is displayed in space, lighting play an important role to reveal the true colour, space and embellishments of an object. Unless the objects are fully visible and lighting aids greatly for making these visible, the true nature of the object is not revealed, and it may not impress the viewers. Lighting should
be so arranged that objects should not lost in the shadows of one another but should reveal the true shape and texture of each of the object. To achieve this the general lighting to make an impact. Lighting has psychological benefits as nobody likes to look at dark or dimly lighted objects. Well lighted objects attract attention and makes lasting impression.

**Texture**

The character of many objects is dominated by their textures and true nature of the object is revealed and captured only when its texture is visible. Lighting as well as backgrounds, against which object is displayed are helpful in exposing the texture of objects. Soft materials backgrounds accentuate hard or intricately curved surfaces of objects. The smooth velvet is not only protective for jewellery but its contrast accentuates the character of beautiful jewellery. Bronzes and terracotta's can be best displayed against the textured Khadi or Silk. The interplay of textures of objects and their backgrounds, which should infact remain in the background.

**Colour**

This is another eye appealing factor and has a psychological impact. Pleasing colour combinations attract visitors to have a look at the object while garish combination discourage them. The backgrounds, while retaining their character of backgrounds, should help in revelling the colour of objects. All object of white marble can be best seen against maroon or blue backgrounds, rather than against white ones. The colour contrast should not be sharp but must be pleasant. In a museum display, colour is used, again to accentuate objects and not to make an attraction of the background. In a showcase or in a gallery the blocks, pedestals should have the same colour as if the background in a showcase, or of walls if they are individually displayed. So the objects stand out against similar colour, whether these are on pedestals or blocks. Besides the visual effects, the colour has also be used for illusion of the spaces and distance. Neutral colours like grey, buff, and cream stay in the same position. Light colours and tones reflect light white dark colours absorb light and so need extra or highlighting. Red and yellow colours attract attention and infuse warmth but blue and grews are soothing to eyes. Colour plays an important role and has a psychological impact.

**Scale**

Museum display is affected favourable if the scale of objects and display spaces have a proper relationship. Small objects in a large showcase or a small showcase in a large gallery get totally lost and can remain unseen. Similarly large and tall objects, if displayed in a crowded gallery or narrow spaces, the object viewing will cause strain to visitors and will be ignored. The scale and size of the object and the distance of viewing should be well co-ordinated. Painting will intricate details should not be hung so high that the eyes are strained. A flat object with minute carving should not be placed low that one has to bend for its viewing. The scale of object and the surrounding space, and the level of objects must be carefully Co-ordinated. Some objects are best seen when they are looked down while some objects are best viewed at eye-levels or when hung high. A standing sculpture cannot be looked at if it is laid and horizontally on floor-level. The best level for viewing a particular object has to be decided after some trails and practices. But no compromise should be made. It is best not to display an object, if it can be displayed at proper level and in proportionate space. Whether the object is displayed in a group or individually, it should have enough space around the same to reveal its full length and depth is well as its characteristics.
The principles of display and design have to be applied to the displayed or presentation of museum specimens combination with exhibition techniques to get good results.

**Design Inputs and Exhibition Techniques**

The arrangement of objects will have to be considered in relation to the exhibition techniques to be used for the display. Some objects are to be presented in standing show cases, while some can be displayed in table cases. For large and free standing objects, pedestals are utilised, but a few of such objects can be presented in a group, sometimes may be on a common platform. Objects like textiles can be presented in standing cases as well as table cases. Whenever possible different types of showcases should be used and display techniques should be varied to avoid monotony of presentation. Natural history specimens are many a time presented in diorama but an exhibition gallery full of dioramas may not sustain interests. Large standing sculptures can be given additional support on the backside against which sculpture can be rest and movement will prevent the same from toppling. Paintings should be mounted so the edges of the same are not damaged. If uniform size of mounts is chosen, it is also convenient for standardizing frame sizes. Textiles should be given the edging of cotton tapes which can be fixed or nailed to the frame and wall. Edging can also be provided with loops or rings, for hanging the same or a rod. Delicate textiles may be stitched on a strong mark in back ground cloth. For facility of folding or spreading even in a table case for purpose of display, costumes should be hung on parket hangers whether in store or on display. Manuscript pages, while displaying a bound volume, may held securely by fixing it in between the tape strings fixed to the base.

Replicas of objects, which are not available in the particular museum and photographs, maps, charts are often needed. For giving references and exact information in addition to labels. Such information material should be combined and displayed in an isolated space and corner which will serve the purpose of giving the proper orientation to the exhibition if this is combined with the introduction near the entrance of a gallery it will help in preparing the minds of visitors by supplying the background information. Folders and catalogues may also be made available to visitors before or at the time of entering the gallery for providing required information.

Labels needed for gallery exhibitions can be divided in three different categories. The general introductory label to give the brief background of the theme of the exhibition and objects. The sectional labels will similarly provide information of objects in the particular section and then individual labels for a group of objects and separate object. These should provide brief information; otherwise labels occupy a larger area than the objects.

**Conclusion**

As it is mentioned in the beginning the techniques of exhibition in museums are continually undergoing a change. But one must remember that all different techniques cannot be utilised simultaneously, whatever techniques are used, they should create a direct connection between are objects and the viewers and the museum should be able to leave the museum with the satisfaction of having gained some knowledge and being inspired lot the pursuit of knowledge.

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Studies on Traditional Bone Setters of Odisha and an Application of Intellectual Property Rights

DILLIP MISHRA*

Abstract: The World Health Organisation has estimated that 80% of the people in the world rely on traditional medicine for primary health care needs. It is estimated that there are 70,000 traditional healers and bonesetters in India who treat 60% of all trauma patients. These bone setters are working in remote places and villages where there are no trained doctors. With some basic education and training in the field of orthopaedic care they can became most effective health care for patients. The traditional bone setting therapy in Orissa is an age old practice of ethno healing covered almost 300 years attended 70% bone fracture cases before patients coming to the governmental hospitals. The present study was conceived with the objectives of finding out the popularity of Ethno healing practice in Orissa and the threat to this practice for globalisation. The research followed the anthropological methods of observation and direct interviewed to the bonesetters by visiting to different centres of Orissa. The conclusion & suggestion carried the application of Intellectual Property Rights to the Bonesetters of Orissa and need of patenting to their herbs and plants used for bone setting.

Introduction

Traditional Bone setting is an old practice found almost in all communities of world. In India it is estimated that there are 70,000 traditional healers and bonesetters who treat 60% of all trauma patients. These bone setters are working in remote places and villages where there are no trained doctors. Modern Technology and modern orthopaedics treatment have made traditional bone setting obsolete in developed countries, the practice is still much with us in developing countries like India. This is a well preserved family practice, and training is by apprenticeship. Records are kept strictly by oral tradition. (Eshete 87)

The health - sickness process is a tangible veracity of all people over the world. Man has always been concerned about his ailments and he has complex conceptions of life, death, stickiness and treatment. Healers across the world work on different premise and follow diverse practices however the main goal is to overcome sickness and maintain good health. All cultures have shared ideas of what makes people sick, what cures them of these ailments and how, they can maintain good health through time. This cognitive development is part of the cultural heritage of each population, and from it empirical medical system have been formed based on the use of natural resources. Both layman and health professionals tend to combine their society's individual models of belief system. (Bhasin 2007).

This knowledge of prevention and cure of sickness is passed on from generation to generation. Thousands of years of observation and experimentation have helped in the development

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of different empirical medical systems around the world, of their conceptions as well as knowledge of plants, animals, and minerals. Useful elements that have curative potential have been chosen, and taxonomies and different treatment have been developed to address health issues across all societies. Bone setting practices also the part of local health culture prevalent to every ancient society.

The folk aetiology of disease is forever in consonance with the socio-cultural conditions of the area. Comparative studies of cultural illness and healing techniques guided by either a search for universalism or cultural relativism have been carried out. Traditional traditions have continued to co-exist with bio medicine. The term "Traditional Medicine" or "Traditional Systems of Health Care", refers to long standing indigenous systems of health care found in developing countries an among indigenous populations. These traditional medical systems view humanity as being intimately linked with the wider dimension of nature. The World Health Organisation of has referred to these systems has holistic. The treatment strategies used in traditional systems of health include the use of herbal medicines, mind/body approaches such as meditation, and physical therapies including massage, acupuncture and exercise programme. These are low cost locally available treatments. Which according to WHO are utilised as the source of primary health care by 80% of the world's population. At present, more than 20 centres around the world collaborate in the WHO Traditional Medical Programme.

Ethno healing practice is the study of ethnography of health and healing behaviour in various societies. Ethno medicine also refers to the study of traditional medical practices. It encompasses methods of diagnosis and treatment. Ethno medical studies are conducted to evaluate the efficacy of traditional health care practices. Similarly medicine, health and illness are all partly cultural categories and different cultures have their own logic and alternative means to deal with these. Every culture has its particular explanation for ill health. Culture provides people with ways of thinking, that there are models and models of reality. (Geertz, 1973). In the traditional medical systems the knowledge of health and illness is not codified, but is widely shared between users and practitioners (Press, 1978:72)

Although traditional systems of medicine have their own science behind the in order to improve the outreach of these systems, serious attention is being paid to validate the traditional knowledge and bring of these systems, serious attention is being paid to validate the traditional knowledge and bring that in conformity with the modern scientific paradigm. It is understood now that we have to more away from single health care systems to pluralistic health care system under which people are given options to choose the systems of medicine which they would like to access health care.

**Problem Area**

The problem is now the ignorant or less educated healers did not know the influence of globalisation among their age old practices. The biggest threat is that the Traditional Chinese Medicine (TCM) is rapidly developing to $18.8 billion in just 2015. Chinese Traditional Medicine (TCM) market is rapidly developing since later of 1990. In 2005, the output value in China's medical industry & the total TCM market in China will rise to $18.8 billion on 2015. Customs figures show China exports 240,000 tons of medicines annually, of which 200,000 tons are raw herbs. The exported raw herbs accounted for 20% of the country's annual harvest. In China Dit-da in Traditional Chinese Medicine for bone setting is a popular way of healing practice gradually
entered the global scenario. Tui Na, literally meaning pushing and pulling, refers to system of massage, manual stimulation and manipulation of muscles, tendons, ligaments, joints and trigger points. This method of treatment of bone setting are very popular and success in China. In China today, there is an effort to integrate Chinese traditional medicine and bio-medicine in clinical practice and research. But such development in traditional healthcare system is not found elsewhere.

The bone setters of these areas curing thousands and thousands of patients in this miraculous way of treatment. It is recognised as a safe local treatment but due to their ignorance and non cooperative activity bone setters yet not building a systematic database. When around more than 300 hundred families scattered and doing this practice and among some of them gained international reputation for success and efficacy of their therapy having no knowledge about bio-piracy or patenting. Similarly the bone setters have been exposed to series of threat and assimilation of modern developments in the context of traditional therapeutic use.

Review of Literature

Onuminya JE, Performance of trained traditional bone setter in Primary Fracture Care, S AF Med J. 2006, 96, 315-322

Mr Onuminyas writing attempted to bridge the gap between orthodox and traditional medicine. The writer suggested for training to the bonesetters for effective and flawless work.


These two writers suggested that training programme for rural health practitioners in Nepal. They evaluated the training for local health practitioners that significant improvement happened after undergoing a training programme of six years.

Eshete M. The prevention of traditional bonesetters gangrene, J.Bone Joint Surg Br, 2005 87B: 102-103. Eshete found a reduction in amputation rates after a one-day instructional course offered to bone setters in Ethiopia.

Zhang Zhigang, Bone Setting Skills in Traditional Medicine: Shandong Science and Technology Press, 1996. The book introduced and explained Traditional Chinese Medicine orthopaedics and traumatology, focussing on common fracture and dislocations. The first two chapters of the book present a brief introduction of the history of the development of the TCM. It consists with general principles of the diagnosis, manual reduction, fixation with splints and bandages. Other chapter expounded the treatment of various individuals fractures and dislocations according to the Chinese setting skills.

Howe Jackson, Natural Bone Setters: Dr Howe recognised the fact that the traditional bone setters when when wholly uneducated may acquired wonderful dexterity in reducing luxations. The advantages of thorough knowledge of anatomy and mechanism and actions of joints makes the surgeon more than the equal of such rare bone setters.

The above review of literature made traditional bone setting practice is more scientific, in nature & popular and have deep rooted in to the culture which cannot be ignored. The authors put importance on training which also necessary for our bonesetters.
However every culture has developed a system of medicine, which stand and enduring and shared relationship to the existing world view. The medical behaviour of individuals and groups is understandable discretely from common cultural history.

**Theoretical Aspect**

The medical systems of all groups can be divided into two major categories: (i) disease theory system and (ii) a health care system. A disease theory system embraces beliefs about the nature of health, the cause of illness, and the nature of health. The cause of illness, and the remedies and the other curing techniques used by doctors. In contrast, a health care system concern with ways employed by the society to deal with sickness and maintenance of health. The knowledge of disease theory and health care system of a society enables us to cope more wisely, more sensitively while introducing new medical system among people who have known traditional system previously. The concept of traditional medicine is a conventional term used by medical scientists to refer to the empirical medical systems used in different cultures all over the world. Each society has its own world view of origin, causes, concepts, practical therapies of sickness and has also developed the specialists that know how to apply them. Traditional medicine include all kinds of folk medicine, unconventional medicine and indeed any kind of therapeutic method that had been handed down by the tradition of community or ethnic group. The medical traditions in the traditional system are diverse in their historical background, theoretical logic and practices, their contemporary social realities and their dynamics. By the World Health Organisation (WHO, 1976) definition, traditional medicine is the sum total of all knowledge and practices. The theoretical analysis of disease theory justified the traditional practice of health management and importance of traditional health care system.

**Methodology**

The research plan followed the anthropological way of investigation covered at least 30 centres and 100 bone setters interviewed for data collection which 19 centres taken for data analysis. The sample size taken as 500 hundred patients interviewed from different bone setting centres of Orissa. For these study 18 nos. of important centres taken from all over the State. The research followed through observation method, personal interviews with structured questionnaire and discussion.

This is hardly commented that the traditional bone setting therapy in Orissa is definitely much advanced therapy, which has age old practices conducted by various families of Orissa. Well over 70% of fractured patients prefer to come these centres before coming to orthopaedicians in government hospitals. Even among the Bone setting centres, Kuleilo from Cuttack district took the glory among famous bone setting Centres of Orissa where patients coming from outside of the state like Delhi, Uttarpradesh, Punjab, Haryana, Chattishgarh, West Bengal Jharkhand, Andhra Pradesh. These centres cured the complicated fractures by taking a nominal cost which can be affordable by a common patient. The bone setters diagnosed of bone fractures through the art of traditional healing and using of the traditional plants, herbs, available near biodiversity areas.

The following data are collected from the traditional bone setting centres of Orissa by direct observation and interviewed to the bonesetters.
### Table I

<table>
<thead>
<tr>
<th>Sl.No</th>
<th>Name of the Centres</th>
<th>Districts</th>
<th>No of Patients Attending Daily</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Athagarh Kuleilo</td>
<td>Cuttack</td>
<td>80-100</td>
</tr>
<tr>
<td>02</td>
<td>Brahmapur</td>
<td>Ganjam</td>
<td>50-60</td>
</tr>
<tr>
<td>03</td>
<td>Bolangir</td>
<td>Bolangir</td>
<td>50-60</td>
</tr>
<tr>
<td>04</td>
<td>Basta</td>
<td>Balasore</td>
<td>60-70</td>
</tr>
<tr>
<td>05</td>
<td>Baripada</td>
<td>Mayurbhanj</td>
<td>60-70</td>
</tr>
<tr>
<td>06</td>
<td>Cuttack town</td>
<td>Cuttack</td>
<td>80-100</td>
</tr>
<tr>
<td>07</td>
<td>Brahmagiri</td>
<td>Puri</td>
<td>70-80</td>
</tr>
<tr>
<td>08</td>
<td>Brajasunderpur</td>
<td>Puri</td>
<td>50-80</td>
</tr>
<tr>
<td>09</td>
<td>Burudhi</td>
<td>Sambalpur</td>
<td>70-80</td>
</tr>
<tr>
<td>10</td>
<td>Bhubaneswar</td>
<td>Khurma</td>
<td>30-40</td>
</tr>
<tr>
<td>11</td>
<td>Khurda town</td>
<td>Khurda</td>
<td>50-60</td>
</tr>
<tr>
<td>12</td>
<td>Jaypur</td>
<td>Koraput</td>
<td>90-100</td>
</tr>
<tr>
<td>13</td>
<td>Kalupada</td>
<td>Khurma</td>
<td>100-120</td>
</tr>
<tr>
<td>14</td>
<td>Jaypur</td>
<td>Koraput</td>
<td>90-100</td>
</tr>
<tr>
<td>15</td>
<td>Kalupada</td>
<td>Khurma</td>
<td>100-110</td>
</tr>
<tr>
<td>16</td>
<td>Malkangiri</td>
<td>Malkangiri</td>
<td>100-120</td>
</tr>
<tr>
<td>17</td>
<td>Natapada</td>
<td>Balasore</td>
<td>50-70</td>
</tr>
<tr>
<td>18</td>
<td>Soro</td>
<td>Balasore</td>
<td>50-70</td>
</tr>
</tbody>
</table>

The above Table shows the popularity among fracture patients giving first preference for coming to these centers. The age old tradition became a culture of the local health system which has widely appreciated by the rural as well as urban people of Orissa.

### Table II

**Contact With Traditional Bone Setters**

<table>
<thead>
<tr>
<th>Contact of Patients</th>
<th>No of Patients</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Old Patients</td>
<td>13</td>
<td>44.8</td>
</tr>
<tr>
<td>Middlemen</td>
<td>12</td>
<td>41.4</td>
</tr>
<tr>
<td>Direct Contact</td>
<td>4</td>
<td>13.8</td>
</tr>
<tr>
<td>Total</td>
<td>29</td>
<td>100</td>
</tr>
</tbody>
</table>

Table II. Shows the how the patients came with the contact of the Traditional Bone Setters for their treatment.

### Discussion

The secret of Bone setting and the chance of Bio-piracy may be happened because Chinese Traditional Medicine System remarkable developed their system of health care. In China today, there is an effort to integrate Chinese traditional medicine and bio-medical in clinical practice and research. Doctors trained in bio-medicine regularly prescribed herb based antibiotics, and traditional doctors often depend X rays and scientific instruments for their diagnoses and
treatment of injuries. Medical scholars throughout Chinese history, beginning with the Qin dynasty (200 B.C.E) have written about QI and body movements. In the Song and Yuan dynasties (900-1300 CE), Taoist and Buddhist priests introduce the importance of cultivation the Tantian (inner elixir). Since 1978, Qi Gong masters have popularized such practice for health preservation and disease prevention which has been popularised day to day. The Chinese way of acupressure is scientific and popular of relieve pain which was world wise acceptable. Now China planned and Chinese Traditional Medicine market is rapidly developing since later of 1990s. In 2005 the output value of TCM amounted to RMB 110.3 billion. (Helmut 2005) The success of Chinese way of treatment definitely affect the local community and the local traditional health. The chance of bio-piracy, registration, patenting the products, is a complex affair for the ignorant bonesetters of Orissa. The application of Indian Intellectual Property Act to their age old practice also not known to the bone setters of Orissa.

By discussing so many laws under International Context and Indian Context we can say the significant of Directive Principles of State Policy Part - IV of the constitution provides which interalia says that the state shall promote with special case the educational interest of Weaker Section of the people and try to protect them from all sorts of exploitation. Simultaneously the constitution also prescribes certain duties upon the citizen to take steps protect and improve the natural environment including forests (inclusive of bio-sphere reserves). By this we can protect the herbs and plants collected by the bonesetters by implementing the patent rights.

International Development and Application of Law for Biopiracy

In 1981, WIPO, and UNESCO adopted a model law of folklore. In 1989 the concept of Farmers Right was introduced by the FAO into its International Understanding on Plant Genetic Resources and in 1992 the Convention of Biological Diversity (CBD) highlighted the need to promote and preserve traditional knowledge. In spite of many efforts which have done for last two decades, final and universally acceptable solutions for the protection and promotions of traditional knowledge have not yet properly emerged. Let us examine what "Traditional Knowledge" defined? Whilst the majority of the knowledge is old in the sense that it has been handed down through the generations. This is true that most traditional knowledge and folklore is passed and orally, some of it codified. Example Textile Design and Ayurvedic Medicinal Knowledge codified. The groups that hold traditional knowledge are very diverse, individual groups or groups or communities may all be custodians. Such communities might be indigenous to the land of descendents or came later settings. The nature of the knowledge is also diverse, it covers, for example, literary, artistic or scientific works. Song, dance, medical treatment (the researcher includes bone setting) and practices, (healing practices) and agricultural technologies and techniques.

Recent surveys of the existing protection of traditional knowledge and folklore, a number of countries have provided further example of how IP tools have been utilised to promote and protect traditional knowledge and folklore. These included the use of copy right protection in Canada to protect the tradition based creations including masks, totes poles and soured recording to Aboriginal artists the use of industrial designs to protect the external appearance of articles such as head dresses and carpets in Kazakhstan and the use of geographical indications to protect traditional products such as liquors, sauces and teas in Venezuela and Vietnam.

Let us examine the Intellectual Property Rights in India context for application for bone setters. There is a well established statutory, administrative and judicial framework to safeguard the Intellectual Property Rights in India whether they relate to patents, trademarks, copy rights.
or industrial designs. The Indian Trademarks Law has been intended through the court decision to service marks in addition to trade marks for goods. The year 1999 witnessed the consideration and passage a major legislation with regard to protection of Intellectual Property Rights in harmony with international practices and in compliance with India’s obligations under TRIPS.

1. Patents (Amendments) Act, 1999, passed by the Indian Parliament on March 10th, 1999 to amend the Patents Act of 1970 that provides for establishment of a mailbox system to file patents and accords exclusive marketing rights for 5 years.

2. The Trade Marks Bills, 1999 which repeals and replaces the Trade and Merchandise Marks Act, 1958 passed by the Indian Parliament in the winter session that concluded on December 23, 1999.

3. The Copyright (Amendment) Act, 1999 passed by the both houses of the Indian Parliament, and signed by the President of India on December 30th, 1999.

4. A sui generis legislation for the protection of geographical indicators called the Geographical indicators of Goods (Registration and Protection) Bill, 1999 approved by the both of the houses of Indian Parliament on December 29, 1999.

5. The Industrial Design Bill, 1999 which replaces the Design Act 1911, was passed in the upper houses of the Indian Parliament in the winter session which concluded on December 23, 1999 and is presently before the Lower House for consideration.

6. The Patents (Second Amendment) Bill, 1999 to further amend the Patent Act 1970 and make it TRIPS compliant was introduced in the Upper House of Indian Parliament on December 20, 1999.

In addition to the above legislative changes, the Government of India has taken several measures to streamline and strengthen the intellectual property administration system in the country. Projects relating to the modernisation and patent information services and trademarks registry have been implemented with the help of WIPO/UNDP. The Government of India is implementing a project of modernisation of patent offices at a cost of Rupees 756 million.

As regards the aspect of enforcement, Indian enforcement agencies are now working very effectively and there has been a notable decline in the levels in the piracy of India. In addition to intensifying raids against copyright infringers, the Government has taken a number of measures to strengthen the enforcement of copy right law. Special cells for copyright enforcement have been set up in 23 states and Union Territories. In addition for collective administration of copy right, societies, have set up for different classes of regard.

The Copyright Act 1957, prescribes mandatory punishment for piracy of copyright matter commensurate with the gravity of the offence with an effect to deter infringement, in compliance with the TRIPS Agreement. Section 63 of the copyright act 1957 provides with an offence of infringement of copyright or other rights conferred by the Act shall be punishable with imprisonment of term which shall be less than six months but which may extended to three years with fine which shall not less than fifty thousand rupees but which may extend to two lakh rupees.

Indian enforcement agencies are working effectively and there is a decline in the levels of piracy in India. In addition to intensifying raids against copyright infringers, the Government has taken a number of measures to strengthen the enforcement of law. Some of these rules are discussing below.
1. During the year the government continued to stress the need for strict enforcement of the copyright act and rules. State governments and other ministries were regularly requested to lay special attention to ensuring copyright protection in their functioning. Instructions were issued to officers in the government requesting them to ensure copyright protection.

2. The government also brought out A Handbook of copyright how to create awareness about copyright amongst the stake holders, enforcement agencies professionals users like the scientific and academic communities and members of the public. Copies of the Hand Book were circulated free of cost to the state and central government official and police personnel and also provided to participants in various seminars and workshops on IPR matter held during the year.

3. The Department of Education, Ministry of Human Resource Development, Government of India has initiated several measures in the past for strengthening the enforcement of copyright that include constitution of a copyright Enforcement Advisory Council CEAC creation of separate cells.

4. The CEAC is reconstituted from time to time to review periodically that the progress of enforcement of the copyright act and to advice on measures of improving the enforcement.

5. Special cells for copyright enforcement have so far set up in 23 states and union territories. which Orissa is one of them. This has been suggested that a nodal officer has been appointed and to scrutinise the enforcement matter.

Findings

Apart from such constitutional provisions, the Forests Act of 1927, basically a revenue laws, aims to regulate and control forests produce. But simultaneously it hardly consider the Eco-balance requirement and such Forest Conservation Act, 1980 was passed particularly for effecting conservation measures on the forest resources, which included the bio-sphere reserves. Consequently such changes it has become a remarkable milestone in the context of conservation of bio-sphere. The Government of Orissa also introduced local laws empowering villagers to manage the village forests in the state which we can say that bone setters may preserve the forests by taking their own protection and preservation of these precious herbs used for bone setting.

The demand for a third generation sight particularly an environment worth living in it as common heritage of mankind was given shape internationally through the Second Rio Convention on Biological Diversity of 1992. The International convention of Biological Diversity produced a breakthrough as it is recognised such genetic resources as no more a mere property of common heritage of mankind, rather a property of country of origin. So it is the prime duties of the locals and the government of Orissa to lookout the preservation of these forests from bio-piracy of these herbs.

Conclusion

It is a question now when 80% of the world population is supposed to be still using traditional medicine, alternative medicine is said to have increased by 60% since 1989. We cannot ignore the same impact in our state like Orissa. At the same time the age old practice of bone setting cannot be ignored. When the bone setters are completely ignored about the laws, patenting to their practice, question like bio-piracy and threats of modernisation came. It is the duty of all citizens, administrators, intellectuals, researchers that the interest of these practitioners properly saved. So that we can give proper justice to this age old practice.
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Forest Livelihood & Poverty: A study on Munda Tribe

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Abstract : Odisha is one of the largest abode of tribal population in India. Out of 427 STs, the state has housed 62 communities, who constitute around 22.08 per cent of the total population (Census of India, 2001). Almost 44.21 per cent of the total state geographical area has been constitutionally declared as scheduled area which covers most of the districts except the coastal and few inland. Out of 314 CD blocks of Odisha, 118 (37.3%) blocks are covered under Tribal Sub-Plan. With the denudation of forest resources which are vital for earning livelihood resources for ST Communities, particularly Munda Tribe, the livelihood and food security faces a great hardship. The paper is based on the findings of an empiric study carried out in Mayurbhanj district one of the most inaccessible tribal dominated districts of Odisha. Keeping in view the most basic issues the present paper has been designed to highlight Munda tribe livelihood pattern in relation to forest dependency. As they are residing nearby Similipal hill area, their degree of dependency on forest is rather better than agriculture. Poverty is main constraint which breaks their social, economic and cultural development. From time immemorial, they are living in the forest to maintain their livelihood and socio-eco-cultural entities. Women and girl children particularly from Munda families collect firewood, fodder, small timber, various NTFP’s etc. from the forest. Also, they are engaged in firewood head loading, primary processing of NTFPs at the household level such as leaf plate making, broom and mat making etc.

Introduction

Forest is the main resource centre of forest dwellers. Forest and environments are major sources of natural capital for the development of forest dwellers. It is a renewable resource which is not only a summation of trees but also a whole of all living and non-living components which supplies the basic need including food, fuel, fodder, fertilizer, water, shelter and oxygen. It also holds a deep cultural and spiritual significance. But deforestation constitutes one of the gravest crises affecting all life from today. From the international events and various people's movements for protection of forest, the state learnt that the protection of forest is absolutely necessary to sustain the very process of development. After Forest Conservation Act, 1980 and its amendment in 1988, NTFPs policy 2000 and FRA 2006 protection of forest for environment and recognition forest right for forest dwellers become the main objective than for exploiting forest commercial purposes. In the forest environment, the tribes are the sole dependants of forest for livelihood, but they are being suffered in the vicious circle of poverty.

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The major reasons of the vicious circle of poverty among forest dwellers are pointed as under:

(i) In the recent years, the depletion of forest, the marginalizing of forest dwellers and the consequent degradation of land resources is a reality. As man depend heavily on a large number of plants and animal products to meet his daily needs. Especially the life and livelihood of forest dwellers, which are mainly dependent on forest, are seriously disturbed due to deforestation.

(ii) Increasing use of forest resources at a higher rate by man is not consciously managed; this may lead to a great scarcity of forest products and pollution of environment, which the future generations have to suffer.

(iii) Interference of non-tribal in tribal economy is shrinking the forest marketing of tribal's and is exploited. As the forestland is leased out by the state to private individuals they are using the forest as they wish.

(iv) As agriculture is the main source of livelihood of some tribal's, horticulture is not developed yet which may prove profitable for both agriculturist and forest gathering tribals. The enacted forest laws are not properly implementing yet.

(v) Absence of processing units is one of the major causes which is responsible for getting fewer prices as compared to which is fair.

(vi) One of the leading aspect of forest problems is institutional aspect. The ownership of forestland is a vital issue, which has enacted in 2006 for recognition of Forest Right Act. Still, struggle, conflict and movements for forest land are pervading. As the tribal’s are illiterate and ignorant about the forest rules, regulations creating an inner conflict between tribal's and the state.

The symbiotic relationship between tribal's and forests contributed immensely for maintaining an eco-cultural balance between man and nature. This has been visibly disturbed not only due to fast depletion of forest cover, but also due to commercial exploitation of forests. The household income per annum (Mallik 1994, 1996 & 1998) has been curtailed greatly by: (i) growing forest-dependent tribal population on the limited forest resources; (ii) conversion of tribal rights into concessions (National Forest Policy 1952); (iii) exploitation of tribals by the middlemen (in various forms and magnitude) mostly due to their poverty, ignorance, illiteracy and low bargaining strength, besides the existence of very high trade margins at the hierarchical stages of disposal of NTFP's and absence of a forest dweller-friendly market strategy of the government; (iv) unscrupulous use of forests by the vested interests and (v) lack of commensurate financial investments for regeneration of forests. In another study (Mallik 1992) shows that deforestation in recent years in Odisha has not only increased the drudgery of the women in spending more time, but also in covering huge distances (2 to 5 kms. & above) to collect firewood, NTFPs and other forest products, but also, has caused collection of inferior fuel, such as leaves, branches, twigs, tree roots, shrubs and weeds.

Apart from a few ethnographic and anthropological studies, little consideration had been given by ecologists and environmentalists to the gender dimension of indigenous knowledge systems. When the myths associated with such stereotypical thinking were unmasked, that feminist scholarship turned its attention to the knowledge systems of women. Now, acknowledgment is increasingly being given to the role played by women in many communities.
as the primary natural resource managers due to their intimate knowledge of the environment that enables them to maintain livelihoods, cultural continuity and community cohesion. Based on women's role in production, their special knowledge of forests, and their place in the cultural and religious life of matrilineal communities, women enjoyed considerable space within the household and the community to make decisions about resource use.

It is evident in the tribal community present day practices socially acknowledge women's knowledge of forests and agriculture. When the Munda (the headmen) go from one village to another, their wives lead them. Women's knowledge of seeds, herbs, and plants is considered precious both in the family and community. Their knowledge of the roots of a particular plant is used to brew rice beer, the most sacred and popular drink of the people.

While women certainly continued to use forests after centralization, they often had to do so clandestinely and in short visits. In addition, many forests were changed into monocrops that provided few of the resources that women controlled historically. With limited access to a much altered forest, women's ability to fend off forces of patriarchy was much reduced.

State efforts to centralize forest management did not go unopposed. Yet these movements did not often reassert women's equal rights with respect to forest management, or any other aspect of social life for that matter. A shift in gender power from women to men was already well underway when such movements got started and local men used the moment to further consolidate patriarchy. In the process of changing forest use from swidden systems to settled, privately-owned fields, and the change from community access to private access to forest products, women had lost the source of their power and status. Men were fighting for the return of forests, not gender equality.

However, that situation is changing and women's inclusion in committees is becoming more a policy norm. In many places, all-women groups have come up for forest management and protection. Women are seen to perform better in many management and production tasks. But these new norms of women's inclusion, though still limited in space both vertically and horizontally have also come about through a process of struggle by women often supported by various external factors.

Rationale behind the research work is need-based and its outcome is quite genuine. The approach to a particular problem from different angle of research is realistic and authentic. Though many researchers and activities had undertaken research on tribals and forest, further research is needed because the society is changing and also the needs of the people is being changed.

In order to have up-to-date knowledge about the tribals and forest more and more research is required. The knowledge about tribal's and their relationship with forest may enable scholars and the govt. people to implement the govt. provisions and rules and regulation. As the major chunk of the population of India is tribals and they have not been covered under the programmes and policies of the Government. So in order to make the programmes and policies used in tribal areas one must have to be awarded of time-to-time changes in the society

Concentration of ST/SC Population

The scheduled tribe (ST) and scheduled caste (SC) population and more particularly the ST population are very backward because of their tradition bound nature, ignorance, illiteracy,
lack of awareness, dwelling in the inaccessible areas, etc. As a result, most of them have very poor living conditions. They are unable to afford the bundle of goods and services including food, education and health which are necessary for minimum existence. The SC/ST households, being disadvantaged, have a considerably higher incidence of poverty than other groups (Vaidyanathan 2001). So, it is the scheduled tribe population, which is mainly responsible for the poor living condition of the people of the state. In Odisha, the percentage of scheduled tribe population was about 23 per cent in the census as against about 8 per cent in India.

Objectives

♦ Firstly the paper tries to examine the income, employment status of Munda tribe in Shyamakhunta block;
♦ Secondly, it tries to find out the dependency of forest in the socio-economic life including forest activities; and
♦ Thirdly to assess the poverty status of Munda tribes in the block.

Research Methodology

Consistent with the objective of the study different techniques are used for the analysis of the primary data collected from 182 selected respondents of fifteen villages by direct observation, interview, focused group discussion, key informant interviews etc of the Munda tribes according to a well set questionnaire under the sample Shyamakhunta blocks of Mayurbhanj district in the year 2012. The secondary data are collected from several published sources such as books, journals, bulletins, reports and publications of Government and research institution.

The data analysis is undertaken mostly with the help of several managerial and statistical devices, comparative and experimental methods of analysis are adopted. Various statistical tools like mean, Standard Deviation, Co-efficient Variation and Correlation coefficient are adopted for analysis. Here, for analysis the statistical tools SPSS (Statistical Package for Social Science) software package is used for calculation in order to plot different tables.

The study area and people

Mayurbhanj

It is one of the thirty districts of Odisha, which spreads over an area 10,418 sq km. The district accounts for 6.69 per cent of the total land mass of Odisha and hence the district is regarded as the largest among the 30 districts of the state. It is a land locked district which is bounded by Jharkhand and West Bengal state in the north, on the south by Keonjhar and Balasore. On the east side the district is bounded by West Bengal and Balasore and Keonjhar and Jharkhand state are located on the western side of the district. According to the data available through the 2011 census, the total population of the district was 25, 13,895, which works out to be 5.99 per cent of the total population of Odisha. As per 2011 census, the district is characterized with a predominance of tribal population as the scheduled tribes constitute 58.72 per cent, out of total ST population, male constitute 49.37 per cent and female constitute 50.63 per cent. Literacy percentage in the district is 54.35, out of total literacy male constitute 57.99 per cent and female constitute 42.01 per cent. This tribal dominated district is inhibited by about 53 types of tribes, out of which the major tribes found in Mayurbhanj are the Santals, Munda, Kolha, Bhuayan, Bathudi, Gond etc.
Shyamakhunta

It is one of the 26 blocks of Mayurbhanja district which is predominately dominated by the scheduled tribe population adopted for the research work. The block has a total geographical coverage of 121 Sq.Km. and the block is located in the central part of the district. The block is bounded by Bangiriposhi and Kuliana blocks, Khunta and Barsahi block in the South. Similipal hills adorned the western side and Sadar block of the Mayurbhanj district is located in the eastern side of the block. About thirty kilometers of the reserve forest area of Similipal Sanctuary is also located within the block. The block is situated 13 km far away from district headquarter, i.e., Baripada. The block is divided into 14 Grampanchayats for the panchayat level administration, which consists of 118 villages. As per the estimation there are around two millions of Munda People live in our country. Since the pre-independent India, this tribe is one among the highly respected tribes in our country. Among these tribal people, Birsa Munda, the Munda who turned to be a Prophet, is the most respected and revered one who has fought for the freedom of India. Even today his contribution to the Independence of India is recognized with high regard. The Munda tribe speaks a language which is called as Mundari. This language belongs to the Munda sub group of the Austro-Asiatic language family. The term Munda given to this community designates the name of the leader of the tribal community. Normally, the Munda identify them as "Hodoko" which means "Human Beings".

Empirical Findings

In this regard, the primary purpose of this paper is to present the findings from field research with respect livelihood and chronic poverty in the forest-based block Shyamakhunta of district Mayurbhanja in the emerging deforestation activities, which have begun to destroy the livelihood and food security base of the forest-dwellers, on which they had been depending upon from the time immemorial. In order to know their nature and degree of forest dependence, commercialization of NTFPs, changing consumption pattern, level of living, food security status, nature of their vulnerability and chronic poverty, have been indeed chosen to employ two criteria; (a) income group index; (b) sex index while grouping the sample households (from Shyamakhunta block of Mayurbhanj) due to differentiation of their living status in the forest region.

Table No.-1: Distribution of Sample HHS according to various Income Groups and Size of Operational Holdings

<table>
<thead>
<tr>
<th>Size Class</th>
<th>Up to 6000</th>
<th>6000-11000</th>
<th>11000-15000</th>
<th>15000-18000</th>
<th>18000-25000</th>
<th>25000 &amp; above</th>
<th>All Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>28 (15.38)</td>
<td>64 (35.16)</td>
<td>28 (15.38)</td>
<td>22 (12.09)</td>
<td>22 (12.09)</td>
<td>18 (9.89)</td>
<td>182 (100.00)</td>
</tr>
<tr>
<td>Landless</td>
<td>2 (22.22)</td>
<td>3 (33.33)</td>
<td>3 (33.33)</td>
<td>1 (11.11)</td>
<td>0 (0.00)</td>
<td>0 (0.00)</td>
<td>9 (100.00)</td>
</tr>
<tr>
<td>Marginal</td>
<td>18 (13.74)</td>
<td>48 (36.64)</td>
<td>20 (15.27)</td>
<td>16 (12.21)</td>
<td>16 (12.21)</td>
<td>13 (9.92)</td>
<td>131 (100.00)</td>
</tr>
<tr>
<td>Small</td>
<td>8 (29.63)</td>
<td>5 (18.52)</td>
<td>3 (11.11)</td>
<td>3 (11.11)</td>
<td>4 (14.81)</td>
<td>4 (14.81)</td>
<td>27 (100.00)</td>
</tr>
<tr>
<td>Medium</td>
<td>0 (0.00)</td>
<td>8 (66.67)</td>
<td>2 (16.67)</td>
<td>2 (16.67)</td>
<td>0 (0.00)</td>
<td>0 (0.00)</td>
<td>12 (100.00)</td>
</tr>
<tr>
<td>Large</td>
<td>0 (0.00)</td>
<td>0 (0.00)</td>
<td>0 (0.00)</td>
<td>0 (0.00)</td>
<td>2 (66.67)</td>
<td>1 (33.33)</td>
<td>3 (100.00)</td>
</tr>
</tbody>
</table>

Source: Primary Data 2012-13
It is confirmed from the data collected that operational holding of land of many provide them some amount social security and some income from agricultural activities. It is revealed from Table-1 that 131 (71.98%) are marginal farmers (Less than 2.5 acres of land), nine are landless and 27 households possess up to 5 acres of land, 12 households possess up to 7.5 acres of land and 3 households possess more than 10 acres of land.

From the point of income categories, out of total sample (182), highest 35.16 percentage from the income group Rs.6, 000/- to Rs.11, 000/-, followed by 15.38 percentage from up to Rs.6, 000/- and Rs.11, 000/- to Rs.15, 000/-, 12.09 percentage from the income group Rs 15,000/- to Rs 18,000/- and Rs 18,000/- to Rs 25,000/- and rest 9.89 percentage from the income group above Rs 25,000/-. Among the size class, though the landless have no land, but they have generated income from non-land resources.

Table No.2: Source wise Per Household Annual Income according to various Sources of Income (Value in Rs)

<table>
<thead>
<tr>
<th>Income Groups</th>
<th>No. of HHs</th>
<th>Forest Sources</th>
<th>Non-Forest Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>NTFP</td>
<td>Fuel</td>
</tr>
<tr>
<td>All</td>
<td>182</td>
<td>994.15</td>
<td>1019.86</td>
</tr>
<tr>
<td>Up to 6000</td>
<td>28</td>
<td>868.25</td>
<td>1225.46</td>
</tr>
<tr>
<td>6001-11000</td>
<td>64</td>
<td>1048.4</td>
<td>1269.54</td>
</tr>
<tr>
<td>11001-15000</td>
<td>28</td>
<td>1433.46</td>
<td>1280.67</td>
</tr>
<tr>
<td>15001-18000</td>
<td>22</td>
<td>991.58</td>
<td>870.52</td>
</tr>
<tr>
<td>18001-25000</td>
<td>22</td>
<td>805.07</td>
<td>480.45</td>
</tr>
<tr>
<td>25001 &amp; Above</td>
<td>18</td>
<td>672.45</td>
<td>240.33</td>
</tr>
</tbody>
</table>

Source: Primary Data 2012-13

While looking at the constituents of income sources from various sources in the block as a whole according to income groups (Table-2), it is noticed that there is a inverse relationship between the size of income group and percentage of income derived from forest sources. In other words, as we move up the income class ladder from Rs.6000/- to Rs.25000/- and above group the contribution of income from forest sources in terms of percentage goes down. This precisely suggests that lower income group households derive more income from forest sources and depend more indeed compared to households of higher income groups, who derive larger income from non-forest sources. However, a positive relation is distinctly visible in case of non-forest sources of income (with increase in size of income group) from Rs.3582.50/- in the lowest group (up to Rs.6,000/-) to Rs.32009.58/- in the highest income group (Rs.25000/- & above).
Table No.-3: Per Household Value of Total collection, Sale & Consumption from forestry sources (in Rs)

<table>
<thead>
<tr>
<th>Sl.No</th>
<th>Special Indicators</th>
<th>Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>No. of HHs</td>
<td>182</td>
</tr>
<tr>
<td>2</td>
<td>Total Value of Collection from all forest sources</td>
<td>2632.25</td>
</tr>
<tr>
<td>3</td>
<td>Sale</td>
<td>1066.97</td>
</tr>
<tr>
<td>4</td>
<td>Consumption</td>
<td>1536.82</td>
</tr>
<tr>
<td>5</td>
<td>Wastage</td>
<td>28.46</td>
</tr>
<tr>
<td>6</td>
<td>Total Procurement value excepting wastage (2-5)=(3+4)</td>
<td>2603.79</td>
</tr>
<tr>
<td>7</td>
<td>Income from all forest Sources</td>
<td>795.43</td>
</tr>
<tr>
<td>8</td>
<td>Total Income from All sources</td>
<td>14474.50</td>
</tr>
<tr>
<td>9</td>
<td>% of value of total forest collection to total income</td>
<td>18.19</td>
</tr>
</tbody>
</table>

Source: Primary Data 2012-13

The collection value of sale and consumption per household is presented in Table-3. It is evident that collection of types of NTFP is made for purpose of meeting food sustenance and also, for sale. Due to the introduction of JFM in the sample villages, the members of VSS’s are entitled to collect their daily food sustenance from the protected forest areas due to grant of usufruct right over the products in lieu of protection and conservation. It is noticed from table that while sale value of forest products constitutes 40.53 per cent and the value of forest products for consumption constitutes 58.38 per cent and the value of wastage constitutes 1.08 per cent in the sample block.

It seems the value of consumption constitutes a major part of the total procurement in all sample Mundas of the sample block. In an attempt to ascertain the degree of dependence on forest source it is distinctly visible that 18.19 per cent income is derived from forest sources to total annual income from all sources in villages of sample blocks and most of the Munda people do not depend much on forest source. It is exclusively due to conservation and protection of village forest which is far from the forest region of the block of Mayurbhanj.

Table No.-4: Per Household Sale of various forest Products (by sex) according to Income Groups (in Rs)

<table>
<thead>
<tr>
<th>Income Groups</th>
<th>No. of HHs</th>
<th>No. of Person Engaged</th>
<th>Male</th>
<th>Female</th>
<th>Child</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>182</td>
<td>96</td>
<td>520.72</td>
<td>1008.55</td>
<td>4.438</td>
<td>1533.71</td>
</tr>
<tr>
<td>Up to 6000</td>
<td>28</td>
<td>10</td>
<td>544.39</td>
<td>913.62</td>
<td>10.24</td>
<td>1468.25</td>
</tr>
<tr>
<td>6001-11000</td>
<td>64</td>
<td>22</td>
<td>716.21</td>
<td>1074.05</td>
<td>8.14</td>
<td>1798.4</td>
</tr>
<tr>
<td>11001-15000</td>
<td>28</td>
<td>36</td>
<td>724.36</td>
<td>1429.01</td>
<td>0</td>
<td>2153.46</td>
</tr>
<tr>
<td>15001-18000</td>
<td>22</td>
<td>18</td>
<td>210.14</td>
<td>1101.44</td>
<td>0</td>
<td>1311.58</td>
</tr>
<tr>
<td>18001-25000</td>
<td>22</td>
<td>4</td>
<td>193.77</td>
<td>791.3</td>
<td>0</td>
<td>985.07</td>
</tr>
<tr>
<td>25001 &amp; Above</td>
<td>18</td>
<td>6</td>
<td>251.21</td>
<td>421.24</td>
<td>0</td>
<td>672.45</td>
</tr>
</tbody>
</table>

Source: Primary Data 2012-13
The income-group wise sale of NTFPs per household by the male, female and child is presented in Table-4. Though, the per household sale of NTFP's by all is Rs.1533.71/- in the block and no definite trend across the income groups is noticed excepting that the sale value of female persons is higher than their male counterparts irrespective the size of the income group. The contribution of children in the blocks however is very negligible. Thus, female participation in sales activities in tribal economy is of crucial significance.

This precisely shows how vulnerable the forest dependent tribals in different villages of Shyamakhunta blocks are exclusively due to massive deforestation, destruction of the forest resource by mining activities in the reserve forest and dense forest areas resulting in collection of inferior fuel wood, dry leaves and charcoal from the adjacent forests and VSS assigned area. Evidently, no nutritious fruits, roots, oil seed etc have been collected for their food sustenance, thus, their food security seems to have been seriously affected due to the emerging recent devastating deforestation and the so-called infrastructural development in the forest regions.

Table No.-5: Sex-wise per Household per Person Working days engaged in Forestry Activities According to Income Groups

<table>
<thead>
<tr>
<th>Income Groups</th>
<th>No. of HHs</th>
<th>No. of Person Engaged</th>
<th>Male</th>
<th>Female</th>
<th>Child</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>182</td>
<td>197</td>
<td>52.16</td>
<td>84.85</td>
<td>11.14</td>
<td>148.15</td>
</tr>
<tr>
<td>Up to 6000</td>
<td>28</td>
<td>9</td>
<td>48.75</td>
<td>66.5</td>
<td>7.5</td>
<td>122.75</td>
</tr>
<tr>
<td>6001-11000</td>
<td>64</td>
<td>33</td>
<td>68.38</td>
<td>87.69</td>
<td>16.23</td>
<td>172.31</td>
</tr>
<tr>
<td>11001-15000</td>
<td>28</td>
<td>69</td>
<td>62.71</td>
<td>129.04</td>
<td>23.67</td>
<td>215.42</td>
</tr>
<tr>
<td>15001-18000</td>
<td>22</td>
<td>32</td>
<td>47.82</td>
<td>119.27</td>
<td>5.27</td>
<td>172.36</td>
</tr>
<tr>
<td>18001-25000</td>
<td>22</td>
<td>31</td>
<td>31.27</td>
<td>43.47</td>
<td>0</td>
<td>74.73</td>
</tr>
<tr>
<td>25001 &amp; Above</td>
<td>18</td>
<td>25</td>
<td>14.25</td>
<td>43.04</td>
<td>0</td>
<td>57.29</td>
</tr>
</tbody>
</table>

Source: Primary Data 2012-13

In point of fact, engagement in forestry activities such as collection, processing forestry activities and so also in sales, despite differentiation, it depends on availability and potential of types of NTFPs. Therefore, Table-5 that presents sex-wise per household annual per person days employment in forestry activities in the sample blocks indicate that while the Munda households reported to have secured 148 days of employment. However, the female person days of Munda households in the block are 85 days which is higher than their male counterpart. In connection to income categories, the highest (69) no of person engaged in forestry activities in the income groups Rs11, 001/- to Rs 15,000/-, as the higher sample selected from lower income groups. Among the sex, females have the highest person days of employment in forestry activities than their male counterpart. Per person days employment of male and income groups presents in inverse relationship as the per person days employment increase with the decrease of income groups. As the female is the main actor in the socio-economic life of Munda tribes, they have more involvement in forestry activities. It is evident that the female engaged 129 days engaged in forestry activities in the income group Rs 11,001/- to Rs 15,000/-. Next to 119 days engaged in forestry activities in the income group Rs 15,001/- to Rs 18,000/-. Interestingly, the female in higher income have the lowest person days of employment in forestry activities.
Table No.-6: Item-wise Average Annual per Household Consumption Expenditure, Total Average Income & Poverty Estimates According to Income Groups (Value in Rs)

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Items</th>
<th>All</th>
<th>Up to 6000</th>
<th>6001-11000</th>
<th>11001-15000</th>
<th>15001-18000</th>
<th>18001-25000</th>
<th>25001 &amp; Above</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>No. of HHs</td>
<td>182</td>
<td>28</td>
<td>64</td>
<td>28</td>
<td>22</td>
<td>22</td>
<td>18</td>
</tr>
<tr>
<td>2</td>
<td>Total Income From All Sources</td>
<td><strong>14474.5</strong></td>
<td>6176.21</td>
<td>9720.25</td>
<td>13848.5</td>
<td>17253.01</td>
<td>21695.53</td>
<td>33039.03</td>
</tr>
<tr>
<td>3</td>
<td>Forest based food</td>
<td>592.441</td>
<td>202.5</td>
<td>463.08</td>
<td>1693.92</td>
<td>886.55</td>
<td>233.33</td>
<td>25</td>
</tr>
<tr>
<td>4</td>
<td>Non-forest food</td>
<td>12367.1</td>
<td>5576.25</td>
<td>13299.23</td>
<td>9069.17</td>
<td>10950.91</td>
<td>14783.67</td>
<td>23524.17</td>
</tr>
<tr>
<td>5</td>
<td>Other Non-food</td>
<td>2544.57</td>
<td>1287.5</td>
<td>1396.15</td>
<td>2287.92</td>
<td>2866.36</td>
<td>4457.47</td>
<td>6251.25</td>
</tr>
<tr>
<td>6</td>
<td>Annual Consumption Expenditure (3+4+5)</td>
<td>15504.1</td>
<td>7066.25</td>
<td>15158.46</td>
<td>13051</td>
<td>14703.82</td>
<td>19474.47</td>
<td>29800.42</td>
</tr>
<tr>
<td>7</td>
<td>No.&amp; % of HH's Income below Consumption Expenditure</td>
<td>138 (75.82)</td>
<td>28 (100.00)</td>
<td>64 (100.00)</td>
<td>19 (67.86)</td>
<td>15 (68.18)</td>
<td>6 (27.27)</td>
<td>6 (33.33)</td>
</tr>
<tr>
<td>8</td>
<td>No.&amp; % of HH's Income above Consumption Expenditure</td>
<td>44 (24.18)</td>
<td>0 (0.00)</td>
<td>0 (0.00)</td>
<td>9 (32.14)</td>
<td>7 (31.82)</td>
<td>16 (72.73)</td>
<td>12 (66.67)</td>
</tr>
</tbody>
</table>

Source: Primary Data 2012-13

Item-wise average per household consumption expenditure, total average income and poverty estimates according to the ethnic group (Table-6) suggests as much as 75.82 per cent (138) of total households, who fail to meet their annual consumption expenditures from their all sources of income. It is revealed from the table that all the Munda households are unable to meet their consumption in the income groups up to Rs. 6000/- (28) and Rs 6000/- to Rs 11,000/- (64), next 67.86 per cent (19) in the income group Rs 11,000/- to Rs 15,000/-, 68.18 per cent (15) in the income group Rs 15,000/- to Rs 18,000/-, 27.27 per cent (6) in the income group Rs 18,000/- to Rs 25,000/- and 33.33 per cent (6) in the income group Rs 25,000/- and above. These households are indeed live in abject poverty and very much prone to under-consumption, indebtedness against mortgages, land alienation and mortgages of their BPL cards. But, those, who at least are identified above this total annual consumption expenditures cannot be called very safe, since the income sources are not sustainable, and at any moment, they could be turned vulnerable, the study reveals.

Table No.-7: Estimates of Poverty

<table>
<thead>
<tr>
<th>Poverty Status</th>
<th>No. of HHs</th>
<th>Income Groups</th>
<th>Average Income</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Poor</td>
<td>16</td>
<td>Above &gt;22000</td>
<td>33326.66</td>
<td>8.79</td>
</tr>
<tr>
<td>Not-So-Poor</td>
<td>24</td>
<td>Below &lt;22000</td>
<td>18861.23</td>
<td>13.19</td>
</tr>
<tr>
<td>Poor</td>
<td>50</td>
<td>Below &lt; 18000</td>
<td>13643.54</td>
<td>27.47</td>
</tr>
<tr>
<td>Chronic Poor/ Ultra poor</td>
<td>92</td>
<td>Below &lt; 11000</td>
<td>8740.56</td>
<td>50.55</td>
</tr>
<tr>
<td>Total</td>
<td>182</td>
<td></td>
<td>13583.54</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Source: Primary Data 2012-13
Further, the estimates of poverty among the sample households presented in Table 8 (according to income groups), provide us additional information regarding magnitude of their poverty in the sample blocks. It is categorized as 'Chronic Poor' households. Despite, variations across the sample villages in the block, of total all sample households, 16 are 'Non-Poor', 24 are 'Not-So-Poor', 50 are 'Poor' and 92 are 'Chronic Poor' households in the block, who indeed belong to Munda tribes. It is evident from table that more than 50 per cent are living under poverty.

**BPL Poverty Estimate**

At this stage, an attempt is made here to ascertain categories of poor sample households on the basis of poverty level estimates by the Planning Commission (following well defined monthly consumption expenditures computed by the NSS from time to time) on the one hand and total income (forestry and non-forestry sources) accrued to sample households of sample villages in the Shyamakunta forested regions (blocks) of Mayurbhanja district on the other. Accordingly, data on prescribed annual poverty level of income (of standard household size) of different periods and the average current annual income of standard family size sample households. However, we propose here to identify four categories of poor households on the basis of the empirical data on per household annual total income vis-à-vis poverty level income estimates. It is believed that the economic disparity and social exclusion are distinctly reflected in high incidence of poverty and its concentration in forest based economy of the state of Odisha. A pertinent question that often arises in the context of high incidence of poverty among the tribals is whether poverty among the Munda tribal communities is high mainly due to their social identity and marginalization. Alternatively, poverty and vulnerability among the tribals are very high due to their greater dependence on forest and their physical isolation from the centre of governance. However, in the light of poverty estimates generated by Haan and Dubey (2003) for the year 1999-2000 it is noticed that 73.0 per cent of tribals are poor in Orissa with fairly low in the northern region (61.7%).

**Rural Poverty Estimates According to Planning Commission (in Rs.)**

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Poverty Level Annual Income</th>
<th>Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>&gt; 22000</td>
<td>Non-Poor</td>
</tr>
<tr>
<td>02</td>
<td>&lt;22000</td>
<td>Not – So-Poor</td>
</tr>
<tr>
<td>03</td>
<td>&lt;18000</td>
<td>Poor</td>
</tr>
<tr>
<td>04</td>
<td>&lt;11000</td>
<td>Chronic Poor/Ultra Poor</td>
</tr>
</tbody>
</table>

The proposed categorization of status of households on the basis poverty level income estimated by the Planning Commission at different points of time is somewhat more scientific (despite series of criticisms on the methods of its computation) for the limited purpose of our use here so as to argue the extent and magnitude of poverty in the studied block of Mayurbhanj. Therefore, it may be a rough and ready method in classifying/categorizing the sample households on the basis of total income derived from both forestry and non-forestry sources vis-à-vis poverty level income estimates by the planning commission. Indeed, it is roughly estimated the poverty level annual income (Rural) at Rs. 22,000/- (prescribed for the 11 the Five Year Plan) and propose to argue that those who have earned above this level of income may be categorized as 'non-poor. By this, it is believed that such a categorization of households is not very rigid, (and at any time, they could enter into BPL) but this enables to identify at least the sample households.
and their extent of poverty/livelihood status in a definite statistical framework to support the analytical view points on poverty in the forested regions of Mayurbhanj.

On inspection of Table-7 which presents the estimates of Poor/BPL households, interestingly, it is noticed in the block, (which is a fully scheduled one) 16 (8.79 %) sample household in the block has total income over and above the prescribed poverty level of income of Rs. 22000/-, followed by have identified 13.19 per cent (24) households in the Rs. 22000/- category, 27.47 per cent (50) households below the level of income of Rs.18000/- and the rest 50.55 per cent (92) of total households (182) having income below the level of Rs.11000/- (around half of the present level of income). Therefore, according to the categorization, while we call above Rs.22000/- per annum income holders as "Non-Poor" and below Rs.22000/- annual income holders may be called "Not-So-Poor" category.

Table No-8: STDEV & CORREL between Income and Consumption

<table>
<thead>
<tr>
<th>Income Groups</th>
<th>Income</th>
<th>Total</th>
<th>Consumption</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Forest</td>
<td></td>
<td>Forest</td>
</tr>
<tr>
<td>All</td>
<td>14474.50</td>
<td>2632.25</td>
<td>15504.10</td>
<td>592.44</td>
</tr>
<tr>
<td>Up to 6000</td>
<td>6176.21</td>
<td>2593.71</td>
<td>7066.25</td>
<td>202.50</td>
</tr>
<tr>
<td>6001-11000</td>
<td>9720.25</td>
<td>2829.48</td>
<td>15158.46</td>
<td>463.08</td>
</tr>
<tr>
<td>11001-15000</td>
<td>13848.50</td>
<td>3822.67</td>
<td>19721.82</td>
<td>435.92</td>
</tr>
<tr>
<td>15001-18000</td>
<td>17253.01</td>
<td>2543.92</td>
<td>19793.82</td>
<td>886.55</td>
</tr>
<tr>
<td>18001-25000</td>
<td>21695.53</td>
<td>1992.19</td>
<td>23687.72</td>
<td>233.33</td>
</tr>
<tr>
<td>25001 &amp; Above</td>
<td>33039.03</td>
<td>1029.45</td>
<td>34068.48</td>
<td>25.00</td>
</tr>
<tr>
<td>STDEV</td>
<td>8800.64</td>
<td>847.17</td>
<td>9647.81</td>
<td>565.56</td>
</tr>
<tr>
<td>CORREL</td>
<td>-0.76</td>
<td></td>
<td>-0.38</td>
<td></td>
</tr>
</tbody>
</table>

To assess the dependency of forest, it is very crucial to analyze the STDEV and CORREL between which is depicted in Table-8. It reveals that total forest based income is 847.17, but consumption expenditure from forest is 565.56 which signifies that munda people greatly depend on forest from the standard deviation calculation but co-relation calculation shows that consumption expenditure from forest sources is half of the total forest income.

Marketing of MFPs.

All biological materials (other than timber) mentioned above and many more, which are extracted from the forests for human use, are the base of livelihood of tribals. Apart from the obvious fruits, nuts, honey, wood, meat, leaves, resins etc. Other things like various stems are cut sized for the construction of walls for house etc. Marketing of MFPs is not yet systematically done. They sale those at their homes or at the village markets for cash or kind. LAMPS, meant for marketing of products are giving the tribals the fair price but are not functioning properly. The tribals are also do not know anything about the govt. fixed prices and the marketing facilities. They face a great problem in selling their products. The economy has given rise to all kind of exploitation they cannot get a good price for the forest products that they sale in the market they are cheated in weights and measures and further, they are not actuated monetary incentives to produce more so as to get the benefit of economic motivation.

The process of extraction of MFP’s and their presentation and processing is also primitive type. They employ their indigenous knowledge of preservation and as they are not trained in this
regard they cannot keep the goods for a fairly long time. Sometimes the goods get roasted and frozen are thrown away. In rainy season the people face more difficulties.

Though they collect the products regularly, the marketing/selling is not possible regularly. For this purpose the village markets are not enough, so they have to go to Baripada to sale the products. Baripada, the district head quarters is approximately 25 kms away from the tribal forest and they have to go there by walking. They have to halt at Baripada and sleep on the roadsides at night. Now a- days some have their own bicycles which helped them a lot in transportation.

**Conclusion and Suggestion**

Tribal communities in the block have very close links with forests. They are dependent on forests for a major part of their means of livelihood and have cultural links with forest. Though deforestation and increasing restrictions imposed upon the uses of forest resources by govt. have adversely affected the lives of tribals they are still struggling for survival. The major findings are shortened and are mentioned below.

(i) A little change is seen as a result of implementation of government policies designed for tribals but most of the tribals waiting for basic facilities like good housing, roofing, ponds and wells for drinking water, toilets and latrines.

(ii) The traditions of forest gathering are combined with a lack of concept of future planning and enterprising spirit to improve their circumstances.

(iii) Most of the tribal population live on agriculture but an advanced technique of cultivation is not accepted / adopted yet, and the people faced food scarcity because of less productivity.

(iv) The practice of animal husbandry is equally dependant on forestry or the forest products rich grazing ground for the cattle and other domesticated animals with its huge repository of grass and green foliage.

(v) The knowledge of medicinal herbs and plants around them take care of their health problems and keeps them fit to pursue the economic goals in adverse natural conditions.

(vi) Besides meeting their food demands and medicine requirements, the forest provides the tribals with all required raw materials for home construction.

(vii) Tribals collect the dried or scattered things for daily use and the bamboos for making mats and baskets. The forest officials threat on the tribals and get back the forest produces. The present Government Forest Policy has led to the exploitation of the tribals by the forest officials.

(viii) The contractors become the master of forest and the tribal people are left at their mercy, contracts provide employment to the tribes and they purchase MFPs and the cost by trees on the private land of tribals at a very low price because they have the base permit.

(ix) Women are more intensely associated with NTFP in all its aspects. They spend considerably long house in collection of NTFP's from different terrains and far away
places inside the forests as also processing and marketing of NTFP, but do not get to receive what is right fully and the neglected.

(x) No tribal people have any idea on forest policies and they also admit know that the government roles of the forest products and are uneducated enough not to understand how they are exploited by the market forces and have almost accepted the hardship and suffering and denial of their rights.

From the discussion it is seen that the changing eco-system is leading to a significant negative change on tribal economy. In order to save both the degradation of forests and tribal economy the following remedial measures are suggested.

(i) First of all the tribal agriculture should be considered. For a long time, agriculture has been the main source of livelihood, but the units of their land ownership are extremely small. Since ownership rights of land among tribals are awfully insecure and alienation of land is common, tribal people are hardly attached to their property rights. This is the proper time when co-operatives can be organized among tribals for deriving economics of large-scale production.

(ii) Horticulture should be developed to a wide extent. These are the regions in which abundant fruit crops are grown but unfortunately the tribals do not derive any benefit from these crops due to lack of marketing facilities and preservation. Middlemen are exploiting them. So fixed rates should be imposed on these products and the fruit processing industries should be set up.

(iii) The farming, gotery and poultry can be conveniently taken up in this area. There will be no difficulty for food or fodder In other words, mixed farming is an essential aspect of economic development here.

(iv) Deforestation is caused largely due to insufficient availability of firewood in villages. Village forest should be developed on government lands. Quick growing species should be planted to give quick results under the social forestry scheme.

(v) Some money may be spent on the village forest committees for the maintenance of these forests so that the people will give more attention towards protection of forests. This will reduce government expenditure in entrusting as large number of forest guards, forecasters etc. who are quite in effective in maintaining these forests in the face of non-cooperation from the village community.

(vi) A system of awards right from the Gramasabha to National level should be introduced to encourage the village community for proper up-keep of their village forests.

(vii) Contractor system may be abolished in order to check exploitation of tribals by who usually take the lease on forest produce. Government may provide facilities to sell the products in the open market or through tribal cooperative societies. The outsiders should be restricted to collect the forest products in the tribal using forest areas.

(viii) Employment opportunities throughout the year may be promoted through the development of forest-based small and household industries and proper training may be given to tribal women. Training mainly in carpentry or other forest based artistry so that they can get new materials from forest.
(ix) Restrictions on stone quarry near or inside the forests should be made so that the forests can be saved and if required that the stone crasher's workshops should be set up far away from forest area.

(x) Both the policy of tribal development and forest development should be implemented in such a way that the interest of farmer should not be hampered at the cost of the later or vice versa.

(xi) Last but not the least emphasis should be given on modernization of tribal economy. It has been said by Gunar Myrdal that economic development depends on two factors, attitude change and institutional change. Suggestions for institutional developments are made but no institution can work unless the people are interested to make them work. In order to bring the tribals into the mainstream awareness should be created regarding their rights and duties. Their responsibilities and involvement and the changing pattern, which is envisaged for them and the work, they have to do in bringing about such changes. A conscious and willing tribal community can change tribal life and prevent exploitation much more quickly.

Suggestions Rendered by the Respondents.

(i) Adequate measures for generation of employment and income based on forest resources have to be taken. In this context, forest based small scale industries cottage industries / processing units, depending on the availability of forest resources, may be set up in local areas.

(ii) Alternative employment opportunities in the locality have to be created so as to reduce the over dependence on forest. In this context, provide irrigation facility may be one of the possible alternatives.

(iii) Support services such as processing, packaging and marketing of forest products are necessary.

(iv) VANA Samrakshyan Samitis may be formulated with the provision of forestland and well defined property right.

(v) Forest dwellers and Gram Panchayat members should be aware of the new NTFP policy and Joint Forest Management.

(vi) The Primary collectors of forest products should be aware of the minimum price fixed by the government or authorized agencies.

(vii) Self-help groups among the primary collectors of forest products should be formulated.

(viii) Institutional credit may be provided to these self-help groups.

(ix) Gram Panchayat should strictly prohibit the unregistered businessmen / middlemen to involve in trading / procuring of forest products.

(x) There are number of non-timber forest products such as mahua seed, kusuma seed, sal seed and sal leave, etc. collected within a specific time period in a year. But due to lack of storage facilities, primary collectors do sale them at below the support price fixed by the government. So storage facilities for these products may be provided.
The forest dwellers which do not have alternative source of livelihood must have to be ensured the right to own a specific area of forest land particularly for cultivation.

References:

Nutritional Status of a Migrant Scheduled Caste Community in Slums of Bhubaneswar, Odisha, India

SUNIL KUMAR GOUDA*
SWAGATIKA KANUNGO**

Abstract: The present paper attempts to highlight the nutritional status of a schedule caste community inhabiting in slums of Bhubaneswar. Twenty four hours dietary recall method was used to assess dietary intakes of children/individuals. Anthropometric measurements such as height and weight were recorded and children were classified according to WHO criterion using nutritional indices. Per day per unit consumption of energy and protein value was calculated and the value was compared with Recommended Dietary Allowances (RDA) of ICMR of Indian standard. Different socio economic factors like occupation, income, education & their association with BMI, calorie & protein consumption were estimated as nutritional status. It was found from the present study that nutritional status is influenced by different factors like income, occupation, size of the family, dietary habits. People were not aware about the nutrition due to their poor educational and economic status and is also manifested by their body mass index and most of the individuals were belongs to the lower economic & education category, Percentage of subjects/individuals suffering from Grade I (65.21%), Grade II (17.8%) and Grade III (8.69%) malnutrition indicates that higher incidence of malnutrition among the studied community. Half of the population belongs to low calorie range. Only 30.63% households consume recommended calorie per day. The study reveals that the community is still nutritionally vulnerable.

Keywords: - Nutritional status, Malnutrition, Anthropometry, Body Mass Index (BMI), Recommended Dietary Allowances, anemia, Nutritional deficiency, Protein and calorie intake.

INTRODUCTION

Nutrition is the cornerstone of socio-economic development, and that nutritional problems are not just medical problems but "multi factorial" with roots in other sectors of development such as anthropology, education, demography, agriculture and rural development. It has become apparent that lasting improvement in the health and nutritional status of people can be brought about only through a successful attack on the basic problems of poverty and injustice. The old concept that the health sector alone is responsible for all nutritional ills of the community has faded away. It is now realized that a broad inter-sectorial and integrated approach of sectors of development is needed to tackle today's nutritional problems. Nutrition as the biological process deals with the mechanisms by which humans utilize food to meet the requirements of biological and behavioral functioning. Moreover, as a science it studies the entire gamut of the body's

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chemical processing and biological use of food. Bio-chemically, foods are the natural and usual sources of variety of nutrients such as carbohydrates, proteins, fats; minerals vitamins etc. and these nutrients are literally the chemical substances that are indispensible elements essential for the growth and development of the body, regulation of body’s physiological process and for sustaining involuntary process for continuance of life.

It has been realized that there is a wide gap between people's need and achievement in the area of health and nutrition. By any comparison the health status of the under privileged section of the society such as scheduled tribes, scheduled castes, urban slum settlers, landless labours etc is no way satisfactory. The wide spread poverty, illiteracy, malnutrition, absence of safe drinking water and sanitary living conditions, poor maternal and child health services have been traced out as possible contributing factors for deplorable health conditions and nutritional status prevailing among these vulnerable populations. Malnutrition poses the greatest challenge to the health of India's people and to India's development. The worst victims of perpetual hunger and malnutrition are the vulnerable sections of poor underprivileged communities of India. Assessment of nutritional status of people is one of the national goals.

Hence present study is an endeavour to assess the nutritional status of the migrant Pano (a Scheduled caste) community inhabiting few Slums of Bhubaneswar. The incidence of malnutrition and over nutrition among the adults and pre-school children, per day calorie & protein consumption among the community member, their occupation & education its correlation to BMI status, association of BMI with calorie & protein consumption etc are calculated to assess the nutritional status of the community.

Relevance of Anthropological Perspectives in Nutritional Studies:-

The nutritional status of a population is more dependent on the quality and quantity of food consumed by its individual members. Nutrition must be concerned with social, economic, cultural and psychological implication of food and eating. Nutrition as a biological science seems to have marvelled in achieving one of its major historic goals: the derivation of nutrients content in variety of foods, their nutritive values and information on the amount of each nutrient essential for human beings at different ages to maintain optimal nutritional health. This accomplishment has provided a pragmatic basis for planning nutritious and well balanced diet in terms of diets regularly consumed by the community members.

Experience gained from nutritional interventional programme in both industrialized and non-industrialized societies, however, has shown that based on this knowledge, it has been possible to determine whether diets in common use by different segments of the community are adequate or inadequate to meet their nutritional requirement. There is no denying the fact that diet of people of a given society apart from consideration of economics, agricultural production and disease is greatly influenced by the cultural values placed on food stuffs that may be unrelated to their nutritional values. Therefore, understanding of nutritive values of different food items would help the nutritional planner to determine which foods are not consumed in enough amount by the population and whether the intake nutrients is qualitatively appropriate or not. However, if the culturally prescribed diet of the indigenous population is nutritionally balanced and meeting the nutritional requirements of its members, there should not be any conscious effort on the part of the nutritional planner to recommend diets of other cultures substituting the indigenous and culturally compatible diets in the name of nutritional planning. It is the opinion of many
anthropologists that we should make all efforts to reinvigorate studying the science of culturally valued nutritional health and helps provide alternatives to solving the problems of nutritional health at community level. On the other hand, numerous illustrations cited by the nutritionists are replete with evidences with regard to negative impact of cultural tradition on nutritional status. For instance, total elimination of Vitamin A deficiency from the populations of Indonesia and Thailand failed in early sixties through the supplementation of green leafy vegetables because there was cultural prejudice against eating some of the green leafy vegetables. Nevertheless, green vegetables were introduced in to the diet of Zulu population to eliminate Vit-A deficiency because there was no cultural inhibition to consume green leafy vegetables; eggs, on the other hand, were not accepted on religious ground. Similarly, cultural beliefs militate beef eating among the Hindus and pork eating among the Muslims and milk eating among some of the tribes. Geophagy, eating of clay or earth is regarded as the custom in certain groups around the world, for example the black women in southern U.S.A.consume clay from the roadside to quiet uneasy sensation in the stomach, regardless of the fact that intestinal parasitism is inevitable. (Vermeer and Frate 1979)

Audrey Richards, a student of Malinowski first highlighted the relevance of anthropological perspective in food and nutritional studies during mid 20th century in her pioneering research on cultural aspects of African diet (Richrd 1939) Subsequently, path braking findings of ethnological food researches pursued by Kurt Lewin (1943), Carl Guthe and Margaret Mead (1948), Mead (1962) under the aegis of National Nutritional and Agricultural Programmes of the US Government in post Second World War period helped consolidate the importance and role of anthropologists in nutritional planning and food aid programme. The publication of book Notes and Queries on anthropology by Murdock in fact was a great help to social scientists working in field programme since it provided with a detailed account methodological tools for collection of date relating to food culture of the society. Since then nutritional anthropology emerged as an eclectic sub-discipline in anthropology, abound with a body of data and theory on the relationship of nutrition to socio-cultural and ecological processes. Today, the scope of nutritional anthropology is in fact broad, diverse and multidisciplinary, for it encompasses perspectives of a wide range of academic disciplines in the humanities, social sciences, biological and medical sciences, engineering and applied sciences, law and politics, to link a diversity of topics that blend culture, diet, and food with nutrition (Grivetti 2000). However, Jhonston (1987) suggested to separate nutritional anthropology from the study of the anthropology of food since the former brings anthropological concerns to the study of nutrition and hence has a clear and predominant biological focus as nutrition is defined in biological terms. The later brings anthropological concerns to the study of food and, since food is defined culturally rather than biologically, has a predominant social and cultural focus. As a matter of fact, such bipolarization of framework of analysis fades away when put to test, for a number of anthropologists attempt consciously to design their research in nutritional anthropology in a holistic perspective as far as possible integrating two areas of study.

From seventies onwards, at a global level, nutritional scientists became interested in understanding the problems of hunger and malnutrition from multidisciplinary perspectives. This has led to the involvement of social scientists including anthropologists in nutritional planning and action programme. However, The biological anthropology of food and nutrition emphasizes the study of nutrition-related physiological process with environmental and population
characteristics, the differential effects of foods and nutrients on physical growth and development in populations belonging to different socio-economic and socio-cultural categories, and the processes of bio-cultural adaptation of human groups to nutritional stress in different eco-cultural regions. The social and cultural anthropology of food mostly focus on the social-institutional arrangements and the detailed cultural practices and beliefs associated with the food ways, food habits, and food ideology of different communities inhabiting varied ecosystems. The impact of ecology on the food system and food culture of any society is no less substantial since food is a product of cultural ecology. More often than not, the natural resources, both biotic and abiotic elements provide wide range of choices, opportunities and alternatives to people to select and grow varieties of crops to meet their food needs. For example, the geo-ecology of an area may suggest the types of crops to be cultivated but what type of crop is to be produced, how it is to be processed, prepared, consumed, shared, stored, distributed including the technologies and resources to be utilized, are by and large determined by the people and their food culture.

MATERIALS AND METHODS

Intensive fieldwork is the most important component of anthropological study. Fieldwork is accomplished through application of different techniques. The Pano community belongs to scheduled caste category and represents the Indo-Dravidian racial stalk & belong to Hindu religion. Now-a-days they have converted to Christianity due to religious conversion. The members of this community are mostly migrated population from kandhamal District of Odisha and settled in different slums of the city in search of better livelihood. They constitute a section of multi-ethnic community. The present study was carried out in different slum settlement comprising the Pano community resides. The study is based upon 111 households comprising of 502 populations, out of which 239 are males and 263 are females.

For collection of data, different techniques have been adopted, like-Interview methods for Diet history survey, pretested schedule method for their food habits, Health & Sanitation, Addictive habits, Health facilities etc.; Participant observation method for different clinical signs of nutritional deficiency. The Anthropometric measurements were taken by using standard techniques of Weiner and Louie. Body mass index (BMI) was computed as weight (kg)/height (m2). Nutritional status was evaluated on the basis of internationally accepted cut off points of BMI. 24 hours recall method was adopted for collection of dietary habits of individuals.

RESULTS

The Age Sex distribution of studied pano community (Table No-1) reveals that the incidence of females (52.39%) is greater than males (47.61%). In all age group, the number of females is greater than male except in the age group- 15-20, 25-30, &30-40. More no. of male (17.15%) & female (16.73%) is found in age group 5-10. Occupational status of pano community (Table-2) shows that Out of 111 households consisting 502 individuals, only 181 individuals are engaged in different occupation. More males are engaged than females in different occupation. Majority of them engaged in manuals works. Both male &female are engaged in different type's occupations. Majority of occupant (male & female) are engaged in manual works. Almost equal % of male &female are engaged in manual works. Lesser no. of males (1.86) & that of females (4.05) are engaged in Agriculture & related activity. No one engaged in govt. jobs. Similarly Literacy status of migrated pano community (table-3) of reveals that Majority of individual belong to literacy
below matriculation i.e. more individuals are fall under < 10th standard. Greater incidence of illiterate are observed among female (24.06%) than that of male (13.98%). More female (36.46%) are primary literate than that of male (26.27%). Greater incidence of literate are observed among male (4152%, 18.22%) than that of female (33.86%, 15.13%) among literate <10th &>10th (under matriculation & above matriculation) category.

Observations made from Calorie Consumption (Table-4) reveals that Greater no. of households (30.63%) consume 2200-2400 calorie per day. 15.31% of households consume very low calorie per day i.e. <1800 K.Cal per day. Only 7.20% of households consume above 2600 calorie per day. Mean consumption of calorie of the studied community is approximately 2117 kcl. Protein consumption of the community (Table-5) reveals that - Greater no. of households (27.92%) consume 40-50 gm protein per day. 17.11% of households consume very low protein consumption i.e. 20-30 gm per day. Only 9% of households consume above 60 gm. Protein per day i.e. as per ICMR Recommended Protein value. Mean protein consumption of the studied community is approximately 41gm per day. Similarly Protein Energy Malnutrition among the pre-school children (Table-6) shows that- Incidence of malnutrition is higher in male child (91.31%) than female. In both male & female, 1st grade of malnutrition accounts for approx. 65%, 2nd grade account for approx. 17% and 3rd grade vary from 7-8.6%. Very few male (8.69) & female (11.90) children fall under normal range with any signs of malnutrition.

Table-1: Distribution of Population according to Age & Sex

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<tbody>
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<td>%</td>
<td>No</td>
<td>%</td>
</tr>
<tr>
<td>0-1</td>
<td>6</td>
<td>2.51</td>
<td>11</td>
</tr>
<tr>
<td>1-2</td>
<td>5</td>
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<td>11</td>
</tr>
<tr>
<td>3-4</td>
<td>12</td>
<td>5.02</td>
<td>20</td>
</tr>
<tr>
<td>5-10</td>
<td>41</td>
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<td>1004</td>
<td>31</td>
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<td>41</td>
<td>17.15</td>
<td>32</td>
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<tr>
<td>40-50</td>
<td>19</td>
<td>7.94</td>
<td>14</td>
</tr>
<tr>
<td>50+</td>
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<td>18</td>
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<tr>
<td>Total</td>
<td>239</td>
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<td>263</td>
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</table>
Table-2: Distribution of Population according to Occupation among Pano community

<table>
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<th>Females</th>
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</thead>
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<td>No</td>
</tr>
<tr>
<td>1. Agriculture</td>
<td>05</td>
<td>1.86</td>
<td>03</td>
</tr>
<tr>
<td>2. Manual Works</td>
<td>132</td>
<td>72.89</td>
<td>54</td>
</tr>
<tr>
<td>3. Skilled</td>
<td>13</td>
<td>7.47</td>
<td>05</td>
</tr>
<tr>
<td>4. Business</td>
<td>06</td>
<td>3.73</td>
<td>02</td>
</tr>
<tr>
<td>5. Private Jobs</td>
<td>25</td>
<td>14.01</td>
<td>10</td>
</tr>
<tr>
<td>6. Govt. Jobs</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>181</td>
<td></td>
<td>107</td>
</tr>
</tbody>
</table>

Table-3: Distribution of Population according to their Literacy Status among Pano

<table>
<thead>
<tr>
<th>Literacy Status</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
<td>%</td>
<td>No</td>
</tr>
<tr>
<td>Illiterate</td>
<td>33</td>
<td>13.98</td>
<td>64</td>
</tr>
<tr>
<td>Literate(Primary)</td>
<td>62</td>
<td>26.27</td>
<td>97</td>
</tr>
<tr>
<td>&lt;10th class(under matriculate)</td>
<td>98</td>
<td>41.52</td>
<td>72</td>
</tr>
<tr>
<td>&gt;10th class(above matriculate)</td>
<td>43</td>
<td>18.22</td>
<td>33</td>
</tr>
</tbody>
</table>

Table-4: Distribution of Per day per unit consumption of calorie among the Pano Households

<table>
<thead>
<tr>
<th>Calorie Range (in K.cal)</th>
<th>No. of Households</th>
<th>% of Households</th>
<th>Mean Calorie Consumption</th>
<th>ICMR Recommended value(2875)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;1800</td>
<td>17</td>
<td>15.31</td>
<td>2117k.cal Apprx.</td>
<td>2875 K. Cal. per day</td>
</tr>
<tr>
<td>1800-2000</td>
<td>12</td>
<td>10.81</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000-2200</td>
<td>21</td>
<td>18.91</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2200-2400</td>
<td>34</td>
<td>30.63</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2400-2600</td>
<td>19</td>
<td>17.11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2600+</td>
<td>8</td>
<td>7.20</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table-5: Distribution of Per day per unit consumption of Proteins among the Pano Households

<table>
<thead>
<tr>
<th>Protein Range (in gm)</th>
<th>No. of Households</th>
<th>% of Households</th>
<th>Mean Protein Consumption</th>
<th>ICMR Recommended value 55gm</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-30</td>
<td>19</td>
<td>17.11</td>
<td>41 gm Appx.</td>
<td></td>
</tr>
<tr>
<td>30-40</td>
<td>23</td>
<td>20.72</td>
<td></td>
<td></td>
</tr>
<tr>
<td>40-50</td>
<td>31</td>
<td>27.92</td>
<td></td>
<td></td>
</tr>
<tr>
<td>50-60</td>
<td>28</td>
<td>25.22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>60-70</td>
<td>10</td>
<td>9</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table-6: Incidence of PEM (Protein Energy Malnutrition) among the pre-school pano children

<table>
<thead>
<tr>
<th>Gender</th>
<th>Normal Grade of malnutrition</th>
<th>1st Grade</th>
<th>2nd Grade</th>
<th>3rd Grade</th>
<th>% of Malnutrition</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>1800-2000</td>
<td>10</td>
<td>4</td>
<td>2</td>
<td>24</td>
<td>30</td>
<td>12.55</td>
</tr>
<tr>
<td>Female</td>
<td>1800-2000</td>
<td>4</td>
<td>24</td>
<td>2</td>
<td>30</td>
<td>76</td>
<td>31.79</td>
</tr>
</tbody>
</table>

Table-7: Distribution of individuals belonging to different calorie range according to their BMI (adults)

<table>
<thead>
<tr>
<th>Calorie Range (In K.cal.)</th>
<th>BMI &lt;18.5</th>
<th>18.5-25</th>
<th>&gt;30</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1800-2000</td>
<td>10</td>
<td>4</td>
<td>2</td>
<td>32</td>
<td>13.38</td>
</tr>
<tr>
<td>2000-2200</td>
<td>4</td>
<td>18</td>
<td>2</td>
<td>22</td>
<td>9.2</td>
</tr>
<tr>
<td>2200-2400</td>
<td>2</td>
<td>16</td>
<td>-</td>
<td>18</td>
<td>7.53</td>
</tr>
</tbody>
</table>

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Association of Calorie range to BMI (Table-7) shows that more than half of the adults belong to low calorie range i.e. from 1500-2000 calorie for BMI. It is clear from the table that approx. 55% (130) of adult individuals fall under low calorie range. Total 9.62% individuals fall under low BMI for calorie range. Only 5.06% of adult has more than normal calorie for BMI.

Protein range to BMI (Table-8) reveals that approx. 45% of the adult individuals belong to very low protein (<30 gm) range for BMI. Only 14% individuals fall just above normal Protein range to BMI. Approx. 73% of total working individuals are wage labourers and belong to very low income range. Due to less consumption, their protein range to BMI is also low. Above all these parameters were measured & analysed to assess the Nutritional status of pano community. Their Health condition, its magnitude & vulnerability and ecological factors responsible for that could be traced out from the present study. Different data analysis shows that-

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>F</th>
<th>Total</th>
<th>2400-2600</th>
<th></th>
<th>M</th>
<th>F</th>
<th>Total</th>
<th></th>
<th>M</th>
<th>F</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calorie Range</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>26</td>
<td>8</td>
<td>34</td>
<td></td>
<td>24</td>
<td>18</td>
<td>42</td>
<td></td>
<td>16</td>
<td>7</td>
<td>23</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10.87</td>
<td>3.34</td>
<td>14.22</td>
<td></td>
<td>11.71</td>
<td>7.53</td>
<td>19.24</td>
<td></td>
<td>6.69</td>
<td>2.92</td>
<td>9.62</td>
<td></td>
</tr>
</tbody>
</table>

- Association of Calorie range to BMI (Table-7) shows that more than half of the adults belong to low calorie range i.e. from 1500-2000 calorie for BMI. It is clear from the table that approx. 55% (130) of adult individuals fall under low calorie range. Total 9.62% individuals fall under low BMI for calorie range. Only 5.06% of adult has more than normal calorie for BMI.

- Protein range to BMI (Table-8) reveals that approx. 45% of the adult individuals belong to very low protein (<30 gm) range for BMI. Only 14% individuals fall just above normal Protein range to BMI. Approx. 73% of total working individuals are wage labourers and belong to very low income range. Due to less consumption, their protein range to BMI is also low. Above all these parameters were measured & analysed to assess the Nutritional status of pano community. Their Health condition, its magnitude & vulnerability and ecological factors responsible for that could be traced out from the present study. Different data analysis shows that-
Table-8: Distribution of individuals belonging to different Protein range according to their BMI(adults)

<table>
<thead>
<tr>
<th>Protein Range(in gm)</th>
<th>BMI &lt;18.5</th>
<th>18.5-25</th>
<th>25-30</th>
<th>&gt;30</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>20-30</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>13</td>
<td>9</td>
<td>-</td>
<td>-</td>
<td>22</td>
<td>19.20</td>
</tr>
<tr>
<td>F</td>
<td>6</td>
<td>8</td>
<td>-</td>
<td>-</td>
<td>14</td>
<td>5.85</td>
</tr>
<tr>
<td>Total</td>
<td>19</td>
<td>17</td>
<td>-</td>
<td>-</td>
<td>36</td>
<td>15.06</td>
</tr>
<tr>
<td><strong>30-40</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>16</td>
<td>26</td>
<td>4</td>
<td>-</td>
<td>46</td>
<td>19.24</td>
</tr>
<tr>
<td>F</td>
<td>4</td>
<td>21</td>
<td>0</td>
<td>-</td>
<td>25</td>
<td>10.46</td>
</tr>
<tr>
<td>Total</td>
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<td>47</td>
<td>4</td>
<td>-</td>
<td>71</td>
<td>29.70</td>
</tr>
<tr>
<td><strong>40-50</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>-</td>
<td>30</td>
<td>2</td>
<td>-</td>
<td>32</td>
<td>13.38</td>
</tr>
<tr>
<td>F</td>
<td>-</td>
<td>32</td>
<td>0</td>
<td>-</td>
<td>32</td>
<td>13.38</td>
</tr>
<tr>
<td>Total</td>
<td>-</td>
<td>62</td>
<td>2</td>
<td>-</td>
<td>64</td>
<td>26.77</td>
</tr>
<tr>
<td><strong>50-60</strong></td>
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<td></td>
</tr>
<tr>
<td>M</td>
<td>-</td>
<td>18</td>
<td>2</td>
<td>-</td>
<td>20</td>
<td>8.36</td>
</tr>
<tr>
<td>F</td>
<td>-</td>
<td>14</td>
<td>0</td>
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<td>14</td>
<td>5.85</td>
</tr>
<tr>
<td>Total</td>
<td>-</td>
<td>32</td>
<td>2</td>
<td>-</td>
<td>34</td>
<td>14.22</td>
</tr>
<tr>
<td><strong>60-70</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>-</td>
<td>22</td>
<td>4</td>
<td>-</td>
<td>26</td>
<td>10.87</td>
</tr>
<tr>
<td>F</td>
<td>-</td>
<td>8</td>
<td>0</td>
<td>-</td>
<td>8</td>
<td>3.34</td>
</tr>
<tr>
<td>Total</td>
<td>-</td>
<td>30</td>
<td>4</td>
<td>-</td>
<td>34</td>
<td>14.22</td>
</tr>
<tr>
<td>Total Male</td>
<td>29</td>
<td>105</td>
<td>12</td>
<td>-</td>
<td>146</td>
<td>61.08</td>
</tr>
<tr>
<td>%</td>
<td>12.12</td>
<td>43.93</td>
<td>5.02</td>
<td>-</td>
<td>61.08</td>
<td>-</td>
</tr>
<tr>
<td>Total Female</td>
<td>10</td>
<td>83</td>
<td>0</td>
<td>-</td>
<td>93</td>
<td>38.91</td>
</tr>
<tr>
<td>%</td>
<td>4.18</td>
<td>34.72</td>
<td>0</td>
<td>-</td>
<td>38.91</td>
<td>-</td>
</tr>
<tr>
<td>Total Individuals</td>
<td>39</td>
<td>188</td>
<td>12</td>
<td>-</td>
<td>239</td>
<td>100</td>
</tr>
<tr>
<td>%</td>
<td>16.31</td>
<td>78.66</td>
<td>5.02</td>
<td>-</td>
<td>100</td>
<td>-</td>
</tr>
</tbody>
</table>
Table no-9: Distribution of individuals belonging to different caloric range according to occupation

<table>
<thead>
<tr>
<th>Calorie range (K.cal)</th>
<th>1500-1800</th>
<th>1800-2000</th>
<th>2000-2200</th>
<th>2200-2400</th>
<th>2400-2600</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occupation</td>
<td>M</td>
<td>F</td>
<td>T</td>
<td>M</td>
<td>F</td>
<td>T</td>
</tr>
<tr>
<td>Daily wages</td>
<td>7</td>
<td>10</td>
<td>17</td>
<td>6</td>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td>Skilled</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Govt. job</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Pvt. Job</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>8</td>
<td>10</td>
<td>18</td>
<td>7</td>
<td>6</td>
<td>13</td>
</tr>
<tr>
<td>Percentage</td>
<td>15.09</td>
<td>18.68</td>
<td>33.96</td>
<td>13.2</td>
<td>11.32</td>
<td>24.52</td>
</tr>
</tbody>
</table>

Table no-10: Distribution of individuals belonging to different Protein range according to occupation

<table>
<thead>
<tr>
<th>Protein range</th>
<th>20-30</th>
<th>30-40</th>
<th>40-50</th>
<th>50-60</th>
<th>60-70</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occupation</td>
<td>M</td>
<td>F</td>
<td>T</td>
<td>M</td>
<td>F</td>
<td>T</td>
</tr>
<tr>
<td>Daily wages</td>
<td>4</td>
<td>2</td>
<td>6</td>
<td>6</td>
<td>11</td>
<td>17</td>
</tr>
<tr>
<td>Skilled</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Govt. job</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Pvt. Job</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td>Percentage</td>
<td>9.77</td>
<td>3.34</td>
<td>3.34</td>
<td>11.32</td>
<td>11.32</td>
<td>22.64</td>
</tr>
</tbody>
</table>
Association of Calorie consumption & occupation (Table-9) reveals that more than 86% of peoples were working as daily wage laborer and above 9% of people working as skilled laborer and a very low percentage of people working in various Govt and Pvt Sectors. From the total daily wage laborer 63.04% individuals have low calorie range and 43.65% of individuals have normal calorie range for occupation and rest 23.21% of individuals have just above normal calorie range.

Table no-11: Distribution of individuals belonging to different Calorie range according to their income

<table>
<thead>
<tr>
<th>Calorie range</th>
<th>1500-1800</th>
<th>1800-2000</th>
<th>2000-2200</th>
<th>2200-2400</th>
<th>2400-2600</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income range</td>
<td>M</td>
<td>F</td>
<td>T</td>
<td>M</td>
<td>F</td>
<td>T</td>
</tr>
<tr>
<td>&lt;3000</td>
<td>19</td>
<td>14</td>
<td>33</td>
<td>14</td>
<td>13</td>
<td>27</td>
</tr>
<tr>
<td>&lt;5000</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>&gt;5000</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>TOTAL</td>
<td>24</td>
<td>18</td>
<td>42</td>
<td>11</td>
<td>13</td>
<td>24</td>
</tr>
<tr>
<td>Percentage</td>
<td>20.86</td>
<td>15.65</td>
<td>66.52</td>
<td>9.56</td>
<td>11.3</td>
<td>20.86</td>
</tr>
</tbody>
</table>

Table no.12: Distribution of individuals belonging to different protein range according to their income

<table>
<thead>
<tr>
<th>Protein range</th>
<th>20-30</th>
<th>30-40</th>
<th>40-50</th>
<th>50-60</th>
<th>60-70</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income range</td>
<td>M</td>
<td>F</td>
<td>T</td>
<td>M</td>
<td>F</td>
<td>T</td>
</tr>
<tr>
<td>&lt;3000</td>
<td>8</td>
<td>3</td>
<td>1</td>
<td>6</td>
<td>23</td>
<td>18</td>
</tr>
<tr>
<td>&lt;5000</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>&gt;5000</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>TOTAL</td>
<td>6</td>
<td>3</td>
<td>9</td>
<td>1</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Percentage</td>
<td>5.08</td>
<td>2.54</td>
<td>22.28</td>
<td>17.79</td>
<td>16.10</td>
<td>3.3</td>
</tr>
</tbody>
</table>

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Income range of the community reveals that- Majority of the individual belongs to low income range i.e. Rs 3000/- Rs 5000/-. Majority of male (72.22%) & that of female (93.65%) belong to very low Income range < Rs 5000. Greater incidence of male than that female in each income range was observed. Only 4.62% of males & 3.17% of female belong to Income range >Rs7000. The incidence of male & female decreases as the Income range increases.

Association of protein consumption & occupation (Table-10) reveals that occupations always have a direct impact on the socio economic status which influences the nutrition of any community/population. Present investigation shows that 86.79% of daily wage labourers and 9.43% are skilled worker were came under low protein range for occupation and rest 1.88% servant working in both govt & pvt. Setors were belong to just normal protein range for occupation. Association of calorie consumption & income (Table-11) reveals that Individuals belonging to low income group Rs <3000 fall in to abnormal range of calorie. They constitute 73.04% of studied sample. Among them 67.85% of individuals having low calorie range, 25.58% of individuals having normal calorie range. Individuals belongs to income range of 3000-5000 were showing normal calorie range, covering 15.6% of total sample and rest 11.3% individuals came under high income group. Correlation of protein consumption & income (Table-12) reveals that Individuals belonging to low income group Rs<3000 fall in to low calorie range. Out of total population, 72.88% of individuals are comes under income ranges of Rs <3000, among them 37.2% belongs to low protein range, 55.81% having normal protein range and rest 13.04% having above normal protein. Out of total population, 15-25% of individual comes under income range Rs 3000-5000, showing normal protein range. At last individuals belong to income range above Rs 5000 have protein range just above the normal range. They constitute only 11.86% of total individual distribution to different protein range according to their income.

TABLE NO-13: Estimation of Mean calorie and Protein according to family Size

Estimating the consumption unit per day the consumption of protein and calorie of individuals per day is evaluated. According to their family size the nutritional status of community is as

<table>
<thead>
<tr>
<th>Family size</th>
<th>Total no. of family</th>
<th>Mean protein</th>
<th>Mean calorie</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>2</td>
<td>66.56</td>
<td>3895.25</td>
</tr>
<tr>
<td>3</td>
<td>10</td>
<td>49.62</td>
<td>2949.0</td>
</tr>
<tr>
<td>4</td>
<td>10</td>
<td>40.72</td>
<td>208.07</td>
</tr>
<tr>
<td>5</td>
<td>7</td>
<td>47.85</td>
<td>2782.13</td>
</tr>
<tr>
<td>6</td>
<td>1</td>
<td>68.49</td>
<td>2288.78</td>
</tr>
</tbody>
</table>

From the above table it is clear that more the number of family size less the consumptions of protein and calorie per day. Largeness of family decreases the consumption of calorie & protein. It reflects a direct relationship between family size and mean protein calorie consumption.
CONCLUSION-

With rapid urbanisation approximately 20% of urban population is forced to reside in slums. Slums are the physical and social expression of inequalities in the distribution of the beneficiaries of economic growth as well as the structure performances and special pattern of the urban economy. Non availability of basic human necessities in urban slums adversely affects the growth and nutritional status of the slum dwellers. Being the most vulnerable segment of community, children under five yrs and pregnant mothers are at greater risk of under nutrition because poor purchasing power, deficiency in dietary intake and high load of infections.

In the present study, different parameters determining the nutritional health status of Pano community were measured. After analysing all the parameters, it is revealed that this community is nutritionally more vulnerable. As majority of people are wage labourers who belong to low income group, they come under below poverty line. They are unable to assess required Nutrition/food for maintaining proper health condition. They do not get work every day & have proper access to safe drinking water, health & educational facilities due to lack of awareness. Very often majority of poor class suffer from diseases like malaria and Nutritional anaemia, cold & cough, joint pain, scabies, jaundice, asthma due to intake of improper nutrients & unhygienic living conditions. Some females are also suffer from menstrual disorders pain as they remain always in unhygienic condition, and that may be due to hormonal imbalance and excess stress. People of this community always remain in stress and strain due to lack of adequate work. To get better earning, for better living standards, they have migrated from their Native Place, where there is very little scope for livelihood. More than half of people of this community migrated due to Pre and Post communal riot at Kandhamal, their Native District. Though govt. has implemented various programmes for the improvement of health, education, eradication of poverty, combating various communicable & non communicable diseases, employment guarantee schemes, food security act for the overall improvement of weaker sections of the society, there are some sections of people who do not get the benefits from these programmes. The present study throws light on the nutritional and health vulnerability of Pano community and draws attention of researchers, different voluntary organization, N.GOs as well as Govt. for their improvement in quality of life. It is the need of the hour to implement community specific, area specific Nutritional programmes based on different geo-climatic region to cover every corner of society to eradicate malnutrition & different nutritional deficiency disorders in India. Planners & Researchers should understand the health seeking behaviour of different community for formulation of guidelines & suggest measures for different nutritional programmes. Eradication of malnutrition has to be a community goal. Peoples’ voice must be honoured at every stage of planning, drafting, and implementation of nutrition related programmes. The local or grass root level institutions such as urban ward, Mahila Mandal, traditional political institutions, elite groups, urban councils, local co-operative institutions etc. should be considered as viable nodal agencies for effective implementation and management of the nutrition programmes.

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Involuntary Resettlement and Violation of Indigenous Rights
(A Case of Kutia Kandha Resettlers of Lanjigarh, Odisha)

DEEPAK KUMAR OJHA*

Abstract: Displacement of people from their traditional habitats, due to development projects causes much trauma to the affected people. It is one of the major social and economic destructive processes happening in many developing countries of the world. Empirical researches have shown that those who have sacrificed their lands and livelihoods have largely remained as losers, more so, those belonging to the vulnerable sections of communities such as the indigenous population and women. The Indigenous people are being deprived of availing their basic right on land, water, common property resource and entire livelihood after being displaced from their native land. Ineffective resettlement and rehabilitation planning and implementation have been considered to be significantly responsible for the plight of the affected communities. Keeping this in framework, the present research work tries to explore and understand the violation of indigenous rights that have taken place within the Kutia Kandha resettlers who have been displaced due to the Vedanta Aluminum industry in Lanjigarh of Odisha. The main objectives of the study are to understand and describe the issue of involuntary resettlement caused by the Vedanta Aluminium Ltd. and the violation of indigenous rights occurred to Kutia Kandha people due to the loss of native land. The methodology that justifies the stance is qualitative whereas intensive field work along with direct observation, semi-structured interview technique and case histories have been used as the main sources of field data. Significant changes have been noticed in Kutia Kandha traditional knowledge system in terms of disruption in ethno-medicine, healing practice, believe pattern and cultivation pattern after their rehabilitation in a new place. Tree feeling, waste disposal, water and air pollution have also impacted negatively to the traditional knowledge system of the Kutia Kandhas.

1. Introduction and Background

Indigenous people’s rights being a part of the broad human rights phenomena have acquired a significant attention in recent times. As human beings the people who live in tribal lands acquire a similar set of rights like others. Being citizens of the country they are entitled to a number of privileges as well. From time immemorial there have been violations of their fundamental rights. One of the major factors that give rise to violation of indigenous rights resulting into deprivation from their land, livelihood and security is involuntary displacement and resettlement. The involuntary displacement and resettlement mainly caused by the different development projects results into many impoverishments risks for the indigenous people, who are found to be the major victims of it. Estimates say that during the last two decades of the previous century, the

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magnitude of forced population displacements caused by development programmes was 10 million people each year, or some 200 million people globally during that period (Cernea 2000: 3659). In addition to this, 40 per cent of these Oustees or Project Affected Persons are tribals or indigenous people (Fernandes 1998: 265).

The violation of indigenous rights due to involuntary displacement and resettlement give rise to several other consequences for the tribals. According to Areeparampil (1989) dispossession not only in the economic sphere but also in social, political and cultural spheres is one of the major consequences of development-induced displacement. As rightly pointed out by Michael Cernea, in addition to loss of land and employment social and cultural disarticulations also uprise as major risks caused by involuntary displacement and resettlement. Social integration of the indigenes is composed of their kinship system, socio-economic, political and religious organisation. It disperses and fragments communities, dismantles pattern of social organisation and interpersonal ties once they get extracted from their native and territory. The life sustaining informal networks of reciprocal help, local voluntary associations, and self-organized mutual services also get disrupted due to this displacement (Cernea, 2000).

Odisha being one of the most backward states of India occupies an unique position due to the high incidences of poverty, indigenous population and good mineral resource. The rich reserves of minerals in Orissa have led to establishment of several mineral-based industries in Orissa. Some of them are the Rourkela Steel Plant, aluminum plants by INDAL and National Aluminum Company (NALCO), charge chrome plants at Brahmanipal, Bhadrak and Choudwar, Ferro Alloys Corporation and Indian Charge Chrome Limited. In addition to all these, NALCO, RSP, ICCL, INDAL etc have set up their own coal-based power plants. Majority of these development projects have resulted into displacement of large number of indigenous population. According to a rough estimate, Industrial Projects have displaced about 60,000 people which is 12% of the total displaced whereas the Mining Projects, Urban Development Projects, thermal Projects & Wild Life Sanctuaries have displaced 3.37%, 12.86%, 2.60% &0.5% of the total displaced people in the State of Odisha. Although the above referred figures account for the already completed projects, there are a host of other projects which are either ongoing or are in the pipeline in which about 2 Lakh more people are expected to be displaced (Ota, 2001). In many cases displacement from their native land and resources have resulted into deprivation and impoverishment in large scale.

2. Problem Statement

Keeping in view the above facts, the present research work seeks to explore and understand anthropologically the violation of indigenous rights of the Kutia Kandha tribe of Kalahandi district who have been displaced because of the Vedanta Aluminium Pvt. Ltd. In 2003, Vedanta Resources signed Memorandum of Understanding with the State Govt. of Odisha for construction of a refinery for Aluminium Production. M/s Sterlite Industries (India) Ltd set up a refinery with a capacity of 1.0 million tonnes per annum for processing aluminium for export. The Vedanta Industry had occupied 660.749 ha of the forest land with an additional 33.73 ha of village forest in the Niyamgiri
hill of the Kalahandi and Rayagada districts which was largely inhabited by the Kutia Kandha people. Mining operations of the intensity proposed in this project spread over more than 7 square km which has severely disturbed this important wildlife habitat. The entire Niyamgiri hills will suffer major ecological damage if mining is allowed in the Proposed Mining Lease (PML) area in the coming days.

The entire Kinari village which was mostly inhabited by the Kutia Kandha people was displaced for setting up of the Vedanta Aluminium Plant. After the displacement the Kutia Kandha people were resettled in the newly built Vedanta Rehabilitation Colony named as the Vedanta Nagar in the foot hill region of Niyamgiri. The rights to select their resettlement land, right to employment, right to common property resources, right to socio-cultural and religious practices and right to traditional occupation all were violated after their shifting from native place. The present research work discusses this issue in detail. The major objective of the present paper is to describe the violation of Kutia Kandha rights in context of their own socio-economic and cultural activities and their adaptation to this new condition.

3. Methods and Materials

The methodological approach which justifies the stance for the study is qualitative one. The present piece of work has focused on descriptive understanding of the issue of violation of indigenous rights of the Kutia Kandhas of Lanjigarh. The tools and techniques such as semi-structured interview, Participant Observation, Focused Group Discussion and Case Studies have contributed to the data collection process to get an in-depth understanding of the issue and sensory interpretation of the experiential knowledge. The insider's perspective has always taken serious consideration in understanding the indigenous rights to land, property, economy, employment, religion and socio-cultural as well as political practice.

4. Human Rights and Indigenous People

Human rights are those conditions which are inherent to nature and without which one can not live as a human being. These rights and fundamental freedoms allow one to develop fully and use one’s human qualities, intelligence, talents and conscience to satisfy one’s spiritual, physical, social and other needs. They are based on human kind’s increasing demand for life in which the inherent dignity and worth of each human being will receive respect and protection. Human rights constitute a variable category as is adequately demonstrated by the history of the last few centuries. The list of human rights has been modified and continues to be modified in changing historical circumstances. Thus rights may not be fundamental by nature. That which appears to be fundamental in a given historical era or civilization is not fundamental in other era or civilization. Since the time of Hobbes and Locke, liberal political theorists have made it their primary purpose to explore relationships between the individual and the State. It is not enough to think in terms of two level relationship, the individual at one level and the State at another nor is it enough if the nation is added. Considering the heterogeneity of mankind and of the population of virtually every existing State it is also necessary to think of ethnic communities and certain
other kinds of groups, and to include them among the kinds of rights and duties bearing units whose inter relations are to be explored.

Rights that belong to individuals may go to them either as human beings or as members of a group. The Universal Declaration of Human Rights enumerates rights of the first sort; they go to, "everyone.... without distinction of any kind, such as race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth or other status".

With regard to the legal rights of groups, ethnic communities are sometimes treated as political units within countries, both through territorial delimitations and through the use of separate electoral rolls. Ethnic communities in many countries are differently treated with respect to rights of property and residence; it is not only a question of territorial reservation for the indigenous but also a question of special measures designed to make it possible for the communities to preserve their distinctive identity. In case of less advanced groups that have suffered discrimination, it is now not uncommon to give them a right to expect special measures (affirmative action) designed to promote their quality, e.g. in the educational and economic realms. In contemporary society the voluntary organisations and NGOs have come to their rescue to some extent. The increasing awareness of the concept of human rights under the aegis of the UNO, world media, NGOs etc. proves beneficial to the victims.

Tribal community in India has been most vulnerable community in the unequal, domination and exploitation ridden society. They are on the breadline of their socio-economic and political rights. Even after centuries, the unchanged condition of Tribal communities is leading in India. The violation of fundamental human rights and the state brutality has been perpetrated on them, particularly on tribal women, children and elderly members. Tribal communities have faced isolation and social discrimination like that of Dalits from the mainstream society. Understanding of current Tribal societies need a basic respect to the historical processes, which have determined the course of consecutive changes in ideological, political, economic and socio cultural life of the Tribal communities. The Indian democratic state accords several statutes in the constitution where the rights of Tribal communities are protected and social justice is determined for. However, the democratic experiment has not been successful in this respect. Therefore, there is a surge of Tribal movements in the country for their rights. All tribal people of India have a thing in common- they all share a history of injustice. The present paper explores within the larger framework of human rights in general and how tribal rights violated in particular, in India.

At the time of independence the Indian Government inherited a large tribal population. The Govt. of India has made a number of plans to protect the rights of the tribals and to integrate them into national developmental planning. The Minority Commission, the National Human Rights Commission etc., are there to prevent atrocities against them and to bring their plight to national lime light. Above all, in the Constitution of India the rights of the tribals were explicitly recognized and clauses were included to permit positive discrimination in their favour.

But the evaluation reports have pointed out that these special provisions have so far failed to bring about any positive gains to the tribal population. As per the Planning Commission...
Document (1973), "Reviewing the policies and programmes of the proceeding Five Year Plans we are of the opinion that the efforts so far made for social and economic development of the scheduled tribes have not brought an appreciable change in their condition." There can be a number of explanations for the failure of the governmental programmes for tribal development. However, the oppression and appropriation of the tribal people by the economically and politically more powerful groups have led to tribal movements or tribal unrest. For instance, the Santal rebellion, the revolt by Birsa Bhagwan, the Praja Mandal Movement, the Tana Bhagat Movement, the Naxalbari Movement, the Jharkhand Movement etc., are all attempts by the tribal people to shake off the yoke of exploitation.

In recent times the traditional territories of the tribal people have been subjected to incursions. Their lands are taken away in the name of economic advancement of the country. But in return they receive landlessness, impoverishment and long term degradation of the environment on which they totally depend. For almost two centuries now, tribal communities, like many other non-tribal peasants and forest dwellers, have been witness to the collapse of their multiple relationship with the land, the forest and among themselves. The basis of their cultural ethos, their systems of meaning have faced the collective unslaughter of outsider exploiters, the disruptive impact of proselytizing Christianity, and of foreign models of economic betterment which have been conceived without their participation and implemented without their consent. Laws like Land Acquisition Act and the Indian Forest Act legitimise the continuing decline in access and control over forest resources that are the basis of their subsistence economy.

Initiatives from the Bharat-Jan-Andolan, Shosit Jan Andolan, the Indian Council of Indigenous and Tribal Peoples, Adivasi Sangamams in South India, PUCL, PUDR etc., are indicative of these modest attempts to raise - fundamental issues and define an alternative political agenda that frontally challenges the institutions and structures of our bourgeois democracy.

5. Violation of Kutia Kandha Rights by Vedanta Alumina Ltd.

The uprooting of tribal people from their original native land due to the establishment of Vedanta Aluminum Ltd. in Niyamgiri hills is a clear case of violation of tribal rights. Even the voluntary organisations, NGOs and Philanthropic societies of the national as well as international level raised this issue and emphasised to stop the intervention of VAL. In the onset, no suggestions and advices were taken from the Kutia Kandhas or other indigenous people of that locality while selecting the Mining Area and the refinery plant.

The Vedanta Alumina Ltd. draws attention to the Indian government's contention that all communities within its borders are Indigenous. This approach neither addresses the human rights impact that the proposed mine at Niyamgiri will have on the Kutia Kandha, nor suggests that Vedanta wants to ensure its existing operations do not result in human rights abuses. As the UN Guiding Principles note, corporate human rights due diligence encompasses the steps the company in question must take to identify, prevent and address adverse human rights impacts. Vedanta's Perspective also claims that "we have our own approach based on our values and
relevant international standards." It adds that "from the perspective of Vedanta, we view the Kutia Kandha as a socially and culturally distinct yet backward community with their own culture and identity within the framework of Indian law and want to deal with them appropriately so that their development is in a manner and timeframe that respects their unique culture as well as being commensurate with their material and other needs." These statements by the company are highly problematic: they are an attempt to redefine the essence of international standards relating to Indigenous peoples to suit the company's interests; they do not reflect the views of the Kutia Kandha themselves; and they suggest a paternalistic approach to the community where the company holds that it knows better than the Kutia Kandha what is in the Kutia Kandha's best interests.

There are several instances of violation of tribal rights in the region undertaken by the VAL by uprooting them from their native land and territory.

(i) Violation of Kutia Kandha Rights Related to Land and Resources

The rights of land ownership is guaranteed in the International Labour Organisation (ILO) Indigenous and Tribal Populations Convention No. 107 of 1957 concerning the protection and integration of tribal and semi-tribal population in independent countries. The right was again revised on ILO Indigenous and Tribal Peoples in Independent Countries Convention No.169 of 1989, and UN Draft Declaration on Indigenous Rights. All these recognize the ownership rights of tribal people, protection of natural resources and the right of the indigenous peoples to participate and give their consent in the use, management and conservation of these resources and consultation in the exploration and exploitation of such resources and in the benefits from them. It urges the government to respect the cultures and spiritual values of the people concerned of their relationship with the lands and territories.

The Kutia Kandhas of Lanjigarh, being a PVTG possess the age old ownership of their forest land and resources which are the main source of their livelihood. The establishment of Vedanta Alumina Ltd. Forced the Kutia Kandhas to get uprooted from their traditional homestead land as well as their forest resources, through which they were maintaining their sustainability. The study has proved that the right of land ownership and resource use has been violated in case of Kutia Kandhas of Lanjigarh.

The UN Declaration also makes the provision of adequate penalties for unauthorized intrusion upon or use of lands of the peoples, which has been eclipsed by the Govt authorities.

Rights Related to Culture. Rights to Education The ILO Convention No. 169 on Indigenous and Tribal Peoples 1989, the UN Draft Declaration on Indigenous Rights recognizes and advocates for the right to education of indigenous peoples.

Rights Related to Development The Declaration on Right to Development 1986 states right to development as an inalienable human right and the ILO Convention No. 169 declares that the peoples concerned shall have the right to decide their own priorities for the process of development as it affects their lives, beliefs, institutions and spiritual well-being and the lands

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they occupy or other wise use, and to exercise control, to the extent possible, over their economic, social and cultural development.

(ii) Violation of the Kutia Rights and the principle of Free, Prior and Informed Consent (FPIC)

Both the International Labour Organisation (ILO) Convention 169 on Indigenous and Tribal Peoples and the UN Declaration on the Rights of Indigenous Peoples recognise the principle of Free, Prior and Informed Consent (FPIC) of Indigenous peoples as central to the protection and realisation of the rights of Indigenous communities. It implies that prior information should be given to the natives and by taking their consent only any kind of development activities may be resumed. The negative impact of Vedanta's operations in Odisha on Indigenous Kutia Kandha communities has been one of the most serious concerns raised by civil society groups and the communities themselves. Vedanta's Perspective points out that India is not a signatory to ILO Convention 169 and that the UN Declaration, which India has endorsed with reservations, does not have the legal force of a UN Convention. However the report fails to consider provisions already existing in Indian legislation that reflect some international standards with regard to FPIC for the Kutia Kandha.

(iii) Violation of Kutia Rights on Environment and Forest Use

The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act 2006 in its Section 3(1) (l) defines the “forest rights” of forest dwelling Scheduled Tribes to include, in addition to the particular rights listed in (a) to (k), "any other traditional right customarily enjoyed by the forest dwelling Scheduled Tribes. The Kutia Kandhas are clearly, legally a forest dwelling Particularly Vulnerable Tribe. They have traditional rights of use and access to the area designated for the mine, which is well known to be sacred to them. These rights have been violated by the mining industry.

The Forest Act 1878, which classified forests into three categories: Reserve, Protected and Village forests makes available only a small portion, i.e. the village forests to the tribals and the National Forest Policy 1894 which declared the forests on the slope of the hills as protected, ultimately led to the process of shrinking tribal access to minor forest produce. Establishing industrial projects, felling trees to supply timber for laying railway tracks, building towns and collecting raw material for industries gave birth to a process of deforestation. This has unleashed a situation where more and more people are being displaced from their communities and traditional ways of life and resulted in an insecure livelihood for the tribal and indigenous communities in the hilly areas and tribal belts of Odisha. No amount of compensation could be adequate for the loss of the natural habitat and the cultural milieu of the tribals. This process can be characterized as a process of - disentitlement - a process where by the tribals are gradually denied access to the support system of their livelihood. It meant loss of rights enjoyed earlier by the tribal community over the forest and land sources around them (Mohanty, 1998: 81). Down To Earth states, "the forested areas, needless to say, will face severe threats from the heavy construction and mining
activities”. Simultaneously, forest loss would also mean the loss of habitat for the region’s wildlife including bears, jackals, wolves, sambars (a deer-like animal), spotted deer, leopard cats and the occasional tiger. Alumina smelting is one of the most energy-intensive operations, and a significant source of greenhouse gas emissions, sulphur dioxides, and fluoride. The emission of fluorides presents a particularly alarming problem in a region where a large number of indigenous people have already been affected by fluorosis (a debilitating dystrophy of the bones caused due to fluoride deposits).

(iv) Violation of Rights to Good Health

The Kutia Kandha people in Lanjigarh are also suffering from several health related problems due to the establishment of Vedanta Mining Industry. Increased fluoride content in drinking water due to emissions from aluminum smelters, toxic air, tree feeling, climatic change, waste disposal etc. are creating health related threats for the Kutia Kandha people. The smelting of aluminium is one of the most energy intensive industries, and releases potent global warming gases; and using India’s low quality, high ash-content coal to do so creates enormous problems - from resettlement of communities for open pit mining, to improper ash disposal that destroys waterways to, of course, climate change (Chakraborthy, 1997:180).

(v) Preservance of Kutia Culture

Social Disarticulation Displacement dismantles the existing socio-cultural fabric and economic base of the displaced families, which has been built over several centuries and generations. It disperses and fragments communities, dismantles patterns of social organization and interpersonal ties; kinship groups becomes scattered as well. The inter-family dependence, and cooperation and social and political organizations which existed in the affected villages amongst the displaced communities have broken down.

The Universal Declaration of Human Rights 1948 recognizes the “right to culture” and the Article 15 of the International Covenant on Economic, Social and Cultural Rights 1966 also recognizes the right of everyone to take part in the cultural life. Article 27 of the International Covenant on Civil and Political Rights 1966 recognizes the cultural rights of minorities, which is more relevant for indigenous peoples. The Declaration of the Principles of International Cultural Cooperation 1966, Declaration on Race and Racial Prejudice 1978, ILO Convention No. 169 and many other laws states that each culture has a dignity which must be respected and preserved life sustaining informal networks of reciprocal help, local voluntary associations, and self-organized mutual services are disrupted. This is a net loss of valuable ‘social capital’ that compounds the loss of natural, physical and human capital. Employment and Education Displacement reduces the employment opportunities for the tribal population and causes impoverishment, thus denying them from their right to employment, work and livelihood. It has increased the drop out rates and caused a wider loss to the children of the displaced tribals and denied their basic right to education and literacy. There are project dependent people besides the project affected. In a village setting, the productive land is a collective source of livelihood not only to its owners but also but also to
the village as a whole. Displacement not only evicts the owner from the land and destroys his livelihood and employment opportunities but also affects the families like the agricultural labourers, village servants (blacksmiths, carpenter, cobbler, and so on). These are primarily who work as labourers, milkmen, tillers, harvesters, cow and sheep rearers, and flower and vegetable vendors. As a result of the sale of the land their lives are affected. They are not at all a category in the rehabilitation package. These groups of people who were dependent on land indirectly lose also their right to life or existence, security, employment and livelihood opportunities as a part of their basic human rights. Displacement of tribal population from their habitat is only one part of the story. There has been large-scale movement of non-tribals into the development project areas, as work contractors, shopkeepers, transporters, labourers etc. Many of them over a period of time have got permanently settled in the project sites and at times places beyond, which are in the midst of vast tracts of tribal habitation. Thus, these tribals have been subject to various kinds of socio-economic exploitation by these settlers in their own land.

(vi) Impoverishment Risks

Displacement and Insecurity (Risks) of Kutia Kandhas is another concerning issue for the people. The Human Rights Declaration states that everyone has the right to life, liberty and security. Under the heading of economic, social and cultural rights, all governments are expected to try progressively to improve the living conditions of their citizens. But the forced displacements have created major socio-economic risks. Giddens uses the sociological concept of risk to indicate the possibility that a certain course of action will trigger future injurious effects - losses and destruction. The concept of 'risk' is posited as a counter-concept to 'security'. The higher the risks, the lower the security of the displaced populations. Cernea developed his eight-point impoverishment risk for the involuntary displaced persons caused by the development process. These are: (1) landlessness, (2) joblessness, (3) homelessness, (4) marginalization, (5) increased morbidity and mortality, (6) food insecurity, (7) loss of access to common property, and (8) social discrimination. To this list Courtland-Robinson (2003) added two more: (9) loss of access to community services, (10) violation of human rights. L.K. Mahapatra (1999) added the eleventh point: (11) loss of educational opportunities. Marginalizing Citizenship Marginalization occurs when families lose economic power and spiral on a downward mobility path. Many individuals cannot use their earlier acquired skills in the new location; human capital is lost or rendered inactive or obsolete. Economic marginalisation is often accompanied by social and psychological marginalization expressed in a drop in social status, in resettler's loss of confidence in society and in themselves, a feeling of injustice, and deepened vulnerability. The coerciveness of displacement and the victimization of resettlers tend to depreciate resettlers' self image and they are often perceived by host communities as a socially degrading stigma (Cernea, 2000:3664). The minorities and peripheral people who are granted 'marginal citizenship' lose their ability to challenge the state as they are going to be the prospective 'sacrificial goat' at the altar of development. The marginal citizens, who are external to the development process as well as the nation state, are denied the right to dissent, object or protest.
The resettlement colony is like a fortress, where any 'outsider' presence is strictly monitored. This shows how scared Vedanta is of stories of its human rights violations and dubious rehabilitation reaching out to the public. This incident clearly elucidates that CSR officials of Vedanta are the company’s puppets, whose ‘responsibility’ is to police people, to hide the truth and to monotonously narrate lies of "Mining happiness", of success stories of 'development' and 'progress'. The resettlement complex is indeed Vedanta’s ‘colony’, where it has shamelessly set up mechanisms of draconian policing -- a neo-colonial License Raj on people who lie in fear at the margins and in whose name we call for 'development'.

6. Revised Human Rights Policy of VAL

In September 2011, Vedanta announced a revised human rights policy for the protection of resettlers. The commitments which were made in the policy are as follows:

1. Respect and preserve the culture and heritage of the local communities including socially vulnerable groups which are impacted by our operations and work towards developing a constructive relationship with such groups and local communities, seeking broad based support for our operations.

2. Respect the social, economic, cultural and human rights of communities and will regularly communicate social performance in an accurate, transparent and timely manner.

3. Work with government agencies to develop a common understanding and agreement to protect human rights in the event of any unforeseen situations. We will ensure the protection of our people, equipment and assets.

4. While such policy statements on human rights are generally welcome, they must be supported by systems and procedures that will prevent human rights abuses from occurring as a consequence of corporate operations.

7. Suggestive Remarks towards the Protection of Kutia Kandha Rights

The VAL must be based on an adequate understanding of what is required to respect international human rights standards. A company that does not understand the international human rights framework and what it means in the context of its operations is unlikely to be able to assess its human rights impact properly and to take proactive measures to avoid causing or contributing to human rights abuses. They should address the need to remediate existing abuses. A key test of a company's commitment to human rights is its willingness to acknowledge and remediate existing abuses that are caused by its operations or business interests. The VAL company that fails to do this is unlikely to learn from its mistakes and to develop the corporate culture conducive to respecting human rights. They should not be traded off against other policies. Companies frequently underplay the need to respect human rights, citing policies that are designed to benefit individuals and communities affected by their operations. Any philanthropic projects and corporate social responsibility initiatives aimed at mitigating the adverse consequences of a
company’s operations, are no substitute for respecting human rights. There should be proper accountability for their implementation. A human rights policy framework needs to include mechanisms for tracking performance, monitoring and reporting human rights impacts and holding managers and employees accountable for implementation. It needs to be integrated into performance targets so that it has traction across a company’s business units.

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Surviving of the Traditional Crafts of Dhokra: 
A Case Study from the Artisans making Kondh Dhokra

SONALI PATTNAIK*

Abstract: Dhokra work across the country needs visibility surpassing on the account of cognitive blinkers and enumerative deficiencies. Tribal inhabited states like Chattisgarh, Odisha etc. house communities who still continue to hold their traditional economy of Dhokra making. Dhokra depicts a rich culture and tradition underneath and also shows how communities have tried to preserve Dhokra as an alternative for sustainable livelihood in the present times as well to cope up with the inflationary pressures that these communities have been facing. Apart from that there are many other peripheral challenges that the community is struggling with in order to preserve the craft that is getting more commercialized to cater the needs of the modern world and losing its originality and ingrained cultural values. The study highlights the patron-client relationship that exists between the artisans and the Kondhs (tribal group) who uses the Dhokra as an important part of their cultural life and values. This paper is based on the learning and findings of the fieldwork done (M.Phil) in 2011 among the Dhokra making craftsmen of Barakhama area in Balliguda block of Kandhamal District of Odisha.

Keywords: Dhokra, lost wax process, Kondh Dhokra, Culture, Livelihood, An Introduction to Historical Account on Dhokra:

Introduction

Historically, the Indian subcontinent was on par with the rest of the world in its metallurgical skill and expertise, and its artisans and craftsmen were masters at extracting and shaping metals. In fact, Indian knowledge of metallurgy predates technologies of many other civilizations, as shown by archaeological finds since ages (ref…). Particularly it is marked from the 2nd and 3rd millennia B.C.

Numerous ancient metallurgical arts and artifacts provide evidence of Indian excellence in the shaping of ferrous and nonferrous metals and alloys, including: dancing girl of Mohenjo Daro, the earliest known Indian lost wax process cast bronze figure (3rd millennium B.C.), the iron pillar, Qutab Minar in New Delhi (310 A.D.), which demonstrated forge-welded, excellent quality wrought iron and the iron craft of Bastar, in which icons and votive animals were made from pure iron. Risley was among the first few who documented the metal craft of the Kamar community of West Bengal in his monumental work 'Tribes and Castes of Bengal' (1891).

Study Area

The study was conducted in Kandhamal district of Odisha. Kandhamal district is surrounded by Boudh district in the north, Rayagada district in the south, Ganjam and Nayagarh districts.

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in the east and Kalahandi district in the west. Geographical area of Kandhamal district is 7654 KMs. (7.14% of state). Kandhamal district has 12 Blocks comprising of 153 GPs and 2415 villages. Most of the villages are located in hilly and inaccessible areas. Total Scheduled Tribe population of the district is 51.96% and Scheduled Caste population is 16.89% and the rest are the General and OBC’s, hence the district is notified as Fifth Schedule area. As per the 2000?01 Agriculture Census, Government of Orissa, the total forest of the district covers 71 % of the total land and the non?forest land consists of 29 %. Private land holding is 12% of the total area of the district. There are 2 subdivisions, 12 Blocks, 153 Gram panchayats and 2515 no of villages.

People under Study

The district of Kandhamal houses Desia Kondhs and Kutia Kondhs whereas the Dongaria Kondhs live in high lands in hilly areas of the Rayagada and Koraput districts. They worship eighty-four deities of which the chief is Dharani penu or earth goddess. She is all powerful and the highest of all deities. She is represented by a block of stone erected in the middle of the settlement or village. She is responsible for the growth of vegetation and other produce of land. The Kondhs are the worshippers of ancestors. Beyond that, the Kondhs are known for their “Meriah” festival, in which they used to have a cult of human sacrifice, but later on with the obstructions from the government and many local groups, human sacrifice is altered with that of a buffalo sacrifice by the tribe group. They speak a Dravidian dialect called Kui, which is their mother-tongue. But most of them speak and understand Odia.

Village Profile: Barakhama

Barakhama is almost 20 kms away from the headquarters of Balliguda Block of Kandhamal district having good road and connectivity. Being close to the headquarters, the people of
Barakhama are bit modern in comparison to other villages those stand far off from Balliguda. As the villagers make Dhokra craft, Barakhama has earned some fame since past few years and as a result is now one of the tourism sites in the District. The place has now primary and secondary schools along with Primary Health Care center. "Due to the development of the area, there has been gradual loss in the forest cover" says one of the inhabitants, Banu Nayak.

Ethnic composition of this village consists of both tribal and non-tribal - SCs and other caste groups. Barakhama houses mostly the Kondhs and Panas who adhere to the modernity in the area. According to the 2001 census, the village consisted of 63 households having a total population of 640 people (310 male and 330 female). Further, there were 32 ST households, 27 SC households and rest other caste groups. Most of the tribal population have adopted Christianity as their religion.

Methodology

Extensive empirical fieldwork was carried out in the Barakhama during a one month stay at the village with the Dhokra making community. Study analysis we carried out in the selected HHs of Barakhama as well as few of the neighboring villages to have an idea on the cultural implications of the artisans and the Kondhs and the underlying patron and client relationship between both the groups.

The standard Participatory Rural Appraisal methods were adopted for sampling and data collection. Primary data were collected through focused group discussion, key informant interview, structured interview and semi-structured interviews with the artisans and the Kondhs who use Dhokra as a significant part of their cultural life. Apart from that, the study also looks at the Dhokra making process and the sustenance of the craft through various Govt. schemes and programmes.

Dhokra in Odisha: Re-defining Tribe-Caste Relationships

The Kondh Dhokra is the most fascinating of all the Dhokras made as they have a unique black colour. They are symbolic of Kondh culture constituting an integral part and the symbolic expression of its beholders. The Kondhs of Kandhamal, Phulbani and Angul are known for pursuing and using this craft in particular. Kondh Dhokra comprises a whole host of activities and hobbies that are related to making things with one's hands and skill reflecting not only their aesthetic sense but along with this, it also delineates their socio-economic status and spiritual beliefs. Dhokra is a very significant asset of the Kondhs. It's a fact that these tribesmen do not make these crafts by themselves, rather they buy it from their neighboring artisan communities. Mostly these Dhokra items are custom-made as per the given specifications and requirements of the Kondhs. This craft is made with bell metals using the lost wax process. This also helps greatly to maintain the socio-economic relationship among the communities says Sagar Pradhan who is one of the Dhokra craftsman.

Dhokra has multiple uses according to various life cycle rituals and maintaining social status and recognition. Further considering its socio-economic relevance, the Kondhs would get and worship various Dhokra items signifying different animals and objects that denote the well-being, prosperity and wealth, good and successful hunting. For example, to increase wealth and after recovering from some deadly disease Kondhs worship different Dhokra objects. Kondhs worship buffaloes to increase their wealth and property. Apart from that, Kondhs also worship
Dhokra of snakes in case of multiple deaths due to snake bite in the family, deers are also worshipped to increase their family size. Similarly, poultry and goats and sheeps are also worshipped. Furthermore, they also worship various forms of Dhokras to show respect to their ancestors and to get protection from malevolent magic and ghosts and spirits. The Kondhs display and worship these Dhokras during various religious occasions and festivals like that of the Meriah parab, Nua khai and many other seasonal festivals.

Banu Nayak who is a well-known Dhokra artisan of the village further explains that, in order to maintain and show their social and economic status the Kondhs give huge amount of Dhokra items of two types to their daughters in marriage one of which is known as "Linga" that are used for worship and the other is known as "Darab" that signifies as the presents denoting the economic status of the person. Locally some of these Dhokras are known as "Aati Linga" (elephant), "Jelbakudolo (wealth)". Apparently for its abstractive aesthetic proliferations it has been doing across the world. The Kondh people buy these Dhokra figurines in order to give their daughters in their marriage. These Dhokra figures are considered very auspicious and the Dhokras that the bride get with her are worshiped during the festivals and the bride is applauded with the Dhokra that she gets from her mother's house. The Kondh people give order for making such Dhokra to the artisans for marriage. Mostly the Dhokra used in marriage consists of the elephants, horse, Kondh men and women.

While visiting another village named Katervatta which is typically a Kondh village, Sana Jani, one of the village elders, showed the "Zaker khamba" where the buffalo's head is placed after sacrifices. He also described that the Kondh worshiped nature earlier but after developing relation with the Hindus, they are continuing to worship different god and goddess. At the time of marriage, the Kondhs give all their Dhokra items to their daughter as dowry which is brought by the bride's mother or they may purchase new Dhokra items to give to their daughter as dowry.

The tribe-caste interaction in this part of the state is very unique on the foregrounds of the riots that engulfed the district of Kandhamal some years back hindering the nourished relationships between the tribal groups and the Scheduled Castes of Kandhamal. "The ruins of the riots are still afresh in the minds of the people that have left a never fading scar in the relationships " - says Annapurna Digal, a 60 year old tribal lady from Barakhama.

The items which are used by the Kondh society have been taken from the Dhokra artisans. They never make Dhokra figures and they buy these items from Dhokra artisans and used for religious and dowry purpose.

The place where the study was undertaken called as Padar sahi where we found different types of SC artisan, who were excellent in making black Dhokra and glazed Dhokra and from Kondha sahi different materials cultures of the Kondhs, where the residing Kondhs use to order the need Dhokra pieces required to the artisans living in the Padar Sahi explains Banu Nayak's wife.

**Family as a functional unit for a Dhokra Artisan**

Earlier, the Dhokra as a craft was limited to Kondhs who used to buy them for their cultural utility, but with time, Dhokra has crossed boundaries and has entered into the market of tribal artefacts and as a result of which there has been quite a demand for this craft. This demand has somehow paved the way for modernization of the Dhokra designs in order to suit the taste of...
the buyers in the urban areas. Looking at this, the ITDA- Balliguda has initially helped the group of artisan in Balliguda to set up a ware-house to help in preserving the craft and simultaneously have a source of income through this.

The daily life of the artisans revolves around the Dhokra making. In this regard the entire family acts as a production unit. It is not only the father and mother who are engaged in the work but also the older people who get themselves engaged in some of the works relating to Dhokra craft. They usually get up very early in the morning and start their work. It is only during the rainy season that they find it very difficult to work because of the moisture in the atmosphere which doesn’t allow the wet models to dry up faster. Socially they live as an extended family. The generations of families live in a proximity to each other. They work throughout the day as the making Dhokra craft is a very time consuming and laborious task. So the cooking and the household chores are done by the women folks and young girls of the house and the elders also at times help in cooking and taking care of the young ones in the family. The men of the house spend the entire day doing the various works relating to the casting, starting from making models to molds to firing the molds.

Cultural Life of a Dhokra Artisan

Four generations ago, the artisans families have migrated from a far off village named Solaguda and settled in Barakhamma. Initially, the SC artisans were not only engaged in Dhokra craft but they also were herdsmen. Apart from that, these families play a great role in the village as they have a crucial action at the time of deaths that occurred in the village by acting one of the socio-religious functionaries. After the death of a person, all his belongings are brought to the cremation ground and thrown away which SC artisans collect. Most people said that they live like this since past five generations. The things that are thrown away are called “Khana” in the local term. These SC artisans collect the belongings and use it and derive a living by doing so. But with time, this thing has vanished and the SCs are no more doing so.

The religious life of the artisans is only limited to the worship that they do in their own houses, not frequently though. But they do worship lord Shiva. Hence, they strictly observe the Sankranti and also celebrate Nuakhiya. Apart from that some of the artisans have changed their religion to Christianity or have given away their daughters to Christian families. One of the daughters of Banu Nayak is married to a Christian family. They believed that, at the end of the day religion does not matter rather the happiness of their children matters. During any worship that are done at their homes, they do worship their ancestors. As a sign of respect they give up various things as an offering to satisfy their ancestors.

Knowledge and transmission of Knowledge of Dhokra Craft

This traditional knowledge is passed on from generation to generation. It happens so because it requires the effort of the entire family in the casting process. While doing any activity relating to the casting the children first accompany their parents and apparently in due course of time learn all the dimensions of the craft. In the long run, however, the artisans face serious issues like non-availability of raw materials, high input of labour, existence of the age old techniques which is highly time consuming and needs accuracy and precision and expertise as it may lead to grave loss of labour and resources. Along with this lack of proper support from the Government with providing adequate financial support and training and also minimal support to
develop market and sell the products and also exploitation from local traders has led young artisans like Pichalu Nayak (son of Banu Nayak) to move away from the craft making as a Dhokra artisan. Whereas there are artisans like Laxman Nayak who prefer to think that they can develop towards a consumer market based on high quality high aesthetic value artefacts. This could possibly be found supplying high craft content artefacts to a growing tourist and indigenous middle class market. The continuation and development of the Dhokra industry depends on the artisans finding a stable market niche for themselves and their products. Whatever it proves to be, this market needs to be developed and supply chains established. It is easy to demonize the middle-men, but if the economic conditions of the artisans become less marginal and their terms of trade can be improved, then there is no reason at all why existing middle-men may not have a major role to play in this market development, though equally well, the further development of banks and proper market facility could eliminate the middleman by providing direct access to new markets. In the end, this is not simply a matter of marginal economics.

Division of labor

In this Dhokra craft, the division of labour in the organization of craft is very hearty. Mostly the women folks tend to have the most difficult task. Apart from working with their family on Dhokra simultaneously they also look after their family. They not only cook and do the rest household chores, but they also go to the forest to fetch firewood and also soil that is required for Dhokra casting. The adolescent girls of the family take care of the young ones but also act as an extra set of hands in the daily chores and also in the designing of the molds.

The men of the houses mostly spend time in doing the craft. They are also accompanied by their elder sons. The menfolk do the hard task of firing of the molds which requires a lot of precision and experience. Then after that they de-mold the Dhokra objects and polish these items. Until a very late age both man and wife stick to this craft.

Role of women

The women play a very crucial role in this craft making. Women were instrumental in establishing the craft institution. Women participate in craft making industry not only as home-based workers, but also as mobile shopkeepers, traders, entrepreneurs, and contract labourers outside the village. Women increasingly play important roles in development of rural economy in general, in income generation for households in particular. The women folk have great deal of responsibility.

In the section the women folks are into the world of Dhokra jewellery plethora creating various forms that are crafted into beautiful and artistic jewellery pieces which have the typical ancient motifs and themes, such as large hole beads made from Dhokra art put together to make necklaces marks a proper piece of tribal jewellery. These are catered to a range of people starting from the Kondh ladies to the modern metro women. Now-a-days one can find some ornaments with a fusion of contemporary and traditional art. For instance, glass, stone or plastic beads are used in necklaces and are connected with pendant made from Dhokra art. Similar method is followed for earrings and other trinkets with floral designs. Traditionally, there was a high demand for jewelry making for the Kondh women for their adornment which includes anklets, anklet bells (ghungrus), nose rings, toe-rings, etc.
Mode of Production

Traditional skills that are imparted are primitive and techniques are cumbersome, less productive and archaic. The artisans have a little conception of economic of materials, labour and time. And simultaneously the artisans also face many difficulties in the aspect of the procurement of the raw material for the craft making. Previously attempts were made to engage the un-employed tribal and rural youth for providing them self-employment through various development schemes on priority basis by providing skill up gradation programmes and workshops.

Mainly in tribal and other rural areas, raw material is available in forest or difficult geographical terrains. These artisans have to put extra labour for procurement of these raw materials or buying it from the local vendors. It has been observed that most of the raw materials used for preparing different types of handicrafts are available in the producing districts. It has been reported that the craftsman's production is seasonal and irregular. The prime need of handicrafts is a reorientation in the techniques of production without interference with the artistic varieties of production. Being either sentimental to their craft or ignorant of the demand of the market, the bulk of the craftsmen stick to the production of century old designs. So production has to be made more even and regular. This can be achieved through better labour saving techniques. This would enable to devote certain hours of the day even on agricultural seasons. In this scenario, SHGs along with some governmental and non-governmental agencies are acting as a helping hand by providing these artisans with raw materials directly.

In this regards, Government tries to bring artisans and their skills to the epitome of the world by providing capacity building programmes and skill up-gradation trainings to refurbish their skill level to thrive in a competitive world. These States and NGOs arrange exposure visits to important crafts hubs for the artisans to enrich their knowledge and learn from other artisans. It also emphasizes a great deal on organizing SHGs, health camps, seminars and workshops for its member artisans. These SHGs in those areas are very intimately associated with these people which enhances the scope of production.

Mode of maneuvering

Raw Materials used

The basic raw material used for making Dhokra articles is brass, which is procured in the form of used brass utensils or any other brass scrap. The brass scraps are available locally from traders who either collect them locally or source them from Dhenkanal town. The brass scrap is available at Rs. 290 to Rs. 300 per kg, depending on the availability and market conditions. The other raw materials required are:

Chikti Maati (black soil): This is mud or soil procured from the beds of the fields. It is basically black soil, but precision in choosing is very important.

Kundaa (paddy husk): Husk obtained from the mills is mixed with the soil, to hold it together, as clay tends to break apart easily when dry; it also makes the mold porous and prevents the cracking of the mold during firing.

Baali (sand): This soil is procured from the riverbanks. The soil is very soft and easy to shape, mold and file, and hence facilitates good final shape and finishing of the product. The soil is red in colour. Precision in picking is important here too, as the use of the wrong soil may lead to breaking of the product when heated.
Gobara (cow-dung): Cow-dung is mixed with the river soil as it allows the wax to melt out of the cast and helps prevent it from getting stuck on to the soil.

Khadadaa maati (red soil): This soil is available above ant homes in the soil.

Sema Patra (leaves of flat beans): These are lima bean leaves picked up from the plants. Although other plant leaves too could serve the purpose, only bean leaves are chosen because of their high water content.

Maham (wax): Two different types of wax are used, both of which serve the same purpose. The first type is bee wax, which is extracted directly from the bee hives available in the forests, while the second type is the mahambatti (paraffin or candle wax). Since candle wax breaks easily, it is mixed with picchu (coal tar) and fire wood.

Koila (charcoal): This is used to prepare a mixture for covering the layer on the model.

Wax, metal and fire wood are used in a fixed proportion of 1:10:100; which means that for every kg. of wax, 10 kgs of metal is required, and for every kg. of metal, 10 kgs of fire wood is consumed.

Tools

The tools used in Dhokra craft are: Hammer; Wooden mallet, Pichkali naali or funnel used to draw wax strands of the required thickness, Chisel, Pliers, Tongs and Wire brushes.

Almost all the tools are made by the artisans either themselves or with the help of the local blacksmith or carpenter.

The Traditional Technology of Dhokra Casting

The Dhokras use lost-wax process to cast hollow brass objects and images. The essence of the process of the model object is in wax, each individually, around a hardened clay core which has approximately the shape of object to be cast. Layers of soft, refractory material are laid over wax model and hardened into a mold. The wax between core and mold is lost or burnt out as mold is heated. Then molten metal takes its place and harden between the core and inner surface of the mold which holds a negative impression of the wax model in all its detail. The outer surface of hardened metal reproduces the shape and details of original wax model with the core producing hollow interior. The hard core and mold become spongy and soft in the fire which are remove easily.

The casting of final detailed metal artifacts by means of the cire perdue (in French) or lost wax technique is almost as old as settled civilization. The technique is simple to describe (but difficult in practice). It involves six stages:

Core-making: A clay core is made slightly smaller than the final intended size of the artifact. The core may be hardened by firing or sun-drying;

Modeling: A detailed wax model is built up around the core, to the thickness of metal desired in the finished object;

Molding: The wax model is coated with a thin layer of very fine clay, which will form an impression of every detail of the model. When this layer is dry and hard, further layers of clay are added to the mold. One or more pouring channels are provided, through which molten metal can run to fill the mold;
"De-waxing: The mold is pre-heated to melt the wax, and the molten wax is poured out (it may be recovered for subsequent re-use). This leaves a cavity which has the exact size, shape and surface contours of the intended artifact;"

"Casting: Molten metal (brass) is poured into the cavity and the mold is left to cool;"

"Finishing: The artifact is broken out of the mold. Traces of baked clay are removed and surface polished and defects repaired."

Provisions, plans and programs by the Government to support the artisans

The office of the Development Commissioner (Handicrafts) is implementing following schemes for promotion and development of handicraft sector and to solve the problems being faced by the handicrafts artisans:

◆ Prime Minister's Employment Generation Programme.
◆ Baba Saheb Ambedkar Hastshilp Vikas Yojana (AHVY)
◆ Marketing support and services
◆ Design and technology upgradation
◆ Research and Development
◆ Human Resource Development and
◆ Welfare scheme for handicrafts artisans

Suitable monitoring system is already in place for proper implementation of the aforesaid welfare schemes for the weavers and handicrafts artisans. The implementations of the schemes are monitored regularly by the authorities of Development Commissioner (Handlooms) and Development Commissioner (Handicrafts). Progresses of the schemes are also monitored by Senior Officers of the Office of Development Commissioner (Handlooms), Development Commissioner (Handicrafts) and Secretary (Textiles). Based on the feedback, future interventions are decided. In order to make the implementation more effective, guidelines have been framed which are periodically revised to further strengthen the monitoring system.

Conclusion and Recommendations:

In order to make handicrafts reach the top spot the following suggestions may be implemented. Organising Marketing Network: Absence of systematic marketing network has been a discouraging factor in this region. In my opinion, the artisans must be organized by themselves to form co-operatives for marketing their products by themselves. For this more and more linkages must be developed with outside parties.

Design Registration: Design registration should be done. That means whatever designs any artisan has introduced on any item should be registered. Then no one can copy it. It will be provide a scope for securing the Intellectual Property Rights of the artisans through copyrights.

A Proper Directory of Odisha Handicrafts: Government should bring a Directory of Odisha Handicrafts with related craftsmen and place under different tourists offices, airports and luxury hotels. Then the foreign buyers can get more detail about the products and enable them to purchase the goods directly from artisans.
Price Uniformity: It is often complained that prices of handicraft products are very much erratic and not uniform. There is significant difference in prices of the same article if purchased from two shops or from two places. In this situation the customer feels very much exploited and harassed. This might have very bad repercussion on the demand of the products. Categorization of art in each craft should be done according to the skill exhibited and quality of raw materials used and pricing should be made accordingly by a team of experts.

Creating Awareness: The majority of artisans are not aware about various new government schemes like loan at concessional rates, free tools, dyes and chemical, workshop-cum-housing facilities. It is the duty of the promotional organizations to make the weavers aware about the various welfare schemes and to implement the same on a war footing.

More Research & Development: For improving the quality of the products, Research and Development is a must. Many more new items and new designs can be developed with the help of Research & Development.

Invitation of Master Designers: Foreign master designers and established designers within India may be invited to the design centers to render guidance to the craftsmen.

Value Added Products: The various specialized organization like DC (handicrafts) may help the local units to produce various value added items which would not only help to penetrate the local market but also help in exporting such items to foreign countries.

Wide Publicity: To attract more and more buyers both within and outside the country, promotional and marketing organizations must give due emphasis on wide publicity of various local products. For this frequent buyers and sellers meets may be organized by promotional organizations. In whatever possible manner, all the promotional and marketing organization, must display the local items in various airports, railway stations, bus stands, commercial centers etc. This will help the local artisans to get more orders from foreign tourists, traders and marketing organization.

Scope for Exports: If systematic efforts are made, some of the selective products could be exported in the near future. However, before exporting of such items care should be taken on product identification, quantum of production, supply arrangements, price, delivery, quality and payment terms.

Strategic Positioning of Handicraft Items: Dhokra items which are produced with traditional skill are gradually facing competition from machine made products, which give greater uniformity and better finish. For large number of handicraft items, there have been neither substitutes nor competition from any significant entrant into the field. Thus, suppliers, new entrants and substitute products do not appear to be significant factors in the strategic positioning of the Dhokra crafts.

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Traditional Knowledge System and Access to Modern Health Care Facilities among the Juangs of Kundhei Village, District-Keonjhar, Odisha

GULSAN KHATOON*

Abstract: This paper outlines an attempt to study the traditional knowledge system and access to modern health care facilities among the primitive Juang tribes of Odisha. Odisha is one of the state, which comprises 62 tribes and Juang tribe is one of them. The Juang people have very much adopted indigenous healing system by procuring their natural environment. The study has been undertaken among the JUANG tribe of Kundhei village of Keonjhar district, Banspal block, Odisha. Indigenous knowledge has been referred as the unique, traditional, local knowledge existing within and developed around the specific conditions of women and men indigenous to a particular geographic area. This knowledge system is transferred from generation to generation by the oral tradition, it also very much found among the indigenous people in world wide. The objectives of this paper is to explore different indigenous methods of diagnosis and treatment of diseases, identification of specific plants used in medicine and cure of diseases, and to document their perception regarding the origin and cause of illness and disease as revealed by in their system of disease classification. Different anthropological methods and techniques will be followed for data collection such as schedule, observation (both participant and non-participant observation), interview (both key and group interview), case-studies, PRA/RRA, FGD, photography methods. Many ethnographic studies have been undertaken to reconstruct the lifestyle and livelihood of different tribal community including the Juangs, but no attention has been given on health and healing practices among the Juangs. This study has generated documentation on Indigenous knowledge system of Odisha, pertinent to Indigenous healing systems. It has also helped to understand the nature of traditional healing practices vis-a-vis modern medicine among the Juangs.

Introduction: In the history of medicine in India, much less attention has been paid to the study of ethno-medicine which reforms to the indigenous medical practices as adhered to by the aboriginal since time immemorial. Each and every culture has its own belief and practices regarding health and disease. The treatment of disease vary from one group to other and one culture to another culture. The WHO (world health organization) has defined "Health is a complete physical, mental, and social well being and not merely the absence of disease or infirmity. Disease or ill health is a condition that accounts for physical disorder and needs some remedial measures. It may be defined as experiences by man in its efforts to respond adaptively to environmental challenges [South Asian Anthropologists, 1995, 16(2)].

Disease is one of the fundamental problems faced by each and every human society. So every society has developed methods for coping with disease and has created medicine which may be herbal 'secular or empirical. The tribal people always entrapped in the intergenerational cycle of poverty and sickness and their environment provided favorable conditions for spread of
infectious disease and many kinds of diseases which are related to malnutrition, poor housing, unsafe drinking water and lower immunity.

In 1923, the American anatomist and Anthropologist, Roy.L..Mood published the first comprehensive book on the "Pathology". An introduction to the ancient evidence of disease and in the same year he also published another short but more important book "The Antiquity of disease".

According to S.R.Mehta, the concept of health and disease has culture relativism and their perception is influenced by the belief structure.

Farbrega pointed out more specifically that "Ethno-medicine deals with information pertaining to social adaptation, folk medicinal knowledge and systems medical care.

Traditional Knowledge has been defined as "a cumulative body of knowledge, know-how, practices and representations maintained and developed by peoples with extended histories of interaction with the natural environment". Indigenous knowledge not only refers to the knowledge of indigenous people but also to that of any other defined community. Quite often indigenous knowledge is local, but it needs not to be traditional as knowledge is always in the making. Indigenous knowledge not only refers to the knowledge of indigenous people, but also to that of any other defined community. Quite often indigenous knowledge is local, but it needs not to be traditional as knowledge is always in the making.

The term indigenous knowledge system delineates a cognitive structure in which theories and perceptions of nature and culture are conceptualized. It thus includes definitions, classifications, and concepts of the physical, natural, social, economic and ideational environments. Indigenous practices can be either an expression or a result of indigenous knowledge, or osmosis of indigenous knowledge with the global scientific knowledge. But more often, indigenous knowledge concepts are presented by social scientists in the disguise of scientific idiom brought into local thinking in the course of time. On the other hand, indigenous knowledge may be quite practical and relating to operationalised local thinking in such fields as technology, agriculture, health, and so forth.

Ethno-medicine is a study or composition of the traditional medicine practiced by various ethnic groups, and especially by indigenous peoples. The word ethno-medicine is sometimes used as a synonym for traditional medicine. Ethno-medical research is interdisciplinary; in its study of traditional medicines, it applies the methods of ethno-botany and medical anthropology. Often, the medicine traditions it studies are preserved only by oral tradition.

Traditional medicine (also known as indigenous or folk medicine) comprises knowledge systems that developed over generations within various societies before the era of modern medicine. In some Asian and African countries, up to 80% of the population relies on traditional medicine for their primary health care needs. When adopted outside of its traditional medicine is often called complementary or alternative medicine. Core disciplines which study traditional medicine include: herbalism, ethno-medicine, ethno-botany, and medical anthropology.

Traditional medicine may include formalized aspects of folk medicine, that is to say long-lasting remedies passed on practiced by lay people. Practices known as traditional medicine include Ayurveda, siddha medicine, unani, Irani, Islamic medicine, traditional Chinese medicine, and so on.
Indigenous medicine is generally transmitted orally through a community, family and individuals until "collected". Within a given culture, elements of indigenous medicine knowledge may be diffusely known by many, or may be gathered and applied by those in a specific role of healer such as shaman or midwife. Three (3) factors legitimize the role of the healer—their own beliefs, the success of their actions, and the beliefs of the community. When the claims of indigenous medicine become rejected by a culture, generally 3 types of adherents still use it—those born and socialized in it who became permanent believers, temporary believers who turn to it in crisis times, and those who only believe in specific aspects, not in all of it.

Of the 62 Tribes of Odisha with a population of 81.45 lakhs (22.13% of total population of state), 13 tribes have been classified as primitive tribal groups with an approximate population of 70,500 (2001 census). The tribal communities live in inaccessible mountains and forest areas with diverse cultural practices and related worldviews and indigenous knowledge systems with well-knit traditional village councils and functionaries. Tribals believe in the existence of human, nature and spiritual worlds and the continuous interaction between these worlds is well established since the origin of their animism and maintained with reciprocity. Most of their knowledge's are in the folk form (oral), which are preserved in different folk systems.

OBJECTIVES OF THE STUDY

- to understand the illness ideology of the natives as defined and experienced by them and more specifically-
  - To get an insight of their belief systems regarding disease.
  - To study conventional concepts and beliefs regarding causes of disease.
  - To find out the indigenous methods of treatment.
  - To explore different methods of identifications of specific plant used in medicine and cure of disease.
  - To find out attitudes of people towards modern medical facilities available in the village.
  - To find out reasons of using indigenous medicines at present in spite of availability of modern medicines in and around the village.
  - To document their perception regarding the origin and the cause of illness and disease are revealed in their system of disease classification and their ethnological categories.
  - To record the various pathogenic agents which cause illness and understand their role in their culture?
  - To understand the symbolic and meaningful aspects of healing.
  - To understand from a meaningful prospective the set process where in there involved in initiates a purposive alteration in the health of the patient.
RESEARCH METHODOLOGY

Anthropology as sub-discipline of social science studies holistic aspects of the human society. Anthropology is well known for its first hand data collection as it a science of field work, the researcher involve intensively in the field do collect primary data from the people with whom he/she working with. Anthropology is also well known for its holistic approach, where a large number of tools and techniques associated in it. To obtain the empirical data for the objectives of this purposed study key anthropological tools and techniques. Anthropology is well known for its first hand data collection as it a science of fieldwork, the researcher involve intensively in the field to collect primary data from the peoples. The primary data will be collected through participant observation, scheduled, interview, case study, key informant and focus group discussion as a technique of data collection.

AREA UNDER STUDY

The present study was conducted i "Kundhei" village of Kodipasa Gram panchayat of the Keonjhar district. The village is located in the border area of Banspal block and almost 25 kilometers away from the district headquarter. The village is surrounded by Dhanbeni Mountain and Ghungi as well as Niyanandapur were the neighboring villages of it. There are two rivers namely Baitarani and Kanaji which are also found near to the village. The beginning region of the village is known as Tala Sahi, where majority of the households belong to the Mahanta community. But, the rest of the Majhi and Tala Sahi households belong to the Juang Community and out of the total population Juangs are found in the majority. The houses of the village are built in a linear manner at the two different sides of the village. The two sides of the village is surrounded by rice fields where as the endpoint of the village is attached with the mountains. According to the natives, the village is almost 500 to 600 years old. Some people said that the village is named after the deity i.e. "Kundhei pata". So the village named as Kundhe. Some other opinesthat many years ago there were many trees of "Padei" bearing red fruit. And so the village was named after the "Padei" trees.

PEOPLE UNDER STUDY

Juangs are a tribal group of the people of the munda ethnic group found in Dhenkanal and Keonjhar districts of Odisha, India. Most of the Juang live in Keonjhar district. The Juang language belongs to the munda family of the Austro-Asiatic languages. Juang peoples are basically a jungle tribe and divided into 2 broad sections, namely thaniya and bhagudias. Thaniya comprises of those of the Juang tribes who have settled down the original homelands. While the bhagudia are those Juangs people who have migrated to some other places. The Juang is one of the primitive tribal groups and found only in Odisha. According to the Juangs of Kundhe village, juangs are known as "Rushi Putra". In their local term Juang means man. According to them, Juangs have originated from the "thai" of the "rushi janhab". So they are known as "Juang". "Rrushi janhab" is referred as the father of the tribe Juang and an "Asurani" I reffered as the mother. When the Rushi janhab and asurani got married, 36 types of animals and Juang and other Odia peoples, insects etc, originated. Juangs originated with the origin of life on earth.

PROFILE OF COMMON AILMENTS

In the survey of my study area at kundhe village, at Banspal block of keonjhar district, I found some common diseases which are seen everywhere. Such common diseases are -Malaria, Diarrohea, Cough, Fever, Headache, Menstrual problem, Wounded
Classification of diseases among different age and sex group

In kundhei village, I found that the children are suffering from various diseases. Most common diseases occurring among the children are malnutrition, dysentery, cold and cough, fever, evil eye, etc. Among some children polio was also found. Every adult of this village are suffering from common diseases like fever, cough and cold, malaria, etc. In case of girls, they are basically suffering from malnutrition, menstruation, and in case of boys, they are suffering from cold, cough, wound, etc. In kundhei village, the male are doing very hard work. So, they are suffering from different diseases like joint pain, muscular disease, piles, TB, chest pain, etc. Most probably at the age of 40-55, the middle aged men are suffering from this type of diseases. Like the men, women also do very hard work. They go to the forest to collect fire wood, bring water from well, pond, nearer river, etc. So due to all these hard work, suffer from various diseases like joint pain, rheumatism, cold, cough, back pain, menstruation problem like severe blood flow, etc.

Season wise occurrence of diseases

Most common diseases which occur in different season among the Juangs of Kundhei village are: Summer season- Fever, cold and cough
Rainy season- Fever, Diarrohea, Malaria, Eye infection
Winter season- Malaria, cold, Diarrohea

Traditional concept of illness and disease

Charcot, a 19th century neurologist who observed that "there is a particular moment between health and sickness when everything depends on the patient, the border line between a discomfort which is accepted and the decision is "I am ill."

Gilbert Lewis has stated in the paper on "Sickness in New Guinea" that illness and health are clearly contrasted for us as general concepts, but we sometimes find it and to draw a strict line and say which side a particular cause falls. Health and illness indicate either end or a continuum (in Dash, 1985:211). According to Jasper Lewis, illness is related to the life and capacity for performance.

In the great variety of states an events called "Disease" almost the only common factor is that disease implies something "Harmful" unwanted and of an inferior character(Jasper 1963:780).

According to Polygar, health is an accumulated resistance to potential dangers.

A person is said to be in a state of healthy, so long as the parts of organs of his/her body go on performing their duties as functions in a normal manner. Any disagreement temporary or permanent in the system of organs of the body constitutes disease. Thus certain kind of change in the body is called a disease. According to Juang society members; the disease may affect the person due to some hostile spirit and also for the violation of taboo. The belief of individual and community at large depend on their relationship with unseen forces which influence human affairs. Thus disease is believed to be spiritually caused and should therefore be treated spiritually according to recognized system of diagnosis and cure.
Types of diseases

In my survey, I have analyzed that in Juang society, due to hygienic environmental condition they are suffering from different diseases. People of Kundhei village are suffering from different diseases. Following are the examples of different types of diseases prevailing in this village.

<table>
<thead>
<tr>
<th>SL.NO</th>
<th>TYPES OF DISEASES</th>
<th>SYMPTOMS</th>
<th>HERBAL MEDICINES USED(LOCAL TERM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Fever</td>
<td>Body temperature high</td>
<td>1.Apamaranga 2.Puruni</td>
</tr>
<tr>
<td>2</td>
<td>Diarrohea</td>
<td>Loose motion</td>
<td>1.dhuba ghasa 2.Agabatha leaf</td>
</tr>
<tr>
<td>3</td>
<td>Chicken Pox/measles</td>
<td>Blister on the entire body and fever</td>
<td>Raw turmeric and neem leaves</td>
</tr>
<tr>
<td>4</td>
<td>Wound</td>
<td>Wound and cut on the body</td>
<td>Bendili leaf</td>
</tr>
<tr>
<td>5</td>
<td>Rakta jhada</td>
<td>Blood during excretion and dysentery</td>
<td>1.macheri kathi(root) 2.Isra tree root</td>
</tr>
<tr>
<td>6</td>
<td>Jaundice</td>
<td>Fever ,body turns yellow and body becomes weak</td>
<td>Bendili plants root</td>
</tr>
<tr>
<td>7</td>
<td>Bone fracture</td>
<td>Fracture in the bone</td>
<td>Hadasunkha leaf</td>
</tr>
<tr>
<td>8</td>
<td>Sterility</td>
<td>Have no children, problem in conceiving</td>
<td>Kumbhipada</td>
</tr>
<tr>
<td>9</td>
<td>Tooth decay, tooth ache</td>
<td>Pain in the teeth, cavity</td>
<td>Karanja and neem stick</td>
</tr>
<tr>
<td>10</td>
<td>Malaria</td>
<td>Severe fever</td>
<td>Gangasuili leaves</td>
</tr>
</tbody>
</table>

Causes of diseases

The Juangs of the study area, believed in occurrence of diseases as the wrath of evil spirits, anger of clan gods, breach of taboo, etc. They believe in the existence of malevolent and benevolent powers that guide the human fate to adversity and prosperity. In case of accidents and seasonal bodily disorders they point its accusing figure to the whim of nature or carelessness of the person. "Diseases in general usage, is a disorder may either be semantics or psychic"(Deb Burman 1986;185) and Juangs belief almost confirm to the opinion. When accidents and bodily...
disorder occur repeatedly and in a cyclic order, then their belief changes from human error and whim of nature to wrath of angry benevolent gods or mischief of the malevolent spirits.

However, the various causes of diseases come under 3 categories. Such a

" Supernatural causes
" Human agencies
" Natural causes

Supernatural causes

The tribal people are usually very much conscious of their religion. Belief in supernatural being occupies an essential part of their society and culture. The Juangs also worshipped a number of deities to obtain security from natural calamities, diseases, epidemics, drought, etc. They also believe that various cosmic forces like sun, moon, rahu, ketu, and others maintain human life. According to them the diseases are caused due to: Wrath of deities, Evil spirits

Wrath of deities

The Juangs of Kundhei village believes that for maintaining the general well being and prosperity of the members of the hamlet, they have to keep a good harmonious relationship with gods and ancestral spirits. The lack of worship will incur the wrath of gods. In each and every village there is a deity inside the village named "Gramadevi" or gramsiri. The gramadevi was under "Karata" tree just at the middle of the Kundhei village. The deity is known as "Kundheipat" worshipped by the village members in order to protect the villagers. According to the villagers, the diseases like chicken pox, small pox, measles, are caused due to the wrath of god and goddesses. If one eat anything without offering it to god at first, then he/she may suffer from disease. Therefore the juangs observe the festival like "amba nuakhia"in the month of march-April before the first eating of mango fruit.

Evil spirits

Like the other tribe, the juangs of the Kundhei village have an unshakable belief that evil spirits are always present as a part of their surrounding, for which they fear that they may bring disease, death, destruction to their life. The evil spirits are perpetuated and appeased by offering sacrifices through magical practices. The different types of evil spirits are the dead ancestors, ghosts of people and certain unknown spirits. If the post funeral of a person are not conducted properly and in due time their spirits are believed to be revolving around his relatives. If one is frightened by seeing its appearance, then the evil spirits come with them. Their main victims are young girl, pregnant women, women who has just given birth to the baby. They can be removed from the body by the magico-religious activities.

Human agencies

There are some diseases which are caused by human agencies like: sorcery, witchcraft, evil eye, breach of taboo made in the past or present.

sorcery: In a tribal society, sorcery and witchcraft are present in the religious belief of the people. These are considered as anti social activities deserving strong condemnation by a community. Those who practiced or performed such activities are despised, though also feared. Juang of the study village are less strongly influenced by sorcery.
Evil eye

Some individuals are believed to have the tendency to cast or spell on others just by looking at them. The victim faces misfortune. The evil eye is more commonly feared form of sorcery. Since it is supposed to be easier to practice, infants and small children are said to be particularly at risk from a certain type of female spirit which is named as "Dahani". If a women during her pregnancy or a women while delivering her baby dies, then her spirit is referred as "Dahani". They commonly attack pregnant women, small children.

Case Study 1:

NAME: Dasada Juang
AGE: 2 yrs
SEX: Female
DISEASE: Evil eye

She was ill and was suffering from dysentery. She was taken to the Raulia of the village named suka Juang. He chanted mantra and provided a charm and herbal root to make the girl healthy. After this the child was well and healthy.

Natural causes: The people of the study village also have a belief other than supernatural causes and human agencies. There are also natural causes of diseases. There are some common diseases like fever, headache, cough, stomach pain, etc. are caused due to some natural causes. Natural causes of diseases are divided into 3 categories:

" Environmental and climatic causes
" Nutritional causes
" Other causes

Environmental causes: Man is a biological being. He totally depends on the environment and its surrounding. Juangs are the most primitive tribal group. They live in the dense forest and hilly areas so the environmental condition of their is something different from us. It is also responsible in order to create some specific diseases. Under environmental the following points may come:

-Climatic condition: The climatic condition of the area is sub tropical monsoonal type with hot summer from march - may when the temperature rises up to 41-45degree Celsius. So in summer people usually the small children suffers from boils, scares, headache, fever, etc. In winter season, which is from December - February, daily temperature falls to 13 degree Celsius. So there is extreme cold for which people suffers from fever, skin cracking, cough, cold, tooth ache, etc. In rainy season, it rain heavily which makes the area breeding ground for mosquitoes. Due to which people suffer from malaria

Accidental and natural calamity: As the environment is surrounded by forests and wild animals like bear, elephant, snakes, etc sometimes enter into the village and cause many harms. Some diseases occur accidentally such as snake bite, insect bite in the field and forest, wound from animals attack, etc. Their environment bound them to work inside the forest to collect firewood, to do agriculture work like shifting cultivation, etc.
Case Study 1:
NAME: Niranjan Juang
AGE: 31
SEX: Male
PROBLEM: Snake bite
While going to the forest to collect firewood he got bitten by a snake. Then he consulted the village Raudia.

Case Study 2:
NAME: Naku Juang
AGE: 49
SEX: Male
PROBLEM: Bear attack
In the early morning while he was going to keonjhar to sell firewood a bear attacked him and he was very seriously injured. Then people took him to Keonjhar hospital

Case Study 3:
NAME: kabira Juang
AGE: 28
SEX: Male
PROBLEM: Elephant attack
Once in the night time, when everyone of his family was sleeping an elephant attacked his house. His house was broken and he was also injured.

Poor sanitary condition: The sanitary conditions are not satisfactory in the Juang village. Then have no latrine. They use open ground to defecate. They use the pond water for all types of work such as bathing, washing clothes, drinking, bathing their animals. The use of contaminated water leads to many diseases.

Nutritional Causes: Causes relating to malnutrition are-In tribal areas due to lack of nutritious food various diseases are caused. Juangs of Kundhei village are not aware of intake of nutritious food.
-Over work and insufficient food: Excessive work and inadequate of food are also reasons affecting the health of the juangs.
-Lack of awareness of balanced diet: Juangs of this Kundhei village are not conscious about the balanced diet. They mostly prefer handia and non-vegetarian food such as chicken, fish, etc which causes many diseases and harm to their diet.

Other causes:
-Infection: Juang of this Kundhei village are not aware about the germ theory or infection. They do not keep their surrounding clean. They dispose their household waste in the backyard. And move in the backyard and surrounding areas without wearing slippers which leads to infection.
<table>
<thead>
<tr>
<th>SL.NO</th>
<th>SEASONS</th>
<th>COMMON DISEASES</th>
<th>ENVIRONMENTAL CAUSE</th>
<th>NUTRITIONAL CAUSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>SUMMER</td>
<td>Boil and scars</td>
<td>-Extreme heat</td>
<td>-use of some wild fruits</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fever</td>
<td>-Due to extreme heat and sudden change in temperature</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Headache</td>
<td>-working under extreme heat</td>
<td>-Taking inadequate of food</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dysentery</td>
<td>-High temperature</td>
<td>-Eating fruits like mango and jackfruit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cold</td>
<td>-Irregular timing of bathing and eating</td>
<td>-Drinking water after working under extreme heat</td>
</tr>
<tr>
<td>2.</td>
<td>RAINY</td>
<td>Fever</td>
<td>-excessive water content</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cough and cold</td>
<td>-Absorption of more water due to rain</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diarrohea</td>
<td>-Due to water infection through drinking water</td>
<td>-unhygienic food which have been exposed to flies and mosquitoes</td>
</tr>
<tr>
<td>3.</td>
<td>WINTER</td>
<td>Fever</td>
<td>-Lowering of climatic temperature</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Skin problem</td>
<td>-Climate dryness</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tooth ache</td>
<td>-Extreme cold</td>
<td></td>
</tr>
</tbody>
</table>
INDIGENOUS METHODS OF CURE AND TREATMENT SYMPTOMS AND DIAGNOSIS OF DISEASE

In my survey, I have analyzed that in Juang society due to unhygienic environment condition, they are suffering from different diseases in this Kundhei village. There are the list of common diseases which are diagnosed by different herbal medicines. These are as follows:

<table>
<thead>
<tr>
<th>NAME OF THE MEDICINES/HERBS/ROOT/ANY MFP</th>
<th>USED OF THE DISEASES</th>
<th>SYMPTOMS</th>
<th>TYPE AND AMOUNT OF MEDICINES</th>
<th>PRACTICE TO USE THE MEDICINE METHOD</th>
</tr>
</thead>
</table>
| 1. Bendili plant(root)                  | Jaundice             | Body becomes weak and turns yellow | Some rice and 3cm long root of bendili plant. | -Grind bendili root and rice together and then roast them in fire.  
-Handia is also used to cure jaundice. |
<p>| 2. Bendili plant(leaf)                  | Wound                | Pain and bleeding of the wound | 100gms of bendili leaves are taken | -Leaf of bendili tree is boiled and grinded and applied on the wound. |
| 3. Kala malli(root)                     | Ranga batta          | -                                   | 5cm long root of kala malli is taken | -Grind root of kala malli plant and then boil it and apply on that particular area. |</p>
<table>
<thead>
<tr>
<th>4. Agabatha (leaf)</th>
<th>Diarrhoea</th>
<th>Loose motion</th>
<th>100gm of agabatha leaf</th>
<th>-Grind and boil agabatha leaf and drink twice a day. Daily diet should include: Lemon and rice (pakhala), misri water, chuda, etc to</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Macheri kathi (root), Isra tree (root)</td>
<td>Rakta jhada</td>
<td>Blood in stool</td>
<td>4cm of macheri kathi and isra tree roots</td>
<td>-Macheri kathi root and isra tree roots are grinded and ate</td>
</tr>
<tr>
<td>6. Raw turmeric and neem leaves</td>
<td>Chicken pox/measles (milimila)</td>
<td>Blisters on the entire body and fever</td>
<td>50gms of turmeric and some amount of neem leaves</td>
<td>-Avoid sunlight -Bath with raw turmeric and neem leaves, 3 times a day. -Avoid non-vegetarian food.</td>
</tr>
<tr>
<td>7. Hada sunkha (leaf)</td>
<td>Bone fracture</td>
<td>Pain on the area of fracture</td>
<td>20cm long leaf of hada sunkha</td>
<td>Hada sunkha leaves are grounded and applied on the fracture.</td>
</tr>
<tr>
<td>8. Apamaranga tree (root)</td>
<td>Evil eye</td>
<td>Fever, loose motion</td>
<td>3-4cm long root of apamaranga leaf are used to make charm.</td>
<td>-Mantra (chant mantra on the root of the apamaranga tree and are then tied upon the arm or neck of the patient)</td>
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</tr>
<tr>
<td>9. Kummhipada tree (root)</td>
<td>Sterile (woman who cannot conceive)</td>
<td>Cannot conceive</td>
<td>-</td>
<td>-leaf of kummhipada are taken and mantra's are chanted and then tied on waist of the sterile woman.</td>
</tr>
<tr>
<td>10. Karanja and neem sticks</td>
<td>Tooth decay and tooth ache</td>
<td>Pain and cavity</td>
<td>15 cm long sticks of these tree are used to clean teeth</td>
<td>Karanja and neem tree sticks are used to brush the teeth for healthy teeth and free</td>
</tr>
<tr>
<td>11. Khandakhai tree (bark)</td>
<td>wound</td>
<td>Pain and bleeding</td>
<td>6*6 sie of bark of khandakhai tree is taken for a small wound</td>
<td>Khandakhai tree's bark are grinded and applied on the wound twice a day.</td>
</tr>
<tr>
<td>12. Gangasuili leaves</td>
<td>Malaria</td>
<td>Severe fever</td>
<td>100gms of gangasiuli leaves in 1.5 liter of water.</td>
<td>Gangasiuli leaves are boiled in water and reduced to a cup amount and drank for 1 month.</td>
</tr>
<tr>
<td>13. Chereiti (leaves), Gutkhadka (leaves)</td>
<td>Malaria and cold</td>
<td>Severe fever and cold</td>
<td>Some amount of chireiti and gutkhadka leaves are taken</td>
<td>Firstly, the leaves are boiled in the water and then those leaves were removed and the residue is used to drink to cure malaria and cold.</td>
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</tr>
<tr>
<td>14. Jada phala (fruit)</td>
<td>Head ache and stomach ache</td>
<td>Pain in head and stomach</td>
<td>- Fruit of this plants are dried and oil is made out of it. This oil is applied on the head and fore head to cure head ache. It is also used to cure stomach ache by eating it.</td>
<td></td>
</tr>
<tr>
<td>15. Patala garuda (root), Agnijala (root)</td>
<td>Snake bite</td>
<td>Pain in the area of bite</td>
<td>5-6cm long root of this trees is used - Grinded and the juice is taken twice a day to the disease.</td>
<td></td>
</tr>
<tr>
<td>16. Dhuba ghas</td>
<td>dysentry</td>
<td>Loose motion</td>
<td>Nearly 50gm of dhuba ghasa Dhuba ghasa paste is taken and lemon juice is mixed in it.</td>
<td></td>
</tr>
<tr>
<td>17. Bhuin nepti (root)</td>
<td>Bata</td>
<td>Weakening of the body, joint pain</td>
<td>- The root of bhuin nepti is grinded and applied on the affected area.</td>
<td></td>
</tr>
<tr>
<td>17. Bhuin nepti (root)</td>
<td>Bata</td>
<td>Weakening of the body, joint pain</td>
<td>- The root of bhuin nepti is grinded and applied on the affected area.</td>
<td></td>
</tr>
<tr>
<td>18. Chatabhari</td>
<td>Stomach ache and dysentery</td>
<td>Vomit, blood in stool</td>
<td>6cm long root is taken - The root of chatabhari is grinded and drank to cure the disease.</td>
<td></td>
</tr>
<tr>
<td>19. Kantakoli (root)</td>
<td>Stomach ache and dysentery</td>
<td>Lose motion and pain in stomach</td>
<td>6-7cm long root are skinned and used</td>
<td>-roots of kantakoli are skinned and the soft part of it is grinded and juice is extracted. Drinking this juice cure the disease.</td>
</tr>
<tr>
<td>-------------------</td>
<td>---------------------------</td>
<td>-------------------------------</td>
<td>-------------------------------------</td>
<td>------------------------------------------------------------------</td>
</tr>
<tr>
<td>20. Emedia tree (root)</td>
<td>dysentery</td>
<td>Loose motion</td>
<td>_</td>
<td>-Grind the leaves of emedia tree and then filter it with a net and the juice obtained are used to cure dysentery.</td>
</tr>
<tr>
<td>21. Akasia tree (bark)</td>
<td>Stomach ache and dysentery</td>
<td>Loose motion and pain in stomach</td>
<td>_</td>
<td>-Bark of akasia tree is grinded and filtered with net to obtain the juice. This is taken to cure the disease.</td>
</tr>
<tr>
<td>22. Jia ramadanga</td>
<td>Bone fracture</td>
<td>Bone fracture and severe pain</td>
<td>_</td>
<td>-Grind it then boil it and apply on the fractured area and tie it with cloth.</td>
</tr>
<tr>
<td>23. Indrajaal (root)</td>
<td>Evil eye</td>
<td>fever</td>
<td>3cm long root is taken</td>
<td>-Root of this plant is taken and mantra is chanted, then tied on the arm or neck. This works as a charm.</td>
</tr>
<tr>
<td></td>
<td>Description</td>
<td>Symptoms</td>
<td>Treatment</td>
<td>Notes</td>
</tr>
<tr>
<td>---</td>
<td>-------------</td>
<td>----------</td>
<td>-----------</td>
<td>-------</td>
</tr>
<tr>
<td>24.</td>
<td>Puruni (root)</td>
<td>Severe fever/pihira jara (1-7 yrs children)</td>
<td>Body temperature is high</td>
<td>3-4cm long root is taken. Puruni root is taken and touched the body of the child 7 times from head to toe and then tied up in the neck.</td>
</tr>
<tr>
<td>25.</td>
<td>Bajra mulimula (root)</td>
<td>Loose motion</td>
<td>_</td>
<td>_</td>
</tr>
<tr>
<td>26.</td>
<td>Akanabindu (root), aeiri mula</td>
<td>Evil eye fever</td>
<td>4cm long roots are taken.</td>
<td>Its root is used as charm.</td>
</tr>
<tr>
<td>27.</td>
<td>Apamaranga (root)</td>
<td>Fever</td>
<td>Body temperature is high</td>
<td>40gm of apamaranga root is taken. It is grinded and paste is obtained. And eaten as medicine</td>
</tr>
<tr>
<td>28.</td>
<td>Apamaranga (stem)</td>
<td>pidhei</td>
<td>_</td>
<td>_</td>
</tr>
<tr>
<td>29.</td>
<td>Bhurdu and Arkha</td>
<td>Bata</td>
<td>_</td>
<td>_</td>
</tr>
</tbody>
</table>
30. Akanabindhu, Patalagaruda, and agnijala (roots)  

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Treatment</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stomach ache</td>
<td>Pain in the stomach</td>
<td>All 3 roots in same proportion</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-All these roots are mixed in right proportion and then grinded and taken twice a day.</td>
</tr>
</tbody>
</table>

31. Nilakantha (root)  

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Treatment</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cough and cold</td>
<td>Evil eye</td>
<td>4 cm long root is taken</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Root is skinned and the inner part of it is chewed to cure cough and cold.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Its root is used as charm in case of evil eye.</td>
</tr>
</tbody>
</table>

**MODE OF TREATMENT**

It is seen that the distinction between religious faith on certain plants and belief on magical power of certain plants are not always distinctly made in the tribal society. So the total behavior such as plants associated with customs, religious taboo, myths, legends, festivals, etc has been termed as magico-religious belief.

In this Kundhei village, the medicine man and shaman is known as vaidya and the sorcerer is known as Raudia. Shaman can be selected through their knowledge. And it is not a hereditary process. Due to modernity, access to traditional medicine has become less, but is still found prevailing in this village.

**Case studies**

In my survey of this village, I found some case studies from which I analyzed that people of this village believe in the traditional treatment or the magico-religious practices along with the use of herbal medicines.

**Case study 1:**

NAME: Kulamani Juang  
AGE: 42  
SEX: male  
DISEASE: Snake bite

Kulamani Juang of Kundhei village has been bitten by snake in his left hand while he was going to forest to collect firewood. He went to the shaman or the medicine man cum sorcerer, named Suka Juang. He tied a hair on his hand above the site of bite and then chanted the mantra to remove the poison of the snake from his body.
"Om netradhula patanka baara
   kene jaayi sarpa madhukara meli
kaainre kundeli bhiter sarpa
   madhu"

Then given a herbal medicine named Aeirimula to eat. The patient was cured by this practice of removing poison of snake.

Case study 2

NAME: Urshi Juang
AGE: 45
SEX: male
DISEASE: Snake bite

He once went for fishing. And a snake has bitten him. He went to a medicine man, Laxmana Baskey. He brought an eye shaped stone which they refer as "Chamaka pathara". And believe that it has life and it eats vermilion and are kept in vermilion box. And drinks water once in 3 month. He kept the chamaka pathara on the site of snake bite. It soaked all the poison and the person got well and free from snake's poison.

Case study

NAME: Lima Juang
AGE: 4years
SEX: Female
DISEASE: Evil eye

Once she was very ill and was suffering from dysentery and fever. People said that she must be suffering from evil eye or in local term "Drustia". So her parents took her to Suka Juang(raudia) of that particular village. He gave her "bajra mula and khani mula" to drink its juice. And then chanted the mantra. The mantra is-

" Bajra bajra bajra rani
   bajra ghate na thay pani
da sa dwara ku tera kabata
   jahinre lagichi mahakala bajra kabata
   palao bhuta,preta,rankuni,dahani, chirakuni
ei gha ra chadiki anya gharaku
   ja ja ja boli sune agya
   siba parbati gotie agya"

He refers this treatment process as "swami-stri". Which means-

Swami=mantra
Stri=herbal roots
MEDICAL PRACTITIONER:

In this village, still now people used the traditional method to cure their diseases. Traditional method means the herbal medicine which are given by the shaman or medicine man of the village. They are basically known as "Vaidya". There are also shaman cum sorcerer who are locally termed as "Raudia".

In this village there were 3 medicine man/shaman namely-

-Suka Juang was shaman cum sorcerer. He has been practicing it from nearly 30-35 years. He has treated many people of the village. He learned it from his grandfather. Some of the diseases diagnosed cured by him are:

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Name of the disease</th>
<th>Symptoms</th>
<th>Name of the herbs used</th>
<th>Method of diagnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Fever</td>
<td>Body temperature is very high</td>
<td>Patala garuda Akanabindu Agnijala Apamaranga mula Deva aeiri mula Majura chulia mula Dhatiki mula khajuni mula</td>
<td>All the roots of these are taken together and grinded to extract juice. Then it is taken to cure fever</td>
</tr>
<tr>
<td>2</td>
<td>Malaria</td>
<td>Severe fever</td>
<td>Gabhani mula Patuli Abagata Bhuin katu Bela Kulisuta Mango Mathamula Fenfena gunduchi</td>
<td>-Bark of these trees are taken in a utensil with 3 litre of water in it. Then it is boiled until the water reduces to 1 cup. -It is taken 2 times a day to cure malaria</td>
</tr>
</tbody>
</table>
Laxmana Baskey, aged nearly 52 was a medicine man. He belongs to Santal tribe. Peoples of different village refer him for the diagnosis and treatment of diseases. He also diagnoses different diseases through urine test. The procedure of diagnosing the diseases through urine test is- urine of the patient is taken in an earthen plate and few drops of mustard oil are added to it. When a snake like image appears in it, which means the patient is suffering from a severe disease and absence of this implies that patient is free from the disease.

Nata Juang aged nearly 50 was a shaman cum sorcerer.

IMPACT OF MODERN HEALTH CARE PROCESS

NATIONAL RURAL HEALTH MISSION

MHU-Mobile health unit

It is a mobile health van, which conduct health program. And visit 44 villages in a month. That means cover 2 villages per day for health programme. In a month, 22 days are occupied for the health programme. In case of serious epidemic; MHU visit the village immediately beside other programs. They get information about this epidemic from the community health centre (CHC) of Banspal.

Some of the medicine available with the MHU are-

<table>
<thead>
<tr>
<th>SL.NO</th>
<th>DISEASES</th>
<th>MEDICINES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Diarrohea</td>
<td>- Ciprofloxacin tablets I.P</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Ofloxacin and Ornidazole tablets</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Metronidazole tablet IP(adult)</td>
</tr>
<tr>
<td>2</td>
<td>Fever</td>
<td>- Paracetamol tablets IP(adults) - Paracetamol dispersible tablets</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Paracetamol dispersible tablets IP(adults) - Paracetamol dispersible tablets</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Metronizable oral suspension Ip</td>
</tr>
<tr>
<td>3</td>
<td>Dysentery(child)</td>
<td>- Metronizole benzoate oral suspension Ip</td>
</tr>
<tr>
<td>4</td>
<td>Cold</td>
<td>- Cetrizine hydrochloride tablets IP(below 12 years)</td>
</tr>
<tr>
<td>5</td>
<td>Itching</td>
<td>- Fluconazole tablets FLUCAS 150</td>
</tr>
<tr>
<td>6</td>
<td>Malaria</td>
<td>- Chloroquine</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Pramaquine</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Artisenates sulphadoxine</td>
</tr>
</tbody>
</table>
IMPACT ASSESSMENT OF GOVERNMENT SCHEMES PROGRAMME

In this village, government is organizing many health camps for various diseases that malaria, HIV/AIDS, leprosy, for child under 5 year, Polio camp, and for the pregnant lady BCG, DIT, DTP immunization programme through ANM and ASHA workers.

Through NRHM (National Rural Health mission) several programme have been undertaken. These are follow:

<table>
<thead>
<tr>
<th>SL.NO</th>
<th>PROBLEM</th>
<th>PROPOSED ACTIONS</th>
<th>ACTIVITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Maternal Health</td>
<td>-Early registration&lt;br&gt;-safe delivery&lt;br&gt;-Institutional delivery</td>
<td>-Early detection of pregnant women&lt;br&gt;-Mobilization for registration&lt;br&gt;-Monthly checkup&lt;br&gt;-Immunization&lt;br&gt;-Advice &amp; create awareness for delivery at nearest health care</td>
</tr>
<tr>
<td>2</td>
<td>Janani surakhyo yojna</td>
<td>-Distribution of incentive to ASHA &amp;JSY beneficiaries through cheque&lt;br&gt;-Random survey of beneficiaries</td>
<td>-Opening of ASHA A/C&lt;br&gt;-Documentation &amp; data base the A/CS</td>
</tr>
<tr>
<td>3</td>
<td>Immunization</td>
<td>-Development of microphones&lt;br&gt;-Alternative vaccine delivery system</td>
<td>-Selection of volunteers for alternative vaccine delivery systems</td>
</tr>
</tbody>
</table>
### Disease control programme

<table>
<thead>
<tr>
<th>SL.NO</th>
<th>PROBLEM</th>
<th>PROPOSED ACTIONS</th>
<th>ACTIVITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Malaria eradication</td>
<td>- IRS spray&lt;br&gt;- MO masari to all&lt;br&gt;- Malaria medicines</td>
<td>- Micro plan&lt;br&gt;- Fixation of date of IRS spray&lt;br&gt;- Slide collection for every fever cases by trained personnel&lt;br&gt;- Incentives to ASHA for slide collection</td>
</tr>
<tr>
<td>2</td>
<td>Blindness</td>
<td>- Identification for cataract operation&lt;br&gt;- Arrangement for cataract operation</td>
<td>- Survey for detection of blindness</td>
</tr>
<tr>
<td>3</td>
<td>TB control</td>
<td>- Sputum testing&lt;br&gt;- DOTS&lt;br&gt;- Involvement of ASHA for providing medicines</td>
<td>- Refer all patient who are suffering from 3 weeks of cough, for sputum test&lt;br&gt;- All positive cases are provided DOTS</td>
</tr>
<tr>
<td>4</td>
<td>Diarrohea</td>
<td>- Availability of ORS&lt;br&gt;- Readiness of centre for any out break&lt;br&gt;- MHU (mobile health unit) for emergency</td>
<td>- ASHA and Anganwadi centre provides medicines</td>
</tr>
</tbody>
</table>
GOVERNMENT PLAN AND PROGRAMMES:

NRHM (National Rural Health Mission)
Members of NRHM are -
Pharmacist: Nandini Patra
Health worker: Sweta Manaprava
Attendant: Sankar Patra
NRHM attends 34 villages and 11 schools in 22 days i.e. 2 program per day.
MHU (Mobile Health Unit):
In 1 month there are 44 camps. In 22 days they attend 2 camps each. They attend both residential schools and villages. Head of MHU is Dr. Sraban Kumar Das.

GRAM KALYAN SAMITI (GKS):
Government provides Rs 10000 per year in the account of ANM centre. This amount is used in serious cases like accident. ANM provides Rs 250 per case for transportation charge. There are 8 members in GKS group.

UNTIED FUND:
It is a fund of Rs 10000, given by government for bringing new medical instruments of ANM sub centre and minor repairing of sub centre. Also gives Rs 250 for emergency case i.e. during pregnancy for transportation. It contains 7 members.

MAMTA SCHEME:
Check up is done 3 times before pregnancy. After getting pregnant, women get Rs 5000 in installment. Like this

<table>
<thead>
<tr>
<th>NUMBER OF INSTALMENTS</th>
<th>AMOUNT</th>
<th>DURATION OF PREGNANCY</th>
<th>AMOUNT</th>
<th>DURATION OF PREGNANCY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st installment</td>
<td>Rs 1500</td>
<td>3rd month</td>
<td>Rs 1500</td>
<td>6th month</td>
</tr>
<tr>
<td>2nd installment</td>
<td>Rs 1500</td>
<td>6th month</td>
<td>VCG Tika</td>
<td></td>
</tr>
<tr>
<td>3rd installment</td>
<td>Rs 1000</td>
<td>9th month</td>
<td>Measles Tika/Polio</td>
<td></td>
</tr>
<tr>
<td>4th installment</td>
<td>Rs 1000</td>
<td>12th month i.e. after delivery</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

HEALTH AND DEVELOPMENT PROGRAMME:
" VHND (Village Health Nutrition Day)
Every month, on 3rd Tuesday awareness camps are organized by CDMO
" Immunization programme is organized every month on 1st Wednesday.
Vaccination programmes are organized for the school children.
Awareness about sterilization programme.
Awareness about TB programme.
Awareness about leprosy.

SOME COMMON DISEASES AND THEIR SYMPTOMS AND DIAGNOSIS

<table>
<thead>
<tr>
<th>SL.NO</th>
<th>DISEASES</th>
<th>SYMPTOMS</th>
<th>DIAGNOSIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>TB (tuberculosis)</td>
<td>- blood vomit</td>
<td>- Sputum test</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- slight fever</td>
<td>- Paracetamol tablets for adults</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- weight loss</td>
<td>- Anti biotic</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- continuous cough</td>
<td>- Refer to hospital for other test</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- no hunger</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Diarrohea</td>
<td>- vomit</td>
<td>- Medicine provided by ANM centre, ASHA, NRHM</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- loose motion</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Malaria</td>
<td>- fever</td>
<td>- Medicines from ANM centre i.e., Artisunate, SP.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- weakness</td>
<td>- Duration of medicine:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- headache</td>
<td>1st day - Artisunate, SP(1 pill each)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2nd day - Pramaquine(6 pill), Artisunate (1 pill)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3rd day - Artisunate (1 pill)</td>
</tr>
</tbody>
</table>

CONCLUSION

It has been widely discussed by development oriented research for tribal health. The social pattern of the tribal population, their community like traditional approach to treatment of disease, ignorance of modern means of treatment and their food habits are among the many reasons of the cause of spread of disease among them. Beside their superstitious believes that god and spirit inflict suffering with disease and by satisfying them the disease can be cured among the major obstacles in convincing the tribal people about the usefulness of modern methods of treatment. The adverse effect caused thereof can be eradicated by implementation of comprehensive health care program which can also create situation for prevention of the disease, restoration of health conditions rehabilitation of tribal's.

Although some Indigenous knowledge is lost naturally as practices get modified or are left unused for long time periods, the current rate of loss can be attributed to modernization and
cultural homogenization, the current educational systems that believe macro-level problems can only be addressed through the global knowledge pool, and slow growth of institution supporting grassroots innovations. With rapid population growth, in-migration, and government relocation schemes (in case of large development projects), standards of living is often deteriorated. As poverty augments, short-term economical gains are chosen over environmental friendly local practices. The introduction of monocropping patterns in agriculture and forestry results in a loss in biodiversity, thus leading to a decline in Indigenous knowledge. Deforestation leads to the disappearance of several precious yet unknown medicinal plants, and as a result the knowledge associated with those plants also declines.

Most of the People of this village are suffering from TB(tuberculosis). The common diseases of this village is cold, cough, fever, body pain, headache, etc. For these disease, they prefer to consult the traditional medicine man who provides herbal medicines which is cold, cough, fever, body pain, headache, etc. For these diseases, they prefer to consult the traditional medicine man that provides herbal medicines which can be easily available in the forest. Major diseases are malaria, Diarrhea, TB, etc. For all these diseases, they do not consult the traditional medicine man and consult the PHU (primary health unit) for the treatment of the disease.

From this study, following conclusion may be drawn that the juangs health culture is in the transitional stage. As the other tribal's, the juang use modern method of treatment along with this they also use the ethno medicine. The ethno medicine of tribal's or juangs is in a process of change due to interaction with other clusters. The introduction of modern medicine into the tribal universe by both government and private agencies affected ethno medicine and brought change into this system.

Thus the introduction of modern medicine did not result in the complete destruction of ethno medicine. Depending upon the nature of disease etiology and mode of treatment the tribal pragmatically avail the service of both systems.

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- Bhat, V.N, 1990, "Public health in India"
- K.K.Basa, "Indigenous Knowledge System"
Implementation of Micro Planning Projects
Towards the Development of Juangs in Banspal
Block of Keonjhar District, Odisha

PARAMANANDA NAIK*

Abstract: This paper outlines an attempt to the impact of Micro Tribal development projects in Odisha. The objective of this research is to identify the development scenario of different field of Odisha. Development scenario is identified through livelihood, education, health and hamlet infrastructure of Odisha tribes. Tribal development includes development of tribal indigenous groups is identified stages of development in different regions of Odisha, through the State, Central Government and NGOs. The empirical study carried out in Kodipasa Gram Panchayat (G.P) of Banspal block located in Keonjhar District. Banspal block was chosen to be field site due to the fact that this block is having relatively large concentrations of "Juangs". The present study is to systematically analysis the effects of Micro projects towards the modern era development of "Juang" people's living pattern in present arena.

INTRODUCTION: The Micro level projects (MLP) are detailed plan prepared at the appropriate level with the involvement of primary stakeholders. The unit of planning can be decided in the context of our preparation. It can be village level to the lowest unit of planning i.e. the household level. As Micro level projects (MLP) requires active involvement of all local communities.

The word "Development" can be defined as a process designed to indicate to induce desirable changes within the project area. It is assumed that the activities planned in a project would contribute to achieving certain immediate objectives set out in the project document. These immediate objectives are further required to contribute to larger development goals and development objectives. Development is a long process of social charge. Social development means to qualitative changes in livelihood, education, economic, political, health and infrastructure. Development is also used for the process of allowing and encouraging people to meet their own aspirations. In Odisha State the Scheduled Tribe Development Department is the major agency involved in the implementation of development programmes benefiting Scheduled Tribes.

Tribe is a social-cultural group which aggregate of common territory, ancestor, dialect, custom, ethos and with the indigenous belief practice. Anthropologist used the term ‘tribe’ to refer to two distinct, yet related realities, field of facts - one, "type of society" and the other, a "stage of evolution"(Godelier,1997:70). It refers to a group of people with unique socio-cultural practice. Tribes are indigenous population of Indian subcontinent. Tribal society is often referred as 'primitive society' or 'pre-state society' of 'folk society' or even as 'simple society'. From time

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immemorial tribal communities constitute an important segment of Indian society. They are commonly designated as Adivasi (original settlers), Girijan (hill dwellers), Vanyajati (forest dwellers), Adimjati (primitive castes), Janajati (folk communities), and Anusuchit Janajati (Scheduled Tribes) and by their respective ethnic and cultural appellations too (Behura 1999). Similarly, various authors have described the tribes by different nomenclatures. Ghurye named them "Backward Hindus"; a few named them aboriginals, primitive tribe, Vanabasi, Pahari, etc. (Mehta 1996).

According to the Dhebar Commission (1960-1961) stated that within Scheduled tribes there existed an inequality in the rate of development. During the fourth five year plan a sub-category was created within Scheduled tribes to identify groups that considered as a lower level of development. This sub-category was named "primitive tribal group". The features of such a group include a pre-agricultural system existence that is practice of hunting and gathering zero or negative population growth extremely low level of literacy in comparison with other tribal groups. Groups that satisfied any one of the criterion were considered as PTG. At the conclusion of the fifth five year plan, 52 communities were identified as being a "primitive tribal group", these communities were identified on the basis of recommendations made by the respective state government. At the conclusion of sixth five year plan 20 groups we added and 2 more in the seventh five year plan, making a total 75 groups were identified as PTG. In Odisha 62 indigenous tribal groups are identified in different geographical regions. In Odisha 13 out of these 75 tribes are known as "Particularly Vulnerable Tribal Groups", (PTGs). In 2006 the Government of India proposed to rename "Primitive Tribal Groups" as "Particularly Vulnerable Tribal Groups". PTGs has since been renamed Particularly Vulnerable Tribal Groups (PVTGs) by the Government of India.

Bonda is first tribe which was designated as PTG in Odisha during 5th Five Year Plan and in subsequent years other 12 tribes like Juang, Lanjia Saora, Kutia Kondh, Dongaria Kondh, Saora, Paudi Bhuyan, Birhor, Didayi, Hill Kharia, Mankirdia, Lodha and Chuktia Bhunjia were included in the list of 'Primitive Tribal Groups'.

According to 2011 Census Tribal Population constitutes 22.10 percentage of the total population of the Odisha and 9.70 percentage of the total population of the India. They are 698 Scheduled Tribes spread all over the country. They are notified as Scheduled Tribes (STs) by the President of India under Article 342 of the Constitution. The first notification was issued in 1950. Characteristics like the tribes’ primitive traits, distinctive culture, shyness with the public at large, geographical isolation and social and economic backwardness etc are considered before a tribe is considered Scheduled Tribe. India has one of the second largest concentrations of tribal population in the world. They are distributed different geographical region in different State. Odisha is the high concentrate State of Tribes in India.
List of PVTGs in State wise of India:

<table>
<thead>
<tr>
<th>S.L No</th>
<th>Name of the State</th>
<th>No. Of PVTGs</th>
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<td>16</td>
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(Source: Annual report 2001-2002, Govt. of India, Ministry of Tribal Affairs)

OBJECTIVES:
- To understand history of tribal development in India and study area.
- To find out implementation of tribal development Programmes by government agencies, voluntary organization and Institute in study area.
- To find out actual benefits access of tribal community in study area.
- To find out the impact of the tribal development agencies of the conditions of tribal people in study area.

RESEARCH METHODOLOGY:

Anthropology as sub-discipline of social science studies holistic aspects of the human society. Anthropology is well known for its first hand data collection as it a science of field work,
the researcher involve intensively in the field do collect primary data from the people with whom he/she working with. Anthropology is also well known for its holistic approach, where a large number of tools and techniques associated in it. To obtain the empirical data for the objectives of this purposed study key anthropological tools and techniques. Anthropology is well known for its first hand data collection as it a science of fieldwork, the researcher involve intensively in the field to collect primary data from the peoples. The primary data will be collected through participant observation, scheduled, interview, case study, key informant and focus group discussion as a technique of data collection.

**TRIBE AND MICRO DEVELOPMENT PROJECTS:**

**Pre-Independence’s Tribe:**

In the historical India tribes living in the forests and hilly areas considered as a part of the Indian populations. After the entry of British government tribes was approached differently in different time (i.e. policy of isolation, assimilation and policy of integration). Tribes are the backward classes calculated from the bottom with low literacy with intense and poverty and remained outside of the mainstream. So there is a need for development and plan to lift them out of poverty trap. The first policy were adopted by the British during their stay in India which led to much exploitation by different group of people like; non-tribal money lender, jamindar, contractor, money lender etc. this policy not only exploited the tribe but also cut off them into the main stream. The area-wise isolation of the tribes by the British began with the enactment of the government of India act, 1870 and a grew tracts were specified as "schedule tracts". In 1874, the scheduled districts act gave effect to the government of India act, 1870. A number of acts were enforced from time to time till 1919. Some territories were declared "backward tract" under the government of India act, 1870 again in 1936 two type of area created by the British emperor named as 'excluded area' and 'partially excluded areas' under section 91 and 92 of the government act 1935. In 1939 Elwin advocated for the "establishment of a sort of 'national park for the tribal and advised that their contact with the outside world should be reduce to the minimum.

**Post Independence’s Tribe:**

With independence the nation tries to change the physical structure of the country, where special focus made in case of tribe and for its welfare. Taking advantandes of the vast literature on tribes by early British administrators like Dalton and Risley by census officer like Grigson and Hutton by Ethnographer and Indian anthropologist like S.C.Roy, B.S.Guha etc. the government of India equipped itself which deep insight into tribal problems. After independence, various efforts also were made to improve the socio-economic conditions of the tribal's and to sustain the constitutional safeguards given to them. A number of commissions, Committees, working groups or study team formed from time to time to evaluate the condition of the SC and ST. The Constitution of India has also made definite provisions for the welfare and uplift of the - tribal people throughout the country.

**The Tribal "Panchasheela":**

Pandit Jawaharlal Nehru I 1957 in his foreword to Verrier Elwins " The philosophy for NEFA", has laid down in five principle , that is "PANCHASHEELA" the policy of integration, The tribal "Panchasheela" as has been enunciated by him are as follows:
1. Nothing should be imposed on the tribal people. They must be allowed to develop along the lines of their own genius. We should try to encourage in every ways their own traditional arts and culture.

2. Tribal right in land and forest should be respected.

3. Attempt must be made to train and build up a team of their own people to work of administration and development. Some technical person from outside will be great help for them in the beginning.

4. Our administrating the tribal area or over whelming them with too many schemes must be avoided. We must not work in rivalry to their own social and cultural institution.

5. The result of work must be adjudged by the quality of the human character that is evolved and not by statistical or the amounts of money spend.

After independence, a secular constitution was adopted to govern the country. Several constitutional provisions were made for the development of tribe. Many schemes of development were formulated and implemented. Several schemes of tribal development are still active through several five year plans in India.

Attempts have been made to make the scheduled tribes to develop socially, educationally, economically, politically and culturally. For the development of tribes, various models, approaches and theories of development have been propounded in different five-year plan periods.

Some of them include Community Development Program, Multipurpose Tribal Blocks, Tribal Development Block, Development Agencies, Primitive Tribal Groups, Integrated Tribal Development Projects, Modified Area Development Approach, Tribal Sub-Plan, Dispersed Tribal Development Program, and Centrally Sponsored Schemes etc.

In the Five Year Plans, the programs for the welfare of the schedule tribes aim:

1. Raising the productivity levels in agriculture, animal husbandry, forestry, cottage and small-scale industries for improve the economic conditions.

2. Education and training programs.

3. Special development programs for women and children.

The Constitutional commitments prompted the Policy-Makers and the Planners to accord high priority to the welfare and development of Scheduled Tribes right from the beginning of the country's developmental planning, launched in 1951.

The First Five Year Plan (1951-56) clearly laid down the principle that 'the general development programmes should be so designed to cater adequately to the Backward Classes and special provisions should be used for securing additional and more intensified development.

The Second Five Year Plan (1956-61) envisaged that the benefits of economic development should accrue more and more to the relatively less privileged classes of society in order to reduce inequalities. As for the Scheduled Tribes, 'Welfare Programs have to be based on respect and understanding of their culture and traditions and an appreciation of the social, psychological and economic problems with which they are faced'. This was in tune with "PANCHSHEEL"-the Five Principles of Tribal Development -enunciated by the first Prime Minister, Pt. Jawaharlal
Nehru. An important landmark during the Second Plan was the creation of 43 Special Multi-purpose Tribal Blocks (SMPTBs) later called Tribal Development Blocks (TDBs). Each was planned for about 25,000 people as against 65,000 in a normal Block. An amount of Rs. 15 lakhs per SMPTB was contributed by the Central Government. The Committee on SMPTBs set up under the Chairmanship of Verrier Elwin (1959) studied the working of these Blocks and found that they were providing very useful services.

The Third Five Year Plan (1961-66) advocated the principle to establish greater equality of opportunity and to bring about reduction in disparities in income and wealth and a more even distribution of economic power. While appraising the programmes of the Third Plan the Shilu Ao Study Team remarked that ‘if progress is to be judged by what remains to be done to bring the tribes on par with the rest of the populations, the leeway is still considerable.

The Fourth Five Year Plan (1969-74) proclaimed that the ‘basic goal was to realize rapid increase in the standard of living of the people through measures which also promote equality and social justice’. An important step was setting up of six pilot projects in Andhra Pradesh, Bihar, Madhya Pradesh and Orissa in 1971-72 as Central Sector Scheme with the primary objective of combating political unrest and Left Wing extremism. A separate Tribal Development Agency was established for each project.

The Fifth Five Year Plan (1974-78) marked a shift in the approach as reflected in the launching of Tribal Sub-Plan (TSP) for the direct benefit of the development of Tribal. The TSP stipulated that funds of the State and Centre should be quantified on the population proportion basis, with budgetary mechanisms to ensure accountability, non-divert ability and utilization for the welfare and development of Scheduled Tribes. With this thrust the concept of Tribal Sub-Plan came into action during the Fifth Plan. There has been a substantial increase in the flow of funds for the development of Scheduled Tribes under this arrangement, resulting in the expansion of infrastructure facilities and enlargement of coverage of the target groups in the beneficiary oriented programmes.

The Sixth Five Year Plan (1980-85) was sought to ensure a higher degree of devolution of funds so that at least 50 per cent of tribal families were provided assistance to cross the poverty line. Emphasis was on family-oriented economic activities rather than infrastructure development schemes. A "Modified Area Development Approach" (MADA) was devised for pockets of tribal concentration with population of 10,000; at least half of them being Scheduled Tribes, and 245 MADA pockets were delineated. Also, 20 more tribal communities were identified as "primitive", raising the total to 72.

In the Seventh Five Year Plan (1985-90), there was substantial increase in the flow of funds for the development of Scheduled Tribes, resulting in the expansion of infrastructural facilities and enlargement of coverage. Emphasis was laid on the educational development of Scheduled Tribes. For the economic development of SCs and Scheduled Tribes, two national level institutions were set up viz.,(i) Tribal Cooperative Marketing Development Federation (TRIFED) in 1987 as an apex body for State Tribal Development Cooperative Corporations; and (ii) National Scheduled Castes and Scheduled Tribes Finance and Development Corporation (NSFDC) in 1989. The former was envisaged to provide remunerative price for the Forest and Agriculture Produce of tribal while the latter was intended to provide credit support for employment generation.
In the Eighth Five Year Plan (1992-97), efforts were intensified to bridge the gap between the levels of development of the Scheduled Tribes and those of other sections of the society so that by the turn of the century, these disadvantaged sections of the population could be brought on par with the rest of the society. The Plan not only emphasized elimination of exploitation but also paid attention to the special problems of suppression of rights, land alienation, non-payment of minimum wages and restrictions on right to collect minor forest produce etc. Attention, on priority basis, continued to be paid for the socio-economic upliftment of Scheduled Tribes. A review of tribal development in early Nineties revealed that ‘Though the TSP Strategy has yielded results, yet were not in a position to commensurate with the efforts put in and investments made’. However, the allocation for development of Scheduled Tribes was increased during this plan period also.

The main objective of the Ninth Five Year Plan was to intensify the efforts to bridge the between Scheduled Tribes and the rest of the population. Literacy states is one of the key indicators of socio-economic development and the relative employment opportunities largely depend on the level of education, for this purpose strengthened of infrastructure facilities like construction of school building, additional classrooms, laboratory buildings, provision of lab equipment, computers, furniture and play material, up gradation of school's at all levels, opening of residential schools, construction of vocational training centers, provisions of basic amenities like toilets, drinking water etc. In the field of economic Development at, financial assistance was offered to these communities from TAHDCO for under taking economic activities viz., distribution of plough bulls, Mitch animals and starting of petty traders.

Regarding housing, distribution of free house site Pattas, construction of houses for poor tribes and provision of infrastructure facilities to ST habitations were the prime priority areas. Provisions of burial ground and pathways to burial ground, drinking water facilities electricity facilities, etc., were also implemented. Mobile dispensaries and medical camps were organized to attend to the general and specific health problems of the tribal comities, since tribal habitations are located in isolated will and forest areas. Direct programmes for the welfare and development of primitive tribes and dispersed tribes were launched through an iterated action plan incorporating supply of safe drinking water food and nutrition security health coverage, educational facilities, housing etc.

In the Tenth Five Year Plan (2002-07)6Guided by the conclusions that were recorded in the Mid-Term Appraisal of the Ninth Five Year Plan (1997-2002) stating that ‘A small bunch of bureaucratic programmes had done little to avert the precipitous pauperization, exploitation and disintegration of tribal communities and therefore, most of the persistent problems like poverty, indebtedness, land alienation, displacement, deterioration of forest villages and the tribes living therein, shifting cultivation etc., continue to persist even till today as the ‘Unresolved Issues of Tribal Development’, the Tenth Five Year Plan lays down its first priority in finding solutions to these very Unresolved Issues. Solutions to this effect can best be found only when the deprivation and exploitation of tribes is eradicated. The Tenth Plan will, therefore, adopt eradication of deprivation/exploitation of tribes as the centre-point in its approach, while pursuing simultaneously the Ninth Plan commitment of empowering the tribes.

The Eleventh Plan7has experienced a paradigm shift with respect to the overall empowerment of the tribal people, keeping the issues related to governance at the centre. The operational imperatives of the Fifth Schedule, Tribal Sub Plan 1976, PESA 1996, RFRA 2006;
the desirability of a tribal-centric, tribal-participative and tribal-managed development process; and the need for a conscious departure from dependence on a largely under-effective official delivery system will be kept in view during this shift.

The perpetuation of socio-economic backwardness among the Scheduled Tribes, in spite of the efforts made so far, presents a formidable challenge demanding effective and result-oriented steps in every developmental sector in the Twelfth Plan. The approach of the Twelfth Five Year Plan must be to achieve overall improvement in the socio-economic conditions of the Scheduled Tribes with the following objectives:

- Relaxing the normative prescriptions about taking up a programme or a scheme in the Tribal majority areas.
- Administrative strengthening of the implementing agency so as to enable taking up implementation of these programmes in the scheduled/tribal areas. This may also require a clear cut personnel policy with regard to posting of officials in those positions, fixity of their tenure and incentivizing these officials for having rendered their services in those areas for a prescribed period.
- Preferring engaging people from the tribal community itself in the areas predominantly inhabited by tribal for government efforts at spreading education, health and extension services, nutrition, public distribution, and so on. If necessary, the basic minimum qualification for such engagements could be relaxed for a specified period (say during the Twelfth Five Year Plan period). For example, engaging a +2 student from the nearby locality for teaching tribal students in primary classes.
- Sensitizing officials with detailed information for serving in the tribal areas so that they become empathetic to the sensitivities of tribal lives and their traditions.
- Reorganizing basic services such as nutritional interventions, education, health services, public distribution system, employment generating activities under MGNREGA with posting adequate staff with surety of tenure and assurance of funds to implement these programmes.
- Emphasis on education, health and livelihood support. For education, schools must be opened wherever necessary and for matriculation and above, facilities at designated places should be created. For health, necessary extension work and facilities for preventive edictal-care should be ensured. For livelihood support, apart from the land and forest based activities under MGNREGA imparting of skills and creating employment opportunities near their habitations should be encouraged. For this skills relevant to the tribal should be identified on the basis of a socioeconomic survey and then necessary skills training should be provided to them.
- No post in the implementing agencies in scheduled areas/areas with tribal majority should be left vacant; every post must be filled up and wherever necessary, additional post Scheduled Tribes should be created for effective implementation.
- Implementation of the schemes must be monitored closely at prescribed periodicity. Implementation should not be made to suffer on account of problems associated with transfer of funds.
- Better coverage of roadways for tribal areas (population of 500-1,000), with population up to 100 being covered in LWE to be connected.

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MAN IN SOCIETY 146
Better connectivity through railways in LWE and tribal areas.

Land acquisition of tribal land to be addressed as required under PESA and displaced tribal population to be resettled and rehabilitated.

Tribal communities to have full right to minor forest produce.

Converge MGNREGA with artisanal work to provide livelihood to tribal, many of whom are engaged in artisanal work.

Land and Tenancy Reform: Deal with outstanding matters of tribal ownership.

Increase coverage of the most vulnerable within the Scheduled Tribes in the health sector. Increase cadre of health workers to better serve tribal.

Plan within a plan of the Twelfth Plan: Suitable programmes for Central Indian Tribal Belt, border and backward areas and those who suffered discrimination like DNTs.

Better and speedy implementation of PESA and FRA Institutional Mechanism of Conflict Resolutions.

Special Central Assistance is being received from the Ministry of Tribal Affairs for implementation of programmes under Integrated Tribal development Agency, Modified Area Development Approach, Micro Projects, Clusters and Dispersed Tribal Development Project for development of the Scheduled Tribe.

**RESEARCH STUDY AREA:**

The present study was conducted in "Kundhei" village of Kodipasa Gram Panchayat of Banspal block in Keonjhar district. The village is located in the Gonasika hill, which is the border area of Banspal block and almost 25 kilometres away from the district headquarter and 250 km from the State Capital Bhubaneswar. The district of Keonjhar, lying between 21°1'N and 22°10'N latitude and 85°11' E to 86°22' E longitude presents a panorama of millennia, both from the geographical and anthropological point of view. Spread over an area of 8,240 Sq. km. The district is as varied as the whole of Orissa with water-falls roaring gorges, mountains and minerals. The manifold expressions of nature in this district are unique in Orissa.

Keonjhar has the distinction of containing one of the oldest rocks of the world, approximately 3800 million years old covering an area of 100 Sq. Km. It has also the oldest stone inscription of Orissa Paleo-geologically belonging to the Gupta period. Anthropologically, its two tribes, namely the Juangs and the Bhuyans carry a distinct and primitive past. The Juang claims them to be the most ancient tribe of the world. In spite of their modern ways of living, many aboriginal practices are still prevalent among them. The district of Keonjhar is highly rich in mineral resources and has vast deposits of Iron, Manganese and Chrome Ores. About 30 percent of the total areas are covered with tracts of dense forests. But the district, apart from its immense mineral and forest wealth, still remaining economically backward. As a sequel to the integration of the feudatory states with Orissa on 1st January, 1948, the erstwhile princely state of Keonjhar emerged as one of its districts with its head-quarters at Keonjhar garh and since then it has been continuing as such.
Juang, a tribal (Adivasi) group who sharing a similar ethnic identity with Minda who are found mainly in the Gonasaika hill ranges in Keonjhar district of Odisha, India. Some Juangs, however migrated to neighboring plains of Dhenkanal district of Odisha during the Bhuiyan Revolt in late 19th century. Majority of the Juang habitat observed hilly side of Keonjhar district. The Juangs of Keonjhar district are known as "Thaniya" which means original inhabitants and who are migrated due to different causes and settled in Dhenkanal districts are called, "Bhagudia". In considering a report of Juang Development Agency (JDA), report 2008 about 10000 of Juang population estimated in the area. The Juang language belongs to the Munda family of the Austroasiatic languages. The Juang claimed to have no traditions connecting them with any other race, and they repudiated all connection with the Ho and the Santal, declaring them the true aborigines. Their tradition claims that the place where the tribe originated from the earth is the Gonasika Hills, near Keonjhar, at the source of the Baitarani River. They were initially hunter-gatherers and cultivated a few crops. They did not get a Patta till today for the land, but they assuring their livelihood by killing or on snakes and insects. They were forced out of their traditional ways after the British declared their forests as reserves.

The Juang traditional huts measured about 6 ft. by 8 ft., with very low doorways. The interior was divided into two compartments. In the first of these the father and all the females of a family lived together; the second was used as a store-room. The boys had a separate hut at the entrance to the village, the Majang or dormitory which served as a guest-house and general assembly place where the musical instruments of the village were kept. Their traditional folk dance included vigorous dances mimicking birds and other animals. Formerly the Juang used to be also known as Patuas, literally "leaf-wearers". Traditionally the women wore girdles of leaves, while the men wore a small loincloth. The Juangs declare that the river Goddess, emerging for the first time from the Gonasika rock, surprised a party of naked Juangs dancing, and ordered them to wear leaves, with the threat that they should die if they ever gave up the custom. The Juangs' weapons were the bow and arrow and a sling made entirely of cord. Their traditional religion included a belief in forest spirits. They offered sacrifices of fowls to the sun when in trouble and to the earth for a bountiful harvest. Polygamy was rare. They burned their dead and disposed of the ashes into any running stream. The most sacred oaths a Juang could take are those on an ant-hill or a tiger-skin. Juang peoples mainly occupation is shifting cultivation, hunting, food gathering and major festival is puspunei, amba-nua, pih paja, dhan nua khai etc.

**JUANG DEVELOPMENT AGENCY (JDA) & IMPACT OF RESEARCH AREA:**

**Juang Development Agency (JDA):**

In Gonasaika among the Juang, have been Government agencies principally the Juang development agency (JDA) setup in 1972 through annual action plan but in functioning in 07.10.1978. The Juang development agency (JDA) is one of the Micro projects which have been functioning since 07/10/1978 for the integrated development of the Juang communities of Gonasaika hill range of Keonjhar district. The Juang development agency (JDA) Geographical area coverage 641.44 sq k.m, no of G.P coverage is 6, no of villages coverage 35 and one block only.

**Micro Development Approach For Tribal's Development:**

**Pocket Approach:**

A small isolated group of people lived in interior area. These are identified of tribal's concentration ST population within a total population is less than 5000.
Cluster Approach

These are identified pockets of tribal concentration contacting 50% or more ST population within a total population of about 5000 or more. As in the case of MADA pockets, there are no separate administrative structures for clusters. So far 82 clusters have been identified in various T.S.P States in India. In Odisha 14 cluster are identified in different geographical region.

MADA (Modified Area Development Approach):

These are identified pockets of concentration of ST population containing 50% or more ST population within a total population of minimum of 10000. The total number of MADA identified so far in the various TSP states in 259 in India and 46 MADA Identified in Odisha.

ITDA (Integrated Tribal Development Agency)

The ITDA are generally contiguous areas of the size of a Tehasil or Block or more in which the ST population is 50% or more of the total population. So far 194 ITDP/ITDA have been identified in India and 21 are identified in Odisha.

TRIFED (Tribal Cooperative Marketing Development Federation)

The scheme provide remunerative price for the forest and agriculture produce of tribal while the latter was intended to provide credit support for employment generation.

NSFDC (National Scheduled Castes and Scheduled Tribes Finance and Development)

The scheme provides financing and mobilizing funds for the economic empowerment of persons living below Double of the Poverty Line (DPL). It provides financial assistance for income generating schemes for the target group through State channelizing Agencies (SCAs) which are nominated by respective State/UT Government.

List of Micro Development Agency in Odisha

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<td>2. Chukitia Bhunija</td>
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<td>3. Didayi</td>
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<td>Komna &amp; Khairput</td>
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<td>4. Dongria Kondh</td>
<td>4) DKDA, Parsali 5) DKDA, Chatikona</td>
<td>Raygada</td>
<td>K.singh pur &amp; Bisamkatak &amp; Muniguda</td>
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Micro development activities by JDA:

Agriculture

Agriculture is the backbone of tribal economy and for the Juang tribe too, they settled as well as shifting cultivators. Several agricultural schemes, such as supply of improved seeds, fertilizers, soil conservation and horticulture were implemented to increase agricultural production.

As agriculture is the principal occupation of these villages started from the month of June-July by ploughing field in the early rains and harvesting completed in the month of December and January. All people are doing in farming like, paddy, wheat, black gram, potato, maize, tomato, cabbage, brinjal, onion etc.

According to the JDA Welfare Extension Officer (WEO) followings are the agricultural schemes and Programmes running in the study area:

- 25 kg potato seeds per person
All the household peoples are benefited through this programme. But all peoples are not utilise this agricultural scheme because due lack of agricultural knowledge and climate.

**Horticulture:**

National Horticulture Mission (NHM) programme was launched in the Year 2005 with the aim of promoting holistic growth of the horticulture sector through area based regionally differentiated strategies. The objective of the scheme included: enhancement of horticulture production, improving nutritional security and income support to farm households, convergence and synergy among multiple ongoing and planned programs for horticulture specially unemployed youth. The scheme is administrated by the Department of Agriculture and Cooperation.

Juangs are mainly settled in the hilly ranges of different geographical area and they are basically depended on forest for his livelihood. After the ban of shifting cultivation the Juang Development Agency (JDA) has started Horticulture development projects in this area in the year 2008. Juang Development Agency (JDA) provides assistance for Juang hamlet wise for the horticulture plantation development activity of Mango, Jackfruit and Guava.

**Live Stock**

In an agro-forest economy like that of tribes, cattle play a very important role. They not only provide them food like milk etc. The JDA has taken up several animal husbandry developments and livestock Programmes. These Programmes are includes: Starting from of veterinary institutions to treat the disease of cattle. Supply of goats and sheep unit's poultry units to tribal's on subsidy basis.

**Podu Chhasa (Shifting Cultivation)**

In the village year ago people are decided and cultivated the podu cultivation together by taking collective decisions. They were together decided the area for the cultivation. But now days everything been changed but not the pattern of cultivation, if there is no group of people only some people or kin relatives are doing this. It has been practiced from 1984 under the scheme Economic Rehabilitation of podu cultivation (ERPC).

Process of Podu Chhasa - once they select the site for podu cultivation the extend of area which usually on the hill slopes are cleared of grass and bushes during the month of April to May by setting them on fire. Immediately after rains next step they proceed toward it through the ancient equipments and modern equipments and started to sown seeds in the month of June. But now due to the modernity people using many iron equipments according to him which are very easy to digging and other activities.
Housing

Indira Awas Yojna (IAY) programme is operation since 1985-86 with the basic aim to provided assistance for the construction/ up gradation of dwelling units for below poverty line (BPL) rural households of SC,ST & freed bonded laborer categories. Since 1993-94 the scope of the scheme was extended to non-SC/ST category of the rural BPL subject to the condition that the benefits to the non-SC/ST poor would not be more than 40% of the total IAY allocation. The scheme is administered by the Ministry of Rural Development.

In this village usually house building was kin based only the close relatives use to invite and participate to build a house for their won. Only the time of collecting wood from the forest they invited some peoples from the village who were after finishing of the house construction. Now also the time of collecting of wood from forest participation of village member seen in the village. In Kundhei I found the houses which follow the town type of house construction. Housing scheme started in these villages in the year 2004-05 under the scheme of IAY. Under this scheme 12 households are benefitted through JDA. Under this scheme JDA provides 45,000 for construction purpose.

Minor Forest Production

Minor Forest Production among the tribal is very essential. The Juang of Kundhei is the example of it. The life cycle rituals, religion, worship all are incorporate with the forest. Villagers believe that forest is the source of attributes and the love of their life without this living life is totally difficult for them. According to them forest is everything from them and it has been providing shelter, food and wood to them. Now also when we are demanding the development of the tribe we cannot separate them into the forest. Some peoples of Kundhei have earning moneys by selling forest products in market. It’s necessary in case of landless, small farmer as they have no other source.

Self Employment and Training Programmes

To develop skills among tribal women and men and to provide them self employment ITDA started different kinds of employment Programmes on this area. The Employment and Training department is implementing several Programmes to develop manpower resources in various technical disciplines and to provide skilled artisans to the Industries.

In the village of Kundhei there are many boys and girls who accept the various training Programmes under ITDA. In Kundhei some three students are complete his training under the ITDA training Programme on the basic of qualification.

Integrated Tribal Development Agency (ITDA):

Tribal sub plan area approach (T.S.P.A.A) every revenue sub-division in which more than 50% of the population is scheduled tribes is recognised as a tribal sub-plan area. Keonjhar I.T.D.A is functioning with effects from 01.07.1979 having jurisdiction with the Keonjhar sadar sub-division.

The Integrated Tribal Development Agency (ITDA) Geographical area coverage 5350.20 sq k.m, no of Tahsil coverage 7, no of Blocks 7, no of G.P 158, no of villages 1189, no of Municipality 1.

District Rural Development Agency (DRDA):
The District Rural Development Agency (DRDA) has become an autonomous agency having its own governing body registered act, 1960 after 73 amendment act past in the 1993 President of Zilla Parishad is the Chair person of the governing body and the district collector is chief executive officer.

The Keonjhar district DRDA came into existence with effect from 01/04/1980.

The MGNREGS (Mahatma Gandhi National Rural Employment Guarantee Scheme) is a central and state government scheme with the ration 90:10. Its main aims to generate incomes and individual employments. The scheme initiated by the government in the year 2005 to enhance the livelihood security and giving at least 100 days of wage employment in every financial year to every household. Under this Sixty percent of work planned for village development and forty percent of work are planned for construction of roads, ponds and wells.

Under this scheme only age group above 18 allowed for getting employment. The officers who appointed by the Mandal office are issue one job card for one house with the eligible member.

These groups are demanding work to the Gramasabha when they required by proposing different developmental Programme of the village after discussing with each members of the groups.

In this village MGNREGS work was started on 2012. One thing is important here actually MGNREGS work started in India on 2005 but in Kundhei village started after seven years.

C.C road

Pradhan Mantri Gram Sadak Yojna (PMGSY) programme was launched in the year 2000 as a fully funded centrally sponsored scheme to provide road connectivity in rural areas of the country. The scheme is administered by the Department of Land Resources of the Ministry of Rural Development. According to G.R.S (Kundhei village) in this village c.c road and drain is implemented in the year 2012.

STATE GOVERNMENT ACTIVITIES:

HEALTH:

Anganwadi Centre:

Kundhei has one Anganwadi center where as in under the Integrated Child Development Scheme (ICDS) sponsored by UNICEF, fund partly by state government to benefit pregnant women and pre-school children (girls and boys of less than 5 years old). Each Anganwadi functions with a teacher, Anganwadi helper and ASHA worker. These centres help in the provision of supplementary nutrition, immunization to children, vaccination (BCG, DPT, DT, Hepatitis, Polio Drop, Measles, Polio, Vitamin A, etc), health checkups for pregnant women, referral services, pre-school education, and nutrition and health education. Monitoring of the growth of the pre-school children is taken into consideration to ensure appropriate supplementary diet to them.

A.N.M centre (sub centre of health):

In the Kundhei, there is one primary sub health center functioning with one A.N.M worker and helper member. The objectives of these sub-health centres at Kundhei are to provide preventive
medicine, post natal care, child care, immunization and prevention of communication disease. The important problems in these regions are:

" Water born disease
" Upper respiratory disease
" Urine tract infection
" And, malaria, typhoid etc.

Gaon Kalyana Samiti:

Left Anganwadi and A.N.M center our state govt. Provides 10,000 fund every village to utilities in village sanitation and emergency of health cases. In this village two funds matain by Anganwadi worker and A.N.M worker.

Mamata Scheme:

According to Mamata scheme 34 women's are benefited in Kundhei village by the the help of Anganwadi worker and ASHA worker. This scheme objective is 5000 provides in pregnancy period through Account payment.

Education:

There are different kinds of Programme initiated by the state and central government to promote tribal education. The working group on tribal development recommended that education in the tribal areas should be given the highest priority for the reasons health educations holds the key to tribal development. The tribal economic development is closely associated with the educational development of the tribe.

As I saw in the village education ratio is very low. Not only boys but the girls are also encourages for study. There are three schools in this village from 1st standard to 5th standard under Sarve Shikshya Aviyana scheme. These schools are teaching Juang local language and Odia to the student. But other M.E school, High school closely situated in the Kundhei village.

Multi lingual Education Programme (MLE): 

Multi lingual education is a programme where the children express what they know in their mother tongue. In kundhei village MLE programme is implemented in year 2009. This programme is emphasised on only class I and class II students.

Public Distribution System (PDS):

In these villages, villagers having two kinds of ration cards, those are white cards and yellow cards. The yellow card means "Antodoya" card under which card holder gets 35kg of rice, 2 litter of kerosene, 1kg sugar. A white card holder means the BPL (Below poverty line) card holder receives 25kg of rice, and other same as like the yellow card holder.

In the Kundhei village, Pratap Mohanta is the Public distributors. He has first deposited 10,000 in Govt. Go down for security purpose and then distributed in public like, rice per k.g one rupees, sugar per k.g twenty two rupees, kerosene per litre fifteen rupees. This chapter attempt to analysis of the views and perceptions of the tribal household on various aspects of tribal
development in the area. This chapter also tries to assess the overall impact of the conditions of the tribal socio-economic and political development of Juang community. Further, the problems faced by the tribal while dealing with these official agencies were analyzed in this chapter. The income pattern of the village is very low as majority of them 25000-30000 per annum. The income is based on only in the agriculture, minor forest products and wage labour as secondary occupation. While if we look into, the expenditure pattern of this group is vested on food and farm investigation as major expenditure. It's due to large family under one income person in the family. Unemployment is causes for this kind of situation in these Juang villages.

Research Study GAP Findings

My observation and participation in the Juang community leads a research period of one month that was more knowledgeable for me. Where, I acquired the knowledge about Juang community and micro development project. A number of programmes have been under taken in this region as a part of the national effort for tribal development. But till today numbers of Junags are far behind to access the micro development projects and its objectives.

Major gaps of Juang Geographical Region:

" Poor resource base, in terms of natural and artificial.

" Exploitation of tribal's by nontribal such as moneylenders, traders, landlords, labour contractors, officials and in some cases even by tribal leaders and politicians.

" Absences of Research development organizations which can mobilize the tribal have promoted their development and secure for them the benefits of various programs.

" Weaknesses in the administrative system arising out of inadequate. While tribal areas need strong and capable administrators who have sympathy for the tribal's very few competent officials are posted in these areas.

" Low production, low investment, low income generations have put the tribal's into the borrowed moneylenders.

" Hunger, starvation, malnutrition, disease, illiteracy, ignorance, poor shelter and exploitation faced by the tribal's are not much different from those faced by the rural poor in other backward areas.

" Addict Liquor (Handia) consumption is the main obstacles for them to access the development objectives.

" Till today also some of the Juang peoples are not access the benefits from the Juang Development Agency (JDA), because they are not coming under the selected 35 hamlet of the Banspal Block of Keonjhar District.

Respondents Views towards the Micro Development Agency:

The success of developmental agencies depends much upon the officials who operate them and also upon the methods of working of these agencies. The beneficiates appreciate the role of the development agencies and cooperate with them only when they have good impression and faith on their official and methods of work. Hence, information on these aspects is very essential for monitoring the effectiveness of the developmental agencies. This holds better in the
case of developmental agencies working in their areas and also on the methods of their work. When the respondents were asked to comment on the conduct of the developmental agencies working in their areas like the JDA and so on they expressed mixed opinion. A majority of the respondents disposed unfavourable on the conduct officials, while others seemed have good opinion on them. The interesting things I got those who gave the favourable opinion on this are provided by the different scheme. On this basic we can infer that the behaviour of the officials of the development agencies is generally bad as they are unable to gain the admiration of majority of the households. The majority felt that these officials are irresponsible for them.

CONCLUSION:

The Central government and state government of India have made continual efforts in the track of tribal development after independence. The Indian constitution has made important provisions for the welfare of the tribal people. In Anthropological studies of development, development studies on the relationship between cultural factors, attitudes, values and economic changes of the community. But the now anthropological studies are more concern with its critical attitude by the use of applied anthropology. In this study, important is given to understand various perceptions of development, the extent of impact of development Programme and its utilization.

The JDA, ITDA and DRDA and NGO is plays an important role for the purpose of development in this area. The Programmes observed in the village mainly relate to agriculture, irrigation, health, education, self employment etc. In the Kundhei village the impact of development Programmes clearly visible in Mahanta community peoples but the same village Juang people’s are still cannot reach to catch the development chain. Due to the irregularity of government official and lazy attitude, people losing hope on development Programmes. But now the village people are influenced by various contacts with people, through their interaction with different types of peoples are arguing with the government official for their right. They now became the decision maker for their society and managing all round development of the village.

From the above discussion its clearly shows the gap between the governmental Programme and micro level Projects. These Programmes are not satisfying the tribal people to meet their need. I could say the communication gap affects more to the people while they had been exploited by the outsider. For the actual development of the Juang, the gap should fulfil and the people should know about the existing Programmes through the cooperation of government official. Community development is well placed to involve people equally on these issues which affect all of us. Community development is the developing the power, skills, knowledge and experience of people as individuals and in groups. Holistic initiatives of their own social, economic, political and environmental problems and enabling them to fully participate in a truly democratic process.
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Intervention of Culture and Community on Multilingual Education among the Juang Tribe of Keonjhar, Banspal Block, Odisha

LIZA SWAIN*

Abstract: This paper aims at exploring to study a comparative understanding about an equitable quality education of Multilingual Education programme on JUANG children of Kundhei village of Keonjhar district and This paper also examines the new programmes initiatives focused on the improvement of quality as well as quantity aspects for tribal children in juang children have their own culture. Odisha has 62 scheduled tribes out of which 13 primitive tribes and the juangs are one of them. The study was conducted in Kundhei village of Kodipasa of Banspal in Keonjhar district. The school children, teachers and households heads were the major respondents for data collection. Language problem is considered as a major difficulty for the tribal children as Education in Odia and English always been preferred as foreign language. This is the reason for which high drop-outs are found among the tribal children. Thus this paper highlighted to understand the intervention of Multi lingual Education and it’s impact upon the education of juang children. The Multilingual Education (MLE) programme is an innovative programme launched by the government of odisha under Sarva Shiksha Abhiyan in selected schools in year 2006-07 with the goal to ensure equality education to tribal children in the state. It aims to improve student learning through the use of their mother tongue in early classes. The programme is designed to develop reading and writing skills to acquire knowledge and information through the mother tongue at the early stages of learning for the children. This programme is being implemented in a phased manner covering 10 tribal languages namely Bonda, juang, kissan, kui, kuvi, munda, oram, santhal. Different Anthropological methods and techniques were using for data collection like scheduled method, observation method, interview method, census method, case study and photography method, PRA/RRA and FGD method. Many stakeholders reported that due to implementation of this programme, children of jiang are interested in learning and their enrollment and retention improved but my finding observation shows that yet fin-e community in their socio work properly and it is just a brand or nothing else

Introduction and Background

The present research work aims at having a comparative understanding about the impact of Multilingual Education programme through the intervention of culture and community on the Juangs of Kundhei village of Keonjhar district. We believe that our culture is better known to us since it is a part of our life. community has been defined different contexts by the theorists and practitioners. While western sociologists define community in their socio-cultural context, community in the Indian content has its own characteristics. Defining the community, McIver

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and Charles H page say, “whenever the members of any group, small or large, live together in such a way that they share, not this or that particular interest, but the basic conditions of a common life, we call that a group or community” (1962:8-9). Over time, community members sift through those environmental elements and develop ways of integrating them into their lives. What makes sense in one community may not make sense in another. The things we see every day, the language we use, the way we earn our living and the history of our shared experiences all influence us in a way that, added together, creates a community*. In the Indian school context, it is accepted that community comprises a whole village irrespective of religion, language, and ethnicity. Education is everybody's human right. If means that no children however poor, however desperate his or her country’s situation is to be included from school, there is one acceptable census for denying him/her the opportunities to develop to his/her fullest potential education saves and improves the lives of children it is considered as a primary indicator of human development and progress. The present decade is closely identified with the children's access to primary education in access to primary education in idna and a story national commitment to achieve universal elementary education and attainment of millennium development goals (MDGS) education also enhances the ability of individuals to achieve desired demographic and health goals (NFHS), 2005-06) the National commitment to provide free and compulsory education to all children in the age group of 6-14 is now a fundamental right of every child in India as per the 86th amendment act 2002 India became one of 135 countries to make education of fundamental right of every child. Education has been in consideration as the cardiac aspect of development both at the micro as well as macro levels nice long past. But more specifically modern education has proved itself to have grater implications on shaping up the overall development goals at the levels of individuals families communities and finally nation as a would there are many benefits of education and even merely that of literacy these may broadly include improvement of self them empowerment of pupils increased political participation which would contribute to the quality of public policies and to democracy cultural benefits preservation of cultural diversity empowerment is quality of leisure time utilisation development of capabilities to maintain of good health gender equality and social mobilisation increased individual income an economic growth etc. (Cf. UNESCO 2006: 136-145).

A Brief Overview of Tribal Education:

The educational problems of the mass of people in the country appear to have close relations with the ethos of the society, most of the socially and economically disadvantaged as well as deprived groups of the society are found to be educationally backward it is reported that the culture of silence and the legitimization and exploitation have been cohabiting in the Indian conditions since the historical past.

The process of learning a culture is called enculturation the alternative term socialization is commonly used when stress is placed on an individuals learning the groups and roles of his or her anthropologists often called this process enculturation focusing gone ft acquiring of skills habitats and behaviour norms values and social roles sociologist tend to use the team socialization centering their interests on the problem of learning social behaviour appropriate to a society. Both may be consideration forms of education.

Problem of the Study:

The field work was conducted for a period of 21 days. The entire field work period was performed in a friendly atmosphere. But still very field work accessed some difficulties
on problems in the field, due to lack of educational status among the juangs.

**Objectives of the Study:**

As the present study aims at describing the Multilingual System and its impact upon the Juang children the specific objectives are:

(i) To understand Juang culture, and their attitude towards education
(ii) To study the primary education scenario among the juang children under Sarva Siksy Abhiyana programme of govt. of Odisha
(iii) To focus on the multi-lingual education system introduced among the Juang children.
(iv) To understand in details the process and practice of MLE system among the Juangs of Kundhei village
(v) To assess the impact of MLE programme on juang children towards their educational improvement

**Methodology:**

(i) Research Design: as the present study aims at finding the impact of MLE upon the Juang children the research design being adopted here is the experimental type. Experimental research design mostly focuses on assessment or comparison of changes occurred due to the MLE programme.

(ii) Selection of study Area and Respondent Units: The study was conducted in Kundhei village of Kodipasa of Bansapal in Keonjhar district. The elderly members and the household heads were the major respondents for data collection.

(iii) Sample: The Sampling technique which was followed to select the respondents was purposive.

Tools and techniques:

(a) Before collection of data, good rapport was established with the school children, teachers and parents who were the primary stakeholders of the information required. Considering this it was necessary to talk them slowly and listen to them carefully and patiently. During conversation many of their problems on grasping a new language as well as understanding the new concepts of Multi-lingual education system were expressed

(b) Scheduled Observation, Participant observation, Non-participant observation, Interview Census Method, Case Study, these are the method by which i have collected some data's.

**Limitations of the Study:**

(i) The study has faced through some of the noticeable limitations which are highlighted below:-

(ii) The school children, who were the major respondents for the study were suspicious towards the researcher as well as they were unable to answer many of the technical aspects of Multi-lingual education system.

(iii) Language was the major limitation of the study as most of the Juanga people speak their own native language. Thus it was difficult to acquire exact information on the topic.
(iv) As it was the festival time, the school was closed for a week. It hampered the data collection process.

(v) We had a big limitation of time. It was really inappropriate to disturb the teacher and school children during the study hour. If we would have a little more time, this would be helpful for the data collection process.

AREA AND PEOPLE UNDER STUDY

Location and profile of kundhei village:

The present study was conducted in "Kundhei" village of Kodipasa Grampanchayat of the Keonjhar district. The village is located in the border area of Banspal block and almost 25 kilometers away from the district headquarter. The village is surrounded by Dhanbeni mountain and Ghungi as well as Niyandapur were the neighbouring villages of it. The village is situated just at the foothill region. The village is divided into three major clusters, known as: Upar Sahi, Majhi Sahi and Tala Sahi. The surface of the village is quite hilly. The names of the hills surrounded to the Kundhei villager are chancabania, Barasi, komeisiania, Gonasika, Pediparbata, Babunkaylam, Badapada, Dhudibadi, Tarabadi, Barbakara, Dangabadi and Purunabani. There are also so many water channels flowing around Kundhei village. The names of the channels are Puljhara, chetakata, sarbasanda, balugara, khadadua, alangamunda, jalidaba, sandinala, kundabala.

PEOPLE

Origin of the Juang tribe:

The Juang is one of the primitive tribal groups and found only in Odisha. The Juangs are known as "Rushi Putra". In their language Juang means man. According to their point of view the Juangs are take birth from the "thai" of the "rushi janhab". So they are known as "Juang". The "rushi janhab" is the father of the tribe Juang and an "Asurani" is the mother. When the janhab rushi and asurani got married then there were many types of animals originated, there are 36 types of animals and Juang and other Odia peoples, insects etc. when the life was started in the earth, from that period the Juangs were also originated.

Juang Society and Culture

In Juang Society Religions Performs An Important Social Rule. They Have Acquired Few Amount Of Scientific Knowledge. They Mainly Believe On The Gods And Goddesses And The Supernatural Powers Like Different Types Of Trees. They Also Worship The Other Dead Ancestors.

Educational Features

Education is most important for every people. In kundhei village more than 50% people are illiterate that is reflects the poor educational standard of the village. The people of kundhei village are very poor so they wear unable to give money to their children for education so they don't educate their children. In kundhei village have a primary school, a U.P school and a high school. Many children wear study in the primary school. Many people wear involve their children in agricultural work and other works so the children wear stop their education.
The Education status of the Kundhei Village shows that out of the total 632 people, 317 (50.15%) are illiterate, while 315 (49.84%) are literate. This indicates a poor education standard in the village. The percentages reflect the number of people who can and cannot read and write. The table below provides a clear overview of the literacy status:

<table>
<thead>
<tr>
<th>LITERATE</th>
<th>(%)</th>
<th>ILLITERATE</th>
<th>(%)</th>
<th>TOTAL</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>315</td>
<td>49.84%</td>
<td>317</td>
<td>50.15%</td>
<td>632</td>
<td>100%</td>
</tr>
</tbody>
</table>

From the above table, it is observed that the number of illiterate people is more than the literate people. Out of the total 632 people, 317 people are illiterate, which constitute 50.15%. This reflects the poor educational standard of the village. The percentages of literates are 49.84 percent.

**IMPLEMENTATION OF MULTI-LINGUAL PROGRAMME EDUCATION AMONG JUANG STUDENT**

**What is Multi-lingual Education (MLE) Programme**

The multi-lingual Education (MLE) programme is an innovative programme launched by the Government of Orissa in selected schools in the year 2006-07 with the goal to ensure equity education to tribal children in the state. It aims to improve student learning through the use of their mother tongue in early classes. The programme is designed to develop reading and writing skills to acquire knowledge and information through the mother tongue at the early stages of learning for the children.

The programme is being implemented in a phased manner covering 10 tribal languages namely Bonda, Juang, Kissan, Koya, Kui Kuvi, Munda, Oram Santhali and Saura in 545 schools spread over 8 districts of the Orissa state.

**Evaluation design and data sources**

The study aimed to answer the following three evaluation questions:

1. Is Multilingual education programme implemented as intended: if not why not?
2. To what extent have the intended objectives of the Multilingual Education programme been realized?
3. What are the unintended outcomes attributable to the programme?

A mixed method approach was used to answer the evaluations, using a number of methods and tools for data gathering such as questionnaire achievement tests, interviews, observations, and focus groups. Besides, document reviews, data was collected from stakeholders. 100 schools in which MLE programme had been implemented, covering all 10 tribal languages. Data was also collected from 100 schools in which multilingual education programme had not been implemented where similar to MLE schools in terms of location, population, and size and had at least 50% enrolment of tribal children. A nonequivalent control group design was also used to assess student achievement outcomes. Mean scores for class 2 students on an achievement test created for this evaluation study were compared for MLE schools and non-MLE schools within each language and for the state as a whole.

The data was gathered from 1757 children, 364 teachers, 200 Head Maters, 534 community members, 75 administrators, and 396 classrooms were observed for the evaluation.
Major findings

"Programme implementation"

"The majority of stakeholder’s were well aware of the MLE programme and its objectives.

"A large percentage of teachers, students and community members participated in the development of textbooks and teaching learning materials. The textbooks and TLMs were available in most of the schools. The learning materials were found to be interesting and useful by the teachers and students. The content of textbooks was age appropriate and contextual to tribal cultures.

"Most MLE programme teachers expressed that changes were required in the teachers training programme including quality duration and number of resource persons.

"There was evidence that the language and curricular relevance of materials needed to be addressed that materials were not always delivered on time and that at times there were not sufficient materials available.

"While almost all the MLE schools had one tribal language teacher, this number was not adequate to teach all the classes in the school it was also observed that Oriya was being used in classrooms in some tribal areas instead of the tribal language.

"There was evidence that many language groups were lacking in basic facilities such running water, toilets and electricity and that there was language groups varied with regard to availability of academic support facilities such as learning corners, wall hanging, magazines, libraries and play materials.

EDUCATION SCENARIO OF JUANG

. Education Scenario of Juang

Enrolments of students in kundhei primary school During the year 2009-2010

<table>
<thead>
<tr>
<th>CLASS</th>
<th>SC</th>
<th>ST</th>
<th>ST</th>
<th>ST</th>
<th>ST</th>
<th>OBC</th>
<th>GEN</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>juang</td>
<td>Majhi</td>
<td>Munda</td>
<td>bathudis</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class 1</td>
<td>0</td>
<td>0</td>
<td>20</td>
<td>23</td>
<td>5</td>
<td>9</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Class 2</td>
<td>0</td>
<td>0</td>
<td>14</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Class 3</td>
<td>0</td>
<td>0</td>
<td>10</td>
<td>5</td>
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<td>2</td>
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</tr>
<tr>
<td>Class 4</td>
<td>1</td>
<td>0</td>
<td>7</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Class 5</td>
<td>0</td>
<td>0</td>
<td>18</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>TOTAL</td>
<td>1</td>
<td>0</td>
<td>69</td>
<td>45</td>
<td>10</td>
<td>14</td>
<td>11</td>
<td>7</td>
</tr>
</tbody>
</table>
From the above table it is shows that the enrolment of students of Kundhei primary school during the year 2009-2010. In this school many tribe students were study like juang, munda, majhi and bathudi. Among that tribe the more number of students were juang. Out of total 219 students 114 students were juang. The number of male students is more than female students. Out of 114 juang students 69 students were male and 45 students were female.

### Enrolment of Students in Kundhei Primary School During the Year- 2010-2011

<table>
<thead>
<tr>
<th>SC</th>
<th>ST</th>
<th>ST</th>
<th>ST</th>
<th>ST</th>
<th>OBC</th>
<th>GEN</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>juang</td>
<td>Majhi</td>
<td>Munda</td>
<td>bathudi</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CLASS</td>
<td>m</td>
<td>F</td>
<td>m</td>
<td>f</td>
<td>m</td>
<td>f</td>
<td>m</td>
</tr>
<tr>
<td>Class 1</td>
<td>0</td>
<td>0</td>
<td>18</td>
<td>18</td>
<td>5</td>
<td>11</td>
<td>4</td>
</tr>
<tr>
<td>Class 2</td>
<td>0</td>
<td>0</td>
<td>16</td>
<td>18</td>
<td>2</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Class 3</td>
<td>0</td>
<td>0</td>
<td>13</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Class 4</td>
<td>0</td>
<td>0</td>
<td>10</td>
<td>5</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Class 5</td>
<td>1</td>
<td>0</td>
<td>12</td>
<td>5</td>
<td>1</td>
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<td>0</td>
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<tr>
<td>TOTAL</td>
<td>1</td>
<td>0</td>
<td>69</td>
<td>51</td>
<td>15</td>
<td>20</td>
<td>6</td>
</tr>
</tbody>
</table>

From the above table it is observed that the enrolment of students during the year 2010-2011. In this year out of 222 students 118 students were male and 104 students were female. In this school more than 50% juang students were study. Out of 222 students 120 students were juang. In this year in class I the higest number of students and in class IV the number of students is very low.

### Enrolment of Students In Kundhei Primary School During The Year-2011-12

<table>
<thead>
<tr>
<th>SC</th>
<th>ST</th>
<th>ST</th>
<th>ST</th>
<th>ST</th>
<th>OBC</th>
<th>GEN</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Juang</td>
<td>Majhi</td>
<td>Munda</td>
<td>Bathudi</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CLASS</td>
<td>M</td>
<td>F</td>
<td>M</td>
<td>F</td>
<td>M</td>
<td>F</td>
<td>M</td>
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</tr>
<tr>
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<td>13</td>
<td>13</td>
<td>3</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>Class 3</td>
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<td>0</td>
<td>15</td>
<td>18</td>
<td>2</td>
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<td>2</td>
</tr>
<tr>
<td>Class 4</td>
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<td>0</td>
<td>10</td>
<td>5</td>
<td>4</td>
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<td>0</td>
<td>0</td>
<td>12</td>
<td>4</td>
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<td>0</td>
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<td>TOTAL</td>
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<td>59</td>
<td>50</td>
<td>13</td>
<td>20</td>
<td>8</td>
</tr>
</tbody>
</table>
From the above table it is shows that the enrolment of students in kundhei primary school. This school out of 204 students 105 students were male and 99 students were female. In this year SC students were nil. Out of 204 students 109 students were juang. In this year the number of juang male is more than juang female. Out of 109 juang students 59 students were male and 50 students were female. 33 majhi students were study in this year, 11 students were Munda and 3 students are Bathudi.

Enrolment of Students in Kundhei Primary School During The Year-2012-2013

<table>
<thead>
<tr>
<th>CLASS</th>
<th>SC</th>
<th>ST</th>
<th>ST</th>
<th>ST</th>
<th>OBC</th>
<th>GEN</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>juang</td>
<td>Majhi</td>
<td>Munda</td>
<td>Bathudi</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class 1</td>
<td>0</td>
<td>0</td>
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<td>6</td>
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<td>0</td>
<td>12</td>
<td>13</td>
<td>2</td>
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<td>3</td>
</tr>
<tr>
<td>Class 4</td>
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<td>0</td>
<td>15</td>
<td>18</td>
<td>2</td>
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<td>0</td>
<td>59</td>
<td>51</td>
<td>14</td>
<td>22</td>
<td>9</td>
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</table>

From the above table it is observed that the male students were more than female students. Out of 207 students 109 male students and 98 female students. More than 50% juang students were study. Out of 207 students 110 students were juang. Out of 110 juang students 59 male and 51 female. The number of s.c students are 0, 36 students were majhi, 14 students were munda and only 3 students are bathudi. In this year 44 obc students were study in this school.

Enrolments Of Students In Kundhei Primary School During The Year-2013-2014

<table>
<thead>
<tr>
<th>CLASS</th>
<th>ST</th>
<th>ST</th>
<th>ST</th>
<th>ST</th>
<th>OBC</th>
<th>GEN</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>juang</td>
<td>Majhi</td>
<td>Munda</td>
<td>Bathudi</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class 1</td>
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<td>7</td>
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<td>9</td>
<td>4</td>
<td>5</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Class 3</td>
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<td>12</td>
<td>10</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Class 4</td>
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<td>0</td>
<td>12</td>
<td>18</td>
<td>1</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>Class 5</td>
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<td>0</td>
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<td>10</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
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<td>56</td>
<td>49</td>
<td>13</td>
<td>15</td>
<td>11</td>
</tr>
</tbody>
</table>

From the above table it is observed that the enrolment of students during the year 2013-2014. In this year out of 185 students 101 students were male and 84 students were female, this year the number of .c students are 0. Out of 185 students 105 students were juang. Out of 105
juang students 56 students are male and 49 students are female. From the above table it is observed that in my study area male students were interested for study than the female students.

Enrollment of Ghungi Primary School:

<table>
<thead>
<tr>
<th>YEAR</th>
<th>CLASS-1</th>
<th>CLASS-2</th>
<th>CLASS-3</th>
<th>CLASS-4</th>
<th>CLASS-5</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009-10</td>
<td>03</td>
<td>04</td>
<td>05</td>
<td>04</td>
<td>05</td>
<td>21</td>
</tr>
<tr>
<td>2010-11</td>
<td>14</td>
<td>03</td>
<td>04</td>
<td>05</td>
<td>03</td>
<td>29</td>
</tr>
<tr>
<td>2011-12</td>
<td>09</td>
<td>07</td>
<td>04</td>
<td>05</td>
<td>07</td>
<td>32</td>
</tr>
<tr>
<td>2012-13</td>
<td>12</td>
<td>06</td>
<td>07</td>
<td>04</td>
<td>06</td>
<td>35</td>
</tr>
<tr>
<td>2013-14</td>
<td>08</td>
<td>07</td>
<td>05</td>
<td>04</td>
<td>04</td>
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<td>46</td>
<td>27</td>
<td>25</td>
<td>22</td>
<td>25</td>
<td>145</td>
</tr>
</tbody>
</table>

Difficulties of Multi-lingualism

Some difficulties of multi-lingualism found in Kundhei prathamika vidyalaya and Ghungi prathamika vidyalaya, which are:

" Poor infrastructure fails to attract the juang children
" Inappropriate curriculum and instructional materials further impede child learning.
" Teachers from outside display negative attitude towards tribal children
" Few educated and trained tribal teachers are available in tribal areas. Non tribal teachers who are posted in Kundhei prathamika vidyalaya don't attend school.
" Children from more than four to five language groups are found in the schools. Teachers teach them in a particular language and the gap between home and school languages negatively affects child learning.
" The opening of a multi-language implemented school with atleast of 21 to 24 children is not feasible in Kundhei prathamika vidyalaya , Ghungi prathamika vidyalaya.

In implementation of Multilingual Education in Kundhei Prathamika Bidyalaya and Ghungi Prathamika Bidyalaya

(According to the National curriculum framework 2005)

In Kundhei Prathamika Bidyalaya MLE programme is implemented from the class I-III. (2009)

<table>
<thead>
<tr>
<th>Class-I</th>
<th>Class-II</th>
<th>Class-III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language in MT</td>
<td>Language in MT</td>
<td>Language as subject</td>
</tr>
<tr>
<td>Math in MT</td>
<td>Math in MT</td>
<td>Math in MT</td>
</tr>
<tr>
<td>EVS in MT</td>
<td>EVS in MT</td>
<td>EVS in MT/L</td>
</tr>
</tbody>
</table>

Ghungi Prathamika Bidyalaya MLE programme is implemented from the class I-V. (2007)
<table>
<thead>
<tr>
<th>Class-I</th>
<th>Class-II</th>
<th>Class-III</th>
<th>Class-IV</th>
<th>Class-V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language in MT</td>
<td>Language In MT</td>
<td>Language as MT</td>
<td>MT as Subject</td>
<td>MT as Subject</td>
</tr>
<tr>
<td>Math in MT</td>
<td>Math in MT</td>
<td>Math in MT</td>
<td>Math in L2</td>
<td>Math in L2</td>
</tr>
<tr>
<td>EVS in MT</td>
<td>EVS in MT</td>
<td>EVS in MT/L</td>
<td>EVS in MT/L</td>
<td>EVS in MT/L</td>
</tr>
<tr>
<td>Oral L2</td>
<td>Reading and L2</td>
<td>Language in L2</td>
<td>Language in L2</td>
<td>Language 2</td>
</tr>
<tr>
<td>Written L3</td>
<td>Oral and L3</td>
<td>Reading in L3</td>
<td>Writing in L3</td>
<td></td>
</tr>
</tbody>
</table>

Diagram 1: Profile of Multi-Lingual Education Programme

- **Reading and Writing**: Letters, Words, Sentences, Letter and Word Games
- **Number counting**: system measuring
- **Maths**: Environment studies
- **Family village work**: Agriculture, market, fishing, forest products, Birds and Animals, festivals and celebrations
- **After Noon**: Reading and Listening Activities, stories children, Reading Books
- **Language Skills**: Games & Activities, Language Use
- **Games Activities**: Alphabet book, Letters, Words and sentences, Alphabet Chart, Letters and Key Words, Games Activities, Songs, Writing and speaking activities
<table>
<thead>
<tr>
<th>MLE Schools</th>
<th>Non MLE Schools</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Student attendance is regular</td>
<td>• Irregularity is clearly marked from the attendance register</td>
</tr>
<tr>
<td>• Culture responsive classroom</td>
<td>• Hardly any link with the tribal culture</td>
</tr>
<tr>
<td>• Lot of Curricular activities</td>
<td>• Over emphasis on text book learning</td>
</tr>
<tr>
<td>• Learning by Doing</td>
<td></td>
</tr>
<tr>
<td>• Activity planning and Use of Local specific TLM is extensively used during the class room transaction</td>
<td>• Entirely confined to text book and rote memorization of facts contained in them.</td>
</tr>
<tr>
<td>• Curriculum, contents materials and learning process compatible to local culture thus making learning meaningful and contextual.</td>
<td>• Curriculum with competencies and content common to all categories of Learners</td>
</tr>
<tr>
<td>• Text book learning embedded with all curricular experience, reflection of cultural values.</td>
<td>• Text book considered as important means of learning</td>
</tr>
</tbody>
</table>

**Transactional Process**

<table>
<thead>
<tr>
<th>MLE Schools</th>
<th>Non MLE Schools</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Activity Based, Learner centered and interactive approaches are used in Learning situation</td>
<td>• Emphasis on rote method</td>
</tr>
</tbody>
</table>
- Curricular concept are linked to the real life outside the classroom
- Hardly any link with the real life of tribal children

5.4. Children and Teacher Perspectives

MLE Schools

- The classroom setup meets the expectation of children
- Teacher form the community contribute to the cultural enrichment of education employing both the written and oral modes of communication
- Comprehensive framework for mother tongue education at the primary level
- Absence of mother tongue in classroom transaction causing dissatisfaction among children
- Community members contribute to the cultural enrichment of education by establishing small cultural museum in the school
- Sense of community ownership developed.

Non MLE Schools

- Hardly match with the imagination of children
- Teachers are not able to bring a convergence between the home and School language
- Along with text book there is scope for self learning and group learning through observation, experimentation and analysis
- Text book considered as the store house of Knowledge
- Community participation in school activities formal in nature
- Community ownership is distant dream.

Uniqueness of MLE Classroom

- The curricular and process of education enriched by cultural contents of The Juanga.
- Resource person from the community are contributing to the cultural enrichment of education
- Class room transaction is vibrant and effective by two ways interaction instead of traditional teacher dominated.
- TLM and Cultural items are ensured in class-1 through collecting materials from environment. Teacher and student are both involved in using these materials.
- Multiple technique of evaluation like observation, portfolio evaluation is used individually for continuous and close monitoring.
Daily routine in MLE schools for Class I and II

- Period 1- Initial Work and attendance taking - 15 minutes
- Period 2- Moral lessons - 15 minutes
- Period 3- Mother Tongue Complex/Combined Letter - 10 minutes
- Period 4- Left out L2 Letters-Alphabet Chart - 10 minutes
- Period 5- Word Webs- 2LA Lesson plan (TPR, Supporting Game, See Listen and Say, Oriya Rhyme, Picture Talk, Reading in L2) - 30 min
- Period 6- Activities supporting this - 10 minutes
- Period 7- Maths Primer/number chart - 30 minutes
- Period 8- Listening to Story
- Period 9- Shared Reading (B.B. + Exp Chart Story + Story Chart)
- Period 10- Silent Reading
- Period 11- Creative Writing
- Period 12- Cultural Maths (Maths Theme Web)
- Period 13- EVS (EVS Theme Web)
- Period 14- Activity Centers (Reading Corner, Science Table, Math Activity Center)
- Period 15- Cultural Songs and Dances
- Period 16- Cultural Crafts and Games

Track One Material for Class II
a. Combined/complex letters MT Chart
b. Combined/complex letters L2 Chart
c. Matra/Falas
d. Left out letters
e. Word Webs
f. Bridging Books (a,b,c,d)
g. Math Book
h. Number Chart

The instructional materials prepared for these two tracks are:

<table>
<thead>
<tr>
<th>Track I contains</th>
<th>Track II contains</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alphabet Chart</td>
<td>Big Book</td>
</tr>
<tr>
<td>Alphabet Book</td>
<td>Small Book</td>
</tr>
<tr>
<td>Number Chart</td>
<td>Story for Listening</td>
</tr>
</tbody>
</table>
COMMUNITY PARTICIPATION IN MLE:

The community has played a major role in shaping school function in the context of multi-lingual education. Community involvement is the prerequisite in multi-lingual education in schools of tribal areas. Community participation is key to creation of contextual curriculum for example, community members help to develop TLM and offer cultural item to use corner.

In this school, one village Education Community Member and one parent teacher Association also found. They played a major role in shaping school function in the context education and help to develop TLM for curriculum. They selected the books for juang students.

According to TRIBAL CO-ORDINATOR "DURGA LAYAK" checked the books means all the text book developed during district level workshop were presented and displayed before validation. Community members validated the culturally appropriation of the text book developed in juang language and made necessary curriculum when ever required. He said that the community has decision making powers and state govt. supports.

According to kundhei prathamika vidyalaya head master "GOPABANDHU PANIGRAHI" - Recognition of the culture context of juang community in the Big Book signifies community contribution in school education.

Besides the folk tales and myths, local legends are also used for language learning. Language activities like listening stories in (collected from village storytellers) and telling experience - stories children tell their stories in fourlines which are then written down) are amply made available to the children through community. These are some of the instances where community knowledge is applied in class-I to class-V in both schools (kundhei prathamika vidyalaya and ghungi prathamika vidyalaya).

PARENTS AND TEACHERS PARTICIPATION IN MLE:

Parental and teachers played a very important role in MIE. Parents and teacher both are participating in the discussion in the curriculum part ten of MIE program. The teacher of kundhei vidyalaya said that environmental study is better than done amid nature than in the classroom. They are motivating their child for better learning. The teachers of kundhei prathamika vidyalaya said that tales and songs, myths and legends, riddle and proverbs, along with folktales, all in the oral tradition, take children back to lived and hence, help them understanding their world better. This whole physical and intellectual creation of community, shared across generations and perpetuated by tradition, is what is called community knowledge.

NEED OF MULTILINGUAL EDUCATION PROGRAMME FOR JUANGS:

Juang have their own dialect, which has been described by Col. Dalten as Kolarian. As per linguistic division The Juanga's are comes under the Austric or Mundari language group. Juanga children falling to cope with Oriya language at school in initial stage which resulting high dropout rate at primary level. To counter this problem multilingual education has been implemented for Juangas of Banspal block. So govt. planned to implementation of MLE for juang children.
In the initial stage the project has been lunched on pilot basis in 10 schools having 100% Juanga children in Class-I. 10 Monolingual schools have been identified from two blocks namely Banspal and Harichandanpur (5 from each block) to introduce MLE.

CONCLUSION:

Aspects of the MLE programme that were implemented as intended included developing curriculum that was culturally appropriate and included input from a variety of stakeholders. Many stakeholders also reported that members of the community actively contributed to various aspects of the MLE programme. Children got back their voice. Their enrollment and retention improved. Children started talking in their language and understood the content and connected the classroom knowledge with their experience. They started reading and writing and identifying letters from the sentence. Literacy became easier and the result is visible. Students from other classes are also interested in learning (reading big book, small book, listening stories, math book etc.). After six months of schooling in Class I the child is able to read a sentence and identify the words and letters from the sentence with meaning, if it is in her mother tongue. Child can think and create if given a context. The basic conclusion emerging from this study is that the MLE programme has been able to achieve its objectives.

MY FINDING OBSERVATION:

My finding observation is that juang students in "kundhei prathamika vidyalaya" are using more than four to five language groups are found in the schools. Teachers teach them in a particular language and the gap between home and school languages negatively affects child learn

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Odisha, India
There is a long gap of publication of *Man in Society* between the last volume and this volume. Reasons are many. Now, we have got ISSN number for this volume and that has encouraged us to go ahead. There is a growing interest among the faculties and research scholars of the Department of Anthropology to contribute papers and we are making a sincere endeavour to keep the tradition alive with research papers based on Anthropological fieldwork which dealt with by enthusiastic contributions. In this volume, there are total eighteen papers covering different branches of Anthropology and all of them are research based and informative in nature.

In the first paper, “Shamanism in Tribal India: Dimensions of an Everyday Religion”, the author has depicted how shamanic beliefs and practices have attracted the interest of scholars from a wide variety of disciplines, including anthropologists, archaeologists, historians, religious studies scholars and psychologists. Whether one claims to be either agnostic or atheist, s/he cannot afford to remain totally unaffected by the general belief system which is deeply ingrained in Indian cultural system and social structure. On one side the spread of education and modernization has certainly had a great impact on people and for them the beliefs in ghosts and spirits have become a thing of the past. But on the other side the uncertainties in one’s life drive people to take shelter under the supernatural.

In the second paper, i.e. “How to understand Anthropology” the author very lucidly explained that in the era of globalization, in the discipline of Anthropology we find confluence of humanities, social, and natural sciences and they have strong interrelations amongst one another. We will see this subject has been central in the development of several new interdisciplinary fields such as cognitive science, global studies, and various ethnic studies.

In the paper, “Development Projects and Displacement: Impact on Rural and Tribal women of Odisha” the author has made an attempt to assess the impact of development projects on socio-cultural and economic life of rural and tribal women of Odisha. When country moves from developing stage to developed one there is a need for construction of development projects which results in development-induced displacement or the forced migration in the name of development. The rehabilitation and resettlement policy of the government is yet to be successful and the women are suffering both by state machineries and customary practices. Both positive and negative consequences of impact situation have been evaluated by observing the pattern of changing lifestyle.
In the paper, “Nutritional status and blood pressure of Tibetans settled in Odisha” the author made an in depth study on the nutritional status and blood pressure of Tibetans born and brought up in coastal Odisha was compared with high altitude studies by using standard anthropometric technique. In the present study it has been observed that Tibetans in coastal Odisha shows a trend towards become taller and heavier when compared in terms of their height, weight, and BMI. Blood pressure level of adolescent Tibetans shows a trend towards higher prevalence of hypertension and is similar to that of high altitude studies.

In the paper entitled, “Stone Age Culture around Ghantikhala Area, District Cuttack, Coastal Odisha”, it highlights the geo-archaeology of the study area and both the authors have shown how an intensive archaeological investigation has been carried out in and around Ghantikhal area in the district of Cuttack recently. The students of Post-Graduate Department of Anthropology, Utkal University are involved in a trial trench excavation at the site of Belasahi Saharsahi to impart field trainings in archaeology. The assemblage of artefacts collected indicate that the study area was colonized from time to time by the prehistoric denizens from the Lower Palaeolithic period during Pleistocene and through the Mesolithic to Neolithic periods during Holocene.

In the paper, “Documentation of the Museum : Special Reference to Ethnographic Specimens”, the author has outlined the principles followed for documentation of museum and has also described the functions of the different parts of documentation. The museum gets enriched when its documentation is correct, timely and properly safeguarded. The worth of a collection depends upon the amount of information which a museum possesses about its objects.

The author in his paper “Objectification of Women in Development Victimization vs. Empowerment, has studied a complex situation of our society with regard to women’s objectification leading to victimization / their empowerment vis-a-vis development. The objectification of women involves the act of disregarding the personal and intellectual abilities and capabilities of a female; and reducing a woman’s worth or role in society to that of an instrument for the sexual pleasure that she can produce in the mind of another. Women are often categorized along with other vulnerable group such as children, elderly and disabled. This not only conceals the patriarchal disempowering elements in hegemonic gender relations inherent in laws, institutions, policies and societal values but it perpetuates women’s dependent and subordinate status. The paper shows where there is resistance, there is power.

The author makes a successful attempt in the paper, “Involuntary Resettlement and its impact on traditional knowledge system of the Kutia Kandhas of Lanjigarh” to
study development induced displacements of human communities is one of the major social destructive processes happening all over the world. Displaced people through forced migration often internalize a sense of helplessness and powerlessness because of their encounter with the powerful external world. Keeping this in mind, the present research work tries to explore and understand the changes that have taken place within the indigenous knowledge system of the Kutia Kandha tribe displaced due to the Vedanta Aluminium industry in Lanjigarh of Odisha.

In the paper, “Biological Determinants of the Fertility and Child Survival among Santal Slum Dewellers, Bhubaneshwar” the author develops a conceptual framework for research on slum dwelling Santal children’s survival in developing city like Bhubaneshwar. He follows the approach of seeking to define a set of proximate determinants of mortality that can link the biologically determined disease processes in children to their social determinants in the family of the migrated Santals. The present work deals with actual fertility scenario and child survival of the Santal women inhabiting the slums of Bhubaneshwar.

In the paper, “Health, Disease and Ethno-healing practices: Continuity and Change among the Santals of Mayurbhanj district, Odisha”, the author has discussed ethno-medical practices found among the tribal people and the extent to which this system is influenced by various factors of change. The study has been undertaken in Santal dominated villages of Mayurbhanj district, Odisha. Like all societies the santals have their own healthcare system- belief, customs, specialists and techniques aimed at ensuring good health, and preventing, diagnosing, and curing illness.

The author has discussed on “Identifying the future prospects of Ecotourism for Indigenous Economy in Similipal Biosphere Reserve”, about the suitability of ecotourism as a means of providing genuinely sustainable and alternative livelihood development opportunities for remote Indigenous communities living in Similipal Biosphere Reserve. Eco-tourism encapsulates scientific, aesthetic, and philosophical approaches which reflect the structure and function of the society. With the globalisation process the processes of these changes have added values to enhance its importance. The present paper emphasises the potentials and prospects of eco-tourism in the state and more particularly in the tribal areas like Similipal. It justifies that eco-tourism of the state, if given due importance with proper value addition, can not only provide the potency of attracting tourists from far and near, but can also generate more revenue for the state.

In the paper, “Forest Livelihood and Poverty: A study on Munda Tribe” the authors have found out how due to denudation of forest resources which are vital for earning
livelihood resources for Scheduled Tribe Communities, particularly Munda Tribe the livelihood and food security face a great hardship. The present paper has been designed to highlight Munda tribe livelihood pattern in relation to forest dependency. For them poverty is the main constraint which breaks their social, economic and cultural development.

The author highlights in the paper, "Development and Socio-economic changes among Rural Women of Chilika Lake, Odisha", the impact of development processes on socio-economic life of Fisher women of Chilika Lake, the largest brackish water lagoon of India, situated in the eastern coast of Indian peninsula. The main occupation of women include collecting fish, drying, curing, marketing of fish, shrimp processing and net making. But after mechanization and intensification of multi-day fishing and adoption of modern equipment like fish finder, GPS, and mobile phone, the household responsibility of fisherwomen has increased to a greater extent.

In the paper, “An Epidemiological Study of Blood Pressure in a Migrant Community (Marwaris) of Khurda District, Odisha’, the author has made an investigative attempt to study how migrant communities, who are undergoing rapid culture change indicate environmental factors associated with changes in blood pressure and risk of hypertension.

In the paper, “Settlement Pattern and Mode of Subsistence of Kondhs of Nuagaon: An Ethno-archaeological Study”, the author has made an attempt for an ethnographic study of the Kondhs with special reference to their strategies of settlement and subsistence. Ethnographic studies can work as flesh and blood for the skeleton of archaeological researches and the subsistence strategies of the Kondhs of Nuagoan, have been used as a key understanding of the subsistence pattern of Neolithic culture in relation to their hunting, gathering and fishing.

In the paper, “Role of Sebayats in Daily Ritual performances of Lord Jagannath of Puri Temple”, the author has thrown lights on the Odishan culture and the life of Odia people that lay around the worship of the Lord Jagannath of the great Jagannath Temple of Puri. The word Dhama means ‘to hold, or to contain something very high and sacred’. Puri has always been an important centre of Hindu worship and also famous for the sanctity of the place.

In discussing the “Multilingual Education: An overview of Juang Children of Keonjhar District, Odisha”, the author studies how children whose early education is in the language of their home tend to do better in the later years of their education. An
essential difference between MLE programs and rural “mother tongue education” programs is the inclusion of a guided transition from learning through the mother tongue to learning through another tongue. The Juang, one of the particularly vulnerable communities of Odisha work very hard to earn their livelihood. Multilingual Education has been introduced among the children of Juang tribe by the state government of Odisha with a thematic approach. At the end in “Problems of osteoporosis among post-menopausal women: A hospital based study in and around Bhubaneswar, Odisha”, the author has made a sincere attempt to study the causes and problem faced by the post menopausal osteoporosis patients in Odisha. She has also tried to find out how osteoporosis affects particularly those class of women who are not aware about the disease due to their poor educational and economic status and how the disease gets manifested by their Body Mass Index (BMI).

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Shamanism in Tribal India: Dimensions of an Everyday Religion

PRASANNA K. NAYAK

Abstract: The paper discusses how shamanic beliefs and practices have attracted the interest of scholars from a wide variety of disciplines, including anthropologists, archaeologists, historians, religious studies scholars and psychologists. Whether one claims to be either agnostic or atheist, s/he cannot afford to remain totally unaffected by the general belief system which is deeply ingrained in Indian cultural system and social structure. On one side the spread of education and modernization has certainly had a great impact on people and for them the beliefs in ghosts and spirits have become a thing of the past. But on the other side the uncertainties in one’s life drive people to take shelter under the supernatural.

Introduction

Shamanism is generally considered one of the fundamental cultural features of tribes/indigenous population in India. Tribal communities in their day to day life and activities believe in shamanism and are decisively guided by shamans who mediate between the supernatural forces and the human world. Shamans are men and women of different grade possessing in them the attributes of special personalities, god-given qualities, who are experts in keeping spirits and other supernatural agencies in good attitude in the interest of the human beings. People are conscious that shamans are indispensable for the welfare of men, women and children, and their safety, security, peace, and harmony in the community, and for the good life and prosperity of all, including animals and plants in the natural environment around them.

For any problem at any level, be it either an individual person or the community, they turn to shamans and look forward to their manoeuvring skills and divination in solving, or at least mitigating, various difficulties arising in the everyday life. Individually and together, they have an enormous capacity to absorb and withstand all supernatural jolts, fiery tests especially during spirit possession, and persist on their mission even if sometimes some of them undergo loss of their progeny because of the wrath of the divine beings they have resort to and propitiate with the claim of excelling in the shamanistic skill. People repose faith in shamans and shamans equally feel concerned and work responsibly to obviate all that befalls on their fellow people. All ailments of physical, psychological, and social nature are always referred to the shamans. They are their healers, relievers of pain, medicine men, psychiatrists, psychotherapists, soothsayers, social doctors, protectors from the onslaught of supernatural anger, saviour

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of life and all earthly beings, and are personalities who prevent and control the occurrence of untoward happenings that would befall on people, and indeed what not. Shamans are held in high esteem and command respect from all. They receive remuneration for the services they render to the villagers. At the end of each ritual function they are presented with half-to-one kilogram of rice, clothes, a token amount of money in rupees, heads of the sacrificed birds and animals, a sumptuous meal and copious doses of alcohol, especially the distilled liquor extracted from the Mohua flower (*Mohua latifolia*).

The religion of tribal people is a shamanistic-type religion, that is, a religion where supernatural beings and spirits are satiated by means of sleight of hand¹ as well as various magical techniques together with blood sacrifices. The general impression of the so called caste Hindus in India is that the tribes living in the forest bush, *jhada janglal* ², appease their forest sacred being, Bana Devata ³ with the help of their own *patra saora* and *patra saorani*⁴, jungle priests and priestesses by indigenous means, which they would hardly accept to define as ‘religion’. But the irony is that the caste Hindus would not mind following the tribal ritual mode or adopting the practice in their own personal interest and well-being. In many Hindu temples, the so called tribal methods and means of propitiation of deities are still in practice even though the priests hardly admit that.

The tribal societies and cultures in India today are in the ferment of change and development and there is a great deal of impact of modernization and globalization on them. Yet they continue to anchor on to age-old practices to a great deal. It is so deep rooted in their culture that it would not be easy to wean them away from their so called traditional moorings. In that parlance, the Indian culture is like that. Even the caste Hindus, however modern and educated they might be, would think several times today before rejecting shamanism prevalent in its varied manifestations in modern India, be it rural or urban. Lots of people, in their everyday life, somehow or other, experience such remedies often drawing psychic solace. This phenomenon re-manifests itself and goes global which conquers the hearts and minds of many western people. The myriad modern Indian Baba cults, notwithstanding the yogic sermons and sessions are a clear example of this.

In the post modern and globalized world, shamanism recurs, reappears, and people adhere to the practice either directly or indirectly; more particularly to overcome the uncertainties of one’s life. People are aware of the marvels of science, its success and its achievements in several fields, yet whenever and wherever it is ordained, they promptly and effortlessly take resort to shamanism of even the so called tribal kind.

It is intended to raise the point and argue out that although shamanism is castigated as a primitive practice, irrational, a blind belief and all that, the tribal people are quite
practical about it. People believe that natural calamities befall on mankind and epidemics spread due to the wrath of gods and goddesses; on the other hand, illness occurs due to the attack of malevolent spirits. In order to prevent the befall of natural disasters they appease the earth goddess and worship the sun god at regular intervals, whereas in order to get cured from diseases they turn to the shamans who mediate between the spirits' world and the human world, and appease the evil spirits by making sacrifices to them.

Shamanism manifests in various folk religious practices in various parts of rural India. Folk priests are generally hailed from low castes, not necessarily of Brahmanic origin. They perform rituals in shamanistic mode, often in trance amidst dance, music, beating of drums, and shouting in various forms so that people would overcome the elements of danger, death, and disease (Sontheimer, 1995: 390-391). High caste Hindus participate in such rituals. Many of them are devout believers in folk deities and the efficacy of folk cults. As for an example, in and around several Puri temples, there are innumerable folk deities who are approached by people and appeased by them to fulfil specific worldly needs and purposes and to get special boons which they would not get by visiting the temple of Lord Jagannath. People repose much more faith in the folk deities and the folk priests and their ritual art of supplication than in the high Hindu gods and the high Hindu priests and their sacred system of beliefs and practices (Nayak, 2011).

In order to understand shamanism in Indian tribal cultures it is relevant to understand the variations in tribal cultures in general. However, as the locus of discussions on shamanism in this paper will be the state of Odisha, and as it has been intended to concentrate on two individual indigenous communities, the so called Primitive Tribal Groups (PTGs) of Odisha, cultural variations in tribal Odisha have been considered.

**Variations in Tribal Cultures in India/Odisha**

Tribal cultures in India can be broadly conceptualized in two visibly distinct variations, not really absolute distinctions. Tribes inhabiting the north-eastern regions can be grouped together under one such variation, whereas the tribes living in the remaining other regions together conform to another variation which can be conceptualized as the middle Indian tribal cultural category. Although tribes in India have been individualized, each having a name and cultural identity of its own, at a deeper level they exhibit cultural parallels cutting across linguistic, social, and cultural distinctions. The middle Indian tribes in particular belong either to the Dravidian or Munda/Austro-Asiatic or Indo-Sanskritic linguistic family and accordingly have socio-cultural formations which have been historically and lawfully structured in different regions and sub-regions of the country. Tribal cultures of Odisha form a representative sample of middle Indian cultural variations presented as hereunder.
Odisha is the home of a number of different tribes. Officially they have been enlisted as scheduled tribes numbering sixty-two. Each tribe possesses its distinct identity in terms of social organization, culture, and language. The people of a tribe organize their social relationships in certain ways, which are distinct from those of another tribe. Besides organizing themselves into certain characteristically structured social groups, which are in fact lineal descent groups, they are found tied to each other through family, marriage, and kinship relationships in specific ways. Often, the descent groups forming a tribe are territorially bounded units functioning as corporate groups. In terms of the total cultural make-up, that is, in its life-style, beliefs, values, and worldview one tribe differs from another. Similarly, the spoken languages of tribes differ from one another. Except for the Ho, Kondh, Santal, and Saora tribes who have in recent years developed their scripts, all other tribes do not have any scripts of their own, and thus possess only spoken languages in the unwritten form.

In order to understand the problem of variation among most of the tribes of Odisha, we first observe, at the surface level, that an individual tribe has its hill dwelling division which is relatively different from the plains dwelling or foothill dwelling or plateau dwelling division. This dualism in habitation is important for the proper understanding of social, cultural, and linguistic variations. Similarly, geographic location, physiographic condition of living, degree of isolation, and exposure to the outer society are other factors important for understanding variations among tribes. Also, the varieties of adaptive strategies evolved by individual tribes for securing their respective cultural identities, which have been formally recognized by the regional or sub-regional authorities in the historical past, are important facts and factors one must bear in mind while inquiring into the problem of variation among the tribes of Odisha.

Secondly, there are individual tribes having their ethno-cultural variations, or sub-tribes. For example, the tribe Kondh has sub-tribes such as the Kutia Kondh, Kutia Kandha Kondh, Malia Kondh, Pengo Kondh, etc.; the tribe Saora has sub-tribes such as Lanjia Saora, Arsi Saora, Suddha Saora, etc.

Thirdly, there are some individualized tribes who can be very comfortably put together into one variety in which case each individualized tribe will be regarded as a variation. Although in order to understand the varieties of tribes or tribal communities we have individualized, differentiated, and contrasted them with one another, at some level one can see striking parallels and close similarities between and among them. For example, each one of the tribes like the Santal, Mankidia, Munda, Ho, Kolha can be considered as a variation of one or the other (Nayak: 2001).

Shamanistic Institutions in Tribal Odisha: Some Field Observations

From 1973 to 2003, the author conducted and guided field research in most of the major tribal areas of Odisha, in different spells. Among the many aspects of tribal
cultures that were observed during this period, shamanism stands remarkable. Visiting a tribal village at any point of time of the year one could notice shamanistic performances of some form or another taking place and being organized by individual families or by the community. In fact, it is so common a practice among the tribes that one cannot understand their culture without understanding shamanism. In order to substantiate this assertion it has been intended to discuss and highlight two major variations of shamanism observed especially among the Lanjia Saoras and the Kutia Kandha Kondhs, two of the so called ‘primitive’ sections of the Saora and the Kondh tribes respectively.

The Saora dialect belongs to the South Munda linguistic family and the Kondh to the Dravidian family. It may be pointed out here that although the overall Saora shamanism is distinct from that of the Kondhs, the Saora shamans used to get guidance of the ace shamans of the neighbouring Kondh tribes. This means, so far as shamanism is concerned, that the Kondhs are far ahead of the Saoras.

**Shamanism in Lanjia Saora Society**

The Lanjia Saoras inhabit the hills and valleys of the Parlakhemundi sub-division of Gajapati district and Gunupur sub-division of Rayagada district, Odisha. They are found concentrated in villages around Puttasing and Seranga, the administrative blocks of the two sub-divisions. The Lanjia Saora environment is amazing; it presents a built ecology of its own amidst swidden fields, which are hill slope lands where they grow crops after clearing the bush by the slash and burn technique, hoeing by hand with the help of dibblers and planting seeds. In the swidden fields they keep preserved the tamarind, date palm and Sago palm, Salap trees, and fruit bearing trees like mangoes and Mohua. Certain hill slopes are also converted into terrace fields which they plough with the help of bullocks and buffaloes. There they cultivate rice by a transplanting method which is indeed very remarkable.

The Saora settlements are compact. Lineal brothers build their houses in one row. The rows of houses are typically spread out having lanes and by-lanes in between. They thatch the houses with local grass; make stone and earthen walls, and use wood and bamboo as pillars, posts, and rafters. Lineage relationship is the spirit of their social life and they organize themselves into several maximal lineages called Birinda. Loin cloth is their men’s traditional wear and skirts and aprons are the women’s wear. They speak the Saora version of the Munda language and the majority of men and women are yet to know how to communicate in Odiya, the language of the State of Odisha.

They venerate innumerable divine beings and spirits who reside in their home and hearth and preside over their land and forest within well delineated territorial areas. It is
said that some villages are notorious for spells and charms. A very important feature of their religion is Italan, the house for tutelary deities and spirits as well as the home for underworld spirits, whose icons are characteristically drawn on the inner walls of their dwellings, which are propitiated by the shamans to promote fertility and protect the family from diseases. Italans are outside identified from the famous wall paintings of the Saoras, Anital 6, which represent shadow or linear pictures of human beings, animals, birds, village life, and various modern objects such as aeroplanes, trains, guns, etc.

Shamanism is associated with every aspect of the Lanjia Saora religious beliefs and practices. They celebrate in observance of their life cycle rituals, first fruit ceremonies, all different phases of agricultural operations, in warding off evil spirits, which affect the health and prosperity of the community, in prevention and cure of diseases, protection of crops and animals, etc. Round the year, a number of rituals and festivals are organized at individual family and community levels to invoke the benevolence of deities, spirits, and ancestors.

A holy being is called Sonum or Sonam and at times Ketum. Every person becomes a Sonum being dead. A particular Sonum is addressed by suffixing sum to its name. They have Sonums such as Lobosum (Earth-sonum), Uyungsum (Sun-sonum), Idaisum (Ancestor-sonum) 7, etc.

Gamango is the secular head of the village who presides over all socio-political matters of the village, whereas they have magico-religious functionaries who are called Buyya, Kudan, Kudanboi, Idaimar, Idaiboi, and Sigmaran. The Buyya is a village official and holds the office of the priest. The Kudan/Kudanmaran is the shaman-diviner, medicine man and celebrant of every kind of sacrifice. His female counterpart is Kudanboi. The Idaimaran is an acolyte who assists the shaman and performs menial duties at funerary ceremonies. His female counterpart is Idaiboi. The Sigmaran has the duty of cremating corpses and performs other duties associated with it. The Italanmar/Iditalmar sketches Anital figurines and makes wall paintings.

The shaman is an occultist, a magician, a witch doctor, a medicine man as well as a psychotherapist at the same time (Elwin 1955). He is the fountain head of all traditional systems of sacred and secret knowledge. By divination and trance he diagnoses causes of sickness and diseases, comes to know about problems which concern every aspect of health and happiness of people and the community, and prescribes remedies and solutions. Among the shamans there are grades. The most experienced and knowledgeable performers are called Suda (senior) Kudan/Kudanboi. In the absence of Buyya, the priest, often the Suda Kudan performs such priestly rituals.
Categories of Shamans

There are five different types of male shamans and four types of female shamans. (1) The most important among them is the Raudakumbmaran. They are married to tutelary beings and come to know about them and their activities in dreams as well as by sitting in trance. They are qualified to perform very important rituals like Doripur, Yungpur, Ratupur, Jammolpur, and at the same time deal with routine ritual matters. They do not have a role in funerary rites like Ajorapur. (2) The second type of shamans is called Guarkumbmaran. They are married to tutelary spirits, but learn shamanistic practices by training; nothing is revealed to them in dreams. They mainly perform funerary rites on the occasion of Guar, Karja, and Lajap, and attend ceremonies which have to do with the dead. Besides they also perform in name-giving ceremonies. (3) The third type of shamans conducts Ajorapur, practical funerary rites and assists the Guarkumbmaran. They are not capable of falling into trance. They conduct rituals associated with the buffalo sacrifice. They often administer medicines and are also known as myth tellers. (4) The fourth type of shamans is simply formed by omen readers or forecasters. They practice divination by mechanical means, such as by sleight of hand on the winnowing fan and miming the movement of shooting an arrow with the bow. They are not capable of spirit possession. They are expert in Tonaipur. They are genealogists, experts in memorizing a long list of names of villagers, living and dead, which they utter in breathless succession and are capable of detecting the hostile ones among them. (5) The fifth type is Regamaran, who prescribes various uncommon material ingredients against sorcery, infection of the body, tendency to commit suicide, and performs magical rites to control the danger of man-eating tigers.

Similarly, among the female shamans the first grade is called Raudakumboi, the counterpart of Raudakumbmaran. The second in grade is Guarkumboi, the counterpart of Guarkumbmaran. The third in grade is often grouped with Guarkumboi. Fourth comes Regamboi, the female counterpart of Regamaran. In most of the Lanjia Saora villages equal number of male and female shamans is found. In some big villages the female shamans outnumber the male shamans. In Sagada, a very traditional village, in 1990 there were eighteen shamans, out of which seven male and eleven female shamans.

Most of the shamans start their career very early, between the age of 12 and 20. It happens earlier in most of the cases of female shamans. Although it is not hereditary, in some cases it follows the family line or close kin. Hardly is competition noticed among the shamans. However, each shaman is rated as a special person and each gets into the profession with the blessings of supernatural and the ancestral holy beings and spirits. The lowest grade of shamans gets into the profession through experience.
and by practice. In the process of attaining shamanhood one has to be expert in incantations and recitations as well as all sorts of diagnoses; he/she must know the causes of any problems occurring in the everyday life, and give their proper interpretations, often through the narration of stories and memorable events and happenings in the village; finally he/she must be able to convince the village people. They learn how to use winnowing fans and practice the supplication of rice; they also become skilled in falling into trance, lighting a lamp, handling a knife, and putting ritual ingredients in definite order and arranging them in a pattern. Often they follow the style of their predecessors. They conform to a strict way of life in their eating habits. Before taking food they have to offer it to their ancestor spirits, and observe the rule of long fasting during rituals; they never brush their teeth. In their dress pattern, adornments, day to day behaviour, and interactions with people they exhibit a difference. They refuse to have illegal sexual relationships; otherwise they might encounter serious troubles because of the ancestors’ wrath. They develop a typical personality of their own. People repose faith in them and they are appreciated by one and all in their society.

**Initiation to Shamanhood**

The would-be shaman experiences a series of dreams of tutelary spirits, who approach him or her for marriage. In the process he/she develops a feeling of restlessness, loses control over him/herself, behaves as a deviant from routine life; becomes mentally upset and physically ill and it often affects the family too. This condition worsens day by day or it recurs intermittently till a solution to this symptom is arrived at. Some young girls experience this at the time of their first puberty ceremony. The experienced shamans among the close relatives diagnose and confirm the source of such disturbance. Initially they reject the proposal of his/her marriage to the tutelary spirit which appeared in dreams and try to explain the cause of their unwillingness, for he/she would not be able to take such a risk of appeasing such a tutelary being, as any mistake on his/ her part would have disastrous consequences for him/her and his/her family. Some tutelary beings may be empathetic but some others use threats towards the unwilling ones. Those who yield to their demand try to learn the magico-religious art by observation and participation in the rituals performed by a close relative shaman. One attains the status of a shaman only after his/her marriage to the tutelary spirit.

After marriage, the female initiated to shamanhood, called Kudanboi, moves with her underworld husband, Ilda, who visits her everyday. They live like husbands and wife and move here and there. She gives birth to children in the underworld. What is most important is the spirit husband who helps and prompts her in all shamanic activities.
General Tasks of Shamans

Every shaman has a lot of responsibilities towards the community and he/she must attend the events and perform life cycle rituals whenever and wherever required as per his/her specialization. Shamans take all the burden of treating the sick and conducting harvesting festivals and consider it his/her bounden duty often leaving behind urgent personal work.

Whenever people neglect or forget to observe ceremonies shamans warn them about the mishaps and misfortunes that will befall on them. They remain in contact with supernatural agencies, spirits, and ancestors, apprising them of sorrows and sufferings of people; they appeal to, request, pray to, offer sacrifices to, and try to persuade them to save the people of the fellow community from any untoward happenings, in such a way providing them with full protection. They diagnose the cause of any problem through the ritual techniques called Tendung and/or Yangate, and consequently prescribe the curative rituals to be observed.

According to their respective specializations shamans perform their duties. They prevent occurrence of misfortunes that might befall on the village community, such as smallpox and acts of sorcery on people; ward off ghosts and malevolent spirits causing troubles, like entering one’s body and into the village boundary; appease the benevolent ones to guarantee their pleasure and ensure their protection. They prescribe remedies, especially herbal medicines, for all kinds of illness, such as fever, all sorts of body aches, pains, fits, swellings, smallpox, rheumatism, diarrhoea, vomiting; protect the vulnerable, especially pregnant young mothers, babies, young children from falling victim to ghosts and spirits. In so doing shamans suggest antidotes for barrenness and miscarriage, and facilitate an easy delivery of babies. But their activities are practically extended to all aspects of individual and communal life as well as all economic operations.

They play an important role in name-giving and hair-cutting ceremonies; protect the widow and the widower from sufferings; prescribe rituals to defend the family of the dead who have incurred either natural or else unnatural death due to the action of identified spirits; perform rituals during all phases of agricultural operations starting from forest clearing to consecration of seeds, protection of plants, prediction of a good harvest by means of specific rituals for each kind of crop.

Ritual Performances

Shamans perform rituals requested by individual families and offer the first crops, such as fruits, nuts, roots, tubers, grains and pulses to their ancestors and in observance of Karja, a very important commemoration ceremony for their dead involving the entire community. The normal name-giving ceremony is usually observed.
after a month from birth. In some cases they name the child after an ancestor under compulsion. If a child goes on crying most of the time, does not take his/her mother’s milk, suffers from fever etc., the parents refer it to the Guarkumbmarans or Guarkumbois to ascertain the reason and the name of the ancestor concerned. They find out the ancestor and offer a buffalo sacrifice to him/her. The Idaimar moves along the village lanes dancing amidst beating of drums called Papadu, made out of Sago palm wood. The shaman puts a bangle or a ring in thread around the wrist of the child. A twig of Bell tree is kept stretched on the threshold of the dwelling as a mark of observance of this special name-giving ceremony. A feast is then arranged.

In the first hair-cutting ceremony, the shaman cuts a tuft of hair of the child and puts it on the ritual place; then, after consecrating it with cow dung he pastes it on the wall. A pig is sacrificed; some sacrifice fowl or buffaloes.

**Death Beliefs and Rites**

The Lanjia Saoras believe that death never marks the end of life, but rather that a new phase of life begins after death. There is not a single ritual or festival which the dead do not visit, sometimes affectionately and at times aggressively. They are interested in what is going on in the village and are ready to talk about it. A person who dies an unnatural death by accident, suicide, murder, snake bite, killed by tiger/leopard, falling from tree, or by an act of sorcery or an attack of evil spirits has no place in the underworld, Kinnorai 16. The situation becomes more serious when somebody dies of cholera (Mordi), smallpox (Ruga), and killed by tiger/leopard (Kina) as in these cases the dead become Mardisum, Rungabo, and Kinnasum, respectively. They are most harmful and, therefore, are offered sacrifice; however, they are also appeased with the help of special rituals and are not allowed to enter the village.

After the funeral the shamans perform a series of rituals and the soul of the dead is invited to find out the cause of his/her death. Family members, lineage members, and kinsmen by marriage, relatives, neighbours, and acquaintances attend the ceremony. After a week, a second ceremony called Guar is performed through elaborate rituals, and a memory stone is erected at Ganuar, the memorial place reserved for the dead of the Birinda, the most direct lineage. The shamans get into trance intermittently and perform rituals for long hours at the dwelling place of the deceased as well as at Ganuar. All ancestors are invited one after another by the shamans, then are appeased, cajoled and persuaded to partake in the ritual. They are offered Salap juice, a variety of drinks as in a cocktail party, _bidi_ 17 or _pika_ 18 to smoke, and new clothes; the shamans use and consume them on behalf of all ancestors. It is believed that the dead enter the underworld and join the ancestors by means of the Guar ceremony.

As Guar is one of the most expensive ceremonies, its observance depends upon the economic capability of the family of the dead to meet the cost. In some cases it is
deferred until some other more convenient time for them, even a full year. A buffalo
sacrifice is a must and kinsmen must wear new clothes. They entertain the guests
and participants with sumptuous meals of rice, meat, and serve good quantities of
alcoholic beverages 19.

Every two or three years Karja, a week-long commemoration, is observed with
great solemnity, this ceremony involving a wider participation of kinsmen and invitees
from outside the community. It is decided at the village community level; the individual
families who are prepared to observe Karja join together and fix the date for the
celebration. It is usually held during February-March. As it is a communal event and
many families join it, a number of buffaloes are sacrificed. It is generally believed that
Karja grants absolute peace to the souls of the dead and all ancestors.

**Agricultural Rites**

Lambusum, Barusum, and a number of local hill holy beings are appeased by
shamans before the beginning of the agricultural operations such as clearing the bush,
setting fire to dried leaves and branches, consecrating seeds and sowing them,
weeding out, and harvesting the crops. They offer sacrifices to them; they also observe
a major ceremony when the plants bear red and yellow flowers, and appease
Jammolsum, who is believed to live on the ground. To protect the plants from the
attack of pests and vermin and prevent diseases, shamans perform rituals to drive
away the evil spirits from the fields as they are thought to be the cause of damage to
the crops. The dead ancestors who were once the owners of the fields, cattle, and
agricultural implements are also appeased during these rituals which are performed
by the shamans called Kudans and Kudanbois 20. It is said that shamans control rains
and offer sacrifices to the rain deity Ganuboi to obtain good rainfall.

The Saoras observe a strict taboo custom, which prevents them from eating new
crops and fruits before they are ceremonially offered to holy beings, spirits, and
ancestors. Harvest festivals are a delight to the whole village people. Individual families
and the village community organize feasts, dances, and merry making activities. Men
and women adorn themselves with ritual robes and beautifully decorate the shrines
with leaves and flowers. Shamans perform rites at the threshing floor of dwellings.

**Disease Beliefs and Black Magic**

It is believed that diseases are caused by supernatural beings, spirits, the trouble-
making dead of the family who are not properly appeased, and also by sorcerers. The
deity which causes cholera is Mardisum; smallpox is due to Lugaboi or Lurnisum,
epilepsy to Kannesum. Correct diagnosis of the problem or disease is most important
to prescribe remedial steps. In order to communicate with the unseen world the shaman
rubs the rice, previously spread on the winnowing fan, with his right hand palm. This
Another method in use is to put some rice into a Bell leaf and burn it in the flame of a lamp reciting the names of some supernatural beings that they consider potentially responsible of the disease. In the Bell leaf test, the answer is given by grains of rice turning black and sticking to the leaf or by the way the leaf burns in the heat. They use lamp, bow, knife, Kurunaranjan, a musical instrument, for the diagnosis. After finding out the reason of the disease, they immediately offer the required sacrifices or pledge to do that more conveniently later on, or after being cured.

The Saoras believe in black magic, which is called Tonai. People fear black magicians and sorcerers, called Tonaimar and Tonaiboi. They perform black magic against their enemies. They put a frog and some insects into a pot and seal it following some magical rites pronouncing the name of the enemy; when they die inside the pot the enemy is believed to die as well. The specialized shamans also know how to counteract black magic and for that purpose they perform the Tonaipur ritual which is meant to help the affected person/s overcome the dangerous effects of black magic. Black magicians do things secretly, but if their activities are disclosed, people punish or even kill them.

**The Kutia Kandha Kondh Shamanism**

The Kutia Kandha Kondhs inhabit the Niamgiri hill ranges of Rayagada district in southern Odisha. Socially they are organized in several clans and sub-clans that are distributed in well delineated clan territories (Nayak 1989). Their settlement pattern is linear, with the shrine of the earth mother installed in the middle. They speak a Dravidian dialect, Kuvi. They mainly pursue swidden cultivation for eking out their living; besides they grow pine apples, bananas, and oranges on the hill slopes. They are known for their custom of Meriah sacrifices, human sacrifices practised in the past (Watts 1970). They worship Dharni Penu, the earth mother by offering her blood sacrifices. Besides, they propitiate the sun and a number of hill and forest supernatural beings, and especially their ancestors and spirits.

Their magico-religious world is very complex. Among the magico-religious functionaries, they have the Jani, Lambajani, Pujari, Beju, and Bejuni. Gurumeni is another functionary who assists priests and shamans and is often consulted by people, priests, and shamans. Priests and shamans occupy respectable positions in the society. In the traditional political structure the priest’s (Jani’s) role is as important as that of the village headman or the chief of the clan. Jani, whose post is hereditary, is the principal worshipper of Dharni Penu; Ichan Jani, who belongs to the Jani’s lineage, assists Jani in the arrangement of ritual objects. The Jani having vast experience of Meriah sacrifices is called Lambajani. Pujari, the assistant priest, belongs to the Pujari lineage and the post is also hereditary. Beju and Bejuni are the shamans.
The Kutia Kandha Kondhs have their religious practitioners who mediate between people and the supernatural beings. Shamanism is one of their age-old institutions which even in our time influence their day to day life. Some individual shamans by virtue of their peculiar skill, techniques, and ritual performances are capable of dealing with the spirits' world more fruitfully and successfully than others; therefore, they are more sought after by the community at large. The shaman derives his/her power directly from supernatural agencies through some sort of mystical experience. S/he is expert in trance, divination, and ritual dance, and has the distinction of being the magico-religious healer. Shamans establish personal relationships with the spirits' world and various holy beings which they try to control by offering them alcoholic liquor and sacrifices of birds and other animals. Beju, the male shaman, and Bejuni, the female shaman, are the most respected magico-religious functionaries who entertain mystical relations with the supernatural beings known in their culture.

**Initiation to Shamanhood**

A person is initiated to shamanhood step by step moving from one stage to another in order to master the mystical techniques and learn the religious and mythological traditions of the tribe. The preparatory stages commence amidst a series of rituals and ceremonies under the supervision and guidance of a veteran shaman. The initiation begins with a supernatural sign conveyed to the person concerned through dreams, visions, pathological symptoms, ecstasies, etc. The next step is to receive theoretical and practical training. On successful completion of training he/she has to pass through a series of rituals and ordeals to attain shamanhood and gain social recognition.

Certain boys and girls are believed to be born with gifted biological and behavioural characteristics and special abilities that help them acquire the art and become shamans. People identify them from their early childhood days and socialize with them accordingly. They are initiated to shamanhood and develop the personality of a shaman. Shamanism is believed to be a gifted, supernaturally given magico-religious art. A shaman's success depends upon the extent of supernatural bliss which he/she acquires in a dream, a divine message, a kind of mystical experience.

A person experiencing unusual dreams informs the family members, friends, and relatives about it. Often people perceive the early signs of such a situation in behavioural changes appearing in him/her. Whenever there is a performance of dance and music during rituals such persons lose their self control, start dancing and fall into a state of trance. In such event, people having a joking relationship with him/her put him/her to test by giving a handmade cigar stuffed with chilli powder to smoke, or by putting the burning tip of a cigar on his/her skin or by piercing his/her ears with pointed plant thorns. If he/she comes out of the ordeal successfully he/she is recognized as a
potential shaman; if he/she fails he/she is ridiculed as a pretender. When such changes are noticed in a person, the family members consult an experienced shaman, who performs divination by rice supplication and goes into trance to find out the cause and identify the spirit responsible for this. He then prescribes appropriate rituals to initiate the novice to shamanhood. But it takes time to attain rank of shamans. The candidate begins to work with experienced shamans and learns how to supplicate millet grains first and later rice on the winnowing fan (Gomango 2007).

**Tutelary Supernatural Beings and Mystical Marriages**

Each shaman adopts a tutelary being of his/her choice and regularly propitiates it and derives power from it to deal with the spirits’ world, especially to control the malevolent spirits who cause harm and miseries to the human group. Bejus and Bejunis adopt personal supernatural beings or ancestor spirits who help them in the ritual techniques; the former choose male spirits and the latter female spirits (Daspatnaik, 1972). Acquiring the favour of supernatural beings shamans remain frequently in trance; through them they engage in dialogue with the ancestor spirit of the person concerned. In the course of this contact the spirit reveals the cause of suffering and prescribes how to deal with the situation by offering what kind of sacrifices he/she needs and claims.

By means of puchuna, the supplication of rice on a winnowing fan, the shaman can identify the most suitable spirit/s and later enters into a direct dialogue with them in a state of trance. Through this practice the shaman comes to know the reasons of the spirit/s’ aggrieved mood and negotiates the means of their appeasement; at the same time, the assistant-shaman sitting in front of him/her reports every bit of the exchange between the shaman and the angry spirit to the party or the person/s concerned.

Shamans also obtain the assistance of their own ancestors by way of a process of incantations and trance, and solicit blessings from them; in the next stage they contract a spiritual marriage with supernatural beings and move from a profane to a sacred status. The marriage is celebrated under a mango tree and it is a very expensive affair; in the marriage ritual arua rice (sun-dried rice), turmeric paste, ragi, millet powder, resin, vermilion, new clothes, fire-wood, Sal/Siali leaves, mango leaves, sacrificial birds, such as cocks and pigeons, are essential ingredients.

The spiritual marriage with the adopted supernatural being involves expenses which the shaman has to afford. The day before the ceremony the ritual spot is cleaned and the altar is made under a mango tree. The apprentice shaman, accompanied by Gurumain, together with Dom 22 musicians and fellow villagers proceed to the spot carrying all ritual objects and sacrificial birds with them. They take a bath in the stream,
put a millet powder mark on their foreheads, bring a pitcher full of water, mix it with turmeric paste, cover the mouth of the pitcher with Sal/Siali leaves, and garland the neck of the pitcher with mango leaves. Amidst beating of drums, the apprentice shaman throws a handful of rice onto the holy pitcher, utters incantations, solicits the blessings of the supreme deity, Dharni Penu, and invokes the patron spirit to whom he/she intends to get married.

Suddenly with a jerk he/she starts trembling and dancing under the attack of a hysteric crisis and loses self-control. This is taken as the sign of spirit possession. The assistants then burn resin and incense to cause a dense smoke in the air; the rhythm of dance and drum beating rises to a frenzied state, and the onlookers start asking questions to the newly initiated shaman in trance and obtain satisfactory replies. After the question-answer session, the shaman moves round the mango tree seven times, takes a cock and a pigeon, gives them rice to eat, plucks a feather from each and touches/presses them to the bodies of onlookers/participants 23; then he/she sacrifices them and sprinkles their blood onto the holy pitcher. After that he/she comes out of trance and regains senses. The ritual is so concluded and they all return home.

After a couple of days a second ritual symbolizing a wedding ceremony is performed. The shaman is carried on the shoulders of the participants to the ritual spot; he/she moves round the mango tree seven times, new clothes dyed with turmeric are tied around his/her head, and a cock is sacrificed at the altar where the sacred pitcher is placed. In the next phase the shaman takes a holy bath and the turmeric water contained in the pitcher is poured on his/her head.

In order to become a principal shaman, Pata Beju/Bejuni, he/she carries out expensive rituals for 3-4 days and arranges feasts entertaining the fellow villagers with sumptuous distribution of meat and alcoholic drinks. He/she performs the ritual dressed in a black sari, adorned with a vermilion mark on the forehead and chains of tinkling bells around the ankles, and holding a handful of peacock feathers.

Bejus and Bejunis perform a large variety of shamanistic rites at the individual family and at the community level. Although both Bejus and Bejunis engage in shamanism and act as medicine persons, practically people prefer Bejunis for shamanistic practices and Bejus as medicine men.

The Shamanistic Mission: A Summary

The nature and kinds of tasks that shamans undertake can be summarized as follows:

1. Diagnostic, curative and preventive practices, and treatment of various kinds of illness and diseases like fever, body aches and joint pains, smallpox, chicken pox, other unidentified malaise for which proper remedies are prescribed.
2. Dealing with deities and spirits, they detect the spirit/s causing troubles; help prevent the occurrence of diseases, misfortunes, all sorts of human suffering; ward off malevolent spirits; appease and entertain the ancestor spirits to avoid any nuisance from them; appease the benevolent spirits to gain their favour and protection.

3. Shamans take up various roles in life cycle rituals. During pregnancy, they prevent miscarriage, infant death and facilitate easy delivery and child birth; identify the ancestor taking rebirth in the new born baby. At later stages, they perform puberty rites and ward off evil spirits; perform preventive rites during wedding to protect the new couple from malevolent spirits. They also detect the cause and determine the agencies responsible for abnormal and unnatural deaths and prescribe ritual remedies to prevent future misfortune.

4. They perform a number of rituals and festivals at various phases of different agricultural activities. They worship Lahi Penu and perform Dongar Puja to get a good harvest. In Bicha Hopan (seed sowing ceremony), they worship Dharni Penu and start sowing seeds. In Mandia Rani Puja they worship Kateiwalli to get a good harvest of millet. They celebrate Pidika Puja and worship Jatra Kudi Penu to save the castor-oil crop from pests and insects and reap a good harvest; perform Mendo Puja and worship Lahi Penu and Sita Penu, and start harvesting crops. In Baliko Repa, they worship Dharni Penu to prevent millet and Kosla crops from attacks of any pests and diseases, and to get a good harvest. They perform Kuteli Perpa and worship Lahi Penu, Budharaja Penu, and Niam Raja Penu to appease them and seek their permission for felling trees in the hill territory. In Marangi Leka they worship Dharni Penu, ancestors, and several holy beings and spirits to start eating the newly harvested paddy. They perform Punahapadi and worship Jatrukudi Penu for the first eating of the locally produced cereals such as Johna, Kosla, Kandula crops, and varieties of grams and fruits. Above all these, they perform Meriah, which used to be a human sacrifice later on replaced by an animal one. They worship Dharni Penu and sacrifice buffaloes all the year round for the well-being and prosperity of the community; observe Ghanta Parbu and worship Takrani Penu, Jatrukudi, and Sita Penu by making animal sacrifices for fulfilment of personal vows promised to deities and spirits. And finally, they carry on many other celebrations such as Salangi Puja which provides that ancestors are worshiped to protect cattle and other livestock from diseases; Male Manjì when ancestors are invoked for the well-being of the family; Enda Penu Puja, the cult of Enda Penu, as and when required by the village community at any time of the year (Gomango & Mohanty, 2008).
Neo-Shamanism in Contemporary India

In a multicultural society like that of India, traditional health and healing practices are found to be varied in nature. Almost all Indians, in their everyday life, have faith in the efficacy of these practices. The influence of these practices across tribes and castes, religious sects and cults is quite visible. They have recourse to these in definite combinations and re-combinations. People’s awareness of clinical health, use of modern medicines, and their undergoing medical treatment in modern hospitals have not weaned them away from traditional health and healing customs. The ill effects of modern medicines have become increasingly obvious. People have realized the limits of modern healthcare and healing systems, furthermore, a sizeable section of the population cannot afford modern medical treatment. Traditional healthcare practices, preventive measures, and curative medications, have often proved to be more effective than modern means and methods of cure. As a result, several institutions of health and healing have recently come up, recommending and popularizing traditional healing systems. In post-modern India, people value the efficacy of reuse of traditional Indian healthcare and healing practices in their myriad manifestations and combinations. People are changing their mind and often prefer shamans to medical doctors: where science fails, shamanism becomes the last resource, used and reused as an alternative. When these local cultural practices are traded globally as commodities, tricks and gimmicks, there is a strong possibility of misrepresentation.

Shamanism in a guise or another has resurfaced today in many parts of rural and urban India. Highly educated urban Indians make a beeline before god-men of all persuasions in the hope of recovering from various ailments and personal family problems. In several cases, they even approach tribal shamans and sorcerers for help. They visit local temples, propitiate the deities of tribal origin in the tribal hinterlands and consult shamans and medicine men. These shamans and medicine men are often invited to visit families living in towns and cities to give treatment to the patients and sort out their family problems too.

Hindu caste people, when they fail to achieve what they intend to have through their own shamans, turn to tribal shamans or Muslim shamans, to modern Babas, who show miracles, or to a shaman from elsewhere. There is growing importance attributed to shamanistic pujas in Hindu temples. The erstwhile distinction between the priest and the shaman is getting blurred and people turn to priests who present more shamanistic attitudes for sorting out family problems, marriage problems of children, or even for choosing a good daughter-in-law, besides sorting out many other worldly problems.

It may be pointed out that in many Hindu temples although gods and goddesses are worshipped as Hindu deities, in reality they are of tribal origin. In the historical
process they have been hinduized and brahmanized. In Odisha, for example, Lord Jagannath is worshiped as a high Hindu deity but He has a tribal origin. Although all the priests serving Him claim Brahmanical status, the majority of them is from tribal origin, known as Daitas. Most of the daily services rendered to the Jagannath triad from early morning to late evening are performed only by Daitas. In fact, the role of Vedic Brahmanic priests is limited to food offerings to the Lord. Similarly, in Shiva and Durga temples in Odisha, besides the Brahmanic priests, the priests of tribal origin, Mali Mohapatras, play important roles about which very little is known, and scholarly attempts to bring it to the limelight are few and far between (Nayak 2011,1-64).

From the very presence of priests of tribal origin as religious functionaries in Hindu temples and the nature and mode of service they render to gods and goddesses there, one could evidently postulate that shamanistic ritual practices must have been an important component of worship of these Hindu deities. The Devadasi tradition still alive and well in Lord Jagannath' temple can be safely said to be a legacy of tribal tradition. The Devadasi, the temple dancer, gets married to Lord Jagannath, the presiding deity of the shrine, and for the rest of her life cannot marry any human being.

Conclusion

In recent years, shamanism in tribal communities of Odisha has witnessed change and transformation. Due to development of modern road communication network, availability of transport facilities, and mass media communication in tribal areas, tribal people are getting more and more exposed to the outside world. Spread of education and health awareness campaigns and health and development programmes in tribal villages have impacted the traditional health and healing practices. They are gradually getting acquainted with allopathic medicines, medical doctors, and hospitals, thus becoming less and less dependent on shamans and traditional healers. After they fail with shamans, they go and consult medical doctors. However, it is just the opposite in urban Odisha/India, where people, often dissatisfied with modern medicines and medical practices, tend to find a solution to their problems through rural and even tribal shamans; in the last resort they surrender to the mercy of gods and goddesses.

In the Kutia Kandha Kondh villages, shamanism is on the decline. The number of shamans has decreased. A few only fulfil the needs of several villages. The Kutia Kandha shamans’ main functions are limited to the observance of annual rituals and festivals, agricultural ceremonies, and life cycle rituals, especially the death rituals. Only occasionally do they turn to shamans as healers. The overall shamanistic practices have been reduced to mere ritual functions without much of trance and dance. Male shamans, except for wearing long hair, are rather reluctant to wear feminine attire. Female shamans hardly appear in ritual robes. The younger generation of Kutia
Kandha Kondh shamans have introduced new ritual ingredients such as banana, cocoanut, and ghee as ritual offerings partly following the local Hindu manners and customs. In addition, they maintain continuity with the traditional offerings of sacrifices of blood and alcoholic liquor.

In the Lanjia Saora villages, shamanism is dwindling away. It is very difficult to ascertain who is a popular shaman among them. Shamans’ roles, especially those of female shamans are limited to death rituals, commemoration ceremonies, and erection of memory stones. Hardly can one find any more Anitals, the typical ritual drawings on the inner walls of their dwellings. Such specialists among shamans are almost extinct. All this is largely due to the spread of Christianity in most parts of the Saora land and territory. However, in the last few years, Anital-like art made by students of arts and art professionals are found marketed in cities of Odisha/India.

In recent decades, some Lanjia Saora villages have been influenced by the activities of the Viswa Hindu Parishad (VHP), a nationalist organization. People have discarded and thrown into the streams the sacred stones representing their holy beings and, on every Sunday, congregate in the community prayer house to worship the photo prints of Hindu deities such as Rama and Sita, Radha and Krishna, Laxmi and Saraswati along with several other gods and goddesses.

All Indians are fatalists. They are brought up like that. However agnostic or atheist one may claim to be, s/he cannot afford to remain totally unaffected by the general belief system which is deeply ingrained in Indian cultural system and social structure. Spread of education and modernization has certainly had a great impact on educated people, so that beliefs in ghosts and spirits have become a thing of the past. Yet, the uncertainties in one’s life drive people to take shelter under the supernatural. Often, even scientists, university scholars, and government officers, while installing computers in their offices perform rituals which are somewhat or other, and more than in one sense, shamanistic in nature. Reuse and reiteration of the tradition is more and more emphasized today, especially in the post-modern and globalized era. Tribal shamanism in some form or another has always been present in Hindu religion, and is often seen in practice today almost everywhere. When modern Indians are beset with new problems and encounter situations beyond their control the shamanistic techniques are invoked, and people get solace in it. Tribal shamanism, therefore, is not antithetical to basic Hindu religion, but is rather a feature of it.

Notes
1. By ‘sleight of hand’ it is meant that each shaman is gifted with a type of body art, typical movement of body parts, and especially in rolling tongues, verbose incantations with the help of which he/she communicates with deities and spirits.
2. *jhada jangal* is an Odiya term (*jhada* means ‘dense’ and *jangal* means ‘forest’).

3. Bana Devata is an Odiya term (Bana means ‘wild’ and Devata means ‘deity’).

4. *patra saora* and *patra saorani* are Odiya terms (*patra* means ‘leaves’ and *saora* and *saorani* respectively mean the ‘male Saora’ and the ‘female Saora’), which refer to shamans half-clad in leaves.

5. Jagannath (‘Lord of the Universe’) is the most celebrated holy being of Odisha. The Car Festival (*ratha yâtrâ*) which takes place from his temple throughout the streets of the city of Puri is one of the most famous religious events all over India, well-known in the anthropological literature (see, for instance, S. C. Mahapatra, 1994).

6. Anital is a typical ritual representation drawn by expert shamans on the inner walls of every Saora dwelling, often secretly kept covered by hanging a winnowing fan over it. Linear figures representing deities and ancestor spirits are drawn on a portion of wall within well delineated rectangular boundary lines. It can be said to be the Saora pantheon.

7. These Sonums are known and categorized according to the experience they underwent on the occasion of their death, or the circumstances, or the symptoms that characterized their death. After death they cause the same sickness/symptoms in the living beings in case they are treated with negligence by their living descendants. Persons dying a natural death due to old age are considered as Earth-sonums. Persons dying a premature or unnatural death such as falling from trees, mountains, snake bite, or committing suicide become Uyungsum. Idaisum refers to a generic term for all the ancestors (Idai). Kittungsum is a creator Sonum and a village guardian. These groups of Sonums have their own residential sites in and around the village territory, in a swidden patch or in a clump of forest, or beside a pathway.

8. Ajorapur is a ritual performed close to a water site/stream-bed. It is done by the shaman to appease the stream-sonum which causes sickness in infants and lactating mothers.

9. Guar is a stone planting ritual for the dead.

10. Karja is a three-day commemoration annual festival for the dead observed mostly in February-March.

11. Lajab is a rice transplanting ceremony wherein ancestors are especially commemorated.

12. Tonaipur is a magical ritual performed either to afflict someone with sorcery or to counteract ill effects of sorcery.
13. Regammar/Regamaran is a medicine man, Regamboi a medicine woman.

14. The supplication/rubbing of rice on the winnowing fan with closed eyes together with incantations for invoking spirits is a skill/technique learned by shamans to be able to get help from their spirits in order to enter into trance and mediate between the human beings and the other world.

15. Tendung and/or Yangate are somewhat different from the normal divination techniques of diagnosis to find the cause of illness.

16. In the Saora dialect Kinnorai is the underworld, where human beings go to live after death. In other words, the abode of ancestors is under the earth.

17. Small cigars made out of country grown tobacco wrapped in dried Kendu leaf.

18. Big cigars made out of country grown tobacco wrapped in Sal leaf.

19. Two tree species are conspicuous in the Saora landscape, viz. Mohua (Aba) and Salap (Ali). Alcohol is distilled from the dried flowers of the former and served as a beverage during the rainy season; Salap juice is used in the winter months.

20. The male Saora shaman is called Kudan/Kudanmar and the female Kudanboi.


22. Dom is a lower caste; people belonging to it inhabit the Kutia Kandha Kondh villages and are considered as their neighbours. They have served the Kutia Kandha Kondhs with various functions (assistants, street sweepers, herdsmen, go-betweens, traders, mediators) since the time of rule of feudal lords in the erstwhile Jeypore State, Odisha.

23. Pressing the birds’ feathers against the body of the onlookers has a symbolic value whereby the animal is sacrificed on behalf of the onlookers/participants in the ritual.

24. Dongar means ‘swidden fields’. Puja is the most common word for ‘ritual propitiation’. Dongar Puja means ‘ritual propitiation’ connected with the holy beings dwelling in the swidden fields.

25. Niam Raja is the name of the mythical king who reigned over the Niamgiri hills, the abode of the Kutia Kandha Kondhs. They believe that to be the descendants of the Niam Raja and, therefore, are of royal origin. Raja means ‘king’ and Penu means ‘deity’.

26. Puja means ‘worship, ritual propitiation’ and in general ‘ritual/s’.
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How to Understand Anthropology?

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Abstract: Anthropology is a global discipline where we find confluence of humanities, social, and natural sciences and they have strong interrelations amongst one another. Anthropologists take a broad approach to understanding the many different aspects of the human experience, which we call holism. It builds upon knowledge from natural sciences, including the discoveries about the origin and evolution of Homo Sapiens, human physical traits, human behaviour, the variations among different groups of humans and they consider what makes up our biological bodies and genetics, as well as our bones, diet, and health. It also studies the evolutionary past of Homo sapiens that has influenced its social organization and culture, and from social sciences, including the organization of human social and cultural relations, institutions, social conflicts, etc. They consider the past, through archaeology, to see how human groups lived hundreds or thousands of years ago and what was important to them. Anthropologists also compare humans with other animals (most often, other primates like monkeys and chimpanzees) to see what we have in common with them and what makes us unique. Even though nearly all humans need the same things to survive, like food, water, and companionship, the ways people meet these needs can be very different. For example, everyone needs to eat, but people eat different foods and get food in different ways. So anthropologists look at how different groups of people get food, prepare it, and share it. They also try to understand how people interact in social relationships (for example with families and friends). They look at the different ways people dress and communicate in different societies. Anthropologists sometimes use these comparisons to understand their own society. In this paper “How to understand Anthropology”, we will see that this subject has been central in the development of several new interdisciplinary fields such as - cognitive science, global studies, and various ethnic studies.

Introduction

During the first phase of interaction with the discipline, the learner tries to grapple with the real meaning of ‘Anthropology’. The English name Anthropology with its etymological origin from Greek language or ‘Nritatwa’ owing Sanskrit source give them little idea about nature and dimension of the discipline. This happened to me also half a century ago.

This name “Manav Bigyan” or The Science of Man is easier to form an idea. Some great authors named their books as “Science of Man”, “Man and his works”,

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“Mirror of Man”, “Man - the tool Maker”, etc. to communicate easily with the readers. They wanted to impress upon us, the holistic nature of the discipline. It deals with all possible aspects of human life and for this reason various branches of knowledge have become related. A learner in the first lesson is introduced to the diversified relation of Anthropology with History, Psychology, Geology, Biology, Statistics and Economics etc. A student may get puzzled, whether it falls under science category or in humanities? The same idea prevails over all people who are in the seat of power and policy maker. Now it is placed under a third category ‘Social Science’, making a sib member with Sociology, Economics, Psychology, Political Science etc. The other siblings are well known among most educated people, but anthropology is not. This is scenario in our country. Even after ninety years of existence in Indian Universities, the discipline remains as lesser known.

Common idea is that anthropology deals with the studies on tribal communities, their society, their body measurements etc. Even that is so, the concerned departments/ ministries do not have preferred place for anthropologist, neither in states nor in the central Government. The Anthropological survey of India is placed under Ministry of Culture not Science and Technology. Hence it runs on lesser fund giving lesser scope for expansion. The Indian Science Congress Association has also abolished independent section of anthropology. The scientific community in India, who guide the national planners, can afford to ignore anthropology because of our own indifference. We have not done any substantial contribution to national development. Our studies have only enriched stock of data on Indian population about which general people know nothing.

This has to be reversed by the new generation of anthropologists. They have to learn quickly that to make a mark as an anthropologist one has to understand the diverse nature of the discipline yet connected by an unifying cover - anthropological interpretation.

Medical science or Engineering Science is also multidisciplinary in nature. At graduation level, students have to learn many matters, which at the stage of specialization became vast discipline yet they had a common approach. A Physician or an Engineer takes up their problem with basic approach. Similarly, in case of human science, our research or action may deal with any parameter of human life, but finally our opinion would express a holistic consideration unlike an economist, sociologist or health scientist.

Let me make it easy for our understanding.

**Example :** (1) As human longevity has increased, many old persons are living, who are over seventy or eighty or even ninety years of age. At the same time, earning younger persons from villages or small towns are settling in industrial areas or in big
cities. They leave behind their aged people for various causes. The aged parents or grandparents become isolated. In many cases they are asked to stay in the urban homes of their sons (rarely daughters), they live like fish out of water. Some old persons have nobody to look after. Really this is a burning social problems.

A demographer or an economist or a sociologist would look at this problem from their own points of view. Numerical proportion of old women places of residence, dependency ratio, family stricture, economic condition etc. A health scientist would record types of ailments most prevalent diseases need for treatment. A social psychologist would fluid mental loveliness, not felling important etc.

An anthropology student should not ignore these but in addition they are to interview and find the stories of the aged as well as their care givers. What they feel what they need and what is desired. This is an insider’s approach. These information are to be superimposed on the generalized (outsider’s) views before composing report. That would go deep within the problem and help in tackling the situation in better way.

**Example : (2)** No you all know that there is the problem of displacement of people from their ancestral villages for various construction projects. There may be construction of river-dam or a huge factory or mining of minerals or large electricity producing installations. Usually these are in remote rural areas where people live on their own resources for generations.

The authorities appoint economist and sociologist who study the people, estimate their annual income, locate a dwelling place near by and prescribe (money) compensation per affected family. One from each family may get a job. This is now done in all cases. Problems arise later. Agitation erupts, work affected and with delay, cost of the project increases. Anthropologists study such displaced people much after the incident and the authorities do not have any knowledge about it. This is like a Post-mortem report.

If an anthropologist was consulted at initial stage, the findings would not have merely been restricted on superficial aspects rural people live in there ancestral and for generations and they develop deep tie with for generations and they develop deep tie will the rivers water sources holy spots high trees or hills. They have their places of gods and buried ancestors. They pray or worship those stones/ trees for well being cherish found memories they feel sage for their children or aged when they go out for earning in distant places.

Eviction is not easy as they are human being. Anthropologists can extract own ideas from those who would be victim. How they would agree to move out and what they want in new habitations. Will the whole villagers like to settle in one new village or scattered? Views of the people carry value, so also the considerations of executing authority.
Like this many human problems can be better investigated through holistic approach. There are specific methods for each category of problem sampling methods, analysis of variance and such techniques come from statistics somatic measurements from biometry. Physiological testing are same as is medical investigation study of earth stratigraphy, soil character etc. are taken form geo-science and so many methods from different branches of knowledge. Indeed this science has combined the methods of laboratory and outdoor studies of various sciences collection of information from people in their habitat or place of work or collecting physical samples or archaic materials are all outdoor activities. This is known as field work many evidences of early men (fossil or hither tools) and life stories of very primitive communities have enriched our knowledge, through painstaking and risky field works by scholars.

Previously many inquisitive scholars took interest is human science and they wrote valuable books which become treasure is anthropology, some were is administrative service, somewhere Pastor of church, some form physic, geology or even medical discipline, colonial rulers encouraged socio-cultural studies to know the native people for effective administration. Gradually the discipline took shape.

All over the world, learned persons undertook investigation to know as much possible about human being. Thus racial variation as per physical features or evolution of man to present from or social stratification culture variation etc. became subject of investigation as all scientific knowledge require a standard method, so also anthropological discipline use specific methods and interpreted data is own way, with corresponding progress in other areas of knowledge. The syllabus of anthropology in the teaching institutions of India have changed towards the end of twentieth century. Many new information about early human existence were added. So also the rise of human genetics using techniques of molecular biology demolished the idea of race depending on somato-metric and blood-group characters. Discoveries of many prehistoric and proto-historic habitations from different parts of world gave new ideas on cultural standard and dispersion of ancient human population. The importance of environmental factors on adaption (cultural and genetics) was better understood. So the new generation anthropology learners are to be more receptive about reformed syllabus of today.

In the following pages, I would try to guide you into the discipline which is now more flexible than in past. This attempt is to rescue you from confusion.

The global environment is changing so fast, that even many primitive communities are exposed to modern gadgets and other items of domestic use. This is happening everywhere. Many old traditions are under change. We have to orient our approach. Our reading materials should include more recent reports. The old treatises are very valuable but would not equip you to compete with others like the history of development of anthropology is global context Indian students should be acquainted with development
and growth of anthropology in India. Many British officials laid the foundation of anthropological studies in India during first held of twentieth made we should know that.

**Step - 1**

The central point is Man (combined term for man and woman i.e., mankind). The human beings seen all over the globe belong to one genus one species and one sub-species. The necessity of creating a sub-species was felt, when fossil relics of distinct varieties of early man of old stone age, were found who wherewith slightly different features and probably were not the progenitors of modern man- if they were given status of homo sapiens the improved anatomical features of modern man need to be placed is sub-species questions arise in our mind why man is unique creature? Who should be called man?.

The Greek mythical hero Oedipus was challenged with a question by the lion-bodied with human head monster sphinx: name a creature who first walks on four afterwards on two and at last on their those who could not answer were killed Oedipus replied man who is in infancy crawls at net stage walks on two and in old age uses a stick. On getting right answer, the sphinx vanished forever.

The story support that man is a habitual biped walker this bipedal walking is different from temporary bipedal stance of an ape or a bear. Man is characterized by speaking out own through is coherent manner not like a talking bird which only imitates. Human brain can think and the hands carry out the instruction. Hands became free from burden of supporting body on tree or on ground. Out of many special features by which man is different from other mammals, perfect bipedal stride, hands having precision grip (holding a pen) and ability to talk and remember the matter are quintessential.

The religions books tell about the origin of human being by the wish of God. Primitive communities also have oral stories of similar nature. Nobody could challenge. When Charles Darwin proposed the systematic way of evolution of all living creatures, and subsequently evolution of man he was severely supposed you all know the debates between Bishop Wilberforce and Thomas Henry Huxley known as Darwin’s bull dog. All those days in late nineteenth century are now over all scientists have accepted biological evolution and emergence of human being from ape like ancient stock. But the battle believe is special vreation of man. the popular book chariot of the god by Eric Anatomic von Damien (Published in 1968) provide enough arguments in favour of anti-evolution. That the gods visited earth and created civilization is supported by huge stone states is Easter Island stone hinge in England and cave art is many places no doubt these are very interesting books.

With strong conviction that man evolved from some stock of ape like creature enthusiastic scholars (of various disciplines like Geology, Ontology, Archaeology) risked
their lives to explore river gorges, dark caves etc to find some relic as proof of early man. There are many fascinating discovery is result of painstaking search, despair and success.

Up to middle of twentieth century, each fossil find was sensational was given a name and adjudged a position is the line of human evolution a concept of missing link (a hominid with half – ape and half man feature ) haunted the discoverers. A book of same name on South Africa Man-apes was written. The students of those time had hard time in remembering the names and features of those fossils and at last to show that the sought after missing-link still remained missing. There is a famous story of fraud where an amateur fossil hunter artificially distorted an old human cranium and a chimpangee jaw. The discover enjoyed high reputation until death, later his cheating was detected. Those days are over with laboratory development.

Now no Palaeo-anthropologist has anything to prove a missing link skeletal relic. Numerous fossil relics have been found from various sites of old-world (Africa-Asia-Europe) which show antiquity of erect walking early men. Who should be Homo but not sapiens. The time of existence was a large span was good enough to make tools from bone or stone and light fire is caves or open habitation.

When we get evidences of better intelligence through left out stone tools or dietary practices or group living, we call them Homo sapiens, though they did not have similar skeletal features everywhere. Somewhere the body build was hefty and some where small. There was debate, which body size was suitable for survival. The large sized early men were more powerful and needed more food. The smaller people needed less food stuff for survival. How far this argument was valid we are not sure.

The most valuable achievement of the early hominids was increased activity of brain, not simply in size. It has been known now that by the time of early food producing stage nearly ninety percent of neuron cells in the brain became as development as modern human being of non-industrial society.

Human evolutionists have debated for a long time on two questions: (a) the process of separation from ape like stock and (b) which are of earth produced the direct ancestors of modern man. Now the old debate is laid to rest. The first process took place is many areas from where samples of Homo erectus have been obtained (even India). They hunted make stone tools, could produce fire, and thrived for pretty long period. Even they improved in physical features and brain. But the present mankind all over the world owe their origin from those who grew in northern part of Africa.

How this type of explanation could be arrived and what happened to other stocks of Homo species?

This has become possible through application of molecular analysis of non-chromosomal DNA and also DNA of Y-chromosome (found only in men). The DNA
material found is mitochondria remain undivided during production of gamete. This knowledge encouraged. Scientists trace mitochondrial DNA in women which is received from her mother. Thus mother line ancestry answered the question of original cradle land of present human population. Also tracing Y-chromosome has helped. Although this explanation of populating all corners of earth from one stock of early man is widely accepted, many question remained unanswered. The chapter is not closed.

The laboratory equipments for molecular genetics is costly and for this not available is all anthropology departments. A student with interests can learn these and orient human genetics is that way. The old lessons of racial variation can be replaced by modern version of human variation. All earliest views can be placed under brief history of development.

**Step - 2**

As already mentioned that cultural evidence is no less important than piece of fossil bone. Fossilization does not occur everywhere. Finding a fossil bone of relevant type (i.e. Homo species) is a chance event. In addition to hominid fossil, if other some stone weapon or fossil bones of animals or plants are found it is advantage. Not only one can ascertain stage of physical development, but also their tool making idea, use of plant as diet or fuel or any other purposes well prepared burial pits of early Homo sapiens have enabled Prehistoric archaeologists (Palaeo-anthropologists) to construct the prevailing climate culture of dead and use of implements.

The weather proof stone materials out of which various usable tools were made, extremely use full when properly examined and interpreted. When fossils are rare these stone implements tell untold story. In many cases it has been found that particular stone pieces were brought from distance places to design particular implement. Many factory sites have been found where varieties of stone material chip (broken tools / flakes) were available that suggest how those early tool makers did know which material would make good tool. These indicate early development of culture.

Prehistoric archaeologists work is close association with palaeontologists. Both specialists work towards constructing the picture of human evolution. These are not separate. During learning students are to correlate the texts on both the aspects. With success is living through advertise human groups became innovative. They discovered metals like copper tin, iron and made tools.

Those who take interest is the very ancient way of life of people, search not only in the hill- caves, but on various places like lake, river island to collect evidences, some cave dwelling site yielded series of skulls of same category of Homo, cracked at the bottom is other place a portion hammered. The interpretation differs. It could be eating the brain (cannibal practice) or a death ritual or lethal injury.
I have hinted is the beginning that many people know anthropology as tribal study i.e. investigations on society and culture of primitive homogenous communities off course. This is an important part of anthropological studies not the sole focus in many western countries social anthropology is separate from biological branch. The approaches of the two branches are different but that does not mean that they belong to different disciplines. A learner may often get idea that the major branches: Physical, social and prehistoric archaeology are quite separate and independently can operate all these sub-disciplines deal with different aspects of human existence can be pursued separately but for interpretation to be taken together.

Now your field every individual bear a social identity. He or she has a name which is simplest from is personal identity when the same bears two or three parts it indicate the persons family identity and further there might be fathers or village or clam identifies (e.g. M.K. Gandhi or M.A.K. Pataudi).

It was understood by the early ancestors of modern men, that single life is not suitable for survival. Hunting and food collection would improve if a group is formed. That group members (of both gender) would work for good wear safety and give care to the offspring. The resolve to live in groups or bands was perhaps the waste decision. Each mobile band framed some rules and regulation and pledged to abide by. In course of time, with increase in population and development of wisdom, different bands devised many rules of internal relation forming a system. These systematic pattern of behavior suited their need at that point of time. Different small bands had their own system of social organization.

Hunting bands still continue to exist and face hard life they cannot afford to have large group. Yet they have large group. Yet they have to acquire conjugal partners and procreate children nature them and wish to leave descendents. How such primitive people could innovate social systems which is remote past saved them from extinction.

Anthropologists try to fluid such primitive societies which live today and understand their indigenous method of society management. It would like to briefly describe one such example of ancient wisdom narrated. By an eminent anthropologist Joseph Birdsell, about fifty years ago, the community lives on gathering edible food and hunting animals in desert areas of Australia. They live is small beds and do not marry within their group. The sex-ratio in those bands are highly imbalanced due to killing practice of female babies at birth. The male proportion is very high because, they would be groomed to be good hunters. Adolescent boys are trained by some expert seniors boot only hunting but also about the territory, their totem spot, and introduced with other bands, with whom to care the elderly persons, to give most part of a killed animal to those who no more can go out for food unless a boy is proved to be an efficient hunter, he is not to marry. So also girls are trained.
When number of marriageable boys are more girls are seared how all men get at least one wife and often more. Way problem is sowed is example of wisdom.

When any man gets a wife from the other band he takes with a promise to return a girl to that family there might be no daughter at that time. There are chances that no girls child is born is ten years to be given to the bachelor groom meanwhile a daughter is born and survives to sub-adult stage the earmarked groom by that time grown to be say thirty five years old. The promised marriage would be solemnized. That man may also marry some widow senior to him.

The young bride would look after her aged husband for longer time and is return get her support. She may also allow one of her daughter baby killed as per social choice. The soul of the baby goes to the totem spot and the mother might get her back is another berth that is her consolation.

This example shows how the primitive group run their society is adverse situation of food shortage. Not only band size is kept under control by cruel (to us) practice, but also facility of being looked after is old age no body degree to defy the dictum of social traditions. It is very difficult to survive alone in such harsh situation. This example of aboriginal hunting groups is of non-progressive society.

Those communities expanded by exploring resources become innovative succeeded is developing their living conditions. They were the path finding ancestors of modern civilization the non-progressive societies mostly became extinct or merged with the progressive people. Anthropologists try to get a glimpse of the ancient society by studying a few such surviving communities.

Many ancient social customs become irrelevant under changed conditions for example when the community adopts rearing live stock along with cultivation or adopts pastoral, nomadic or semi-nomadic life. A section of group cling to orthodox practices others adopt changes. They might break away. But cannot forget some old practices. These remain as optional.

Students may fluid that one nomadic Toda community now raising livestock, had continued female infant killing for long time polyandry is a practice to compensate lesser number of women. Among the Hindu many communities practise cross-cousin marriage or uncle niece marriage or marry dead brothers wife or wife’s sister or multiple marriage other Hindus condemn the practice why this?

You should ask yourself for reason. Why one cannot shake off community identity every one lives among other people is a foreign area? We have multiple identity: national linguistic regional community etc. How it is.

**Human Culture**

Culture is inseparable from human life and it is the quality by which man is distinct from other primate. A wasp builds nest before laying egg. Put some food for growing
larva seal the mouth and files off. In due course the full grown baby wasp (Imago) comes out there is not body of its species to held or teach. It flies out in a new world discover it food understand safety, matures again build same type of nest to lay egg. It is all instinctive or inborn quality based ib gebetuc cide tgus us bit cykytre as we perceive,

Can you imagine a human baby to do this? Human babies (also many other earning animals) are given attention by mother and all others of family the baby grows up and in each stage given specific care and guidance child learns to behave like that so culture is learned behavior also cultivated inspire of teaching a child imitate many behaviors out of its own intuition. As brain develops both taught and instinct level acquired matters are mixed to make a behaviour pattern of a young person. Thus we find great degree of variation even among siblings.

Family elders try to impart such training which is approved by the cultural norm of the society. Most important is the gender specific way i.e. specially meant for boy or girl child. Each human society has its own cultural stereotypes about man and woman. Each man and woman are explicated to fit into the approved image.

Children are groomed to be perfect bearer of the cultural wealth of a society with expectation of further refinement. Culture is mental quality which has prevailed over all expressed aspects of humans, miles Herskovits summarily described culture as product of hand, mind and society. Rabindranath Tagore. Was more poetic is comparing culture with the a litter of a pieced of diamond. The shine depend or the quality of the stone i.e. the quality of an individual. If a person is of good taste and intelligence she/he can refine culture- both abstract and material.

It society can be compared to a container culture is the content like the quality of the mass of diamond stone a strongly organized society can yield refined culture. To make society strong. Human mind introduced network of kin relations and reciprocal behavior such society could not only sustain culture practice or legacy of past generations but also develop it further.

Many ancient civilizations like getup summery Harppa, Mahenjadaro decayed as weakness creped into social organization. They had amazing knowledge of navigation astronomy philosophy architecture buy all become lost other groups of people learnt many thing from them and flourished. By contact of one group with other culture spreads. It is not exactly borrowed rather imitated and them assimilated is own style . All items of culture (Intellectual, behavioral or material) are not accepted or imitated by the people who are impressed at same time consider we the Indians did not accept European culture in dress, cooking, personal way of expression etc. till the television entered our domestic life . this is a contactless exposure. Assimilation is in our own way rapid is urban areas but slow is remote rural areas.
Many cultural traditions are hard to die in social ceremonies or religious functions the advance ed people have mixed non Indian dress and attitude with prescribed traditional paten. The least affected is mortuary rites is this way one can sort out many festivals essentially practiced by agricultural communities people engaged in seas trade are still observed by intake double.

IV. Ecological approach

Human population are found to live in different geographical conditions from desert to snow land to high mountain valley and fertile areas. Natural eco-conditions have influenced both biological and social cultural aspects, physical characters like haemoglobin long and cardiac capacities and physical features like trunk link ration skin.

References
Development Projects and Displacement: Impact on and Rural Tribal Women of Odisha

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Abstract: In this present paper, an attempt has been made to assess the impact of development projects on socio-cultural and economic life of rural and tribal women of Odisha. It also studies the problems of displacement which create dispossession of women as an effect of government measures taken for their resettlements. Although Government of India has been implementing many development projects in the tribal and rural areas but they were literally chased away from their own traditional land and are turned into displaced, landless, migrant people in search of a livelihood. The rehabilitation and resettlement policy of the government is yet to be successful and the women are suffering both by state machineries and customary practices. There is no proper effort to identify the discriminatory practices of rural and tribal women in the name of non-interference policy. Both positive and negative consequences of impact situation have been evaluated by observing the pattern of changing lifestyle.

Introduction

The term ‘Development’ means changes towards betterment of community. It involves the notion of growth, progress, improvement and expansion of a complex process involving the social, cultural, political and economic upliftment of people and society. But when country moves from developing stage to developed one there is a need for construction of dams, hydro-plants, and large irrigation projects, reservoirs, the building of highways, roads and railroad networks, urbanization and social services (expansion of cities, urban transport, water supply), expansion of agriculture, mining, industries, conservation of nature, population redistribution schemes. That results in development-induced displacement or the forced migration in the name of development. It bring development one side but on the side it affects more and more people. The people that face such migration are often helpless, suppressed by the power and laws of nations. Displacement is not a recent phenomenon. Michael Cernea argues that “Involuntary population displacement and resettlement are wide spread enough, big enough, frequent enough, complex and consequences enough to merit the full mobilization of the conceptual, analytical and operational tolls available to address it”. Displacement of tribal and rural people due to establishment of development projects raises various issues and problems, which are to be studied from anthropological perspectives. As a result displacement causes changes in the socio-cultural and economic life of rural women. Displacement of people has affected their social structure.

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Development brings out breakdown of social network and creation of a Cultural Diaspora.

The studies of displacement and rehabilitation are still relatively new and emerging area in Anthropology. Historically Social Scientists have been better at recording tragedies and the trauma of evictions and displacement, than at generating the conditions that would prevent these from happening. There also have been inabilities of social science research to acknowledge the full implications of the process of displacement, primarily since this to be grounded in a larger and structural critique of development.

Anthropological studies on displacement and rehabilitation started in India around the later 50s and early 60s. Some of the important studies under taken duties area by some authors (Scudder, 1973). Vidyathi’s (1970) full length study of Hati Industrial Complex provides one with an insight to understand the change in cultural patterns among displaced persons. He has attempted a longitudinal analysis of the different phases of industrialization and has examine the pre-industrial stage, the gradual implications of dislocations and disorganisations formation of a new society and readjustment to the new environment. He has also studied the growth of social and political leadership such as trade unions and business organisations. The research has placed special emphasis on the changes in economy, social behaviour, customs, fashions and inter-personal relationship.

Sarkar (1970) in his study at the bokare still project area highlighted the discrimination in payment of wages to the local displaced people. He brought out there difficulties in finding alternation jobs. The members of the affected families visited various work sites in search of jobs, which were controlled by contractors to prefers to employ experienced people. The studies of displacement and rehabilitation are still relatively new and emerging area in Anthropology. Burman (1962) studied the displaced tribal of Sundargarh District of Odisha because of construction of Rourkela Steel Plant and he had highlighted various factors affecting the process of displacement. After 1970 there have been resurgence of studies in Indian Anthropology and many have thrown insights to understand the change in cultural patterns among displaced persons, their gradual implications of dislocation and disorganizations formation of a new society and readjustment to the new environment.

Development Projects

Government of India has been implementing many development projects in the rural and tribal areas and the inhabitants have been literally chased away from their own traditional land and have been turned into displaced, landless, migrant people in search of a livelihood. The rehabilitation and resettlement policy of the government is yet to be implemented successfully and because of such activities the women are
suffering most both by state machineries and customary practices. There is no proper effort to identify the discriminatory practices of rural and tribal women in the name of non-interference policy. After independence in India many major development projects have been initiated and implemented by the Government to fight against poverty and economic stagnation and to increase economic and industrial development. These development projects were given high priority because of colonial era of deprivation and disorganized development in the interest of imperial power.

**Displacement Scenario in Odisha**

The state of Orissa has a total population of 4,19,47,358 (2011 census). More than two third of total areas of the state is covered with hills and forest. These areas are largely inhabited by tribal communities. In Odisha there are sixty-two tribal communities starting from small group of semi-nomadic hunting bands and artisans to sizeable groups of shifting cultivators and large groups of settled farmers and industrial workers. They show great varieties in language and culture, in economic life, social organization and religious customs and practices. These tribal communities with a population of 95,90,756 constitute 22.80 percent of Orissa’s total population and 9.20 percent of the total Scheduled Tribe population of India (2011 census). Orissa occupies third position in respect of concentration of tribal population of India.

Odisha like other regions of India is in the forefront of development process. This results in involuntary displacement of large population of illiterate, poor and unorganized weaker sections. For the sake of development of the region they are affected most. Such involuntary displacement brings uprooting and dismemberment of the social, moral and economic fabric of life built over generations or centuries.

In Odisha two mega development projects established in two different fields; power and steel started in the first decade after independence. In Odisha nearly 400,000 people have been displaced as result of 70 medium and major development projects having lost their homes and socio-cultural economic base which were built over generations. The multi-purpose Hirakud dam project, founded in 1946 evacuated nearly 15,000 families, who were displaced from their original villages having mostly tribal and scheduled caste population. Rourkela steel plant in Odisha, founded in 1950s, Rengali multi-purpose river dam, the Macchkund hydroelectric project in Koraput, National Aluminum Company Limited (NALCO), a Public Sector company, established in 1981, displaced nearly 48% from Scheduled Tribe and nearly 10% from Scheduled Caste population respectively. Upper Kolab multipurpose project and Upper Indravati project displaced mostly Scheduled Tribe and Scheduled Caste families.

Development-induced displacement or the forced migration in the name of development is affecting more and more people as countries move from developing to
developed nations. The people that face such migration are often helpless, suppressed by the power and laws of nations. Displaced people often internalize a sense of helplessness and powerlessness because of their encounter with the powerful external world, although there are also several examples of active resistance movements against development-induced displacement. In every category, particularly among marginalized groups, women are the worst hit and pay the highest price of development. A study carried out by the National Commission for Women in India (NCW) on the impact of displacement on women reveals that violence against women is increased. An increase in alcoholism due to displacement has led to a marked rise in domestic violence in India. Every day in different parts of the state, people from tribal and rural areas became victims of forceful displacement. Those that are displaced, they are again victimized by the corporations and the government. More than 15 thousand people have been displaced for Jindal Steel and Power Ltd. company in Angul district of Odisha in last 5 years. The Government of Odisha had suppressed the anti-displacement movement at the beginning. People had opposed the project and practically four thousand acres of land were acquired by the government for the company by alluring high payment or compensation and employment guarantee. But after acquisition of land, the displaced people are being betrayed and left unemployed without source of livelihood.

On 25th January 2012 just before the Republic Day, 4000 unarmed, displaced people including women went to company gate to demand their right to livelihood and life with dignity. But in the presence of police, they were attacked physically by the security guards of Jindal company without any provocation. The security force used lathis and iron rods by which people are being beaten mercilessly. Women were attacked in such a inhuman way, that their clothes were torn and they were being injured severely from tip to toe. More than 200 persons became seriously injured and admitted in the Hospital. Many injured women are not admitted in the hospital being feared, they are in their homes without medical treatments. The heinous attack by Jindal company is a conspiracy with district administration to suppress the voice of the displaced people to not to fight for their right to life and livelihood.

Recently 48 Tribal and Dalit people are being beaten by the police at Lanjigarh and kept in jail as the people opposed to destruction of village road for Vedanta company. Hired goons of POSCO used hand bombs to attack on struggling people of Dhinkia in presence of police in November 2012.

Although women constitute half of the world’s total population most of their work is not visible like household work, child rearing, fetching fuel, collecting water etc., which are generally considered as not productive labour and they receive no remuneration for these work. Women carry the burden of the two third of the total hours of work performed (UN and ILO statistics). Development planning has failed to recognize fully
women's contribution to the development process. Continuous displacement through development projects have become an instrument for change with subsequent readjustment. The process for moving from traditional places for living to new areas in new rural areas or urban areas due to rural urban movement, reinforced partly through resettlement have prefunded affected the life style as well as socio-economic structure of the concerned people. An extremely important area is gender issue. Women are assured to suffer most from displacement. They are uprooted from their traditional roles and have to adjust to a new role, different from their previous one. This new role would require gainful employment. They may not have required skill for the new job generated in the process. So, dislocation affects women more than their male counterparts. Most development policies and projects have in fact had severe negative impact on survival chances of poor women and their families. Moreover, such policies and large scale projects often fail to meet their goals when women's labour contribution at the household and project levels are overlooked, their needs for economic incentives are not understood, and resources relevant to their productive work are misdirected to men (Rao:1986).

Scheduled Tribe women constitute 50.7 percent of the total tribal population of the state. The sex ratio amongst the Scheduled Tribe population is 1029 females for 1000 males. Mostly they are underfed and suffering from malnutrition. Their educational attainment is very low. The rate of stagnation and dropouts among the girl students is very high. The participation rate of the tribal women (43.32 %) in the work force is much higher than that of other women in general population (22.30 %). Most of them are engaged in primary sector, as cultivators and agriculture labourers (almost 91 %). Hardly 3% of them are engaged in secondary and tertiary activities. Most development policies and projects have in fact had severe negative impact on survival chances of poor women and their families. Moreover, such policies and large scale projects often fail to meet their goals when women’s labour contribution at the household and project levels are overlooked, their needs for economic incentives are not understood, and resources relevant to their productive work are misdirected to men (Rao:1986).

The present study attempts to understand how development projects affect quality of life of rural and tribal women of Odisha. It is an outcome of anthropological study on impact of development projects on socio-cultural, economic as well as political life of women. It also studies the problems of displacement which creates dispossessions of women as an effect of Government measures taken for their resettlements. Data collected from women folk by undertaking fieldwork in different villages like Khandra, Jamuposhi, Ramthenga of Jajpur district of Odisha. The percentage of tribal population is 7.4 as against the total population of the district. Both the positive and negative consequences and trends consequent upon the impact situations are evaluated by observing the pattern of changing life style and culture of tribal communities.
Development Projects in Study Area

In the Jajpur District, in Kalinganagar there are six industries, established for which people have been displaced. These are NILACHAL ISPAT NIGAM Ltd., MESCO, JINDAL, VISA, ROHIT and COMMON CORRIDOR. More than 4000 people have been displaced from their native place. The following table represents the number of villages and families those have been displaced.

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Industries causing Displacement</th>
<th>Affected Villages</th>
<th>Number of Families Displaced</th>
<th>Communities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>NINL</td>
<td>Khandiapase, Kasiudi, Madhubapur, Sarangapur, Nuagaon</td>
<td>639</td>
<td>Munda Santal Bhumij</td>
</tr>
<tr>
<td>2.</td>
<td>MESCO</td>
<td>Siaria</td>
<td>53</td>
<td>Mohamadian</td>
</tr>
<tr>
<td>3.</td>
<td>JINDAL</td>
<td>Bansipur, Manpur, Kulpasi</td>
<td>60</td>
<td>Munda</td>
</tr>
<tr>
<td>4.</td>
<td>ROHIT</td>
<td>Tangarsahi</td>
<td>12</td>
<td>Munda</td>
</tr>
<tr>
<td>5.</td>
<td>VISA</td>
<td>Kudumisahi, Kulapasi, Mangalpur, Jakhapura</td>
<td>23</td>
<td>Munda</td>
</tr>
<tr>
<td>6.</td>
<td>Common Corridor</td>
<td>Mangalpur, Kulapasi</td>
<td>28</td>
<td>Munda</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td><strong>13</strong></td>
<td><strong>815</strong></td>
</tr>
</tbody>
</table>

The Government had planned to take the 30,000 acre land for industrialization in Kalinganagar of Jajpur District. But IDCO have taken 12,999 acre land so far and the total number of 1842 families have been displaced from Kalinganagar.

The tribal after have loosed their land, forest, house, source of livelihood, natural resources are thus becoming violent towards the Government or industry owners. According to them, they are not getting sufficient compensation and sufficient money for their land from Government. The rate of land is Rs.3,50,000 per acre where as they have received only Rs.50,000 per acre. On 2nd January’06, there was a serious disturbance between tribal and police officials. This incident had occurred at Nuagaon village under Kalinganagar in Jajpur District. 12 tribals have been killed by police firing
and many were injured. Earlier the Kalinganagar police tried to check and control the inflow of tribal people from Chandia, Gobarghati and Champakoila villages but they reached the site where ground leveling work of Tata Steels’ proposed plant was underway. The tribal had organized a meeting at Duburi on 2nd December’2005. Majority of them belong to Munda and Santal communities, who have been displaced due to establishment of these industries. The process of industrialization in the name of development saw the loss their cultural identity and values and their original socio-economic status changed. The serious problem during displacement was that a large number of Munda had lost their property rights. Three core elements of development, i.e. survival, security and autonomy grossly were missing in this process of integration with larger economies. They were hopeful that although their community ownership in the forest would go away but they would properly be compensated to have private ownership of land. The developmental policies and process had drastically altered relationship of Munda with natural environment and resources. From food gathering and agriculture to industrial labourer had become a painful journey with no sustenance commitment.

Government Policies and Company Policies

Government of Orissa has been pursuing various development initiatives to improve the quality of lives ensuring social justice being one of the major cornerstones of development. The Government always proactively tries to make sure people’s participation in development process. For displacement due to large development project in Odisha, Government has been formulating various projects specific resettlement and rehabilitation policies and plans. Orissa Government declared this Rehabilitation and Resettlement Policy in 15th May 2006. In this new policy, the definition of family have been changed with increased the compensational package of displaced people. The displaced people of mining and Industrial project can get the employment opportunity, not like the displaced people of other projects. Now, Government of Orissa changes the Rehabilitation and Resettlement policies especially for Kalinga Nagar.

Rehabilitation and Resettlement measures taken by Government

The Government of Orissa had declared a new package for the displaced family and a meeting was held on 1st June’2005. The Government time to time is changing their package for the displaced people. Each displaced family is provided with the following things :-

- Assistance for temporary structure and transport Rs.5000.
- 10 decimals of land or Rs.50,000 in lieu of it.
- House building assistance of Rs.50,000.
- One option of the following :-
Employment with the industry.
• Self-employment (One shop)
• One time cash assistance in lieu of job.
• Rs.20,000 for the DFs losing more than 2/3rd cultivable land.
• Rs.1,00,000 for the DFs losing more than 113rd cultivatable land.
• Rs.50,000 for other DFs.

Company Policy:
IDCO (Industrial Development Corporation) have made two rehabilitation colonies for displaced families such as Trijanga Rehabilitation colony and Gobarghati Rehabilitation Colony. IDCO had displaced all the tribal people from Khandiapasi, Kasiudi in January’1993.

For Trijanga Rehabilitation Colony, TATA Steel company has provided Rs. 1,50,000/- per household for house construction per family. Company provided Rs. 2,000/- monthly household maintenance and Rs. 2,000/- monthly health facilities. A medical vehicle is also available to provide free medicine to each family. TATA Steel organizes a Training Centre only for women member to learn.

Mode of Compensation
The company provide Rs. 1,50,000/- and 10 Decimal land. Company gave Rs. 1,50,000/- one time. In this money, the people use their own benefit and not utilize their house construction. So the company decided, money given by person for 3 Phases.

Foundation phase - they gave Rs. 50,000/-
Half construction phase – they gave Rs. 50,000/-
Full construction phase – they gave Rs. 50,000/-

The company provided Rs. 2,000/- monthly house hold maintenance and Rs. 2,000/- for maintenance of health monthly.

Impact on socio-cultural life
As a consequence of development projects, the tribal women have lost their conventionally high position in their respective societies. Due to change in traditional culture, values and ideology, their social organization (family structure, marriage system and kinship relationships) has been changed. Before displacement, they had joint family system, but after displacement, when Government provides 10 decimal land and Rs. 1,50,000/-per family for house construction to get more compensation, they have preferred nuclear family. Traditionally they mostly preferred large family to increase
their economic status. But now the family size has become small and the interpersonal relationships among the family members have become formal and restricted. Traditionally marriage was arranged with bride price by the parents with the consent of boys and girls called “Raji Khusi Marriage” (Love marriage). Even Cross cousin marriage was a practice in Munda society. The age at marriage for the male was 18 years and female was 16 years. But after displacement, the age has been increased to above 20 for a boy and below 20 for a girl. Now, they are preferring money and ornament as bride-price. But earlier they were using domesticated animals as bride price in marriage.

Within the family the ideal forms of relationship have been disturbed due to large-scale infiltration of non-tribal traders, contractors, moneylenders and others in their areas. They exploit them by engaging in cheap labour and even hiring tribal girls for sex and immoral trafficking. As a result the community has lost its indigenous system of social control on them and consequently tribal women are affected due to distorted family structure. As a consequence it affects the socialization process and the upbringing of children in tribal societies.

In tribal society people are tied by various kinds of bonds of which kinship bond is one, based on reproduction by which the whole group is bonded together as an entity. Now, the kinship bond amongst them is getting loosened and their traditional and original kinship terminologies are gradually changing due to the process of acculturation with the encysted caste people in development area. As a result women are losing their importance in social participation in keeping the kinship relationship alive and to bind their kin members together.

**Impact on economic life**

Economy is an important constituent of the community life and it plays a deciding role in the formulation of the socio-cultural structure of the societies. Clan groups maintained a social cohesiveness during earlier time in economic activities. But now people displaced from their native place and occupational mobility took place. The Munda were basically agriculturist and also earned for their livelihood by firewood collection, hunting, selling of country liquor in the market. But due to displacement, they have become engaged as wage labourers and changed their occupation due to loss of their land and forest. So tribal women are becoming economically independent by earning their own income as wage labours. As women are more involved in wage labour in the project sites in many cases men are becoming dependent on them. They show no keenness to work for the family. The rate of liquor consumption has been increasing day by day. The compensation money, which they received from government at the beginning of project, was mostly spent on liquor consumption and merry makings so that that money could not be utilized for their economic development.
Impact on women empowerment

As a result of impact of development projects on tribal women, the decision-making ability has gone through a sea change with regard to choosing own life partner, deciding about nuclear family system resulting in growth of individualism. The recognition of women's political equality as per Indian constitution is not observed in tribal societies. The decision-making process in the social, economic, and political fields is still restricted within the family level, but it is extended up to the community level in special cases.

Munda women are now been given chances to participate in the political sphere which was impossible earlier in their community. Women were confined to domestic work only. In one such case Sombari-dei Purty was selected as the ward member in women reservation quota. In previous year she was a ward member only because of her education. Sombari is 7th std. drop out. She could not continue her study due to her early marriage. Through SHGs (Self help Groups) women empowerment has been increased.

Conclusion

In the tribal world women contribute to the working force in a more substantial way than the non-tribal world. With the opening of mines and growth of industrial in tribal areas a large number of women have been drawn to occupations wither to unknown to them. The proportion of women in labour force has increased. The women feel inclined to go on for such short and long term employment avenues because it provides them ready cash which they spend it either on their family or on clothes, new fashion ornaments and other items of daily case. Besides the monetary gain, they also cherish the pleasure of daily outing which is actively associated with such occupations. But in many of the industrial project areas, the employment women have led to several forms of social and economic exploitation. They are now aware of women rights on various fields like parental property, education, employment etc.

Now a days, women are the centre of development studies primarily because they have been subjected to gender discriminations which ultimately results in long term social discriminations and multiple forms of exploitation originating from socio-cultural system.

The impact of development projects and displacement has far reaching consequences. They are both positive and negative. The positives are in the field of women empowerment particularly in economic sphere. But the negatives are in both social and cultural life of tribal women. Previously the tribal women have been enjoying conventional high position in society and working in a favourable traditional working...
Contacts with outsiders, the monetization and commercialization of economic activities, introduction of government policies, and programmes have reduced the earlier importance of women. Various types of changes relating to new practices have added to their work without enhancing their position in society.

The impact assessment study has been done by considering many variables like socio-cultural, economic, empowerment and as a whole their quality of life. It deals with the nature and visibility of traditional female economic activities and cultural variables covering values and attitudes related to marriage system, family structures, power relations and motherhood. Women have great role within the family and the society, so they have larger say in the familial and social activities. This may be termed as a positive consequence of project. But it is also observed that the middlemen and contractors are exploiting the tribal women by neither giving them their payments in time nor the full amount in many cases. Tribal women are still not fully aware of their legal and economic rights given by the government due to their low educational attainments. As the strategy for women development is multi-dimensional, the tribal women in India have to be given their share in all spheres of development. Skill development of rural and tribal people is necessary to increase their employability which can be processed through different training programmes. The compensation package should not be handed over directly to the displaced population in cash as they are likely to spend the compensation money on liquor and betting.

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Stone Age Cultures Around Ghantikhala Area, Cuttack District, Coastal Odisha

DAITARI SAHOO*
SUBRAT K. NAIK**

Abstract : Recently an intensive archaeological investigation was carried out in and around Ghantikhala area in the district of Cuttack in Odisha. The work in the area was undertaken under the auspices of the Prehistoric Archaeology Branch, Post-Graduate Department of Anthropology, Utkal University, Bhubaneswar to impart field trainings in archaeology to the final year Post-Graduate students of Anthropology, specialising in Prehistoric Archaeology. The archaeological investigation in the study area was also followed by a trial trench excavation at the site of Belasahi, Saharasahi and a scientific section swapping at a site called Nuasahi Khalipadia. During the excavation, altogether, 11 sites were located in the study area with significant evidences of lithic artefacts of lower Palaeolithic, Mesolithic and Neolithic periods. From the entire collection, a few specimens of Palaeolithic artefacts have also been collected as in situ as embedded in their original contexts at the sites. Although the number of artefacts in the collection is not very big, the occurrences of various typologies of all these three different cultural periods indicate that the area was colonized from time to time by the prehistoric denizens from the Lower Palaeolithic period during Pleistocene and through the Mesolithic to Neolithic periods in the Holocene. However, this paper highlights the geoarchaeology of the study area and the artefact assemblages in the collection which belong to the above said Stone Age cultures.

Introduction

The age-old Cuttack district including all the five historically famous ancient military cantonments, (Katakas) is widely known as ‘Panchakataka’ of the medieval Ganga and Gajapati kings. It is located in the mid-eastern coastal parts of the state of Odisha in Indian Peninsula. From the administrative point of view, It is divided into four new districts of Cuttack, Jajpur, Jagatsinghpur and Kendrapada. Before the division, including the Cuttack subdivision, the other three were the famous subdivisions (Behura 1996: viii) of the erstwhile Cuttack District. The newly formed district of Cuttack consists of its three long-standing subdivisions of Athagarh, Banki and Cuttack which lies roughly between 84° 58’ to 86° 20’ E longitudes and 20° 03’ to 20° 40’ N latitudes.

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Geographically it is surrounded by different districts: Dhenkanal in the north, Angul in the north-west, Jajpur in the north-east, Khurda in the south, Nayagarh in the south-west and Jagatsinghpur in the south-east. The district covers 2.52% of the state’s area (3932 sq. km) and 6.38 % of the state’s population (2341000 cr) as per District Statistical Handbook, Cuttack 2001:1-2. It has a hot and humid subtropical monsoon climate. It receives an average annual rain fall aof about 1501.03 mm. While during the summer, the mercury rises as high as 40º Celsius, during the winter, it dips as low as 10º Celsius. Summer starts at the end of March and lasts till June when the monsoon sets in. Winter starts from November and lasts till January and is characterized by chill winds from the North. It is pleasant with moderate climate from mid January to mid March. The entire district is considerably drained by the mid and lower reaches of the Mahanadi as well as its two major distributaries, the Birupa and the Kathajodi.

From the physiographic point of view, the district may be divided into three major natural zones as (i) the North-western rugged hilly tracts, (ii) Deltaic alluvial plain and (iii) Younger alluvial basin of the Mahanadi. A major portion of the district falls in the North-western rugged hilly tracts and the younger alluvial basin of the Mahanadi. Young alluvial soil is distributed in the west along the Mahanadi valleys. The North-western rugged hilly tracts with hills of various heights ranging from 100m to 600m and low-lying flat laterite hills are commonly observed around north and north-west of Tangi-Choudwar, Athagarh, Baramba and Narasinghpur areas. The deltaic alluvial plain of the district spreads from delta head at Naraj through the valleys of the Mahanadi and the Kathajodi up to the boundaries of Jajpur, Kendrapada and Jagatsinghpur. This part of the district has been formed during the recent geological era providing a fully irrigated arable land dotted with rice fields, banyan trees, bamboo orchards, as well and palm and mango groves. The younger alluvial basin of the Mahanadi with few isolated hillocks is significantly marked to the south of the rugged hilly tracts on either of the banks of the lower Mahanadi valley from Narsinghpur throughout Athagarh, Banki and Tangi-Choudwar area. In this tract, the Mahanadi flows cutting the floors of upper Gondwana sandstone formation around Athagarh. A few discontinuous narrow lateritic stretches of Pleistocene formation are found around the periphery of the hilly region to the south of Mahanadi close to Banki and from Athagarh to Nirgundi including Tangi-Choudwar area to the north and north-west of the Mahanadi. This region is devoid of forests of any kind but sparsely covered with certain indigenous vegetation.

Geologically, this region covers the rock types occuring from oldest to youngest formations. The oldest formation comprises granite gneisses, khondalite suits of rocks and charnokites of Pre Cambrian-Archean formations. Rocks of the lower Cretaceous-Jurassic formation from the upper Gondwanas are represented by the Athagarh sandstones. The youngest formations from the quaternary period belonging to the Pleistocene are recent and recent days the laterites and alluvial deposits distributed in vast areas of the district.
In this region, the laterites, detrital in character, are primarily developed on the formations of granite gneisses and sandstones. It is widely reported that both these laterites and alluvial deposits are found to be implementiferous associated with Palaeolithic tools, the earliest remains of prehistoric men in different parts of India (Ghosh, 1966: 149-62, 1979: 120-124; Mohapatra, 1962: 12-13). But the tools found from the gravelly lateritic deposits are also being lateritised and are provided with lateritic encrustations.

As history goes, out of the five historically venerable ‘Panchakataka’ of the erstwhile Cuttack district, the present boundary of the newly formed Cuttack district comprises the three of such places: the Choudwar Kataka, the Sarangagarh or Chudangagarh Kataka, and the Varanasi Kataka or Bidanasi Kataka. However, the present Cuttack district has got its name from the principal city and headquarters with the same name which was once the martial cantonment (Kataka) of the medieval Ganga and Gajapati kings of Odisha (Mahapatra 1986: 1). The present Cuttack city adorned with the relics of the glorious Varanasi Kataka is strategically located in a ravine island formed by the Mahanadi and Kathajodi rivers. History of Cuttack, since the early historic period to the contemporary period is widely known but not much study on the prehistory of this part is attempted beside/except the few sporadic works/work in the district as discussed below.

**Previous work in Cuttack and adjoining regions**

It was Valentine Ball, a British geologist working on the laterites of the Mahanadi valley, who laid the foundation stone in the line of research on the prehistory of the district of Cuttack. He did this by discovering the occurrence of potsherds evidenced by an ancient kitchen-midden associated with a slab of laterite at Chaudwar (Ball 1876: 120-121) about 10 kilometres to the east of the study area, Ghantikhala, in the district of Cuttack.

After an a gap of about nine decades, it was G.C. Mahapatra (1962), inspired by Ball’s report, who surveyed the area in and around Chaudwar and tried his best to locate the site where Ball reported the occurrence of potsherds as identified as kitchen-midden. But he was highly disappointed in his effort and failed to find out the particular place and locate the specimen in any of the museums and expressed his disappointment on missing such valuable information regarding the antiquity of pottery in Indian Prehistory (Mohapatra 1962: 27). But he was highly disappointed for failing to find the particular place and locate the specimen in any of the museums. He expressed his grief on missing of such valuable information regarding the antiquity of pottery in Indian Prehistory (Mohapatra 1962: 27). Subsequently, from 1962 to 2005, in four decades, a number of prehistoric sites yielding Stone Age artefact assemblages of Palaeolithic, Mesolithic and Neolithic periods have been reported in and around the
adjoining regions of the district Cuttack (Mohapatra, 1962; Tripathy 1972; Sahoo and Tripathy, 1988-89:269-273; Sahoo, 2000: 173-200; Sahoo and Dash 2005-06). Some of them have also excavated with trial trenches to establish the geochronology of the different cultural phases of the prehistoric period (Ghosh and Ray, 1990-93:92-99; Basa and Sahoo, 2000:121-140).

But in these four decades, most of the area around north and north-western hilly tracks along the lower Mahanadi valley of the district of Cuttack, plausibly potential for prehistoric evidences, have been destroyed due to encroachment of land for cultivation, settlements, industries and quarrying of lateritic slabs, soils and other raw materials for roads, railways and buildings. However, learning from the works of Ball (1876:120-121) and Mohapatra, (1962:27) the present author Sahoo has been attracted toward the uncharted area in and around Chaudwar. He has surveyed up to Naraja at the delta head as well as its surroundings on the north of the lower Mahanadi valley near Cuttack for locating more prehistoric sites.

Within a period of nine years, from 1996 to 2004, the first author has been frequently stepping coming to the area dotted with lateritic low flat hills and mounds. He has located a good number of sites with stone tool relics belonging to the Mesolithic and Neolithic cultures in and around Chaudwar near Cuttack where V. Ball had possibly stepped his feet first during his exploration in this region. He has recorded that most of the prehistoric sites are very much located around the hill slopes, foothills, even on the hilltops of the low flat hills of laterites in the region. Beside this, Sahoo has also found a number of prehistoric sites around Naraja which have yielded quite a good number of prehistoric lithic artefact assemblages belonging to the lower Palaeolithic, Mesolithic and Neolithic cultures. Out of these, the two sites that have the evidences of rock art on the low hills of the white sandstone belong to Athagarh series of the upper Gondwana formation around delta head of the Mahanadi. From these two sites, one is significantly located on the face of a huge rock exposed at the foothills of the Siddheswar Mundia and another at a cave on the waist of the Haripuli hills in the Subasi Reserve Forest area around the delta head of Coastal Odisha. These newly discovered petroglyphs in the forms of bruising and engraving imply the cognitive ability of catching fish and the game animals of the early inhabitants in the area (Sahoo, 2010).

**Present work**

In January 2005, the first author under the auspices of the P.G. Department of Anthropology, Utkal University conducted an intensive archaeological survey in and around the area of Ghantikhal in the district of Cuttack in coastal Odisha. The aims of this survey were, firstly, to salvage the early human heritage in the sites which were on the verge of destruction, secondly, for imparting training in field methods in archaeology.
to the final year M.A. Anthropology students, specialising in Prehistoric Archaeology for the fulfillment of their P.G. Diploma in Anthropology and thirdly, to prepare a data base on the geomorphology and archaeology of the newly discovered sites in the study area for adding new pages in the prehistoric archaeology of Cuttack in particular and Odisha in general. The second author was one of the members of our survey team and prepared his dissertation titled “Prehistoric Archaeological Exploration around Ghantikhal, District Cuttack” under the guidance of the first author. The survey in the area has resulted in the discovery of 11 sites altogether with notable evidence of lower Palaeolithic, Mesolithic and Neolithic periods. Altogether 196 stone artifacts have have been Collected from the surface survey of the eleven different sites out of which 23 are of the Lower Palaeolithic culture, 162 are of the Mesolithic culture and the rest 11 are of the Neolithic culture.

In addition to this, the survey in the area was also followed by a trial trench excavation at an undisturbed place in the site of Belasahi Saharasahi and the scientific section scraping at a selected patch of the vertical section exposed associated with ancient pottery remains at the site of Nuasahi Khalipadia. This present paper is an outcome of the recent study and highlights the geomorphological and archaeological potential of the study area which reveals the existence of most of the cultures of the Stone Age. However, it discusses the geomorphology and archaeology of almost all the sites and the possible archaeological methods followed in the study as well as the artefact assemblages of the different Stone Age cultures collected from the different sites located in and around the study area of Ghantikhala.

The Study Area and its Geomorphology

The present investigation was primarily undertaken in and around Ghantikhala area of Gurudijhatia block under Athagarh subdivision of the district of Cuttack. It is on the north-west peneplain adjacent to the upland region to the north of the river Mahanadi in Cuttack district. Geographically, the area including the Subasi Reserve Forest is located in between 20° 30’ 00” to 20° 34’ 00” N latitudes and 85° 43’ 00” to 85° 46’ 00” E longitudes. The area is very much known for the Nidhipur-Ghantikhala railway station on the South Eastern Railway (S.E.R) East Coast Section. It is also widely known for its important hills like Haripuli and Subasi as well as the Subasi Reserve Forest. It is sitauted at about 8 km to the west of the city of Cuttack, the headquarters of the district of Cuttack and about 45 km to the north of the state capital, Bhubaneswar. In fact, the survey concentrated in the area between Khuntuni and Nidhipur-Ghantikhala along the sides of the South Eastern Railway in east coast section (which runs in the area from Behentasaharasahi to Radhakishorepur). The area on the north is bounded by Khuntuni and Radhakishorepur, in the east by Subasi reserve forest, on the south by...
Nidhipur-Ghantikhala and on the west by Champa, Dalabhoga, and Subarnamanjaripur lying on the western fringe of the Subasi Reserve Forest.

The undulation of this natural landscape is noticeable due to the distribution of hills and mountains. The Haripuli is a block hill with the upper Gondwana sandstone formation and laterites of Pliocene and Pleistocene formation located close to Radhashyampur and Belasahi Saharsahi. The Subasi range is located on the east of the study area orienting from east to west. There are many seasonal and perennial mountain streams which have considerably drained the landmass. Among them, Barajora in the northwest and the Sankhajor on the south of the study area are the important perennial streams. The Barajora forms an affluent of the river Sapua, tributary of the Mahanadi in the district of Cuttack.

The study area is inhabited by caste and tribes. The Savaras are the major tribe living in the villages like Behentakaharshai, Belasahisaharsahi, Nuasahi, Champa, Rampei, Subarnamanjaripur, Chepeti Sahi etc in the study area since time immemorial. They have been depending on the reserved forest region of Subasi hills and water bodies nearby for their livelihood since they have habituated this area. However, it is apparent that the geomorphology of the area along with environment suitably facilitating the land with easy mobility, resources for subsistence and raw materials for the production of tools not only has provided asylum to the present population but also had attracted the prehistoric population for occupying the land in the remote past. In this micro area, sites discovered pertinent to prehistoric Stone Age culture are mostly open air sites. Such sites are very commonly located at the sloppy foothills and eroded rocky lateritic landmass on the foot plains of the hills close to seasonal or perennial stream and water bodies. The present survey in the study area has resulted in the discovery of 11 sites altogether with significant evidences of lithic artefacts of lower Palaeolithic, Mesolithic and Neolithic periods.

Location of Prehistoric Sites

From the present survey in and around Gantikhala a number of sites associated with various lithic artefacts of Stone Age have been discovered. Hence a precise site description is as follows.


This site is located on/to the west of the South Eastern Railway (East Coast Section) which runs from Barang through Ghantikhala-Nidhipur railway station to Radhakishorepur in the study area. There is a vast patch of highly eroded land parallel to the said railway track measuring 180x80 sq.m. approximately. The land is eroded
up to the lateritic deposit because of heavy earth quarrying for various purposes. The lateritic exposure is found to be distributed with angular knobs of weathered sandstones of different shapes and sizes. Lateritic nodules of different sizes are also found strewn in the site. In the site, the lower Palaeolithic artifacts of various types were noticed as in situ and loose on the compact secondary pebbly and pisolithic laterite horizon. A good number of representative samples of the lower Palaeolithic artifacts including chopper, hand axe, scrapers and flakes have been collected from the site. An exposed section in the site has been studied and recorded during the survey for the purpose of reconstruction of the geo-chronocultural sequences of the site.

2. Sapei (SPI) : 20°31'30"E.Longitude, 85°44'55"E.Longitude, Site No.2.

This site is located on/to the east of the South Eastern Railway, (East Coast Section) near the passage no 12 situated before a tunnel on the western margin of the Subasi reserve forest. A mountain stream, locally called as Kiahjor Nala, a tributary of Sankhajor is flowing at about 400m to the south of the site. There is a highly eroded patch of laterite outcrop measuring 80x40 sq. m. This lateritic outcrop was found to be distributed with various types of complete and fragmentary microliths of shaped and simple categories. A lens deposit of light brown soil mixed with quartz pellets rests over the detrital laterite outcrop at places in the site also found distributed with microliths of various types. The deposit of light brown soil mixed with quartz pellets is in fact the implementifrous microlithic bearing horizon in the site. Altogether 86 numbers altogether of microliths including core, flake, chip, blade, scraper, denticulate, point, borer, awl, burin, and lunates have been yielded/collected from the site.

3. Subarnamanjaripur (SMP) : 20°30'40"N.Latitude, 85°43'15"E.Longitude, Site No.3.

This site is located about 1 km to the north of the Ghantikhala-Kantol road that runs from Ghantikhala-Nidhipur through Subarnamanjaripur to Athagarh and about 500 m to the north-east of the village Subarnamanjaripur. It is in fact situated to the northeastern part of the Subarnamanjaripur Minor Irrigation Project and is very close to the boundary wall of Arati Steel Plant in the area. A bed of secondary laterites measuring about area of 40x20 sq.m. is exposed because of heavy earth quarrying for the M.I.P in the site. The exposed lateritic bed, detrital in character in the site has significantly yielded a few lower Palaeolithic artefact assemblages as in situ context. Altogether nine artefacts comprising chopper, hand axe, scraper, flake and hammer belonging to the lower Palaeolithic culture have been collected from the site.

4. Rampei (RMP) : 20°33'20"N.Latitude, 85°44'05"E.Longitude, Site No.4.

This site is located 500 m to the south of the National Highway No. 42 near Khuntuni bazaar. It is located on/in the northwestern periphery of the Subasi Reserve Forest. It
is more or less an eroded plain land with a defunct lateritic quarry. There is a small pit of about 35x25 sq. m. formed because of quarrying of laterite slabs for building and other construction purposes. The land around the periphery of this pit is slightly eroded. From this erosion, a good number of microliths and a piece of Neolithic Celt (existing portion of the working end of a huge axe) has been/have been collected. At places in this site, microliths are generally found associated with the light brown soil mixed with quartz pellets. The Mesolithic artefacts in the collection from the site include cores, blades, scraper, notch, burins, flakes and chips.


   This site is located about 500 m to the northeast of Ramshyampur village. It is situated in the south-eastern foot plains of the Subasi Reserve Forest. There is a highly eroded landmass of about 60x20 sq. m. with sandstones exposed at places. To the east of the site, the sandstone outcrop is found to be overlain by a deposit of about 35 cm of loose laterites. A deposit of 30 cm in average thickness, composed of the light brown silty soil mixed with quartz pellets and gravels, is there over the loose lateritic deposit. At places, a number of broken pieces of microliths primarily on the cherts of various shades and forms have been found distributed on this eroded patch of land. Altogether 19 Mesolithic artifacts including core, flake, scraper and penknife blade have been collected from this site.


   This site is located on the south-western foot plains of the Subasi hill range. It is dotted with various indigenous shrubs of Subasi Reserve Forest area. There is a sizeable open and undulated lateritic outcrop distributed with the knobs of country rocks. The lateritic outcrop in the site is sparsely distributed with broken and complete microliths of the Mesolithic period due to heavy erosion of the soil deposits over the lateritic outcrop. The site is significantly found with some unusual structures of circular or semicircular patterns composed of irregular slads of laterites of various shapes and sizes. These structures were probably made by the Mesolithic people as their archaic dwelling places or home bases. The remnants of Mesolithic artefacts are also reported in and around these atypical structures. Numbers of microliths including cores, flakes, scrapers and awls have been collected as representative samples from this site.

7. **Cherua (CER)**: 20°31’40"N.Latitude, 85°44’55”E.Longitude, Site No 7.

   This site is located on the west of the South Eastern Railway in the East Coast Section which runs from Ghantikhala to Radhakishorepur in the study area. It is situated
about 500 m to the east of Belasahi Saharasahi, close to the railway passage no 12 before cutting with the tunnel for rail track on the south-western margin of the Subasi hill range. From this site, two prehistoric artifacts of different cultural periods have been found. The collection from this site includes one lower Palaeolithic artifact identified as a cleaver and one Neolithic half broken ring stone.

8. **Belasahi Saharasahi (BSS):** 20°31'40"N.Latitude, 85°44'55"E.Longitude, Site No. 8.

This site is a hamlet of Ghantikhala village inhabited by Savara tribes. The site of prehistoric importance is located on the west of the Ghantikhala-Khuntuni road. It is an open air site with an elevated area at its centre, extended up to an area of 100x70 sq.m. approximately. It is located on the south-eastern foothill of the Haribolei (Haripuli) hill. A mountain stream locally known as Kiajhor Nala flows on the south of the site. The site on/in the north and northwest is bounded by dense mixed jungle of the Subasi Reserve Forest. The elevated land seems to be an antique habitation mound. The site has yielded one adze, one pestle-cum-polisher and a few Neolithic flakes of diorite. Besides, a patch of highly eroded land close to the left of Ghantikhala-Khuntuni road is found exposed up to the compact secondary pebbly and pisolitic laterite horizon. This compact secondary laterite exposure is found to be overlain by a deposit of about 25cm to 30cm thick layer of loose laterites.

The loose laterite level is overlain by a layer of about 20cm to 25cm thickness and composed of light brown soil mixed with quartz pellets containing microlithic artefacts. Above the layer bearing microlith, there is a deposit of dark brown silty soil which forms the surface. The compact secondary laterite exposure in the site has yielded a few lower Palaeolithic artefacts. The surface survey in the site has yielded 26 prehistoric lithic artefacts of the lower Palaeolithic, Mesolithic and Neolithic periods. The lower Palaeolitths artefacts include different core and flake tools like chopper, scraper and knife. The Mesolithic artefacts include blade, point, core, flake, and chips. Few Neolithic artefacts include adze, polisher, and flakes. Moreover, considering the geomorphology and archaeological importance of the site, a trial trench was excavated at a comparatively intact place to know its geochronocultural stratigraphy.

9. **Bhagidehurikhola (BDK) :** 20°31'30"N.Latitude, 85°43'55"E.Longitude, Site No. 9.

This site is located on the northern hill slopes of an unnamed hillock to the west of the Ghantikhala-Khuntuni road and about 500 m to the southwest of Belasahi Saharasahi. It is rocky and sparsely dotted with shrubs and vines of indigenous types. It is noticed that sandstone outcrop and rifts are exposed in the area. A mountain stream, the Kiajhor Nala, flows almost from west to east in its north. This area was used as
common burial ground of Savara community of the Belasahi Saharsahi. The landmass of this area slopes down the stream to the west and north. On the northern slopes, there is a hard rock exposed at the surface level significantly associated- handmade terracotta animal figurines and a certain kind of powdery materials of saffron hue. This peculiar feature noticed at the site is nothing but, probably, of an ancient shrine, which was abandoned since long back. Near this abandoned shrine, Mesolithic artefacts are noticed abundantly. From this place, a few representative samples of Mesolithic artefacts have been collected which include blades, scraper, point and flakes. The site has also yielded a fragment of the Neolithic tool.


The site is named after the Haripuli hill in the locality. It is located on the left of the Ghantikhala-Khuntuni road at about 3.5 km to the north of Ghantikhala village and about 1 km to the north-west of the tribal hamlet, Belasahi Sahara Sahi. The Haripuli hill is widely known as Haribolei in the locality. The site is located on its eastern flank at about 70m to 80m contour elevation. It is significantly marked with a few large natural caves on the exposed sandstone rifts of the upper Gondwana formation. During the survey, a complete and fully grounded and polished Celt on dolerite was found at a place about 60 m contour height on the way leading to the cave site through a narrow and rugged foot track. The artefact is identified as an axe of medium size belonging to the Neolithic period.


This site is located 500 m to the north-west of the village Nuasahi Sharsahi and is about 200 m to the east of the South Eastern Railway in the East-Coast Section. It is situated on the foot plains of the Reserve Forest area of the Subasi hills. There is a grave yard which is locally known as ‘masahni’ located on/in the north of the site. The site extends upto an area of 150x80 sq. m approximately having an elevation at its centre. The elevation at the centre seems to be a small and low mound of an ancient habitation. It is an oval shaped mound, with a north-south orientation and distributed with stone bats. To the southern slope of the site, there is a cliff section, almost facing south, due to quarrying of soil from this part. The section is significantly distributed with different types of ancient potsherds. A broken piece of Neolithic axe having parabolic butt with biconvex cross-section and lacking the working end has been found from the bottom of the section associated with various ceramic remains.

Stratigraphy

In the course of fieldwork attempts have been made to recover in situ artifacts and to reconstruct a possible chrono-cultural sequence as well as composite stratigraphy
of the area. So section scanning and meticulous observation of occurrences of antiquities and their association in the geo-stratigraphy of the sites are made. However, our field observation on quaternary deposits recorded a vertical section of 2.83 m in height exposed on the west of the site of Ghantikhal. The section study in the site revealed a fivefold stratigraphic layer from top to bottom. The entire height of the section represented a deposit of 10 cm to 12 cm humus of light brown fine clay mixed with sand and silt. Over this layer, there are a few living thorny plants. Below the humus layer, the layer - 2 is 145 cm to 148 cm thick and composed of reddish clayey silt soil mixed with some living and dried out roots and rootlets/rootlets of plants. The layer - 3, underlain by the layer - 2 is 37 cm to 42 cm composed of brown soil mixed with quartz pellets of fine variety. The layer - 4 is 73 cm to 78 cm thick and composed of loose lateritic soil with ferricrete granules and it meets the layer 5 with a gentle slope. The layer 5 is composed of lateritic conglomerate, detrital in character, developed over the country rock, the gneisses rock of the Precambrian-Archean Formation.

This exposed lateritic conglomerate bed at the site of Ghantikhal is marked as the implementiferous layer. In addition to this two distinct beds of lateritic conglomerates found exposed at two different places: one at the north-eastern part of the Subarnamanjaripur Minor Irrigation Project (M.I.P) in the site of Subarnamanjaripur and the other one marked close to the west of Ghantikhala-Khuntuni road in the site Belasahi-Saharasahi, have been studied for the said purposes. These two sites have also revealed the occurrence of the lower Palaeolithic artefacts mostly embedded in the detrital lateritic conglomerates developed in the gneisses rock. In addition to this, the sites like Belasahi-Saharasahi, Rampei and Sapei reveal the occurrence of microliths of various types associated with the light brown soil mixed with quartz pellets deposit of the Holocene. It overlies the loose laterites belonging to the terminal Pleistocene at places in the study area. In fact the light brown soil mixed with quartz pellets deposit is the implementifrous microlithic bearing horizon of the area surveyed. The surface survey in the area and the scientific section cleaning at the site of Nuasahi Khalipadia reveal that the Neolithic artefacts are very much found associated with top red soil deposits composed of dark brown silty clay soils.

**Recovery of Artefacts**

The eleven sites at different locations in the study area have yielded distinct lithic antiquities of the prehistoric denizens from various contexts. Altogether 196 artefacts are found from the surface survey of the eleven different sites out of which 08 (4.08%) are from Ghantikhal (GKL), 86 (43.87%) are from Sapei (SPI), 09 (4.59%) from Subarnamanjaripur (SMP), 26 (13.26%) from Rampei (RMP), 19 (09.69%) from Ramashyampur (RSP), 11 (05.61%) from Subasi Foothill (SFH), 02 (01.02%) from Cherua (CHR), 26 (13.26%) from Belasahi-Saharasahi (BSS), 07 (03.57%) from Bhagi...
Dehuru Khola (BDK), 01 (00.51%) from Haripuli (HPL) and the rest 01 (00.51%) from Nuasahi Khali Padia (NKP). The artifact assemblages in the collection are classified into three different cultural periods based on the typo-technological characteristics.

From typo-technological analysis, it is apparent that out of the entire recovery, 23 (11.73%) are of/from the Lower Palaeolithic culture, 162 (82.65%) are from Mesolithic culture and the rest 11 (05.61%) from Neolithic culture (Table: 1).

Table 1: Site and Culture wise Distribution of Artefacts around Ghantikhala

<table>
<thead>
<tr>
<th>Sites</th>
<th>Lower Palaeolithic</th>
<th>Mesolithic</th>
<th>Neolithic</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
</tr>
<tr>
<td>Ghantikhal</td>
<td>08</td>
<td>34.78</td>
<td>-</td>
</tr>
<tr>
<td>Sapei</td>
<td>-</td>
<td>-</td>
<td>86</td>
</tr>
<tr>
<td>Subarnamanjaripur</td>
<td>09</td>
<td>39.13</td>
<td>-</td>
</tr>
<tr>
<td>Rampei</td>
<td>-</td>
<td>-</td>
<td>25</td>
</tr>
<tr>
<td>Ramashyampur</td>
<td>-</td>
<td>-</td>
<td>19</td>
</tr>
<tr>
<td>Subasi Foothill</td>
<td>-</td>
<td>-</td>
<td>11</td>
</tr>
<tr>
<td>Cherua</td>
<td>01</td>
<td>04.34</td>
<td>-</td>
</tr>
<tr>
<td>Belasahi-Saharasahi</td>
<td>05</td>
<td>21.73</td>
<td>15</td>
</tr>
<tr>
<td>Bhagi Dehuri Khola</td>
<td>-</td>
<td>-</td>
<td>06</td>
</tr>
<tr>
<td>Haripuli</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Nuasahi Khali Padia</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Grand Total</td>
<td>23</td>
<td>(11.73)</td>
<td>162</td>
</tr>
</tbody>
</table>

The artefacts remains belong to the above mentioned cultural periods and are classified into different types. Accordingly, the respective types are categorized as shaped artefacts and simple artefacts. The shaped artefacts show deliberate retouching on one or more edges while the simple artefacts are the intermediary and the byproducts of the shaped tools. Summarily, descriptions of the cultural remains of the different lithic cultures are given below.
Lower Palaeolithic Artefacts

Although the artefact remaining in the collection seems scanty in number and it consists of only 23, the evidences of wide range of typology in it suggest the presence of lower Palaeolithic culture in the study area. Out of these, 08 (34.78%) are from Ghantikhala, 09 (39.13%) from Subarnamanjaripur, 01 (04.34%) from Cherua and the rest 05 (21.73%) from Belasahi-Saharasahi. The entire representative specimens of the lower Palaeolithics are classified into two categories: (i) shaped artefacts and (ii) simple artefacts. The shaped artefacts of this culture include the total 16 (69.56%) specimens including 03 (13.04%) choppers, 02 (08.70%) hand axe, 01 (04.34%) cleaver, 09 (39.13%) scrapers and 01 (04.34%) knife. The simple artefacts include the total 07(30.43%) specimens including 04 (17.40%) flakes and 03(13.04%) hammers (Table-2). All these various types artefacts are found in situ embedded with the detritus laterites and loose in the disturbed context at sites.

Table-2:
Type and Site wise frequency of Lower Palaeolithic Artefacts around Ghantikhala.

<table>
<thead>
<tr>
<th>Artefact Types</th>
<th>Sites</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ghantikhal</td>
<td>Subarnamanjaripur</td>
</tr>
<tr>
<td>Shaped Artefacts (16:69.56%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chopper</td>
<td>01</td>
<td>01</td>
</tr>
<tr>
<td>Handaxe</td>
<td>01</td>
<td>01</td>
</tr>
<tr>
<td>Cleaver</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Scraper</td>
<td>04</td>
<td>02</td>
</tr>
<tr>
<td>Knife</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Simple Artefacts (07:30.43%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flake</td>
<td>02</td>
<td>02</td>
</tr>
<tr>
<td>Hammer</td>
<td>—</td>
<td>03</td>
</tr>
<tr>
<td>Grand Total</td>
<td>N</td>
<td>08</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>34.78</td>
</tr>
</tbody>
</table>

Artefact assemblages of the lower Palaeolithic industries are chiefly made of the locally available raw materials like quartzite pebbles and lumps of ferruginous
sandstone. Typo-technologically, the choppers from the study area are made on quartzite pebbles. They are classified into two types: unifacial chopper and bifacial choppers. Accordingly their broad working edges are made by removing minimum flakes from one of the sides and both the sides of the pebble blanks. The two hand axes in the collection are oval in their general shapes, one is suitably made on an oval and flat pebble of quartzite and the other one is prepared/made into an ovate on a ferruginous sand stone lump by mass reduction processes involving the applications of stone hammer or hollow hammer techniques. The cleaver is crudely made on a thick and large primary flake. It has a straight and sharp working end perpendicular to its narrow and thick butt which has developed due to the removal of the small and thin flakes more at its obverse and a few on the reverse as required. The scrapers are designed mostly on thick and side flakes by unidirectional or bidirectional flaking of small and shallow invasive flakes and chips with application of soft hammer at their sides, ends or around the periphery. No flakes on which scrapers are very much designed reveal the retention of cortical surface. This indicates the scrapers in the collection are made on secondary or prepared flakes. The scrapers made on prepared flakes suggest the application of prepared core (Levalloisian) technique. A specimen of round scraper from the site of Ghantikhala is on a flake with shallow scars of previous flakes removed in centripetal manner on its obverse and a flat surface on the reverse strengthens this view that it is shaped prior to its dislodgement from the mother lump or nodule, the nucleus. Subsequently, this prepared flake is shaped into such a scarper type by means of cylinder hammer technique. However flakes of different types play a greater role in the manufacturing of scraper with controlled flaking as well as little retouches. A knife from the site of Belasahi-Sahara-Sahi is on an elongated flake of quartzite. The simple artefacts have been yielded from the survey are flakes and hammers. The flakes are mostly secondary flakes of ferruginous sandstone with prominent bulb of percussion at the lower surface and the scars of previous flakes removed on the upper surfaces. The hammer stones are on quartzite pebbles having battering marks at their ends and sides. A keen observation of the above described Palaeolithic assemblages indicates that free flaking, controlled flaking and secondary flaking were usually employed to manufacture various types of tools and flakes.

Mesolithic Artefacts

In the Stone Age, culture chronology, the Mesolithic period bridges the gap between the Palaeolithic period of the Pleistocene and the Neolithic period of the Holocene. The surface exploration in the study area resulted in the discovery of the six implementiferous sites of Mesolithic period. The sites are very much found strewn with various types of elements of the microlithic industry characterized by the end products such as finished tools and the byproducts such as debitage in the form of broken flakes or blades and
micro-blades, discarded nodules, chips and spalls in addition to the unwanted chunks of worked nodules or cores of suitable rocks as well the selected but little worked or unworked raw material pieces as manuports.

Such sites are more or less intact in nature but there are erosions of surface at places, exposed up to a deposit of the detrital laterites that lies beneath the soil deposits. This is variedly composed of light brown to dark brown silty soil mixed with quartz pellets and reddish brown clay and silt soil mixed with fine to coarse grained ferricrete granulites. From the six sites 162 Mesolithic artefacts (microliths) were found including 86 (53.01%) from Sapei, 25 (35.43%) from Rampei, 19 (11.73%) from Ramshyampur, 11 (06.79%) from Subasi foot hill, 15 (09.25%) from Belasahi-Saharasahi, and the rest of the 06 (03.71%) from Bhagi Dehuri Khola. The raw materials used in the manufacturing of the Mesolithic artefacts are chiefly of cryptocrystalline siliceous rocks belonging to the cherts of various shades, jasper, cherty quartzite and crystals. But cherts are the most common raw materials exploited for manufacturing of Mesolithic artefacts.

Typo-technologically, the artefact assemblages include both the geometric and the non-geometric forms of microliths. Based on the analysis of typo-technology of microliths, the artefact assemblages in the collection may be classified into two broad categories: for example, (i) shaped artefacts (ii) simple artefacts similar to the lower Palaeoliths. The shaped artefacts of this culture comprise a total of 47 (29.01%) specimens including 20 (12.34%) scrapers, 02 (1.23%) denticulate, 01 (0.61%) notch, 04 (2.46%) points, 03 (1.85%) awls, 02 (1.23%) borers, 07 (4.32%) burins, 01 (0.61%) penknife blade, 06 (3.70%) lunate and 01 (0.61%) triangle. Similarly the simple artifacts comprise the total 115 (70.98%) specimens comprising of 21 (12.96%) cores, 43 (26.54%) flakes, 27 (16.66%) blades and 24 (14.81%) chips (Table-3).
Table- 3 : Type and Site wise frequency of Mesolithic Artifacts around Ghantikhala

<table>
<thead>
<tr>
<th>Artefact Types</th>
<th>Sites</th>
<th>Total</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sapei</td>
<td>Rampe</td>
<td>Ramshy-ampur</td>
<td>Subasi-Foothill</td>
</tr>
<tr>
<td>Shaped Artifacts (47)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blade</td>
<td>17</td>
<td>06</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Penknife blade</td>
<td>—</td>
<td>—</td>
<td>01</td>
<td>—</td>
</tr>
<tr>
<td>Scraper</td>
<td>04</td>
<td>01</td>
<td>07</td>
<td>07</td>
</tr>
<tr>
<td>Denticulate</td>
<td>02</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Notch</td>
<td>—</td>
<td>01</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Point</td>
<td>01</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Bore</td>
<td>02</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Awl</td>
<td>01</td>
<td>—</td>
<td>—</td>
<td>02</td>
</tr>
<tr>
<td>Burin</td>
<td>05</td>
<td>02</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Triangle</td>
<td>01</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Lunate</td>
<td>06</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Simple Artifacts (115)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Core</td>
<td>09</td>
<td>02</td>
<td>06</td>
<td>01</td>
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<tr>
<td>Flake</td>
<td>21</td>
<td>08</td>
<td>05</td>
<td>01</td>
</tr>
<tr>
<td>Chip</td>
<td>17</td>
<td>05</td>
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<td>—</td>
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<tr>
<td>Grand Total</td>
<td>N</td>
<td>86</td>
<td>25</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>09.09</td>
<td>09.09</td>
<td>54.54</td>
</tr>
</tbody>
</table>

Arrangement of artefacts in ascending order of frequency notably flakes 43 (26.54%), blades 27 (16.66%), chips 24 (14.81%), cores 21(12.96%), scraper 20(12.34%), burins 07(04.32%), lunates 06 (3.70%), points 04 (2.46%), awls 03 (1.85%), borers 02 (1.23%), denticulates 02 (1.23%), notch 01(0.61%), penknife blade 01 (0.61%), and triangle 01 (0.61%) reveals that the microlithic industry of Mesolithic period in this region characterized by core, flake and blade dominated industries is similar to the microliths reported from Bhubaneswar (Mitra, 1959; Tripathy1970), Tangi (Tripathy and Kar 1993) in the district of Khurda and around Darpankhas in the district of Jajpur district (Sahoo, 2000). But the geometric forms like triangle and lunates are rare and absent at sites in the area. Hence, the presence of few triangle and lunates in the collection testifies the making and use of geometric microliths as the integral part of
the microlithic industries in the area with the ascendancy of non-geometric forms of microliths including the various typologies of both the shaped tools and simple artefacts during the Mesolithic culture. The existence of different types of finished tools, utilized and broken tools, indeterminate, and worked blanks including other debitage at each site apparently indicates about the tool manufacturing and utilizing activities at places in the sites located in the study area.

A careful examination of the Mesolithic artefacts from the study area reveals that these were fashioned by certain kind of advanced techniques of stone tool manufacturing. These could be pressure flaking or fluting technique for obtaining chiefly flakes and blade flakes from the selected mother core and such flakes and blade flakes were designed by secondary working with minute retouching. The shaped tool types which are seen in the area are significantly made of simple artefacts such as core, blade and flakes.

The majority of cores, blades and flakes have been converted intentionally into finished implements (shaped tools) like penknife blades, scraper, denticulate, notch, point, borer, awl, burin, triangle and lunates by the application of careful and minute unifacial and bifacial secondary working or retouching. The cores are divided into two major types as blade core (fluted core) and flake core. The fluted cores typically with parallel sided blade flake scars were possibly produced by fluting or pressure techniques after the removal of a series of blade flakes by applying impulsive pressure along the longitudinal axis. It determined the weaknesses on/of the crested guiding ridges prepared beforehand on more than one end at the short axis of the selected core blanks. The flake cores are irregular in shape with shallow scars of end or side flakes. It is interesting that the cores show smooth cortical surfaces retained on/in the untouched opposite area or lateral parts of the worked (fluted or flaked) part. This indicates that the early man of the area probably exploited the crystalline, crypto-crystalline rock pebbles found elsewhere from the area or from the resources found nearby. The blades and flakes have been removed by impulsive pressure or by punch, especially with soft hammer of stone, bone, or wood. Blades can be classified into different types such as single sided, parallel sided and utilized blades. Flakes with partial and full cortical surfaces can be divided into two types: in the side and at the end. Scrapers of different types are like side scraper, end scraper, side-cum-end scraper, round scraper, and notched scrapers made out of thick cores, flakes, and nodules. Somehow flake and core of different types play a greater role in the manufacturing of scraper with little retouches. Scrapers are also made out of flakes with contiguous and non-contiguous retouches. A few denticulate in the toolkit reported to be found from the survey are made on thick blade flakes. They were produced by the removal of minute spalls to develop intermittent indentations on either one or both the sides of the selected blanks of blade flakes.
A solitary notch having a cavernous working edge in the collection is made on an amorphous thick flake. Points are simple and primarily made on the end flakes of triangular to sub-triangular shapes with minimum retouching to provide the conversant and effective pointed distal ends. Borers are commonly made on elongated and straight nodules having trilateral or quadrilateral sides and thick pointed flakes at/on which the projectile borer ends were prepared by further secondary working. Awls are pointed tools having a projectile awl head. They are simply made on pointed flakes and projectile awl heads are prepared with much care in reducing in order to provide two lateral wings from where the projectile awl heads starts. Hence based on the morphology and manufacturing techniques, the borers and the awls as entities in Mesolithic industry can be distinguished. Though triangle and lunates from/form less percentage in the collection, they deserve a special mention as the evidence of geometric forms in the Mesolithic assemblage. Both Triangle and awl as entities in Mesolithic industry are very much designed on parallel blades by further steep or ridge back retouches. While triangle shows an angled and blunted back opposite to the other sharp blade edge as it is in the selected blade blank, the lunates show retouches basically high in central part of the convex back (chord) tapering towards both ends. In both the cases blunting of backs may be unidirectional or bidirectional and probably, the blunted backs are usually thick and intentionally made blunt to facilitate hafting in a handle of bone, antler or wood to produce composite tools. The other sharp edge is left untouched but some cases reveal marks of utilization.

**Neolithic Artifacts**

Out of the eleven sites only six sites like Rampei, Cherua, Belasahi-Saharasahi, Bhagidehuri Khol, Haripuli and Nuasahi Khali Padia have yielded 11 artifacts altogether of Neoliths including both shaped artifacts 05 (45.45%) and simple artifacts 06 (54.54%). From/In the entire collection, the site Belasahi-Shararasahi has yielded 06 (54.54%) artifacts where as the rest other five sites have yielded 01 (09.09%) each. Thus the shaped artifacts include 03 axes (01 complete axe from Haripuli, 01broken and existing part of convexed and sharp working end from Rampei and 01 broken and existing part of butt including body part from Nuasahi Khali Padia), 01 complete adze from Belasahi-Saharasahi, 01 half broken ring stone from Cherua, and the simple artifact comprises of only 04 flakes and 01 polisher from Belasahi-Saharasahi (Table-4).
On the basis of typo-technological and morphological analysis, the shaped artifacts in the collection are further classified into different types of ground and polished type of tools such as axe, adze, ring-stone and indeterminate. Similarly the simple artifacts in the collection are classified into two types such as flakes and polisher. But one and only representative specimen of an indeterminate (BDK-7: 3.7 x 2.9 x 1.1 cm.) in the shaped category from Bhagi Dehuri Khola is apparently a broken piece of some or the other form of Celt (axe type?) having oval cross-section and well ground and polished marks all over its surfaces.

The exiting part of the indeterminate seems to be from the body portion of the said type of tool of the Neolithic period which was damaged during its use. Ground and polished marks with feeble scars of previous flakes or chips at places in all over the body of either complete or broken specimens in the collection indicate the modus operandi of the manufacturing of axe and adze by means of flaking, chipping, pecking and finally grinding and polishing processes. The specimen of a half broken ring stone is comparatively thick and evenly semicircular in shape having a cylinder-shaped central hole, broad (2.6 cm in diameter) at the upper surface and relatively narrow (1.6 cm in
diameter) at the lower surface. The perforated section of the central hole reveals that it is probably bored by unidirectional drilling from one of the surfaces.

The unidirectional drilling of such a cylinder-shaped central hole in the specimen indicates that the similar kind of complete ring stones were most likely used for various functions such as small wheels fitted with a tough wooden axle to make a mini tow truck/tow cart for short distance transportation. Mace head inserted with a wooden, bone or antler handle was most likely used to throw at the game animals or sometimes used as hammer and as a weight to suffice more force to the digging stick. As far as the raw material is concerned, except the representative samples of a ring stone and a polisher, all other shaped and simple artifacts are made on dolerite—a fine to medium grain igneous rock. Each one of the specimen of a half broken ring stone and a polisher is made on fine grained sandstone. The evidences of different shapes and sizes of dolerite flakes from Belasahi-Saharasahi are the testimony of the manufacturing activities of the Neolithic artifacts in the area.

**Trial trench Excavation at Belasahi-Saharasahi**

The surveys of eleven sites in the study area proved its prehistoric potential with the evidences of lithic artifacts of different stone ages. It was intended to undertake an excavation at one of the sites which is comparatively intact and yielded various stone artifacts broadly of the Palaeolithic, Mesolithic and Neolithic periods. Moreover, it was found that the site Belasahi-Saharasahi is one of the most intact sites and also has yielded cultural remains of the above said stone ages. Hence a trial trench named as trench-P, measuring 1x1 sq. m. in the area was excavated at the site. As per our convenience the excavation was restricted to 05 cm for each dig and 06 dig altogether were meticulously taken with recording the occurrences of artifacts, drawing of the sections and plan-view of the trench. Still photographs of all the aspects of the trench were also taken as eyewitness for further analysis and interpretation.

The first four digs to the level of 20 cm were found sterile. The subsequent two digs exposed the implementifrous stratum, bearing microliths between the depth of 21 cm to 25 cm which are composed of light brown to dark brown silt soil mixed with quartz pellets and coarse grained ferricrete granulites. The excavation of the trial trench was stopped at a depth of 30 cm touching the layer of lateritic conglomerate. Apart from microliths neither any plant nor any animal remains were salvaged from the trial trench. Analysis of the morphometry of the trench deposits, section drawings, and implementifrous plan view, as well as the photographs of the trial trench excavation in the site revealed a three fold stratigraphy consisted of Layer-1, Layer-2, and Layer-3 from top to bottom. The layer-3 is the lowermost deposit of 06 cm to 12 cm in thickness, composed of loose lateritic soil, comprising of dark brown clay mixed with fine to
coarse grained ferricrete granulites belonging to the terminal Pleistocene. The deposit in the site is developed over the compact secondary laterites, detrital in character and is at places exposed up to 25 cm to 30 cm in thickness. The successive Layer-2 which lies over the layer-3 is an implementifrous deposit of 10.5 cm to 18 cm in thickness, composed of light brown silt soil mixed with quartz pellets belonging to the early Holocene. The implementifrous deposit rests over the layer-3 and contains microlithic artifacts within its lowermost level.

Few microliths were also found from the uppermost level of the Layer-3 deposit, overlain by the Layer-2. These evidences apparently indicate that the implementifrous stratum, bearing microliths between the depths of 21 cm to 25 cm which is composed of light brown to dark brown silt soil mixed with quartz pellets and coarse grained ferricrete granulites belongs to the deposits of the lowermost and uppermost parts of the Layer-2 and Layer-3 respectively. The Layer-1 is the topmost deposit which forms the surface and sub-surface soil in the site. The deposit in this layer varies from 07 cm to 13 cm in thickness and consists of dark brown silty clay soil and belongs to the Holocene period. However the excavation of the trial trench yielded 11 microliths altogether including 2 cores, 1 nodule, 1 flake, 1 chip, 5 blades and 1 borer. Subsequently looking into a few potsherds embedded in the site at about 5 m to the west of the trench-P, another test trench named as trench-P1 measuring 1x1 sq.m. was laid out. It was not fully excavated due to paucity of time, but the occurrences of pottery remains were collected from the area of trench-P1. A few pieces of slow wheel which made the potsherds identified as rim shreds of red ware broad mouthed pot (handi) or jar have been yielded/ found from the trench-P1.

Scientific Section Cleaning at Nuasahi Khalipadia

This site Nuasahi Khalipadia (20°31’15”N.Lat. and 85°44’55”E.Long.) is about 100 m from the site, Sapei. To the southern slope of the site, there was/is a cliff section of about 15 m in length and 1.20 m to 2.10 m in height almost extending from east to west and facing south. The section was formed due to quarrying of soil from this part to convert it into the agricultural land by the residents of Ghantikhal village. The exposed section at the site was found deposited with a good number of potsherds of different shapes and sizes. Since a nice piece of broken Celt of Neolithic period was recovered from the washed-out soil deposited at the bottom of the section associated with various ceramic remains, it was decided to undertake a scientific cleaning of the section.

The cliff section at the site was meticulously studied and a part of the section measuring 1.50 m in width and 2.10 m in height was scientifically cleaned from top to bottom for knowing precisely the pottery bearing horizon and for the recovery of associated potsherds as well as any other cultural materials inside the same. The
section cleaning in the selected spot has exposed a four fold layer of stratigraphy from top to bottom which consisted of Layer-1, Layer-2, Layer-3 and Layer-4.

At the bottom of the layer 3 a step, measuring of 36 cm in width and 45 cm in height was made to save time and labour. The Layer-1 is 15 cm thick, composed of light brown soil and attributed to/from the humus deposit. Layer-2 is 30 cm in thickness and composed of loose brown soil. Layer-3, 1.20 cm thick, is made of compact dark brown soil and the deposit yielded a number of wheel-turned potsherds of red ware, red ware with grey core and grey ware at a depth of 45 cm to 52 cm below the surface level. The potsherds are too fragmentary to be recognizable in their shapes. The significant find from the step at the bottom of Layer-3 are a fragment of a ground and polished tool and a portable grinding stone. Layer-4 is 45 cm in thickness, composed of dark brown soil mixed with quartz pellets and lateritic granules.

Conclusion

The Stone Age denotes a period of time in the history of humanity during which early man made its tools on/from stones. It is broadly divided into three cultural periods: the Palaeolithic (Old Stone Age), the Mesolithic (Middle Stone Age), and the Neolithic (New Stone Age). The Paleolithic period is further divided into three sub periods: Lower Palaeolithic, Middle Palaeolithic and Upper Palaeolithic. In world context, such cultural remains have been found from the lower Pleistocene deposit up to the late Pleistocene deposit.

In India the geological time scale with reference to the Stone Age culture chronology reveals that Palaeolithic period is the first which begins with lower Pleistocene, Mesolithic period begins with the fag end of the Pleistocene or the early Holocene bridges the gap between the Palaeolithic period of the Pleistocene and the Neolithic period in the Holocene. The earliest reliable tool assemblages in India specifically belong to two distinct cultural and technological traditions: (i) the Sohanian and (ii) the Acheulian. The Sohanian culture is named after the river Sohan or Soan, a tributary of the Indus, and is found at a number of sites in the Siwalik Hills in the northwest of India and Pakistan. The Acheulian culture, named after the French site St. Acheul, and the remains of this culture have been reported extensively from the Siwalik Hills in the north to the areas around Chennai in the south besides the Western Ghats and the coastal regions running parallel to them are the plains of the Ganges and northeast India. The evidences of the subsequent lithic cultural phases with reference to middle and upper Palaeolithic, Mesolithic and Neolithic periods are found with almost all kinds of land forms of Indian peninsula. However after the intensive and extensive studies of V. Ball, a substantial data on the Stone Age research has been generated and a large number of Stone Age sites of various ages are brought to light from the hilly terrains of north and north-western regions and coastal parts in Odisha.
Recent archaeological investigation in and around Ghantikhal with a micro area approach has resulted in the discovery of 11 sites altogether with notable evidences of artifacts of lower Palaeolithic, Mesolithic and Neolithic periods. No site of the Middle Palaeolithic and Upper Palaeolithic was reported from the survey in the area, probably, due to a kind of occasional discontinuation. This indicates a gradual growth and development of the Stone Age cultures right from lower Palaeolithic to Neolithic periods.

The surface survey in the 11 different sites altogether has yielded 196 stone artifacts out of which 23 artifacts belong to the Lower Palaeolithic culture, 162 belong to Mesolithic culture including maximum number of non-geometric and a few geometric forms of microliths. This indicates that there were flake, blade, core and scraper which dominated microlithic industries during the Mesolithic Culture. The rest 11 belongs to the Neolithic culture. In addition to this the survey in the area was also followed by a trial trench excavation at an undisturbed place in the site of Belasahi Saharasahi and the scientific section scraping at a selected patch of the vertical section exposed artifacts associated with ancient pottery remains at the site of Nuasahi Khalipadia. The present study adding the new pages to the prehistoric archaeology of Odisha reveals that the study area in the Coastal Odisha is ecologically advantageous and adaptable for occupation/habitation by the prehistoric denizens of different Stone Age cultures.

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Nutritional status and blood pressure of Tibetans settled in Odisha

K. C. SATAPATHY*

Abstract: Study on the nutritional status and blood pressure of Tibetans born and brought up in coastal Odisha was compared with high altitude studies by using standard anthropometric technique. In the present study it has been observed that Tibetans in coastal Odisha shows a trend towards become taller and heavier when compared in terms of their height, weight, and BMI. Blood pressure level of adolescent Tibetans show a trend towards higher prevalence of hypertension and is similar to that of high altitude studies. In terms of Nutritional status the present generation exhibits a better picture when compared to other populations.

Introduction

People permanently leaving exposed to hypoxia at >3000 meter above sea level show a phenotypic form of adaptation. Growth at high altitude is generally characterized by smaller body size than low altitude (Beall et al 1977, Greksa et al, 1984, 1985; Hoff, 1974; Stinson, 1980; Weitz and Garruto, 2004). Children living at high altitude often have delayed growth but whether growth retardation is related to high altitude or other factors is still not known (Tripathy et al, 2007; Argnani et al, 2008). In fact, the effect of hypoxia on growth are combined with the effects of low socioeconomic status, poor nutrition and disease. The few studies conducted in Tibet indicated that there is a high prevalence of malnutrition in preschool children (especially stunting), with value higher than the average China. These studies also implied that there is some adaptation to high-altitude hypoxia in the growth pattern of Tibetan children (Harris et al., 2001; Dang etal, 2004; Tripathy et al, 2007; Argnani; 2008; Rooze et al, 2012).Considerable variation in newborn size exists within and between populations. At high altitude, women of high altitude ancestry give birth to heavier babies compared to high altitude residents who were born and raised at low altitude or with women born and raised at high altitude but descended from populations of low-altitude ancestry (Zamudio et al 1993, Niermeyer et al 1995, Hass et al 1980). Altitude also affects blood pressure. Both systolic blood pressure and Diastolic blood pressure are found to lower in the high altitude native population than low altitude native populations at high altitude (Clegge et al 1976, Hanna 1999). The cause of this decline is not clear, it has been suggested that hypoxia leads to relaxation of vascular smooth muscle or that an increase in collateral circulation may be involved (Frisancho 1993). The degree of decline in systemic Blood Pressure is found to be a function of time at residence at altitude (Hanna 1999). The Andean

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evidence is strong in suggesting the above relationship. This observation is also observed in some other populations like Sherpas (Basu et al. 1984), natives of Tien Shan and the Pamir (Mirrakhimov 1978) and the Ambaras region in Ethiopia (Beall et al 1997). One study on Tibetans (Sun 1986) showing higher incidence of hypertension than the low altitude native Han migrants.

Tibetans born and raised at low altitude do not experience the multitude of stresses that exist at high altitude, hypoxia being the most important. Thus, the study of growth and development of Tibetans in the absence of hypoxia at low altitude will provide an insight into the unique and possibly adaptive pattern of growth and development of Tibetans at high altitude. Tibetans are believed to have at high altitudes for longer than other high-altitude populations of the world (Moore 1998). Dalai Lama of Tibet was given asylum in India after the political up-heals in 1959. Following Dalai Lama 80,00 Tibetans fled to India. Tibetan refugees have been living in different parts of India for more than four decades. The different parts of India offers them different climatic and cultural environment and where the succeeding generations have grown up without any stress of hypoxia. In the present study an attempt has been made to examine the degree to which their phenotypes differ from those of their parental generations at high altitude through the determinant of health i.e. height, weight, BMI, birth weight, nutrition and blood pressure. It also provides a measure of the environmental impact on the growth process to hypoxia and there by mechanism of adaptation to high altitude. For the above purpose Tibetans who are an Asian high altitude population that has migrated and settled in Odisha in an almost alien and completely different ecosystem were chosen and compared with the Tibetans of other studies in different situations.

Materials and Methods

The Tibetans settlement in Odisha was established in 1963 at Chandragiri on Eastern Ghats, which is at an altitude of 930 meters and is also very near to coastal area as well as away from the urban centers drastically different from their homeland Tibet. The settlement started with an initial population of 2500 and reached approximately to 3,600 in 2001. This study is based on cross sectional data collected between February 2003 and September 2004. Anthropometric data on children and adolescents were collected from Central schools for Tibetans, individual's home or at community centre. Only those children, adolescents, and young adults who were born and raised in the settlement or nearby town or city have been included in the present study. Age of the children and adolescents were collected from school records and were cross-checked with the individuals. The secondary data on birth weight was mostly collected from the local hospitals. Anthropometric measurements were taken as described by Weiner and Lourie (1981). Height was measured with the help of Harpenden anthropometer.
rod and weight with a weighing scale. Height was recorded to the nearest millimeter and weight to nearest 0.5kg. CDC/NCHS (2005) recommended BMI cut off was used for classifying the population for nutritional status. Mercury sphygmomanometer was used to measure blood pressure. All the measurement were taken by single investigator. For classification of Hypertension recommendation of JNC7 (2003) was used. For the nutritional assessment the information on dietary intake and food habits were collected, using 24 hours recall methods (Gopalan, 2000).

Table No. - 1
Mean heights (cm) of Tibetans (Male) at different Altitudes

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Chandragiri 930m</th>
<th>Weitz 3,200m</th>
<th>Weitz 3,800m</th>
</tr>
</thead>
<tbody>
<tr>
<td>6-7yr</td>
<td>115.9</td>
<td>111.4</td>
<td>111.3</td>
</tr>
<tr>
<td>8-9yr</td>
<td>123.4</td>
<td>120.8</td>
<td>121.1</td>
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<tr>
<td>10-11yr</td>
<td>132.5</td>
<td>128.4</td>
<td>132.9</td>
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<tr>
<td>12-13yr</td>
<td>146.5</td>
<td>139.5</td>
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<td>14-15</td>
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<td>153.7</td>
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<tr>
<td>16-17</td>
<td>164.7</td>
<td>164.7</td>
<td>165.1</td>
</tr>
<tr>
<td>18-19</td>
<td>168.9</td>
<td>168.0</td>
<td>165.4</td>
</tr>
<tr>
<td>20-29</td>
<td>170.0</td>
<td>168.7</td>
<td>167.5</td>
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</tbody>
</table>

Table No. - 2
Mean heights of Tibetans (Female) at different altitude

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Chandragiri 930m</th>
<th>Weitz 3,200m</th>
<th>Weitz 3,800m</th>
</tr>
</thead>
<tbody>
<tr>
<td>6-7yr</td>
<td>116.6</td>
<td>111.9</td>
<td>113.5</td>
</tr>
<tr>
<td>8-9yr</td>
<td>124.3</td>
<td>120.5</td>
<td>125</td>
</tr>
<tr>
<td>10-11yr</td>
<td>135.6</td>
<td>128.4</td>
<td>137.4</td>
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<tr>
<td>12-13yr</td>
<td>147.9</td>
<td>141.5</td>
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<td>14-15</td>
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<td>155</td>
</tr>
<tr>
<td>20-29</td>
<td>155.6</td>
<td>157.1</td>
<td>157.4</td>
</tr>
</tbody>
</table>
In the above table 2 the mean heights of Tibetan females in Odisha were compared with the high altitude studies. It has been observed that mean heights of Tibetans increases in all the age groups i.e. from 6-7yr to 20-29yrs. Except for the age group 8-9yr and 20-29yr the height for age value is seen to be higher in the present study as compared to high altitude studies.

Table No. - 3
Mean Weights of Tibetans (Male)

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Chandragiri 930m</th>
<th>Weitz 3,200m</th>
<th>Weitz 3,800m</th>
</tr>
</thead>
<tbody>
<tr>
<td>6-7yr</td>
<td>21.3</td>
<td>18.6</td>
<td>18.8</td>
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<td>8-9yr</td>
<td>24.4</td>
<td>22.4</td>
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<td>10-11yr</td>
<td>27.9</td>
<td>26.3</td>
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<td>53.3</td>
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<td>18-19</td>
<td>58.0</td>
<td>56.6</td>
<td>55.7</td>
</tr>
<tr>
<td>20-29</td>
<td>62.9</td>
<td>57.5</td>
<td>57.8</td>
</tr>
</tbody>
</table>

In table 3 the mean weight (kg) of Tibetan males Odisha was compared to the different high altitude studies and it was found that the mean value of the present study is higher than the high altitude studies for all age groups.

Table No. - 4
Mean weights of Tibetans (Female)

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Chandragiri 930m</th>
<th>Weitz 3,200m</th>
<th>Weitz 3,800m</th>
</tr>
</thead>
<tbody>
<tr>
<td>6-7yr</td>
<td>20.8</td>
<td>17.9</td>
<td>19.2</td>
</tr>
<tr>
<td>8-9yr</td>
<td>24.9</td>
<td>20.9</td>
<td>22.4</td>
</tr>
<tr>
<td>10-11yr</td>
<td>30.5</td>
<td>24.8</td>
<td>28.7</td>
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<tr>
<td>12-13yr</td>
<td>43.2</td>
<td>31.7</td>
<td>36.4</td>
</tr>
<tr>
<td>14-15</td>
<td>47.3</td>
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<td>42.6</td>
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<td>50.6</td>
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<tr>
<td>18-19</td>
<td>55.9</td>
<td>52.1</td>
<td>52</td>
</tr>
<tr>
<td>20-29</td>
<td>54.4</td>
<td>51</td>
<td>50.4</td>
</tr>
</tbody>
</table>
The mean weight (kg) of Tibetan females in the present study (table 4) was compared with the different height altitude studies and it was found that the mean value of the present study is higher than the high altitude studies for all age groups.

Table No. - 5
Nutritional Status based on Height for Age Tibetan (Children)

<table>
<thead>
<tr>
<th>Sex</th>
<th>Stunted N</th>
<th>Stunted %</th>
<th>Normal N</th>
<th>Normal %</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>17</td>
<td>17.2</td>
<td>82</td>
<td>82.8</td>
<td>99</td>
</tr>
<tr>
<td>Female</td>
<td>16</td>
<td>14.7</td>
<td>93</td>
<td>85.3</td>
<td>109</td>
</tr>
<tr>
<td>Total</td>
<td>33</td>
<td>15.9</td>
<td>175</td>
<td>84.1</td>
<td>208</td>
</tr>
</tbody>
</table>

\[ \chi^2 = .242, P > 0.05 \]

Table 5 present the nutritional status of Tibetan children based on height for age Z scores which shows that out of 208 individual 15.9 percent of them are fall under stunted category where as 84.1 percent belongs to normal category. It has also been observed that the variation in sex is non significant (\[ \chi^2 = .242, P > 0.05 \]). However, high incidence of stunting has been reported among Tibetan children in high altitude.

Table No. - 6
Nutritional Status based on Weight for Age Tibetan (Children)

<table>
<thead>
<tr>
<th>Sex</th>
<th>Wasted N</th>
<th>Wasted %</th>
<th>Normal N</th>
<th>Normal %</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>2</td>
<td>1.0</td>
<td>86</td>
<td>43.7</td>
<td>88 (3.0)</td>
</tr>
<tr>
<td>Female</td>
<td>4</td>
<td>2.0</td>
<td>105</td>
<td>53.3</td>
<td>109 (97.0)</td>
</tr>
<tr>
<td>Total</td>
<td>6</td>
<td>3.0</td>
<td>191</td>
<td>97.0</td>
<td>197 (100.0)</td>
</tr>
</tbody>
</table>

\[ \chi^2 = .322, P > 0.05 \]

Table 6 presents the nutritional status of Tibetan children weight for age of 191 individuals shows that 3 percent belongs to wasted category where as 97 percent belongs to normal category. It has also been found that the variation between sex is non-significant (\[ \chi^2 = .322, P > 0.05 \]).
Table No. 7
Nutritional Status based on Weight for Stature Tibetan
(stature between 81 to 149cm)

<table>
<thead>
<tr>
<th>Sex</th>
<th>Wasted</th>
<th>Normal</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N %</td>
<td>N %</td>
<td>N</td>
</tr>
<tr>
<td>Male</td>
<td>0 0</td>
<td>51 47.2</td>
<td>51</td>
</tr>
<tr>
<td>Female</td>
<td>0 0</td>
<td>57 57.8</td>
<td>57</td>
</tr>
<tr>
<td>Total</td>
<td>0 0</td>
<td>108 100</td>
<td>108</td>
</tr>
</tbody>
</table>

Table 7 presents the nutritional status of Tibetan children born and brought up in Odisha according to weight for stature Z score value and it reveals that all i.e. 108 individuals are belongs to normal category.

Body mass index is a measure of weight for height and is used differently with Children than it is with Adults. In children and in teens, body mass index is used to assess underweight, overweight, and risk for overweight. Children’s body fatness changes over the years as they grow. Also, girls and boys differ in their body fatness as they mature. This is why BMI for children, also referred to as BMI-for-age, is gender and age specific. BMI-for-age is plotted on gender specific growth charts. These charts are used for children and teens 2 – 20 years of age. CDC (2005) percentile cutoff points were used in the present study to identify underweight and overweight in children as well as for adults over 20 years old.

Table No. - 8
BMI of Tibetan Children (2-20yrs) in Odisha

<table>
<thead>
<tr>
<th>Category</th>
<th>Cutoff percentile</th>
<th>Male (%)</th>
<th>Female (%)</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under weight</td>
<td>BMI-for-age &lt; 5th percentile</td>
<td>12(12.24)</td>
<td>6(5.0)</td>
<td>18(8.3)</td>
</tr>
<tr>
<td>Normal</td>
<td>BMI-for-age &gt; 5th percentile to &lt; 85th percentile</td>
<td>73(74.48)</td>
<td>100(83.33)</td>
<td>173(79.4)</td>
</tr>
<tr>
<td>At risk of overweight</td>
<td>BMI-for-age 85th percentile to &lt; 95th percentile</td>
<td>6(6.12)</td>
<td>10(8.33)</td>
<td>16(7.3)</td>
</tr>
<tr>
<td>Overweight</td>
<td>BMI-for-age ≥ 95th percentile</td>
<td>7(7.14)</td>
<td>4(3.33)</td>
<td>11(5.0)</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>98(45.0)</td>
<td>120(55.0)</td>
<td>218(100.0)</td>
</tr>
</tbody>
</table>
Table 8 presents the BMI percentage of 218 Tibetan children, 79.4 percent of them belong to normal category, 8.3 percent belong to underweight category, 7.3 percent belong to risk of over weight category and only 5 percent of them belong to over weight. Similarly among 98 male children 12.24 percent belong to under weight category, 74.48 percent belong to normal category, 6.12 belong to risk of over weight and 7.14 percent belong to the over weight category. Among the females out of the total 120 individuals 83.33 percent belong to normal category, 5 percent belong to under weight, 8.33 percent belong to the risk of under weight category and 3.33 percent belong to the over weight category. From this it has been observed that the number of under weight cases is more in case of male as compared to the females.

Table No. 9
BMI of Tibetan Adults in Odisha

<table>
<thead>
<tr>
<th>Weight Status</th>
<th>BMI</th>
<th>Male (%)</th>
<th>Female (%)</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under weight</td>
<td>&gt;18.5</td>
<td>5(7.25)</td>
<td>4(3.4)</td>
<td>9(4.84)</td>
</tr>
<tr>
<td>Normal</td>
<td>18.5-24.9</td>
<td>40(57.97)</td>
<td>68(58.11)</td>
<td>108(58.06)</td>
</tr>
<tr>
<td>At risk of overweight</td>
<td>25.0-29.9</td>
<td>16(23.18)</td>
<td>27(23.08)</td>
<td>43(23.12)</td>
</tr>
<tr>
<td>Obese</td>
<td>30.0 and above</td>
<td>8(11.6)</td>
<td>18(15.38)</td>
<td>26(13.98)</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>69</td>
<td>117</td>
<td>186</td>
</tr>
</tbody>
</table>

In Table 9 the BMI percentage of 186 Tibetan adults shows that 58.06 percent belong to normal category, 4.84 belong to under weight category 23.12 percent belong to the risk of over being weight category and 13.98 percent belong to obese category. Out of 69 males 57.97 percent belong to the normal category, 7.25 percent belong to under weight category, 23.18 percent are in the risk of overweight category and 11.6 percent belongs to over weight category. Similarly out of 117 females 58.06 percent belong to normal category, 4.84 percent belong to under weight category, 23.12 percent belongs to at risk of over weight category and 13.98 percent belongs to obese category. From this it has been observed that the number of obese cases is higher among the females as compared to males but the cases of under weight is more in case of males as compared to females. However there is a similarity seen in both the sexes whether normal or whether at the risk of being overweight. Thus the adult population of the Tibetans leaving in Odisha varies between normal to obese category.
Table No. 10
Comparison of Mean BMI for different countries

<table>
<thead>
<tr>
<th>Place, Region</th>
<th>Year</th>
<th>No. of Adults</th>
<th>BMI Mean</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>India* (Males)</td>
<td>1988/90</td>
<td>9447</td>
<td>18.9</td>
<td>Shetty and James, 1994</td>
</tr>
<tr>
<td>India* (Female)</td>
<td>1988/90</td>
<td>11914</td>
<td>19.0</td>
<td>Shetty and James, 1994</td>
</tr>
<tr>
<td>Odisha, Tibetan (Male)</td>
<td>2003-2005</td>
<td>69</td>
<td>24.2</td>
<td>Tripathy &amp; Satapathy, 2006</td>
</tr>
<tr>
<td>Odisha, Tibetan (Female)</td>
<td>2003-2005</td>
<td>117</td>
<td>25.2</td>
<td>Tripathy &amp; Satapathy, 2006</td>
</tr>
<tr>
<td>Tibet, Tibetan Nomads (Male)</td>
<td>1996</td>
<td>19</td>
<td>17.7</td>
<td>Beall et al, 1996</td>
</tr>
<tr>
<td>Tibet, Tibetan Nomads (Female)</td>
<td>1996</td>
<td>19</td>
<td>17.1</td>
<td>Beall et al, 1996</td>
</tr>
</tbody>
</table>

The comparison of BMI of Tibetans in the present study (table 10) with other populations including Tibetans in the high altitude shows that Tibetans in Odisha shows a better mean value for BMI i.e. 24.2 for males and 25.2 for females as compared to the high altitude Tibetans i.e. 17.7 in case of males and 17.1 in case of females and Indians with 18.9 in case of males and 19.0 in case of females. Therefore, the BMI value which is considered to be an indicator of nutritional status shows better value as compared to other population in the present study. This is due to change in environment and change in food and dietary habits of the present generation Tibetans in Odisha.
**Table No. - 11**

Average daily nutrient intake (g) of Tibetans at different altitude

<table>
<thead>
<tr>
<th>Nutrients</th>
<th>Present Study, Tibetans (970m), Odisha, 2006</th>
<th>Tibetan Women Dehradun (600m), Bera; 2004</th>
<th>Tibetans, Odisha (970m), Patel, 1985</th>
<th>Sherpas, Kalimpong, (1000-1500m)</th>
<th>Sherpas, Upper Khumbu (3,500-4,500), Gupta et al 1989</th>
<th>RDA, Male ICMR, 2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calorie (Kcal)</td>
<td>3256</td>
<td>2629</td>
<td>2504</td>
<td>3,017</td>
<td>2,343</td>
<td>2,800</td>
</tr>
<tr>
<td>Carbohydrate (g)</td>
<td>557</td>
<td>498</td>
<td>424.0</td>
<td>-</td>
<td>-</td>
<td>330</td>
</tr>
<tr>
<td>Protein (g)</td>
<td>86.2</td>
<td>36.7</td>
<td>75.7</td>
<td>85.4</td>
<td>52.6</td>
<td>55.0</td>
</tr>
<tr>
<td>Fat (g)</td>
<td>54.2</td>
<td>6.1</td>
<td>51.7</td>
<td>52.3</td>
<td>-</td>
<td>40</td>
</tr>
</tbody>
</table>

The above Table shows the comparative study of nutrient intake of Tibetans at different altitude compared with that of ICMR recommended value. It has been observed that the mean calorie consumption of Tibetans adults in Odisha is 3256Kcal as compared to high altitude study i.e. 3017 and 2343 Kcal but ICMR recommended value is 2800 Kcal. Similarly, the mean carbohydrate consumption is 557gm in Odisha. Protein consumption of Tibetans in Odisha is 86.2gm as compared to high altitude study i.e. 85.4gm and 52.6gm but ICMR recommended value is 55.0gm. As far as fat consumption is considered Tibetans in Odisha consume 54.2gm daily as compare to high altitude i.e. 52.3gm and recommended value is 55.0gm per day. It shows that the nutrient intake of Tibetans in Odisha is better then the high altitude study and is better as compared to ICMR recommended value.
Table No. - 12
Results from birth weight studies in Tibetans at different altitudes

<table>
<thead>
<tr>
<th>Place</th>
<th>Altitude (m)</th>
<th>N</th>
<th>Birth weight (g)</th>
<th>SD</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lhasa, Tibet</td>
<td>3658</td>
<td>34</td>
<td>3222</td>
<td>400.0</td>
<td>Zamudio et. al., 1993</td>
</tr>
<tr>
<td>Kathamadu, Nepal</td>
<td>1200</td>
<td>45</td>
<td>3313</td>
<td>322.6</td>
<td>Zamudio et. al., 1993</td>
</tr>
<tr>
<td>Tibet</td>
<td>&gt;4000</td>
<td>96</td>
<td>2860</td>
<td></td>
<td>Moore et al., 2001</td>
</tr>
<tr>
<td>Tibet</td>
<td>3000-4000</td>
<td>165</td>
<td>3140</td>
<td></td>
<td>Moore et al., 2001</td>
</tr>
<tr>
<td>Tibet</td>
<td>&gt;3000</td>
<td>116</td>
<td>3110</td>
<td></td>
<td>Moore et al., 2001</td>
</tr>
<tr>
<td>Chandragiri, Odisha</td>
<td>930</td>
<td>54</td>
<td>3404</td>
<td>499.3</td>
<td>Present study</td>
</tr>
<tr>
<td>3000 (Tibetans)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chandragiri, Odisha</td>
<td>930</td>
<td>94</td>
<td>2518</td>
<td>534.9</td>
<td>Present study</td>
</tr>
<tr>
<td>3000 (Odias)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 12 presents the birth weight of Tibetans at different altitude and it's shows an increasing in birth weight in low altitude Odisha when compared it with the high altitude studies.

Table No. - 13
Hyper-tension among the adult Tibetans in Odisha

<table>
<thead>
<tr>
<th>Category</th>
<th>SBP*</th>
<th>DBP*</th>
<th>Male (%)</th>
<th>Female (%)</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>&lt;120</td>
<td>And &lt;80</td>
<td>26(29.54)</td>
<td>45(31.46)</td>
<td>71(30.73)</td>
</tr>
<tr>
<td>Prehypertension</td>
<td>120-139</td>
<td>Or 80-89</td>
<td>31(35.22)</td>
<td>41(28.67)</td>
<td>72(31.16)</td>
</tr>
<tr>
<td>Stage 1 Hypertension</td>
<td>140-159</td>
<td>Or 90-99</td>
<td>19(21.59)</td>
<td>20(13.98)</td>
<td>39(16.88)</td>
</tr>
<tr>
<td>Stage 2 Hypertension</td>
<td>e&quot;160</td>
<td>Ore&quot;100</td>
<td>12(13.63)</td>
<td>27(18.88)</td>
<td>39(16.88)</td>
</tr>
<tr>
<td>Total</td>
<td>88(100.00)</td>
<td>143(100.00)</td>
<td>231(100.00)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

MAN IN SOCIETY
Table 13 presents the classification of hypertension according to Sex of adult Tibetans of Odisha. The percentage of normal blood pressure is 29.5 for males and 31.6 for females. Stage I and Stage II hypertension are 21.59, 13.63 and 13.98, 18.88 for males and females respectively. Percentage of adults classified as pre-hypertension is 35.22 for males and 28.67 for females which suggests an increasing trend of high blood pressure among the Tibetans in Odisha.

Table 14 presents Tibetans blood pressure in low and high altitude. It has been observed that Tibetans have a high blood pressure values in both the altitude when compared to the local studies. However, residents at high altitude are known to have a reducing effect on systemic blood pressures.

**Table No. - 14**

**Average blood pressure of Tibetans at different altitude**

<table>
<thead>
<tr>
<th>Studies</th>
<th>Place &amp; population</th>
<th>Systolic</th>
<th>Diastolic</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>Present Study, 2004</td>
<td>Odisha (Tibetans)</td>
<td>122.9</td>
<td>121.9</td>
</tr>
<tr>
<td></td>
<td>(N=328)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sun, 1986</td>
<td>Lhasa (Tibetans)</td>
<td>123.7</td>
<td>129.5</td>
</tr>
<tr>
<td></td>
<td>(N=15545)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gupta, 1984</td>
<td>Kalimpong (Sherpas)</td>
<td>128.6</td>
<td>132.6</td>
</tr>
<tr>
<td>Nirmala, 2001</td>
<td>Indian (Rural)</td>
<td>104</td>
<td>98</td>
</tr>
<tr>
<td></td>
<td>Indian (Urban)</td>
<td>106</td>
<td>90</td>
</tr>
</tbody>
</table>

Table 14 presents Tibetans blood pressure in low and high altitude. It has been observed that Tibetans have a high blood pressure values in both the altitude when compared to the local studies. However, residents at high altitude are known to have a reducing effect on systemic blood pressures.

**Discussion**

Growth and development is the result of environmental effect on the manifestation of genetic potential of the individual. The present status of growth and development of an individual is the result of the environmental stresses it encountered throughout its developmental period. The study of growth and development has been described in two sections, one describing prenatal growth and the other postnatal growth. Prenatal growth has been studied through birth weight which is an easily measured integrated result of prenatal growth. At high altitude, decreased growth in Utero is sustained after birth. High altitude growth is characterized by slow and delayed rate of growth, less pronounced growth spurts and shorter stature compared to low altitude (Haas 1976; Haas et al 1977; Leonard et al 1995; Beall et al 1977; Beall 1982; Frisancho and Baker.
In the present study, we compare the growth of Tibetans at high altitude to that of the absence of hypoxic stress by studying the growth of Tibetans at low altitude. Table-1 to Table- 4 compare the mean height and mean weight respectively of Tibetans at high altitude and Tibetans at low altitude. In all the age groups the mean height and mean weight is less for high altitude samples compared to their low altitude counterparts and most of these differences are significant(Tripathy, 2007; Satapathy, 2010). The differences are more marked in the growing age groups. Quite a few studies have been done on the Tibetans at high altitude. For the comparison of our data we selected the data of Weitz (2000) from Tibet. His data were from three different places at different altitudes all above 3000m. We pooled his data for the three places for each age group and plotted it along side the height and weight curves of the present study. The low altitude mean height and weight of the present study were greater than the Weitz’s sample.

Anthropometric indices are used as the main criteria for assessing the adequacy of diet and growth in individuals and or for a population. BMI a composite index of weight and height is used with age and sex independent cut-offs to define overweight or thinness in adults (CDC 2005). NCHS reference percentiles cut-offs 5th, 85th and 95th as provided by Frisancho (1990) has been used for assessing nutritional status in children and adolescents (Table 8, 9 & 10). Present study reveals that the low altitude Tibetans have high BMI value as compared to high altitude Tibetans as well as other Indian population. The nutritional status of the Tibetan in terms of Z score as a whole show a very pleasant picture as far as under nutrition is concerned (Table 5 to 7). However, an alarmingly high percentage of adult population in the category of risk of overweight and obesity is a matter of concern.

At both low and high altitudes, Tibetans have higher birth weights compared to other populations at the same locale (Table 12). The difference in birth weight between low and high altitude is inversely proportional to the protection from IUGR (Intra Uterine Growth Retardation) at high altitude. Our study shows that Tibetan birth weight was more than that of groups with low-altitude ancestry who were living at the same altitudes. A new finding in this study is that Tibetan birth weights are higher among Tibetans living at low altitudes than the Tibetans living at high altitudes. The increase in birth weight with decreasing altitude among Tibetans is similar to what was observed for Andeans in Peru by Beall (1981b); in Bolivia by Haas et al. (1980); and in North America by Yip (1987).

The Tibetans’ heavier birth weights at high altitude compared to persons living at the same altitudes but of low-altitude ancestry may indicate better adaptation compared
to the people of low-altitude ancestry at high altitude. Otherwise, it may be due to genetic factors influencing birth weight irrespective of altitude (Tripathy, 2005). The Tibetans’ heavier birth weights at low altitudes indicate that fetal growth does not achieve its potential even among Tibetans at high altitude. Genetic potential for birth weight is seemingly manifested only at low altitude. Migration of Tibetans to low altitude has resulted in an increase in blood pressure (Table 13 & 14) a possible reason could be that Tibetans at high altitude in contrast to Tibetans at low altitude have retained the habit of high salt intake and higher intake of non-vegetarian in their diet (Table 11).

References


Documentation in Museums : Special Reference to Ethnographic Specimens

SUBODHA KUMAR MOHANTY*

Introduction

Museums symbolize the place where objects, either man made or natural are collected, preserved and displayed and through them knowledge spreads. In very simple term museum is an institution, where there is a permanent exhibition and it is open to public for entertainment or recreation. The main aims of the museums are collection, conservation, use for educational purpose, entertainment or recreation and proper documentation.(Behere and Mohanty,2007,P-2) Documentation may be defined as the precise information classified in a museum to make it readily available, as a controlled and index of museum. One of the primary functions of a museum is to collect objects. The worth of a collection depends upon the amount of information which a museum possesses about its objects. A specimen, however important it may be losses much of its research value if its provenance, purpose and other distinctive features are not known. So accurate and complete records are basic to sound museum practice at every stage of operation for all the museums. Dr. G. Morley (1968) the eminent Museologist has stated “A museum is an institution which continually documents the course of development within its field by means of three dimensional objects and all sorts of data, enriching the information - contents of these objects.”

The method of museum documentation is as old as the museum themselves. Even the temple priests of the Greek City States and the keeper of ancient Chitrasalas were known to have kept detailed records of their collection. Of course, they were not kept in systematic manner. With the increasing dependence by the museums on public funds, the maintenance of accurate records of registers of acquisition became necessary for every museum.

Need of Documentation

Documentation in a museum is essential for the following reasons.
1. For effective management of the collections.
2. For proper storage and identification of the specimens.
3. For security, insurance and auditing of the specimens.
4. To enable the collections to be researched and published. The value of publications and the presentation of the collection through displays and educational work is related to the quality of documentation.

* Curator In-charge, Departmental Museum, P.G. Department of Anthropology, Utkal University
5. Proper documentation of museum objects also helps in saving time and energy of the staff.

6. Proper documentation are useful in meeting any legal complications, which may arise about any particular specimen even after decades since it’s entered into the collection of a museum.

7. Proper documentation of the objects are needed for proper communication between one museum and the other. So it is also desirable to maintain a minimum standard of uniformity in listing and cataloguing of the museum objects.

Method of Documentation

In response to its needs, each museum adopts and develop its own procedures of maintaining records about its objects. So there can not be universal rule for the methods to be followed at the time of documentation of the objects in the museums. But there are some broad patterns followed in this respect by different museums in India.

1. Registration or Accession Record

All the objects acquired by the museum are entered into the Accession Register. A number is given to each object, which is known as Accession Number. The system of giving this number differs from one museum to other. A brief description on the identification of the object is given basing on the information immediately available. Entry may be made in the Accession Register as per detail given below.

(i) Serial No.
(ii) Accession No.
(iii) Date and year of Acquisition
(iv) Source and mode of acquisition
(v) A short description of the object.
(vi) Locality
(vii) Material and colour.
(viii) Price(value).
(ix) Location in the Museum.
(x) Condition of the object.

2. Classified or Departmental Records

Classified or Departmental (Section) records are the next step in museum documentation. The Accession Number is always used when the object is referred. Additional important information should be given on the objects. These are recorded in a register.
3. Index Card

Index Card may be made in duplicate, triplicate or more according to the need of the museum. The cards should be arranged in a way to facilitate obtaining rapidly information on the items in the collection. Index Cards is the first step towards preparing a systematic catalogue. It is desirable to have a photograph or sketch of the object on the back side of the index card. In the front side detail information of the object should be given.

4. Catalogues

Catalogues are recommended for collection, which may have become large enough to have some significance. The printing of classified catalogues of the collections should be a priority programme of a museum.

5. Labels

Labels of all kind are museum documentation intended to benefit the public at large, rather than simply to serve the museum’s staff members. It is important that label should not say a word more than what is necessary. Its aim should be to provide essential information and arouse curiosity to study the object. Labelling is always a subject of great controversy and often subjected to complaints from various quarters. Simply, compact and neatly composed labels containing essential information of an exhibit is now universally accepted.

Documentation of Ethnographic Specimens

Ethnographical objects are material objects used by a community, which have a symbolic value in the culture of the community. If properly documented, ethnographical objects have greater value in describing the life-style of a community, its level of technology and a contemporary account of its culture.

There are many ways of acquiring ethnographical objects such as gift, purchase, exchange, loan etc. Ethnographical objects acquired through gift or purchase do not always contain relevant information essential to understand the contextual cultural meaning of the specimen. So these objects can not be properly utilized for the purpose of research or these specimens can not be displayed properly in the galleries. So the best way to collect ethnographical specimens is to collect them from the field. By this the collector not only sees the use of the object by the people, but also can gather all relevant information pertaining to these objects. So it is a must for every collector of ethnographical objects, every collector should fill -up the field-data sheet for each specimen in the field.
Field Data Sheet


2. Field No. of the Object.

3. Name of the Object (Local name with English equivalent)

4. Locality (Village, District, State).

5. Ethnic Group/Community.

6. Maker (Caste/Tribe, sex, age).

7. Material Components of the object.

8. Source of material.

9. Technique of production.

10. Use of the object (How used, occasion etc.)

11. Local Price.

12. Description with sketch and measurement.

13. Traditional or adopted.

14. Mode of acquisition.

15. Date of collection.

16. Collected by.

After the field collection is over, these field data sheets for every object should be brought to the museum along with the objects. These are then subjected to permanent documentation process.

Safeguards of Documentation Records

The establishment and maintenance of an effective documentation system represents a considerable investment of money and energy. So steps should be taken for proper safeguards of the records. Fire, flood and theft are potential threats to security of the important documents of a museum. So it is advisable to maintain a duplicate set of records in separate locations. The preservation of the documentation records depends on the chemical stability of the paper and ink used and the environment in which they are stored. Records should be stored in a secured room in fireproof cabinets and protected from light, dust and dirt and insects.
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Objectification of Women in Development Victimization vs. Empowerment

RAJAKISHOR MAHANA*

Abstract: In development discourse and practice, women are still seen as vulnerable, weak and in need of protection. Hence, they are often categorized along with other vulnerable group such as children, elderly and disabled. This not only conceals the patriarchal disempowering elements in hegemonic gender relations inherent in laws, institutions, policies and societal values but it perpetuates women’s dependent and subordinate status. Consequently, women very often are not only victimized but also objectified - both by others and self. In a space of contested development, subordinate women being raped, stripped in public, burnt alive, for instance, by the dominant persons, groups and state-led armed forces are some of the forms of objectification of women to show power remains in the hands of those who have the right to objectify. Taking insights from Barbara Hooper, the paper argues that the physical human body, particularly women’s body, as a space is perhaps a critical site for the production and reproduction of power.

On the contrary, the subordinate women have learnt to self-objectify their body by being the front-line leaders in strikes and demonstrations; engaging in lewd behaviour and getting naked in public, for example, as mechanisms to protect themselves from assault, arrest, conviction and challenge the dominant forces are seen by some women as forms of empowerment. Building on Foucault’s insights, the paper shows where there is resistance, there is power. Studying these complex and contradictory forms of objectification of women would help to understand the dynamics of victimization/empowerment of women vis-à-vis development.

Theorising Body: An Introduction

The construction of human body is much more than just biological – anatomical, genetic and hormonal. Feminist and other sociocultural traditions have shown that bodies exist within sociocultural contexts and hence are also constructed through sociocultural practices and discourses. Theorist in various disciplines have began to explore the multiple ways that the body conveys social meaning and how these meanings have shaped the gendered experience [e.g. Bordo (1993), Butler (1990, 1993, 2004) and Foucault (1980) in philosophy, E. Martin (1987) in anthropology, K. Martin (1996) and Shilling (1993) in sociology, Kaschak (1992) and Ussher (1989) in psychology].

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Given that, bodies as social construction are subjected to different kinds of treatments based on certain conditions and contexts. While male body is associated with masculinity – strong, powerful etc, the portrayal of female body is “dehumanized as sexual objects, things, or commodities” (MacKinnon 1987: 174), or at best reproductive bodies. Here, women are still seen as vulnerable, weak and in need of protection. Hence, they are often categorized along with other vulnerable group such as children, elderly and disabled. This not only conceals the patriarchal disempowering elements in hegemonic gender relations inherent in laws, institutions, policies and societal values but it perpetuates women’s dependent and subordinate status, and hence violence against women. In other words, violence against women is not merely the problem of victimization, rather it is inherently linked to the historically rooted patriarchal system of gender and power relations. This in turn, perpetuates pejorative ways of thinking, speaking and acting against the women, usually, though not always, in the sexual realm that she finds morally, socially, psychologically or physically objectionable. This is called objectification.

Objectification of women, particularly sexual objectification, is a familiar concept. “Sexual objectification occurs whenever a woman’s body, body parts, or sexual function are separated out from her person, reduced to the status of mere instruments, or regarded as if they were capable of representing her” (Fredrickson and Roberts 1997: 175, see Bartky 1990). In other words, when objectified, women are treated as bodies or objects what are really not bodies or objects, but rather, in fact, are human beings. Then, we need to ask how objectification happens and what is involved in the idea of treating as an object? Martha C. Nussbaum points out that there are seven notions that are involved in that idea (1995: 257):

1. Instrumentality: The objectifier treats the object as a tool of his or her purposes.
2. Denial of autonomy: The objectifier treats the object as lacking in autonomy and self-determination.
3. Inertness: The objectifier treats the object as lacking in agency, and perhaps also in activity.
4. Fungibility: The objectifier treats the object as interchangeable (a) with other objects of the same type, and/or (b) with objects of other types.
5. Violability: The objectifier treats the object as lacking in boundary-integrity, as something that it is permissible to break up, smash, break into.
6. Ownership: The objectifier treats the object as something that is owned by another, can be bought or sold, etc.
7. Denial of subjectivity: The objectifier treats the object as something whose experience and feelings (if any) need not be taken into account.
Each of these is an attribute of our treatment to an object, though in fact we do not treat all objects in all of these ways. Objectifying an object is not objectification, but in fact treating a human being in one or more of these ways is objectification. Of all the features listed above, denial of autonomy and denial of subjectivity attract our special attention here for the reason that they seem to be modes of treatment we do not bother discussing much in case of mere objects, where the question of autonomy and subjectivity do not arise, they seem most suited for objectified treatment of persons.

Neither objectification of women nor the objection to the objectification of women is a recent phenomenon. In Hindu mythology, for instance, Ahalya, created by the God Brahma as the most beautiful woman, was married to the much older sage Gautam Maharishi. Many Hindu scriptures narrates that being seduced by Indra (the king of the gods) (and some other narratives say that Indra came in disguise as her husband and though Ahalya saw through his disguise but nonetheless accepted his advances for sexual favour), Ahalya had sexual intercourse with Indra. In all narratives, Ahalya and Indra were cursed by Gautam. In popular retelling of the legend, Ahalya was cursed to remain as a stone for thousands of years who later on returned to her human form only after being brushed by Rama’s foot. Most of the narratives say that Ahalya accepted the verdict (to be objectified) without objection. Pradip Bhattacharya, author of Panch-Kanya: The five virgins of Indian Epics, argues that this version of the tale is “male blacklash” and patriarchal myth-making that condemns her as a non-entity devoid of emotions, self-respect and social status (Bhattacharya 2000, 2004a, 2004b).

Similarly, in the French Enlightenment, there was a debate as to whether a woman’s breasts were merely a sensual enticement or rather a natural gift. In Alexandre Guillaume Mouslier de Moisy’s play The True Mother (La Vraie Mère), the title character rebukes her husband for treating her as merely an object for his sexual gratification: “Are your senses so gross as to look on these breasts – the respectable treasures of nature – as merely an embellishment, destined to ornament the chest of women?” (Schama 1989: 147). Challenging upper caste male patriarchy, even the contemporary literature on Dalit studies clearly points out that women, particularly Dalit women, are being treated by upper caste Hindus as objects or at best as bodies for the use of others (cf. Viramma, Racine and Racine 2000). Muli, a Bauri caste (one of the untouchable castes) man—the main character of James Freeman’s book, Untouchable: An Indian Life History – talks about how upper caste men treat Bauri women, “to keep their prestige, they avoid us in public, but in private they screw our women, ‘hu hu’, panting like dogs” (Freeman 1979: 22). The common thread running through all the examples is the experience of women being treated as bodies devoid of autonomy and subjectivity. Particularly, in all the examples except the first one, body has been treated instrumentally as an object for the mere use of (or consumption by) others.
Building on these insights, the paper moves forward a step to explore how objectification of women happens in a contested space of “development” and its consequence on their subjective experiences. For instance, subordinate women being raped, stripped in public, and burnt alive by the dominant persons, groups and state-led armed forces are some of the forms of objectification of women are not uncommon in any contested space of development. With help of snippets from different tribal resistance movements in Odisha (India) against the so-called mega-development projects and the opposition of the dominant forces to them, the paper argues that the physical human body, particularly women’s body, as a space is perhaps a critical site for the production and reproduction of power (Hooper 2000). The paper further argues that power remains in the hands of those who have the power to objectify (the objectifier).

On the contrary, the subordinate women have been coaxed to internalize an observer’s perspective on self, an effect what we call self-objectification. On this, Fredrickson and Roberts note, “maintaining an observer’s perspective on physical self forces women to simultaneously experience their bodies as “objects” as well as capabilities” (1997: 184, cf. Young 1990: 146). Though self-objectification certainly has a negative impact on the subjective self, nonetheless women in certain spaces of contested development do self-objectify their body by being the front-line leaders in strikes and demonstrations (to protect others from police assault, for instance); engaging in lewd behaviour and getting naked in public, for example, as mechanisms to protect themselves from assault, arrest, conviction as well as to challenge the dominant forces.

Studying these forms of resistance from Scott’s notion of “weapons of the week” (Scott 1985) is interesting. Here, Lila Abu-Lughod’s proposition of studying resistance as a “diagnostic of power” (1990: 42) offers us helpful insights. In this, I take a cue from Foucault’s analytics of power and resistance. Particularly, I build on one of his central assertions advanced in his most explicit discussion of power, in the first volume of The History of Sexuality, that “where there is power, there is resistance” (1978: 95). By this, Foucault challenges us to question our understanding of power as always and essentially repressive. Deromanticizing the 20th-century sexual revolution, he argues that power is something which not just works negatively – by forbidding, restricting, prohibiting, or repressing – but also positively and productively – by producing forms of pleasure, systems of knowledge, goods, and discourses. He highlights the productive perspective of power in the following words: “What makes power hold good, what makes it accepted, is simply the fact that it doesn’t only weigh on us as a force that says no, but that it traverses and produces things, it induces pleasure, forms knowledge, produces discourse” (Foucault 1980: 119).
Despite his constant attempt to show that resistance is always tied to power, he occasionally implies the persistence of some residual freedom, as evident from the following (Foucault 1982: 225),

For, if it is true that at the heart of power relations and as a permanent condition of their existence there is an insubordination and a certain essential obstinacy on the part of the principles of freedom, then there is no relationship of power without the means of escape or possible flight. Every power relationship implies, at least in potentia, a strategy of struggle, in which the two forces are not superimposed, do not lose their specific nature, or do not finally become confused. Each constitutes for the other a kind of permanent limit, a point of possible reversal. A relationship of confrontation reaches its term, its final moment (and the victory of one of the two adversaries) when stable mechanisms replace the free play of antagonistic reactions.

Foucault further says, “Where there is power, there is resistance, and yet, or rather consequently, this resistance is never in a position of exteriority in relation to power” (1978: 95). This is more insightful and provocative. But to appreciate its significance, one needs to invert the first part of the assertion that can give us a clue: “where there is resistance, there is power”. This shift is potentially more useful in ethnographic analysis because it enables us to shift from abstract theories of power to methodological strategies for the study of different forms of power in various locations. Foucault himself writes that we can use “resistance as a chemical catalyst so as to bring to light power relations, locate their position, find out their point of application and the methods used” (1982: 211).

I explore self-objectification as a form of resistance strategically to know more about the forms of power and how women view this as a form of empowerment. Studying these complex and contradictory forms of objectification of women would help to understand the dynamics of victimization/empowerment of women vis-à-vis development. In the following pages, I present, based on my fieldwork on conflicts over development in different parts of Odisha, two examples for each of the concepts (objectification and self-objectification) we have discussed above followed by an analysis and concluding remarks.

The Silenced Body and the Speaking Body: Empirical Snippets

I. THE SILENCED BODY

1. Mutilation of women’s body by the police in Kalinganagar

It was 2 January 2006. The day broke. The clock read 7.00 am. TATA Company contractors accompanied by the top government officials of Jajpur district, i.e. the District Collector (DC), the Superintendent of Police (SP) and the Additional District
Magistrate (ADM) with the protection of 27 platoons of strong armed police force reached the north end of Champakoila village of Jajpur district of Odisha for laying foundation stone for TATA Steel Company. Six bulldozers and other heavy duty earth moving equipment started levelling the paddy fields.

Some of the tribals of Kalinganagar had already consumed the left over country liquor that they prepared for the celebration of the New Year. They were expecting something to happen as they were informed by the leaders of Bisthapan Birodhi Jana Manch (BBJM) – People’s Forum Against Displacement – in a meeting the previous day that Tata Steel Company Ltd. (here after TATA) was going to start its construction of a boundary wall at Champakoila village. They had decided to protest as they were not given proper compensation for their lands. Seeing the bulldozers at work, therefore, some persons of Champakoila village rushed to different villages to deliver the message about the arrival of company people in Champakoila. The news spread like wild fire. The reaction of the people was spontaneous. Many people rushed to the site. It was about 10am. 200-300 people gathered at the southern end of the football field of Champakoila. Gradually a huge crowd from Chandia, Gadhapur, Ambagaddia, Gobarghati, Baligotha, Belahori and other nearby villages joined the gathering with an equal strength of female folk.

On seeing the work in progress, they wondered what could be done. A delegation met the government officials to question the illegal occupation of their private land even without paying proper compensation. But the Collector, the SP and other officials refused to listen to anything. The ground levelling work continued. Realizing that their request for a dialogue with the government officials had been turned down, they decided to directly request the TATA Company workers to stop the work. As they started moving towards the bulldozers, defying the police in between, countless explosive land mines burst. Birsingh Gope (27 years) of Chandia village was the first victim of the blast, losing his legs. Several others were injured. This enraged the tribals. There was violent clash between the armed police force and the adivasis. Though the tribals were afraid, their resistance spirit remained high remembering the words of their leaders who told them in their previous meetings that there would be no police firing.

It was around 11 O’clock. Lathi-charge, tear-gas shells, rubber bullets and actual bullet firing followed in quick succession. The firing was indiscriminate. A boy standing a long distance in front of his house was hit by a bullet and died. Another bullet hit the roof of a nearby house. Many people in and around the site sustained injuries. Many injured fell to the ground. Others tried to rescue them. While saving the injured, many

1 According to local reports, 27 platoons of armed police force were deployed. Police themselves claimed it was only 17 platoons.
of the tribals had also been hit in their back. Four persons died on the spot. The enraged police captured the injured Mukuta Bangira aged 40 years and Bhagaban Soy aged 25 years and kicked them with their boots and killed them mercilessly. The tribals started running back. As there was continuous firing, the people lay down on the ground and started crawling remembering the words of their leaders, “if by chance there will be any firing, lie down and crawl”. Thus, by running and crawling people crossed almost a kilometer, after which they rushed to nearby villages. In the meantime some of the severely wounded persons were rescued and people started giving treatment to them.

Later, people found out that four tribals had died on the spot and that police had taken eight injured into their custody of which six were reported to be dead and two were admitted in hospital. One person died in the hospital. From that day the tribals of the area blocked Daitari-Paradeep road from both ends of Kalinganagar. They were waiting for the dead bodies (taken by the police) to be returned for cremation. Two days later the corpses were returned to them. They were shocked to see that both the palms of six corpses had been chopped off and the genitals of the four men and breast of one woman mutilated.

2. Rape of women by the powerful elites in Raighar

The partition of India in 1947 left 11.4 million (42%) of Bengal’s Hindu population in East Pakistan (which became the independent nation of Bangladesh after the Bangladesh Liberation War of 1971). As a result, a movement of about 2.5 million people from East Pakistan into India took place (Visaria 1969:324; Elahi 1981:219). Of these, about 1.5 million people came as refugees, predominantly Hindus and some Santal tribals and moved into the Indian state of West Bengal, Assam and Meghalaya where they settled mostly on their own. There still remained slightly more than one million refugees, mostly belonging to backward caste groups like the \textit{Namasudra}, to be rehabilitated. Out of this, 21,990 Bengali refugee families were rehabilitated being provided with 0.4 acre of homestead and 7 acres of arable land per family in Dandakaranya forest area including Umarkote, Jharigaon and Raighar blocks of Nabarangpur district in Odisha. The apparent discriminatory mode of land distribution and allocation of other developmental benefits between the local tribals and refugees laid the foundation for socio-economic and psychological conflicts between the two groups. Moreover, within three decades, the Bengali refugees encroached upon the lands of the tribals through various fraudulent means. Any protest from tribals resulted in Bengalis manhandling the tribals through use of violent means including beatings, raping of women and looting of property.

Once Parsuram Gond of Jamadora village in Raighar block of Nabarangpur district in Odisha had mortgaged four acres of arable land for four years to Subash Haldar – a

\textsuperscript{2} \textit{Sali} means sister-in-law. \textit{It is used as slang here}
Bengali refugee of Kumuli DNK – and received a loan of Rs.2000. Both of them came to a formal agreement that “no share of the yield, no interest for the money” – i.e. Subash will not share the yield from the land for these four years and Parsuram need not pay the interest for the money. At the end of the fourth year, Parsuram would get back his land by paying the exact amount he had borrowed (Rs.2000). Subash got the signature (thumb impression) of Parsuram on a written document stating that was just a formality. Four years passed. Parsuram arranged Rs.2000 for repaying the debt of Subah.

In a late evening of early May 2001, Parsuram met Subash to settle the account so that he could prepare and plough his land for sowing paddy in early June. Lighting his bidi (hand-made cigarette) on a rainy evening in August 2006, Parsuram continued that while handing over the money he was shocked to hear Subash’s awful words, “sale [means wife’s younger brother, used as a slang here] adivasis, you cheats, thieves. You see, you have taken Rs.20000 from me and I have the papers with your signature. Now you are paying me Rs.2000 and asking me to leave the land. Then, who will pay me the rest money? Your father?” Parsuram returned home in desperation. He brought this to the notice of Dabulu Gond and Jagabandhu Majhi and solicited their advice and support.

On 4 June 2001, Parsuram along with some villagers and his brothers – Govinda and Sundar – went to the disputed land to plough. As they continued their ploughing, the message reached Subash. Subash backed by about 200 Bengalis of Kumuli DNK armed with lathis reached the spot and prevented ploughing. As Parsuram did not listen, the Bengalis beat the tribals. There was a violent clash. Many people were injured. Parsuram with the help of Dabulu lodged a case against the Bengalis in Raighar police station. In retaliation, a group of Bengalis reached at Parsuram’s house in the same evening and raped his wife. “They confiscate not only our land but also our women”, Dandho Pujari, a very old man summarizes the whole situation by his riddle, “biha kari banjha, kamai kari chora”.

II. THE SPEAKING BODY

3. Women leading strike and burning the police station in Raighar

In 1994, the tribals of Nabarangpur district started an anti-land alienation movement against the Bengalis refugees. The movement got momentum in 2001 when there were a series of individual and communal fights between the two groups. Most of the tribal leaders, being framed in various cases, either were imprisoned or became underground. The movement was led by the women.

On 10 November 2001, Harabati Gond reached Bhanumati Majhi’s house in Raighar of Nabarangpur district in Odisha. On that night, message about the next day
rally was passed on to all villages and people, especially women, were requested to join in large numbers for the Block gherao. Next morning, Harabati and Bhanumati along with about one hundred women reached Kalashi Padia in Raighar and sat there waiting for other women to join them for a rally. Women came to join them from all directions. Police came to know about this. Armed with lathi, gas cells, handcuffs and guns, a battalion of police rushed to Kalashi Padia and started abusing them without asking anything, “You characterless adivasi women, you are here for a rally? You will understand well once you get the lathi-charges on your ass. We are warning you to quit, otherwise we will rape you. None of your husbands will save you. Here 144 rules and therefore, we will not allow you to have any kind of meeting and rally”. This warning fell on tribal women’s deaf ears. Harabati was able to sense, however, some women got frightened. Some women started moving to the other end of the field. Bhanumati was trembling in fear. Harabati made her sit by holding her hand. Police came to Harabati and scolded.

“Why are you sitting here? Do you know, 144 has been declared here? But still you want to have your rally! If we beat you to death none of your husbands will come here for your rescue. Get up….move…..move……”

“Why should we get up? We are not doing any harm to you. Then, why should we move?” – Harabati replied boldly concealing her nervousness.

“Look, look, how dare [my] wife’s sister back answer me?” – one police officer vented his anger.

“Mind your words. We are not thieves or goons that you can abuse us using filthy language or whip us. You do not know why we are here. Then, why are you scolding?” – Harabati asked.

“Rape those salis² and then only they will understand” – another policeman shouted from a distance.

“You know tribal culture. During marriage, death and other rituals, the tribal women move together in group to their relatives’ houses, market and other working places. You do not know why we have gathered here. We are here to proceed together to our work place. You have slandered and intimidated us to rape. Do as you like. As you told, we would start a rally from here now. You admit your fault and beg us for pardon. Let the Collector and the SP come and apologise to us. Otherwise, we will start our rally against your ill-treatment to women” – Harabati shouted firmly, though she was shivering in fear.

As they were firm on their demands, the Collector and the SP came to them. Harabati said to them, “We are tribal people. Tribal women move together in group to
fairs, festivals, markets and relative's house to attend ceremonies and rituals. We are out today to attend to such a work. A few of us are waiting here for our friends to join. These police have insulted us in filthy and obscene language. They have threatened to beat us to death. They have told us that we are characterless and they will rape us. We never come for a rally here. Since they have accused us that we are united for a movement, now definitely we will go in a rally against the ill-treatment of the police. We will start our rally from here to the block office. We will have our meeting in Hatapada and we will end the rally with the submission of a memorandum to the BDO”. Initially, the Collector did not agree to Harabati’s demand. He asked Harabati who would be responsible if the violent mob destroyed the houses, ransacked the government offices, set the public vehicles on fire or beat the police to death. Finally, Harabati came to a written agreement with the officials that she would surrender herself to the police if any mishap occurred.

The rally started from there, Kalasi Padia. The women who were retreating joined the rally. A huge crowd followed. The mob was rigid to retaliate the ill-treatment of the police. Harabati told them not to do anything like that. The crowd reached the Block office and Harabati went inside to meet the BDO to handover the memorandum. In the meantime, the violent mob ransacked the block office and set it on fire. They also tried to fire the police station but in vain due to timely deployment of Orissa State Armed Police. The police opened gas firing quickly followed by bullet firing resulting in death of Budhuram Singh Bihari and Laxam Deepak of Raighar. In the meantime, one policeman came to Harabati and advised her to leave the spot. At once the Magistrate reached. Harabati escaped by jumping the boundary wall of the Block office and quickly hide herself in the paddy fields behind the college. Bhanumati was with her. She was sobbed in fear. Harabati tried to console her but frustrated Bhanumati told Harabati that everything happened because of her. As it was almost evening, it became easy for them to hide in the paddy fields safely. The policemen in 10-15 vehicles searched for them. Harabati was afraid that if found, they would be shot dead or arrested. However, Harabati escaped.

4. Women’s naked protest in Kashipur

To facilitate the commencement of the Utkal Alumina International Ltd (UAIL) at Kucheipadar village of Kashipur block in Rayagada district in Odisha, the Government decided to station a police outpost at D. Karol – a village in between the main centre of the movement, Kucheipadar, and the Company – for “law and order” reasons. In fact, Tikiri Police Station (PS) stands at a distance of 10km and Dangasil police outpost lies at 5km from the proposed police station. On the first day when Collector came to lay the foundation stone for the police outpost at D. Karol, the people especially the women
protested firmly. Just after a week, on 1 December 2004, the Collector along with the SP again planned to lay the foundation stone. In protest, the Prakrutik Suraksha Sampada Parisad (PSSP) – The Council for Protection of Natural Resources – called for a meeting on the same spot on the same day. The Collector arrived with eight platoons of police armed with lathis and guns. The people protested with slogans that they needed schools and hospitals, not police-outposts. The Magistrate present warned the tribals to disperse. As the people did not move, the OIC of Tikiri PS shouted, “You nonsense adivasis, go away, otherwise you will face the consequence”. He abused and threatened the women to be raped, if they did not move. “When you are in the habit of sleeping with your father and brother, what is wrong if you are raped by us”, he further stressed (PUCL 2005: 4). Apprehending some danger, the older women folk came to the front pushing the young ladies back. The tribals of Kashipur had knowledge, mostly through word of mouth, about the naked protest of women in Manipur against the alleged rape, torture and murder of women (particularly against the murder of Thangjam Manorama) by paramilitary forces (for details see Hussain 2004). Once stripped, the tribal women thought that the police would go back, and hence, they would be safe from violence and importantly they would succeed on their protest against the building of the police outpost at D. Karol. Thus, some of the old women stripped of their clothes challenging the OIC and the police force to commit rape. To their surprise and embarrassment, the police force started pelting stones at them quickly followed by gas firing and lathi charge. About 35 people were severely injured. Eight of them including two women were arrested by the police.

Conclusion

So, we have four examples of women’s lived experience that seems to deserve, in some sense, the name of objectification. In each case, the women as mere bodies were subjected to the instrumental treatment being denied of autonomy and subjectivity. The first two examples talks about the objectification of women while the last two examples talks about the self-objectification of women in relation to their lived experiences in a contested space of development. In first two instances, absence of true autonomy and concern for experiences and feelings seems to grant that the dominant forces (here police, military forces, elite caste groups and bureaucrats) have taken the women as given to be used as mere instruments or bodies for the production and reproduction of power. By capturing woman, killing her and mutilating her body (along with chopping off hands of men), the police and the military forces wanted to achieve two things:

1. To take revenge on the people who killed a police personnel in the fight indicatively to spread a message among the people that the state and company are too powerful to be fought with.
2. Secondly, to create a sense of fear among the common people so that they won’t be taking part in the movement to fight against the state and company combined together.

Similarly, in the second example, by raping and sexually abusing women, the Bengalis too wanted not only to prove that they are powerful enough not to be retaliated but also to show that retaliation with them would necessarily end in destroying their (the tribals here) families. So, the Bengalis used this method (raping of tribal women) at the slightest pretext of any opposition against them by the tribals. Here women experience objectification because of their systematic subordination to male based power, which is often approved by the society.

In our later examples, the women have been coaxed (or they have learnt) to self-objectify their body as a result of internalizing the observer’s perspective onto self. Through their lived experience in taking part in people’s movements against the dominant forces like the State and market, the women have come to realize that their protest would bring less retaliation (in comparison to men’s protest). In other words, the women bring in the front line of the strike and demonstrations or sometimes leading the whole movement, protected themselves (including men) from assault, arrest, conviction and other forms of violence by the powerful forces. Here, objectification of women as a social construct is primary in causing self-objectification that serves a twofold purpose. Firstly, learning from the oppressor, the subordinate women have learnt to self-objectify their body as a challenge to the dominant forces. Secondly, this act of self-objectification works as a mechanism to protect themselves (including their men) from various forms of violence from the oppressors. For the historically subordinate women, challenging the powerful or at least disobeying the “rule” is seen as a form of liberation and empowerment. But, how far we can unmake the discourses and practices of violence against women in a contested space of development and how far the emergent transformative power of the women will transform their (including men) life-world, however, is another matter.

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Involuntary Resettlement and its Impact on Traditional Knowledge System of the Kutia Kandhas of Lanjigarh

DEEPAK KUMAR OJHA*

Abstract: Development induced displacements of human communities is one of the major social destructive processes happening all over the world. Among the various impacts of large development projects, the displacement by several industries in forested and tribal areas is a devastating one. Keeping this in mind, the present research work tries to explore and understand the changes that have taken place within the indigenous knowledge system of the Kutia Kandha tribe displaced due to the Vedanta Aluminum industry in Lanjigarh of Odisha. As the research problem of the study aims at a descriptive understanding of the Kutia Kandha knowledge system it has adopted an ethnographic approach. The main objectives of the study are to understand and describe the Kutia Kandha tribe in the realm of their socio-economic, political and religious organizations and to examine the changes occurred in the Ethno-medicine, livelihood, occupational pattern of the Kutia Kandhas after their rehabilitation in a new place. The methodology that justifies the stance is qualitative whereas intensive field work along with direct observation, semi-structured interview technique and case histories have been used as the main sources of field data. Significant changes have been noticed in Kutia Kandha traditional knowledge system in terms of disruption in ethno-medicine, healing practice, believe system and cultivation pattern after their rehabilitation in a new place.

Introduction and Background

Impacts of development projects are varied and complex and pose great challenges to administration. Empirical researches have shown that those who have sacrificed their lands and livelihoods have largely remained as losers, more so, those belonging to the vulnerable sections of communities such as the indigenous population and women. Ineffective R&R Planning and implementation have been considered to be significantly responsible for the plight of the affected communities. During the last two decades of the previous century, the magnitude of forced population displacements caused by development programmes was 10 million people each year, or some 200 million people globally during that period (Cernea 2000: 3659). The increasing construction of development projects consistently displaced a massive number of tribal and weaker sections. In India, it is found that the country’s development programmes have caused an aggregate displacement of more than 20 million people

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during roughly four decades. 40 per cent of these Oustees or Project Affected Persons were tribals and another 20 per cent were from the Scheduled Caste. In fact, one in every seven Indian tribal is a displaced person (Fernandes 1998: 265). Even when India has invested enormous capital, effort and resources in building large industrial projects, there is a total absence of systematic evaluation of it. Official database is particularly dismal when it comes to reliable number of people who have been displaced and affected by mines and industries. Though estimates vary significantly, there is an agreement that mines have caused displacement of 21,00,000 population since now, among which 5,25,000 have been rehabilitated where as 15,75,000 have been left in backlog. Similarly, displacement caused by several other industries and infrastructural projects till 1991 are 13,00,000, among which 3,25,000 have been rehabilitated and 9,50,000 left in backlog. (Fernandes, 1995)

**An Overview of Displacement in Odisha**

The state of Odisha occupies a unique place among the underdeveloped states of India, because of its large concentration (22.13%) of tribal population. The most striking fact about Odisha is that while it is rich in natural resources, its people are extremely poor. 47.15 per cent of its population are living below the poverty line which is the highest in the country (Census of India 2001). Odisha, though a relatively backward state in terms of standard of living indicators, posses a vast amount of mineral, water and forest resources. The state is richly endowed with minerals like coal, iron ore, bauxite, chromites, manganese ore, graphite and rare earths. A. B. Ota says,

“A good number of Business houses also have been attracted to this state because of its bountiful natural and mineral resources for harnessing them and in the process have established development projects in different regions. Statistical figures indicate that till 2000, about 20 lakh people been directly affected by development projects in varying degrees out of which about 5 lakh have been physically displaced losing their home and hearth from their original habitat. Statistical figures further indicate that the dam/irrigation projects alone have displaced nearly 3.5 lakh people, which is roughly 70 per cent of the total displaced persons” (Ota 2001: 1).

The magnitudes of displacement in Odisha caused by different industrial projects are very high. The State has seen the setting up of large development projects like multipurpose river valley projects- Hirakud Dam, Rengali, Upper Kolab, Indravati, Subarnarekha etc., large industries — Rourkela Steel Plant, NALCO, HAL and the like. Besides several private sectors have either set up projects or signed MoUs with the State Government to start their units which include industrial giants Tata, Jindal, Birla, POSCO and others. But what is painful is the large-scale involuntary displacement of weaker sections, particularly the tribals. The findings of many studies relating to
displacement and resettlement present a dismal picture. However, most of them have not been able to present an accurate picture of the socio-economic status of the oustees in the post-displacement period vis-à-vis their position in the pre-displacement era. Statistical data indicates that a large portion of the project affected families belong to the tribal group. Since the tribal belt is invariably rich in mineral deposits, they are affected much by the ongoing power, mining and industrial projects. Conservative estimate reveals the percentage of tribal among displaced families in the ongoing and pipeline development projects will be as high as 80%. Different studies put the number of already displaced at more than 10 lakhs and those adversely affected in varying degrees at 50 lakhs.

Research Problem

Keeping in view the above facts, the present research work seeks to explore and understand anthropologically the changes that have taken place within the Indigenous Knowledge System of the Kutia Kandha tribe of Kalahandi district who have been displaced because of the Vedanta Almunium Pvt. Ltd. In 2003, Vedanta Resources of M/s Sterlite Industries India Ltd. signed Memorandum of Understanding with the State Govt. of Odisha for construction of a refinery for Aluminum Production. M/s Sterlite Industries (India) Ltd. set up a refinery with a capacity of 1.0 million tonnes per annum for processing aluminium for export. The Vedanta Industry Has occupied 660.749 ha of the forest land with an additional 33.73 ha of village forest in the Niyamgiri hill of the Kalahandi and Rayagada districts which was largely inhabited by the Kutia Kandha people. Mining operations of the intensity proposed in this project spread over more than 7 square km which has severely disturbed this important wildlife habitat.

The present research work describes in detail the above situation in the Kalahandi district of Odisha. The study aims at an anthropological impact assessment as well as the changes resulted in the indigenous Knowledge System of the Kutia Kandha tribe. It attempts to deal with the questions: What is the impact of displacement upon the Kutia Kandha Indigenous Knowledge System? What are the consequent changes found in the occupational practice and traditional ethno-medicinal knowledge? Have the Kutia Kandhas succeeded in re-establishing or reorganising their social integration in an alien place when they are being relocated after displacement?

Development and Displacement: A Theoretical Framework

The word ‘development’ is a holistic concept. Development cannot and should not be restricted to a narrower meaning but assumes a wider connotation. Vidyarthi observed that development means growth and change which includes both the material and human – the socio-cultural factors which are an integral part of the dynamics of growth. He felt that while striving for the development of a group or an area, due
emphasis has to be given to their traditional values and historical experiences (Vidyarthi 1970). There is a growing realization that development can no longer be understood in terms of statistical indices, political symbols or economic parameters. For an integral development of a community, the developmental strategies should be formulated in accordance with the locally felt, culturally conditioned individual and group needs. In fact economists also agree that development does not start with goods; it starts with people and their education, organization and discipline. Amartya Sen is of the view that in the world today, we live both with ‘unprecedented opulence’ and ‘remarkable deprivation’, ‘destitution and oppression’ (Sen 2000). According to him, “the central exercise of development is to overcome these problems and to achieve this, the ‘various types of unfreedoms’ have to be removed. It concentrates particularly on the roles and interconnections between certain crucial instrumental freedoms including economic opportunities, political freedoms, social facilities, transparency guarantees and protective security” (Sen, 2000: 12). Development is a multi-dimensional process and is interdependent on various parameters. “It is not based purely on economic parameters promoting only the earlier concept of ‘growth’, by the transfer of finance, technology and experience from the developed countries but encompasses within itself a whole range of social, economic, institutional, environmental, cultural and other parameters” (Sebastian 1997: 329).

However, development in Indian context shows unfortunately a different picture. After independence, the Government of India introduced many plans and programmes, which envisaged two major components, poverty alleviation and rapid industrialization. The poverty alleviation programmes were meant for the economically backward communities the major chunk of which comprised Scheduled Tribes and Scheduled Castes. Though these programmes had tribes and other backward communities as their target groups, they were never formulated in accordance with the felt needs of the individual and cultural nuances of the group. As a consequence, these programmes were mostly rejected or at best evoked lukewarm response (Dube 1958). The other component of the planning of the Government of India involved installation of plants and industries in the resource rich areas which are known for the inhabiting places of Adivasis1. Such Projects (heavy industries and big dams) became the symbol of modernization and development and primarily due to the advocacy they received from the political leaders. It was this grand promise that prompted Pandit Jawaharlal Nehru, first Prime Minister of India, to call dams “secular temples of modern India”. Though these projects were envisaged for the welfare of the entire society, they affected the local population in an adverse way, unleashing devastating consequences for them. Installation of these projects in tribal inhabited areas required a vast tract of land to be colonised, thus leading to the displacement of the local population. Displacement of
these people has affected their social structure. The so-called development (for a particular section of the society) brings out destruction for these communities, virtually resulting in the breakdown of social network and creation of cultural dysphoria.

Anthropologists have not paid attention to the issues pertaining to displacement, rehabilitation and Indigenous Knowledge System. There are quite few anthropological studies done so far in this area. To quote Beteille: “It is an area which is relatively unexplored not only in Indian anthropology but also in anthropology anywhere” (Beteille 1990: 12).

Studies of displacement and resettlement conducted in many third world and developing nations such as Brazil, Indonesia, and Kenya report disappointing experiences. The development of Sao Fancisco river basin in Brazil included the construction of several major dams such as Sobradinho, Paolo Alfanso, Itaparica and other dams. Lake Sobradinho, which displaced 65,000 people, had particularly disastrous socio-economic consequences. Studies on Itaipu dam resettlement (Kohlhepp 1987) and Tucurui dam resettlement (Mougeot 1986) have also reported similar findings. In Indonesia, the Kedung Ombo dam and irrigation project located in central Java carried unrealistic assumptions about the transmigration of the reservoir inhabitants (World bank Report 1983). In Kenya’s Kiambere reservoir area, the post relocation impact study found that resettler’s average landholding size diminished to less than half and their livestock were reduced by more than a third and more than thirty three per cent of the resettlers were still without new house by the end of the project (Mburugu 1988). Similar experiences are also reported from other countries.

Anthropological studies on displacement and rehabilitation started in India around the late 50s, and early 60s. Two important studies of this period are worth mentioning. Roy Burman’s study (1962) of displaced tribes of Sundergarh district in Odisha due to the construction of Rourkela Steel Plant highlighted various factors affecting the process of displacement. Karve and Nimbker’s study (1969) of Koyna Dam Project dealt with the impact of displacement and rehabilitation on the family and kinship system of the uprooted communities of Maharastra. In addition anthropologists also paid attention to the rehabilitation of nomadic and denotified communities during 1950-1970 (Majumdar 1951; Biswas 1954; Bose and Bharara 1967; Bharal 1968; Bhowmick 1968; Mishra 1969).

After 1970s, there was a resurgence of tribal studies in Indian Anthropology. In the 1980s, other social scientists such as economists, political scientists, human and social geographers, social activists and students of law became interested and involved in the academic issues and practical problems of tribal communities. It was mainly because of the fact that the question of dam building and the associated displacement
of the indigenous people from their traditional habitat was linked up with the issue of human rights. The primary concern of these studies was the issue of economic vs. social cost, the antagonism towards big dam, the state policies on displacement and rehabilitation, and macro-level evaluation of the large dams in India (Shatrugna 1981; Joshi 1987; Reddy 1988; Paranjpye 1988; Iyer 1989; Dhawan 1989; Fernandes and Thukral 1989; Singh 1990; Baboo 1991).

From the later part of the 1980s onwards and in the beginning of the present decade, social anthropologists gave adequate attention to these issues (Behura and Mishra 1988; Behura 1989; Sudarsan and Kalam 1990; Baboo 1992; Mahapatra 1992; Sanwal and Saksena 1993; Baviskar 1995). Behura’s study (1989) of relocates of Rengali dam in Odisha insightfully analyses the rehabilitation policy and highlights the economic problem and socio-cultural consequences. It provides an understanding of the dynamics of social change with special reference to sibling relationship, nature of cooperation, causes of conflict and the institution of Kinship and marriage. Baboo’s study (1992) attempts to reconstruct the socio-cultural life of the Oustees of the Hirakud Dam who underwent traumatic experiences in the 1950s because of displacement. Mahapatra (1992) highlights the rehabilitation process and problems of the displaced tribals of Odisha in the comparative perspective of the situation in some other states in India. Nevertheless, very few displacement and rehabilitation studies have dealt with the socio-cultural and psychological components.

A detailed sociological study by Behura and Nayak (1993) on a dam project in Odisha found various manifestations of social disarticulation within the kinship system, such as the loosening of intimate bonds, the weakening of control on interpersonal behaviour, and lower cohesion in family structures. Studies undertaken by the researchers show that there are different types of social disarticulation caused by displacement, such as growing alienation and anomie, the loosening of kinship bonds, the weakening of control on interpersonal behaviour, and lower cohesion in family structures. Marriages were deferred because dowries, feasts, and gifts became unaffordable. Resettlers’ obligations towards and relationship with non-displaced kinsmen were eroded and interaction between individual families was reduced. As a result, participation in-group action decreased; leaders became conspicuously absent from settlements; post-harvest communal feasts and pilgrimages were discontinued; daily normal social interaction was severely curtailed; and common burial grounds became shapeless and disordered.

Similar type of study is conducted by Biswal (2000) upon the Oraons of Odisha, who are being displaced by the Rengali dam. It shows that the involuntary displacement and resettlement has caused several changes in their family, marriage and kinship structure. She observes that due to the division of joint families into nuclear ones and
separation of married brothers and sons, unity of the old family is lost. In marriage they
are not following clan exogamy strictly. In some cases, either by elopement or by
negotiation they are marrying within the same clan, which are exceptions. The old clan
rules and regulations are no longer abided by the members. Because of the spatial
mobility and distribution of kinsmen to other villages, the members are not being able
to observe pollution practices arising out of death and birth.

In one of his earliest studies relating to rehabilitation in Rengali Project, Behura
(1990) has analyzed the reaction of the Oustees towards displacement and the changes
in their socio-economic pattern after displacement. Some of his important observations
were that the social functions were not observed strictly by all the displaced families
on the basis of lineage unity as they have been scattered in different resettled villages
far from each other. Further, due to weaker economic condition after resettlement, it
was not possible for all the displaced families of the same lineage to attend to all
common social functions with presentations as before.

So far as the Resettlement and Rehabilitation measures taken up by the government
are concerned, there are very few instances of effective implementation of these
programmes on re-establishment of social integration. Despite such a historic and
philosophic Indian tradition favouring rights of the displaced and duties of the invader,
the displaced are facing severe traumatic condition. These days, the problem of
resettlement and rehabilitation is becoming such a widespread event that it is enveloping
all corners of the developing as well as developed societies of the world.

Last two decades have observed a considerable amount of research work to
estimate the problems encountered by the project affected persons by the
anthropologists, sociologists, planners, political scientists, NGOs, social activists,
government agencies as well as funding agencies like World Bank, Asian Development
Bank, etc. The studies have covered one area or the other depending on the context
and requirement of the time. However, there are shortcomings and drawbacks in most
of the works.

(i) Most of the studies are sectoral in nature and lacking a holistic approach. The
studies conducted by economists, planners and engineers have covered a particular
aspect of the problem and have left the rest untouched. In fact, a serious study of the
problem started only after the World Bank’s formulation of law on Resettlement and
Rehabilitation. The World Bank made it mandatory for the borrower to become socially
aware and undertake Resettlement and Rehabilitation activities to the affected areas
of their projects. It is only after the World Bank guidelines, that the researches on
Resettlement and Rehabilitation have taken a serious mode. But still it is very much
based on the cost-benefit analysis of the project. This is precisely the reason why
most of the studies conducted earlier are sectoral in nature and based on the study of the economic aspects mainly. Though some others tried to study other aspects also, but it is not deeply motivated and penetrated.

(ii) The studies have also suffered due to the non-cooperative attitude of the displaced persons. The Oustees had to face severe mental and psychological trauma at the time of relocation, which created a hidden animosity towards the project authorities. Sometimes, the researchers were confusedly equated with the project authorities by the displaced persons. This created hurdles in approaching the Oustees and getting correct information from them. Displaces also go with the assumption that if they give a gloomy picture, they could get some benefits in future from the government, thus hiding and misquoting the reality. In other cases, they were tired of responding to the researchers. Everyday or the other, someone appears to them with a piece of paper and a pen to ask the painstaking questions.

(iii) Anthropological aspects like customs, tradition, values, belief system, religion, marriage, caste system etc., have been neglected by most of the studies. Even if they tried to sketch the information, it lacked deep insight. People’s attachment to the place, bonding with religious deities, ancestor worship, informal social network, common property resources, etc., has been totally neglected. Very less information is available about what happens to the most vulnerable section of the society, i.e., the Scheduled Tribes, women and children. Health, nutrition and sanitation which are the most vital areas of concern for the society were given very less attention.

(iv) Besides these, studies on the impact of displacement and rehabilitation on the indigenous knowledge system of the displaced community, especially focusing on the process of change, have been rather rare. By examining the impact of displacement and rehabilitation on the Kutia Kandha social structure, the present study attempts to fill this gap.

Many anthropological and sociological studies have already been conducted in analysing the socio-economic problems of the displaced people and evaluating the Resettlement and Rehabilitation policies implemented by the Government. The studies of Cernea (1995, 1999, 2000), Fernandes (1991, 1995, 1997), Mahapatra (1992, 1995), Thukral (1992), Behura (1993), Baviskar (1995), Parsuraman (1999), Bhagamwar (2003), and Ota (2001), are notable among them. But, the studies on consequent changes in the traditional local knowledge of the displaced tribes are quite inadequate. Similarly, a very less amount of studies have been done on analyzing the impact on occupational practices as well as ethno-medicine of the displaced Kutia Kandhas of Kalahandi district, Odisha. The name and a brief introduction of displaced Kutia Kandha tribe has been made in a report of four member committee including Parasuraman, Baviskar, Saxena and Kant (2010) who have investigated the Vedanta Almunium site.
and its impact on the socio-economic conditions of Kutia Kandhas. Even in these studies many important elements of the Kutia Kandha social structure such as traditional knowledge system and occupational skills have remained unexplored. Thus, the present research work tries to fulfil this gap by adding to the existing stock of knowledge as well as attempts to find out the less discussed people’s experience towards the change in a community caused by the development induced displacement with the major objectives to understand and describe the Kutia Kandha tribe in the realm of their socio-economic, political and religious organizations and to find out the changes occurred in the indigenous knowledge system especially in the traditional medicinal practice of the Kutia Kandha people after rehabilitation.

Methods and Materials

The Methodology that justifies the stands for the present study is qualitative where as intensive field work along with semi-structured interview, direct observation and case histories are used for the data collection.

The Cases of Ambaguda Village and Vedanta Rehabilitation Colony

The present study focuses on the Kutia Kandha tribe and they cannot be understood in isolation from other communities in relation with whom they live. They have a complex and definite relationship with their habitat and social surroundings. The study was conducted in two different localities - a traditional Kutia Kandha village (Ambaguda) and the newly built rehabilitation colony (Vedanta Rehabilitation Colony). The distance between the two is nearly 10 kilometers and they are completely different in their physical as well as social setting. However, both of the villages are located in the district of Kalahandi which is traditionally known as the homeland of the Kutia Kandha tribe.

Kalahandi (locally pronounced as Kalahaniti), is a district of Odisha in India. The region had a glorious past and great civilization in ancient time. Archaeological evidence of stone age and Iron Age human settlement has been recovered from the region. In South Asia it is believed that the lands of Kalahandi district and Koraput district were the ancient places where people started cultivation of paddy. It was a princely state in British India and in post independence period it merged with Odisha state in India as Kalahandi district comprising current Kalahandi district and Nuapada district. In 1967, Kashipur block from Kalahandi district was transferred to Rayagada district for administrative reason. In 1980s, Kalahandi name became associated with backwardness and starvation death, which is known as “Kalahandi Syndrome”. Despite its backwardness its one of the rich region in terms of history, agriculture, forest resources, gemstone, bauxite, folk dance, folk music, folklore, handicrafts and arts.

According to the 2011 census of Govt. of India, Kalahandi district has a population of 1,573,054, roughly equal to the nation of Gabon or the US state.
of Idaho. This gives it a ranking of 317th in India (out of a total of 640). The district has a population density of 199 inhabitants per square kilometre (520 /sq mi). Its population growth rate over the decade 2001-2011 was 17.79% and it has a sex ratio of 1003 females for every 1000 males, whereas literacy rate is of 60.22%. The language spoken by the people of Kalahandi is Kalahandia Language where as other dialects like Kui, Bhatri, Parji, Bhunjia are also being spoken by the local Adivasis.

The Ambaguda village represents one of the traditional village structures of the Kutia Kandha habitation. The village is located in the Trilochanpur Grampanchayat of the Lanjigarh block of the Kalahandi district. The approximate distance of the Lanjigarh from the District head quarter, Bhawanipatana of Kalahandi is 85 kilometers. The village has 35 households and all belong to the Kutia Kandha group. The total number of population is 279, including 126 males and 153 females. The village is surrounded with the hilly terrains of Niyamgiri. Being full of mountainous forest resources, the Ambaguda is located in the foot hill region.

The Vedanta Rehabilitation Colony came into existence after the development of Vedanta Almunium Pvt. Ltd in 2004. It is located within the Vedanta township called as Vedanta Nagri of Lanjigarh block. The distance of the colony is almost 25 kilometers away from the Lanjigarh block. This is new area developed by the industry by cleaning the foot hills. The colony consists of 58 households with a total population of 364, mostly belonging to the Kutia Kandha tribe

Socio-Economic and Cultural Profile of Kutia Kandha People

In the remote mountainous wilderness of the Eastern Ghats region of Southern Odisha lives a fascinating Kuvi-speaking tribe called, the Kutia Kandha who are a primitive section of the Kandha – numerically the most preponderant tribe of Odisha. They inhabit the lofty Niyamgiri hill ranges in the district of Kalahandi. To a stranger the Kutia Kandha strike as a very important tribal community for their simplicity, quickness in observation and simplicity. The Kutia Kandha villages of Kalahandi are located in the hill-slopes hilltops or valleys in a tangle of thickly wooded hill ranges. The habitation site is chosen upon the availability of sufficient land for shifting cultivation and a perennial source of water.

The word “Kuti” in kui language means ‘big hole’. It is believed that the Kutia Kandhas have been originated from the big hole of earth. They are originally found in Belghar, Gumma, Lankagarh, Jhirpani GPs of Tumudibondh block. They are also found in Subarnagiri and Kotagarh block of Phulbani. The total population of Kutia Kondh is 6479 in entire Orissa.

The Kutia Kandhas continue their age old subsistence activity of food gathering from the forest. Seasonal food collection is still an indispensable part of their economic
life. Their food is greatly supplemented by a seasonal variety of fruits, roots and tubers. The high dependence of Kutia Kandha on the mountain and forest include several customary practices like, agriculture, grazing, ethno-medicine and the collection of Minor Forest Produces. Major cultivations of the Kutia Kandha are cereals such as Mandia (Ragi, Finger Millet), Kosala (foxtail millet), pulses like Kandlo (tuvar, pigeon pea), biri (black gram), Kolath (horse gram) and oilseeds like castor and linseed. Mostly the foot hill regions are selected for the cultivation and indigenous technologies are adopted to protect the crops.

**Indigenous Knowledge System of the Kutia Kandhas**

Indigenous knowledge (IK) is the local knowledge – knowledge that is unique to a given culture or society. IK contrasts with the international knowledge system generated by universities, research institutions and private firms. It is the basis for local-level decision making in agriculture, health care, food preparation, education, natural-resource management, and a host of other activities in rural communities. (Warren 1991). The Kutia Kandhas of Kalahandi are well equipped with their age old traditional skills and expertises. Till date they practise their own unique method and technique of occupational practice, healing practice and management of natural resources. Though the influence of modernity has impacted the age old traditions of the Kutia Kandhas, still several local practices towards occupation and health care was found among them. It was found that the Kutia Kandhas always select foot hill regions for cultivation and they prepare their own water channels to irrigate their land. Similarly they collect several Minor Forest Produces from the Niyamgiri and use those tubers, roots, seeds, flowers, fruits and leaves for medicinal purpose. These MFPs work as medicines for the different ailments like, scorpion and snake bites, stomach disorders, arthritis, tuberculosis, paralysis, cholera, acidity, diarrhoea, dysentry, eczema, bone fractures, asthmas, wounds and sores.

The habitant of Kutia Kandhas, the Niyamgiri hills which are a part of the northern Eastern Ghats hill ranges and form Biotic Province 6C of the Deccan Plateau Zone 6 of the Biogeographic Classification of the Wildlife Institute of India (WII). The forest cover in the general area is very dense and consists of a number of ecological communities such as tropical evergreen forests, tropical moist deciduous forests, dry deciduous mixed forests, moist peninsular sal forests, dense bamboo forests, scrub woodlands and open grasslands. In addition, tropical semi-evergreen forests are also found along the stream courses. Several medicinal plants are collected from these forests by the Kutia Kandha people for the medicinal purposes. They are *Terminalia tomentosa*, *Terminalia chebula*, *Xyilia xylocarpa*, *Cedrella toona*, *Pterocarpus marsupium*, *Adina cardifolia*, *Syzizium cumini*, *Grewia taelifolia*, *G. elastic*, *Aegle marmelos*, *Bauhinia retusa*, *Colebrookia oppositifolea*, *Butea monosperma*, *Careya arborea*, *Embelica officinalis*. 
Vedanta Almumin Pvt. Ltd and Displacement of Kutia Kandha People

Vedanta Alumina Limited (VAL), a subsidiary of Sterlite Industries, a major aluminium processor has made major investments by establishing an 1 MTPA Alumina Refinery and 75 MW Captive Power Plant at Lanjigarh. In 2003, Vedanta Resources signed MoU with the State Govt. of Odisha for construction of a refinery for Aluminum Production. M/s Sterlite Industries (India) Ltd. set up a refinery with a capacity of 1.0 million tonnes per annum for processing aluminium for export. It has occupied 660.749 ha of the forest land with an additional 33.73 ha of village forest in the Niyamgiri hill of the Kalahandi and Rayagada districts. The project has caused displacement of home-sted and agricultural land of the local inhabitants. Specifically, the Kinari village which was highly inhabited by the Kutia Kandhas was taken under the mining area, hence it resulted the displacement of all the inhabitants. Later on the inhabitants of Kinari village got rehabilitated in the newly built Vedanta Rehabilitation Colony within the Vedanta Township.

Impact of Displacement on the Indigenous Knowledge System of Kutia Kandha people

(i) From Self-Sufficiency to Destitution

Comparison between the traditional and rehabilitated Kutia kandha villages has shown the loss of self-sufficiency of the Kutia Kandha in the rehabilitated colony people in terms of accessing the natural resources, use of Minor Forest Produces, occupational practices and ethno-medicinal knowledge. Right now their economic situation is in a question where they are not getting full employment throughout the year. It has been found during the study in Rehabilitation Colony, most of the tribal youths have been migrated to Kerala in search of employment to sustain their family. Traditional occupational practice and techniques have also been affected after their resettlement in the rehabilitation colony. Majority of the Kutia Kandha youths have started showing their interest on the non-agricultural occupation.

(ii) Tree Feeling resulting into the loss of ethno-medicinal products

According to the assessment of Wildlife Institute of India, 1,21,337 trees have been cut in 2006 towards the building of refinery in Proposed Mining Lease area. The Kutia Kandha people were fully dependant on the forest resource from which they collect several Minor Forest Produces to prepare their traditional medicinal products. Thus due to this mining, lots of medicinal products have been lost. By interacting with Kusha Majhi, it was found that almost 20 different types of rare orchids of Niyamgiri have been lost which had medicinal values. Simultaneously, new kinds of diseases have also been found because of the environmental pollution caused by the industry which seems not to be cured by the traditional healing practice.
(iii) Environmental Pollution and its impact on Traditional Occupation

The study discovered several incidences of environmental degradation of the Niyamgiri hills ecosystem by land degradation, geo-hydrological drainage change, air and water quality reduction and public health hazard caused by the Vedanta mining. The hill stream and the river Basumdhara, which is a main source of drinking water and irrigation for the Kutia Kandhas have been polluted because of the mining. As a result of which, the traditional occupational practice has got dismantled.

(iv) Impact of Modernization and Conflict with Host Communities

A negative impact to livelihood and traditional techniques have been found in the rehabilitation colony of Lanjigarh. Because of not getting any opportunity to access the forest resource most of the Kutia Kandha youths are having a threat to their employment. Many people have joined as workers in the plant which has negatively impacted to their traditional techniques and loss of hereditary knowledge.

Concluding Observations and Suggestive Remarks

Though the project has received criticism from environmentalists, especially from outside groups; some of the supporters of VAL claims it has brought significant changes in Socio-Economic scenario of Lanjigarh and Kalahandi. The Union Environment Ministry in August 2010, rejected earlier clearances granted to a joint venture led by the Vedanta Group company Sterlite Industries for mining bauxite from Niyamgiri hills making the company to depend on bauxite from outside Orissa. The company’s proposal for Expansion of the Refinery to 6 MTPA, which would have made it one of the largest refinery in the world, was halted by India’s environment ministry.

Mining, if permitted, will directly affect a substantial section (almost 20 per cent of their entire population in this world!) of the Kutia Kandh community. An impact on such a significant fraction of the population of the community will have repercussions on the community’s very survival, the overall viability of this group and its biological and social reproduction. The question of “Development for Whom?” is still a present primary concern and need to have an integrated understanding with anthropological perspective. Strict enforcement of Forest Right Act aiming towards protection of the Tribal Rights and prevention of injustice should be the ideal duty of the development planners as well as specific policy enforcement and enactment should be made by the Govt. towards preservation and protection of the tribal Indigenous Knowledge System.
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Biocultural Determinants of Fertility and Child Survival among Santal Slum Dwellers, Bhubaneswar, Odisha

SUNIL KUMAR GOUDA*

Abstract: The present paper attempts to study the bio-cultural factors influencing human fertility and child survival among the Santal, a scheduled tribe population group inhabited in slums of Bhubaneswar. They have migrated to Bhubaneswar since twenty years in search of better livelihood. Data have been collected from 90 ever-married women of the reproductive age group (15-49 years) during 2009. The present work deals with actual fertility scenario and child survival of the Santal women inhabiting in slums of Bhubaneswar. Different bicultural factors like age at menarche, age at marriage, age at menopause, economic conditions, occupation of husband, education of wife & husbands, Income of household, family structure, use of drinking water, use of Latrine & toilet, ventilation of household etc have been studied. The average no. of abortion, still birth and child loss decreases with the increase of age of mother and it is higher among mother of <15 years of age. Average fertility decreases with increase of age at marriage. Family structure reveals that no. of live birth is higher (3.04 per couple) among Nuclear family than that of Joint family (2.28 per couple). Illiterate women seem to have high fertility than their literate counter-parts and whose husband’s are illiterate and it is highest among daily wage labourer than other groups. The average number live birth and surviving children seems to be increase with increasing income levels, increasing use of Latrine, toilet than open defecation, increasing use of safe drinking water and inhabiting in ventilated house. Mean age at menarche among the santal is 12.7 years, mean age at marriage is 17.2 years & Age at 1st conception is 18.1 year & average age of menopause is 46.38 years. Survivability rate among Santal is 79.86%.

Introduction

The study of fertility is of tremendous importance as it is one of the major positive forces in the balance of vital processes. It plays a major role in defining the health and fitness, survival and growth of a population. Age-sex distribution of a population is also more sensitive to the changes in fertility, than to the changes in mortality, leading to young or old age population structure and alternations in the sex ratio. Today, in view of the global decline in mortality, and absence of any corresponding diminution in fertility, it is held responsible for most of the population, developmental and environmental predicaments faced by nations, societies. For quite some time, therefore, concerted

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efforts are on to control fertility, particularly in the developing countries, like India. It is widely acknowledged that before implementation of any control measure, explanation of fertility is a pre-requisite, which, in turn, requires understanding of the interplay of a host of physical environmental, economic, socio cultural factors, which are perceived to be directly or indirectly influencing the population component.

Though fertility is a biological event, sometimes various cultural traits and sub-traits act as 'intermediate factors' in determining the level of human fertility. The whole mechanism involved in this process is often very complicated, varying by time and space. In the case of the planned as well as unplanned fertility, whether the perception variables play major roles or the practice (performance) variables have greater impact is still unexplored. The norms and values in human society that influence the perception and practice are also important aspects of fertility research. The interaction of these two kinds (perception and practice) may be manifested on fertility at individual as well as community/population level. The co linearity of one or more particular cultural variables with biological variable(s) may have some amount of additive or interactive impact on fertility. Sometimes, cultural variables may act merely as catalysts inducing other type of variables to influence fertility. The examination of such mechanisms involving traits and sub-traits of culture are not relatively easier. But there have been endeavours by different researchers such as Srinivas, Nag, Lorimer etc. in this line.

Different theories have been propounded over time regarding the determinants attributing to the differential fertility. The socio-cultural theories have focussed on the attitude and motivational factors at community level for explaining the reproductive behaviour (Dumont, 1890; Davis, 1956; Carlsson, 1966). In a cultural set-up, many times the fertility of a married woman is altered after passing through a series of ‘Hierarchical Social Structures’ viz., society, community, family, and the husband (Nanda and Ram, 2003).

R.Mohanty conducted a study on ABO incompatibility and its relation to fertility performances among three tribal groups like Santal, Bhumij, and Kharia & a backward caste like Mahato group in Mayurbhanj district of Odisha, concluded that – the mean number of pregnancies is found to be always higher in the incompatible mating in all the group. The proportion of childless couple was higher in compatible mating than in incompatible mating in all the four groups. Average no. of conception, live birth, prenatal and post natal death is higher among Kharia followed by Santal followed by Mahato and Bhumij so far as in compatible mating is concerned. The average no. of conception & live birth are higher among Santal followed by kharia followed by Bhumij & Mahato in case of compatible mating. Similarly prenatal death is higher among Bhumij and post natal death is higher among Santal incompatible mating.
Rath, Ray and Mohanty (1983) carried out a study on the delineation of fertility strategies in Koya tribal population of Koraput District, Orissa. They found that in spite of higher offspring mortality they do not have a higher value of son survivorship. Nag (1962) has given an elaborate classification of a number of physiological, socio-cultural and economic factors affecting fertility, based on a cross cultural analysis of 61 non-industrial societies of different regions of the world. He has identified the factors affecting the probability of coitus, probability of conception (fecundity) and general socio-cultural, economic and physiological factors affecting the fertility and reproductive behaviour viz., the marriage practice, sexual behaviour, general and reproductive morbidity, nutrition, cultural folkways etc. Suparlan (1980) in his study of culture and fertility showed religion and ethnicity predicting fertility in major way. In a study of culture and fertility in sub-Saharan Africa, Sonko (1994) explained the marriage pattern, bride wealth etc. to be important for variations in fertility. Against these backdrops the current paper endeavours to examine the nature and magnitude of association of some cultural characteristics of women with their fertility.

The numbers of births and deaths that take place are themselves influenced by the size and age distribution of the population. The difference between the number of births and deaths, natural change, is a key determinant of population size and growth. If there are more births than deaths, a population will experience natural increase. Conversely, if more deaths occur than births, a population will experience natural decrease (Rajasekghara Reddy 2005). Fertility and mortality are fundamental determinants of population growth in order to understand the changes in the genetic structure of a population. Biological as well as socio-cultural factors are responsible for the differential fertility and mortality among human populations (Elizabeth 2000; Emma Kerkeni et al. 2007; Mostafizur Rahman et al. 2008). Research studies repeatedly emphasize that biological and socio-cultural variables like age at menarche, age at marriage, type of Marriage, Age at first conception and first childbirth, duration of Breast feeding, economic levels, Occupation, education and birth control methods have significant influence on the fertility, mortality and child survival rate of a population (Meerambica et al. 1999; Das and Goswami 2004; Hammami 2005; Al-Kandari 2007; Bosch 2008; Koc 2008). However, the net influence of the factors varies from population to population depending on their bio-cultural status. In view of this there is a need to study and document the effect of these factors on fertility and mortality in various sub-population groups.

Though several anthropological research works related to fertility performances has been reported on Santal tribal population, but few work has been reported from santal tribal population inhabited in urban slum area of Odisha, Therefore, an attempt has been made in the present study to assess the influence of various bio-social
factors viz., type of marriage, income, age at menarche and age at marriage on fertility, mortality and child survival of the Santal community residing in the slum in Bhubaneswar, Khurdha district of Eastern Odisha, India.

Materials and Methods

Present study was carried out in and around Infosity slum area of Bhubaneswar where migrated Santal tribal group resides. This study is based upon 99 Santal households comprising 496 individuals, out of which 249 are males and 243 are females, 90 ever married women. For the present study 90 ever married women between 15-49 years of age having at least one live birth are taken into consideration as the material or sample for this study.

For collection of data, different methods adopted like- participant observation method, Interview methods, schedule method(Self generated schedule),case study methods for collection of data related to age of women at marriage, age at conception, education, income, occupation, their food habits, Health & Sanitation, Addictive habits, Health facilities etc.

Interviewing the eligible couples with the help of some previously structured pre tested schedule, the data has been collected. The biological factors like age at first childbirth, total live birth, pregnancy wastage, age at menopause and completed fertility are considered for the present study. On the other hand the age at menarche and marriage, education and occupation of the concerned couples and cultural factors are studied to find out its effect on fertility and child survival.

Objectives of the Study

1. To find out the general demographic situation of Santal community.
2. To examine the bio cultural factors which affect the fertility and child survival among Santal. From several Biological and cultural factors given, what are the major determining factors affecting fertility pattern and child survival among Santal?
3. To analyze the dominant factors that influences Fertility and child survival.

Results and Discussion

Exploratory Fertility Analysis : As already mentioned a number of independent economic, socio-cultural and physical environmental determinants affect the population forces, which result in differential fertility levels across population groups/regions/countries. In the present study too, such interplay on number of children ever born, fertility –related variable has been studied as detailed in this section.

Fertility study involves reproductive history of the women, which very clearly describes the no. of conception, actual live births, wastage of conception, child death and actual no. of living children. Reproductive history of women throws light on change in population size. It is also studied according to present age of the women.
### Table - 1 : Age sex Distribution of Santal

<table>
<thead>
<tr>
<th>Age group</th>
<th>Male</th>
<th>%</th>
<th>Female</th>
<th>%</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-4</td>
<td>31</td>
<td>12.44</td>
<td>27</td>
<td>10.93</td>
<td>58</td>
<td>11.69</td>
</tr>
<tr>
<td>5-9</td>
<td>32</td>
<td>12.85</td>
<td>30</td>
<td>12.14</td>
<td>62</td>
<td>12.5</td>
</tr>
<tr>
<td>10-14</td>
<td>30</td>
<td>12.04</td>
<td>26</td>
<td>10.52</td>
<td>56</td>
<td>11.29</td>
</tr>
<tr>
<td>15-19</td>
<td>28</td>
<td>11.24</td>
<td>38</td>
<td>15.38</td>
<td>66</td>
<td>13.30</td>
</tr>
<tr>
<td>20-24</td>
<td>20</td>
<td>8.03</td>
<td>33</td>
<td>13.36</td>
<td>53</td>
<td>10.68</td>
</tr>
<tr>
<td>25-29</td>
<td>26</td>
<td>10.44</td>
<td>20</td>
<td>8.09</td>
<td>46</td>
<td>9.27</td>
</tr>
<tr>
<td>30-34</td>
<td>18</td>
<td>7.22</td>
<td>20</td>
<td>8.09</td>
<td>38</td>
<td>7.66</td>
</tr>
<tr>
<td>35-39</td>
<td>14</td>
<td>5.62</td>
<td>27</td>
<td>10.93</td>
<td>41</td>
<td>8.26</td>
</tr>
<tr>
<td>40-44</td>
<td>21</td>
<td>8.43</td>
<td>5</td>
<td>2.02</td>
<td>26</td>
<td>5.24</td>
</tr>
<tr>
<td>45-49</td>
<td>11</td>
<td>4.41</td>
<td>12</td>
<td>4.85</td>
<td>23</td>
<td>4.63</td>
</tr>
<tr>
<td>50-54</td>
<td>10</td>
<td>4.01</td>
<td>4</td>
<td>1.61</td>
<td>14</td>
<td>2.82</td>
</tr>
<tr>
<td>55-59</td>
<td>4</td>
<td>2.00</td>
<td>3</td>
<td>1.21</td>
<td>7</td>
<td>1.41</td>
</tr>
<tr>
<td>60+</td>
<td>3</td>
<td>1.20</td>
<td>2</td>
<td>0.80</td>
<td>5</td>
<td>1.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>249</strong></td>
<td><strong>100</strong></td>
<td><strong>247</strong></td>
<td><strong>100</strong></td>
<td><strong>496</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Age sex distribution of Santal (Table -1) reveals that there are almost equal numbers of males (249) and females (247) are in the studied Santal population. There are more number of males in 0-4, 5-9, & 10-14 Age groups. But females are more in number in 15-19, 20-24 Age groups. There is lesser no. of individuals found from 45-49 Age group onwards in both male and female category.
Table-2 : Reproductive History of Santal

<table>
<thead>
<tr>
<th>Age group</th>
<th>No. of Women</th>
<th>Total No. Conception</th>
<th>Abortion</th>
<th>Stillbirth</th>
<th>Total livebirth</th>
<th>Total Death</th>
<th>Total surviving children</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-19</td>
<td>4</td>
<td>5</td>
<td>-</td>
<td>-</td>
<td>5</td>
<td>-</td>
<td>5</td>
</tr>
<tr>
<td>20-24</td>
<td>18</td>
<td>36</td>
<td>2</td>
<td>-</td>
<td>34</td>
<td>-</td>
<td>34</td>
</tr>
<tr>
<td>25-29</td>
<td>14</td>
<td>45</td>
<td>3</td>
<td>2</td>
<td>40</td>
<td>3</td>
<td>37</td>
</tr>
<tr>
<td>30-34</td>
<td>20</td>
<td>65</td>
<td>3</td>
<td>4</td>
<td>58</td>
<td>4</td>
<td>54</td>
</tr>
<tr>
<td>35-39</td>
<td>23</td>
<td>90</td>
<td>4</td>
<td>6</td>
<td>80</td>
<td>10</td>
<td>70</td>
</tr>
<tr>
<td>40-44</td>
<td>3</td>
<td>12</td>
<td>5</td>
<td>-</td>
<td>7</td>
<td>-</td>
<td>7</td>
</tr>
<tr>
<td>45-49</td>
<td>8</td>
<td>40</td>
<td>5</td>
<td>1</td>
<td>34</td>
<td>7</td>
<td>27</td>
</tr>
<tr>
<td>Total</td>
<td>90</td>
<td>293</td>
<td>22</td>
<td>13</td>
<td>258</td>
<td>24</td>
<td>234</td>
</tr>
</tbody>
</table>

Mean Average | 3.25 | 0.244 | 0.14 | 2.86 | 0.266 | 2.6 |

Reproductive History of Santal (Table-2) shows that there are 90 ever married females in all Age group. Total number of conceptions made by 90 ever married females is 293(mean conception is 3.25 per couple) total number of live birth is 258 (mean live birth is 2.86 per couple), total number of living children is 234(mean surviving children is 2.6). Number of Prenatal death is 35(Abortion 22 and stillbirth 13). Total no. of postnatal death is 24 in the studied Santal population.

The average fertility of 90 ever married women is 2.86 (258 out of the total conception rate is 3.25). The average no of still birth is 0.14. Out of 258 live birth, 234 (average 2.6) are surviving children and rest that is 0.266 are died during infancy and childhood. This is the total reproductive performance of Santal women. The average no. of conception gradually increase from 15-19 age groups up to 35-90 age groups. Average no. of live birth shows the similar trend.
Table - 3 : Age at Marriage and Fertility

<table>
<thead>
<tr>
<th>Age of Mother at Marriage</th>
<th>No. of Female</th>
<th>No. of Female</th>
<th>Avg</th>
<th>Abortion Avg</th>
<th>Stillbirth Avg</th>
<th>Livebirth Avg</th>
<th>Childloss Avg</th>
<th>Surviving Child Avg</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;15 yrs</td>
<td>4</td>
<td>17</td>
<td>4.25</td>
<td>3</td>
<td>0.75</td>
<td>2</td>
<td>0.5</td>
<td>12</td>
</tr>
<tr>
<td>15-19</td>
<td>49</td>
<td>165</td>
<td>3.36</td>
<td>15</td>
<td>0.30</td>
<td>7</td>
<td>0.142</td>
<td>143</td>
</tr>
<tr>
<td>20-24</td>
<td>28</td>
<td>87</td>
<td>3.1</td>
<td>4</td>
<td>0.142</td>
<td>4</td>
<td>0.142</td>
<td>79</td>
</tr>
<tr>
<td>25-29</td>
<td>9</td>
<td>24</td>
<td>2.66</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>24</td>
</tr>
<tr>
<td>Total</td>
<td>90</td>
<td>293</td>
<td>3.25</td>
<td>22</td>
<td>0.244</td>
<td>13</td>
<td>0.14</td>
<td>258</td>
</tr>
</tbody>
</table>

**Fertility Differentials by Age at Marriage of Women** : Age at marriage of women is considered one of the most important factors influencing fertility behaviour. After Malthus, several others from across the world have reported that delayed marriage contributed to the decline in fertility (UN, 1961; Busfield, 1972; Chaudhury, 1984; Pandey and Talwar, 1987). In the present Scheduled Tribe population also, broadly speaking, the trend is of decreasing fertility with the increase in age at marriage of women (Table 3). Individually speaking as well, the same trend is observed. This could be attributed to their greater chances of being literate, and gainfully employed, being aware of fertility control methods and benefits. This can be explained in terms of lesser parental control, greater chances of being educated and gainfully employed, as well as greater awareness of small family size benefits and contraceptive usage.

The Age at marriage is the most important factor influencing fertility. After that women are legally allowed to give birth to babies in our society. After marriage the number of births depends on effective marital duration. The no. of children which a woman could have roughly equalled to no. of years of marital life between menopauses. But the reproductive capacity is equally reduced after the age 45 years. The fertility of a population is highly influenced by the marital duration of wives. This gives better estimation of fertility rate. The average no. of conception, abortion, stillbirth, live birth and child loss is more among mother belong to age <15 years. As the age of mother increases, the average no. of abortion, still birth and child loss decreases. i.e. the young mothers are more vulnerable to prenatal death. The analysis of table shows that average fertility decreases with increase of age at marriage.

This is perhaps due to small population size and taking into account abortion, still birth and child loss. This implies that marriage at early age effect adversely on fertility...
pattern of Santal women. Average conception, abortion, still birth, child loss are comparatively less among mother of age group above 25. Prenatal death & child loss is positively correlated with (early) age of mother and no. surviving children is negatively correlated with early age of mother.

Table - 4 : Family Type & Fertility

<table>
<thead>
<tr>
<th>Family Type</th>
<th>No. of Couple</th>
<th>No. of Live Birth</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nuclear</td>
<td>69</td>
<td>210</td>
<td>3.04</td>
</tr>
<tr>
<td>Joint</td>
<td>21</td>
<td>48</td>
<td>2.28</td>
</tr>
<tr>
<td>Total</td>
<td>90</td>
<td>258</td>
<td>2.86</td>
</tr>
</tbody>
</table>

Fertility Differentials by Family Structure: In the present Scheduled Tribe population, the average number of children ever born seems higher in nuclear family set ups than in joint family ones (Table 4). All the individual tribal groups of India, have shown similar trend. Many studies have also indicated that in joint family set-ups, fertility may be low (Caldwell et al., 1984) which may be attributed to relatively lesser husband and wife communication, which in turn is due to the traditional set-up of such families, lack of privacy etc. (Driver, 1963; Gould, 1972; Nag, 1972). Family structure of Santal (Table-4) reveals that no. of live birth is more (3.04 per couple) among Nuclear family than that of Joint family (2.28 per couple). i.e. the fertility variation rate in nuclear family is 3.04 and that of joint family is 2.28. Nuclear family may have better awareness and education than Joint family, so that average no. of live birth is slightly lower among Nuclear family.

Table - 5 : Educational Status of Parents & Fertility

<table>
<thead>
<tr>
<th>Educational Status</th>
<th>No. of couple</th>
<th>No. of Live birth</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Both illiterate</td>
<td>17</td>
<td>64</td>
<td>3.76</td>
</tr>
<tr>
<td>Husband literate,</td>
<td>36</td>
<td>99</td>
<td>2.75</td>
</tr>
<tr>
<td>Wife illiterate</td>
<td>30</td>
<td>72</td>
<td>2.40</td>
</tr>
<tr>
<td>Both literate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Husband illiterate, wife literate</td>
<td>7</td>
<td>23</td>
<td>3.28</td>
</tr>
<tr>
<td>Total</td>
<td>90</td>
<td>258</td>
<td>2.86</td>
</tr>
</tbody>
</table>
**Fertility Differentials by Education of parents**: In many studies education-fertility relationship have been reported (Chaudhury, 1984, Jain and Nag, 1985). In the present Studied Population as well, illiterate women seem to have borne more children than their literate counter-parts (as seen in case of education too). The average number of children ever born to ever-married women is higher where husbands are illiterate, than literate. Cross comparision literacy status of parents and number of children born shows that women seem to have born more children where husbands are less educated, than relatively better educated.

In developing nation like India where population growth depends on economic development, education enables those persons for better occupation and economic condition. It also changes the outlook of the people. Moreover it changes the attitude towards the family size. So the education is very closely related with fertility pattern and it has consistent negative association with fertility.

Education is another most important factor of fertility which determines the quality of life of population. The education of women is more important factor than the education of husband and it determines the fertility pattern of the couples. Literacy standard of wife has much importance and direct impact on fertility. Through education, adoption of contraceptive can be attempted and overall modernity is achieved. Educated women can take better care of their children. Therefore, they have lower mortality rate, which helps them to have fewer births. Education of both husband and wife is important but education in particular bears a strong and consistent negative relation to fertility.

Education is one of the important demographic factors affect fertility. Because uneducated people do not realise the bad effect of unreasonably expanded families on the standard of living. So education is best way to increase awareness of the couple not only towards the different developmental programme meant for them but also change the attitude towards family size. So education and fertility have close relation to each other. The couple have been categorised into 4 groups according to literacy status. Among the 90 ever married couple, it is observed that 30 literate couple have an average of 2.40 children. The couple who are both illiterate constitute 17 of total whose live birth is 3.76. There are 36 couples whose husbands are educated and wives are illiterate have given to 2.75 children. I observed only 7 couples where wives are illiterate and husbands are literate have average 3.28 children. Average no. of live birth is higher where both couples are illiterate and at least husband illiterate, but its rate is lower among couple where both are literate. i.e education plays a vital role on fertility performances of Santal women. Better the education, lesser the no. of live birth or child birth, and lesser the education, greater the no. of child production among women. This implies that education also plays a significant role on fertility of Santal women.
Table - 6 : Occupation of Husband & Fertility

<table>
<thead>
<tr>
<th>Type of Occupation</th>
<th>No. of Male</th>
<th>Live birth</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual /Daily labourer</td>
<td>37 (41.11%)</td>
<td>119</td>
<td>3.21</td>
</tr>
<tr>
<td>Skilled Labourer</td>
<td>20 (22.22%)</td>
<td>49</td>
<td>2.45</td>
</tr>
<tr>
<td>Business</td>
<td>7 (7.77%)</td>
<td>18</td>
<td>2.57</td>
</tr>
<tr>
<td>Private Jobs</td>
<td>23 (25.55%)</td>
<td>64</td>
<td>2.78</td>
</tr>
<tr>
<td>Others</td>
<td>3 (3.33%)</td>
<td>8</td>
<td>2.66</td>
</tr>
<tr>
<td>Total</td>
<td>90 (100%)</td>
<td>258</td>
<td>2.86</td>
</tr>
</tbody>
</table>

Table - 7 : Occupation of Women & Fertility

<table>
<thead>
<tr>
<th>Type of Occupation</th>
<th>No. of Female</th>
<th>Live birth</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual /Daily labourer</td>
<td>23 (25.55%)</td>
<td>60</td>
<td>2.60</td>
</tr>
<tr>
<td>Household Worker</td>
<td>56 (62.22%)</td>
<td>175</td>
<td>3.12</td>
</tr>
<tr>
<td>Business</td>
<td>3 (3.33%)</td>
<td>7</td>
<td>2.33</td>
</tr>
<tr>
<td>Private Jobs</td>
<td>7 (7.77%)</td>
<td>14</td>
<td>2</td>
</tr>
<tr>
<td>Others</td>
<td>1 (1.11%)</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>90 (100%)</td>
<td>258</td>
<td>2.86</td>
</tr>
</tbody>
</table>

**Fertility Differentials by Occupation of Husband** : Pick et al. (1988) in a study in Mexico found that besides education, which had a major negative impact on fertility, occupation too had a negative impact. Pandey et al. (1987) in a study in rural Uttar Pradesh found agricultural labourers having the highest fertility whereas when the husband’s occupational category is service, the fertility level was the lowest. The present Santal Population, on the whole, has shown similar trend. That is, while the average number of children ever born is relatively quite low where husbands are engaged as skill labourer, it is the highest where they are engaged as daily wage labourer and the second highest where they are private job holder (Table 6).

Fertility pattern mainly depends upon the economic conditions of the population belonging to any caste, religious group because economic condition gives the opportunity to the people for education and better health status, increase awareness, by that also controls the child loss. Therefore, in fertility behaviour occupation of parents plays an important role. Occupation pattern of Husband (Table-6) reveals that 41.11%
of males are engaged as Daily labourers and their average live birth is 3.21, 22.22% are engaged as skilled labourer have average live birth of 2.45. In private farms, 25.55% of males are engaged and their live birth is 2.78. Only 7.77% males are involved in Business having 2.57 of average live birth.

**Fertility Differentials by Occupation of Women**: In the studied Santal Population, women’s occupation too shows differential fertility. However, the trend seems slightly different from what has been noticed in case of husband’s occupation, most probably due to small number of cases in most of the categories. The majority of women appear to be economically inactive. And, fertility is the lowest among them who are engaged in private service and Business followed by those engaged in Manual labour (2.60), while it is the highest among House hold workers (3.12).

Observation made from Occupation pattern of Santal reveals that maximum females are engaged in house hold work i.e. 62.22%(56) with an average live birth is 3.12. 25.55%(23) females are engaged and their live birth is 2.60. In Business and other services 3.33%(3) and 1.11% females are engaged in business and other services with average live birth 2. Women engaged as house hold worker are producing more children than the Women engaged as Daily manual worker than engaged in Business. I observed that Women who are engaged as Household worker are engaged for shorter period of time of the day and likewise women who are engaged as Daily worker are only get few days of work in a month. So Women of these categories are facilitating to produce more child than women belong to other occupation.

**Table - 8 : Child Mortality and Fertility**

<table>
<thead>
<tr>
<th>Present Age of the Mother</th>
<th>No. of Women</th>
<th>Total live birth</th>
<th>Avg.</th>
<th>Total Living children</th>
<th>Avg.</th>
<th>No. of children Dead/Loss</th>
<th>Avg.</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-19</td>
<td>4</td>
<td>5</td>
<td>1.25</td>
<td>5</td>
<td>1.25</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>20-24</td>
<td>18</td>
<td>34</td>
<td>1.88</td>
<td>34</td>
<td>1.88</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>25-29</td>
<td>14</td>
<td>40</td>
<td>2.85</td>
<td>37</td>
<td>2.64</td>
<td>3</td>
<td>0.214</td>
</tr>
<tr>
<td>30-34</td>
<td>20</td>
<td>58</td>
<td>2.9</td>
<td>54</td>
<td>2.7</td>
<td>4</td>
<td>0.2</td>
</tr>
<tr>
<td>35-39</td>
<td>23</td>
<td>80</td>
<td>3.47</td>
<td>70</td>
<td>3.04</td>
<td>10</td>
<td>0.434</td>
</tr>
<tr>
<td>40-44</td>
<td>3</td>
<td>7</td>
<td>2.33</td>
<td>7</td>
<td>2.33</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>45-49</td>
<td>8</td>
<td>34</td>
<td>4.25</td>
<td>27</td>
<td>3.375</td>
<td>7</td>
<td>0.875</td>
</tr>
<tr>
<td>Total</td>
<td>90</td>
<td>258</td>
<td>2.86</td>
<td>234</td>
<td>2.6</td>
<td>24</td>
<td>0.266</td>
</tr>
</tbody>
</table>
**Fertility Differentials by Present Age of Woman**: The present study reveals that the average number of children ever born per ever married woman increases with the increasing age of woman. In the age group of 15-19 years, women seem to have borne only 1.25 children, whereas in the 45+ year’s age group, the average moves up to a high of 4.25, indicating rather high completed family size. This Santal tribal group have also shown similar trend, where slight discrepancy is noticed in the age group 40-45, which could be due to omission of some births by the older respondents.

Fertility and mortality are the two important factors in population growth and are also well related. These two vital events are positively correlated in the population. The child mortality rate can be related with fertility or in other words one can say that it influence the fertility rate indirectly. Both high fertility and degree in differences in the fertility depend along with other factors on mortality and especially on infant and child mortality.

Mortality is generally considered to be associated with environmental conditions like climate, standard of living, population density, industrial development, sanitation, medical facilities etc.

In the present study, the infant and child mortality is high in age group 45-49 i.e. 0.875% (7). No infant and child death is found among the mother of age group 15-19, 20-24, and 40-44. It is 0.434% (10) among mother belongs to 35-39 years age group. Mothers of Age group 30-34 have 0.2% (4) infant and child deaths.

**Table - 9 : Income & Fertility**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>3000-5000</td>
<td>32</td>
<td>111</td>
<td>3.46</td>
<td>89</td>
<td>2.78</td>
</tr>
<tr>
<td>5000-7000</td>
<td>40</td>
<td>129</td>
<td>3.22</td>
<td>118</td>
<td>2.95</td>
</tr>
<tr>
<td>7000-10000</td>
<td>12</td>
<td>38</td>
<td>3.16</td>
<td>36</td>
<td>3.2</td>
</tr>
<tr>
<td>10,000+</td>
<td>6</td>
<td>15</td>
<td>2.5</td>
<td>15</td>
<td>2.5</td>
</tr>
<tr>
<td>Total</td>
<td>90</td>
<td>293</td>
<td>3.25</td>
<td>258</td>
<td>2.86</td>
</tr>
</tbody>
</table>

**Fertility Differentials by Income**: In developing countries, negative association between fertility and income has been highlighted by many authors (Mamdani, 1981; Dastidar, 1996). In the present population, broadly speaking, the average number of conception and average number of death to ever married women seems to decrease
with increase in income levels, but the average number of live birth and surviving children seems to be increase with increase in income levels. But there is a deviation to the income group > Rs 10,000 that may be due to few women in this income group (Table 9). Higher conception and death rate in low income group may be due ignorance, lack of education, awareness etc. Simultaneously higher surviving rate among high income group is may be due better care of pregnant women and child, better health care.

Incomes of the households also affect the size of the family and fertility. Average conception is high (3.48%) among low income family, i.e. whose family income is < RS 5000, but no. of live birth is high (3 %) among household/family belong to high income group i.e. Rs 7000-10000 & >10,000. The no. of death is also high (0.40%) among family whose income range < Rs 5000. But no. of Surviving children is higher (2.83%) among family belong to high income group i.e. Rs 7000-10000. Higher rate of conception & child death and lower rate of live birth & surviving children among family belong to income range<Rs 5000 implies that their low income affect adversely on fertility. Household belong to low income range may have low literacy rate and lack of awareness, so they have higher child death and lower surviving children. This implies income level also affect fertility performances of Santal Women.

Table- 10 : Family Planning & Fertility

<table>
<thead>
<tr>
<th>Family planning Method</th>
<th>No. of female/women</th>
<th>Total Live birth</th>
<th>Avg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Availed</td>
<td>16</td>
<td>34</td>
<td>2.12</td>
</tr>
<tr>
<td>Not availed</td>
<td>74</td>
<td>224</td>
<td>3.02</td>
</tr>
<tr>
<td>Total</td>
<td>90</td>
<td>258</td>
<td>2.86</td>
</tr>
</tbody>
</table>

Family type is the most important variable in demographic process. So, also in acceptance of family planning methods. Family planning methods have a direct impact on fertility. Fertility control means the modification of fertility by deliberate methods for avoiding unwanted births to restrict family size or to get children by choice. Santal women who have adopted family planning method have average live birth of 2.12 % whereas who have not adopted any family planning method have average live birth 3.02% more than that adopted women (Table-10).
Table-11 : Sanitary Condition & Fertility

<table>
<thead>
<tr>
<th>Sanitary conditions</th>
<th>No. of female/ mothers</th>
<th>Live births</th>
<th>Avg.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Having toilets &amp; Latrine</td>
<td>34</td>
<td>112</td>
<td>3.29</td>
</tr>
<tr>
<td>No latrine &amp; toilets</td>
<td>56</td>
<td>146</td>
<td>2.60</td>
</tr>
<tr>
<td>Total</td>
<td>90</td>
<td>258</td>
<td>2.86</td>
</tr>
</tbody>
</table>

**Fertility Differentials by General Sanitary Condition** : In the present study, on the whole, women those who are using Latrine & toilet have average live birth 3.29% , where as it is 2.60% among women who are not not using any toilet, Latrine and have open defecation .This implies that personal toilet use leads to better hygienic condition and higher fertility among the Santal (Table 11).

Table - 12 : Drinking water & fertility

<table>
<thead>
<tr>
<th>Source of drinking water</th>
<th>Total mother</th>
<th>Live birth</th>
<th>Avg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tubewell, supply by govt</td>
<td>41</td>
<td>135</td>
<td>3.29</td>
</tr>
<tr>
<td>Pond, streams</td>
<td>49</td>
<td>123</td>
<td>2.51</td>
</tr>
<tr>
<td>Total</td>
<td>90</td>
<td>258</td>
<td>2.86</td>
</tr>
</tbody>
</table>

**Fertility Differentials by Source of Water Supply** : The present study reveals that the average number of children ever born seem the lowest (2.51) where the sources of drinking water is pond, streams etc, while it is the highest (3.29), where the sources of drinking water is tube well & supply govt. water. (Table-12). This indicates that drinking water also affect the fertility performance of Santal. Unhygienic Drinking water affects adversely on fertility performances.

Table - 13 : Ventilation & Fertility

<table>
<thead>
<tr>
<th>Ventilation condition</th>
<th>No. of mother</th>
<th>Live birth</th>
<th>Avg.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Well ventilated room</td>
<td>31</td>
<td>104</td>
<td>3.35</td>
</tr>
<tr>
<td>Suffocated rooms</td>
<td>59</td>
<td>154</td>
<td>2.61</td>
</tr>
<tr>
<td>Total</td>
<td>90</td>
<td>258</td>
<td>2.86</td>
</tr>
</tbody>
</table>

**Fertility Differentials by Ventilation Condition** : Similar to the above -mentioned factor, satisfactory or unsatisfactory ventilation in the house also seem to influence fertility among present Santal population. Satisfactory ventilation seem to higher(3.35%)
fertility, while suffocated condition leads to lower (2.61%) fertility among Santal women. (Table-13).

**Table - 14:**

Mean Ages at Menarche, Marriage and 1st Conception among the Santal Women

<table>
<thead>
<tr>
<th>Category</th>
<th>Santal</th>
<th>Mean ± SD (yrs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age at menarche</td>
<td>12.7</td>
<td>±0.87</td>
</tr>
<tr>
<td>Age at marriage</td>
<td>17.2</td>
<td>±0.39</td>
</tr>
<tr>
<td>Age at 1st conception</td>
<td>18.1</td>
<td>±0.42</td>
</tr>
<tr>
<td>Age at menopause</td>
<td>46.38</td>
<td>±0.81</td>
</tr>
</tbody>
</table>

Observation made from Table-14 indicates that mean age at menarche among Santal is 12.7 years. But mean age at marriage is 17.2 years & Age at 1st conception is 18.1 year & average age of menopause is 46.38 years. Early menarche age among Santal indicates that their Nutrition, educational, environment is improving as compared with other population group. Though the Santal girl attains menarche at 12.7 age, but they marry at an age 17.2, i.e after 4 years of puberty. But they conceive child immediately after marriage i.e at 18.1 ages. Women belong to 15-49 years are taken for this study and women adopting family planning methods are also taken into consideration. So complete fertility cannot be exactly assessed from these few Samples i.e. from 90 ever married women.

**Table - 15: Index of Survivability among Santal**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Santal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total No. ever married Women</td>
<td>90</td>
</tr>
<tr>
<td>Total No. of Conception</td>
<td>293 (3.255 per couple)</td>
</tr>
<tr>
<td>Total No. of Live Birth</td>
<td>258 (2.86 per couple)</td>
</tr>
<tr>
<td>Abortion+ Stillbirth (pre natal)</td>
<td>22 + 13 (0.388 per couple)</td>
</tr>
<tr>
<td>Total No. Death (post natal)</td>
<td>24 (0.266 per couple)</td>
</tr>
<tr>
<td>Total No. Death (Pre+ Post natal)</td>
<td>59 (0.65 per couple)</td>
</tr>
<tr>
<td>Infant Mortality (0-1 years)</td>
<td>15 (62.5%)</td>
</tr>
<tr>
<td>Early child Mortality (1-5 yrs)</td>
<td>6 (25%)</td>
</tr>
<tr>
<td>Late child Mortality(6+ yrs)</td>
<td>3 (12.5%)</td>
</tr>
<tr>
<td>Total No. of Living Child</td>
<td>234</td>
</tr>
<tr>
<td>% survivability</td>
<td>79.86</td>
</tr>
</tbody>
</table>
Survivability Index of Santal (Table-15) reveals that number of conception to 90 ever married women among Santal is 293 i.e. 3.255 per couple and no. of live birth is 258 i.e. 2.86 per couple. Prenatal death (Abortion+ stillbirth) is 35(0.388 per couple) and Survivable children is 234 out of 293 conception of 90 ever married women i.e. Survivability rate is 79.86%. Total no. of living child, percentage of survivability is due to better awareness, education, income, and living condition.

Conclusion

In the Present studied Santal community, there is a trend of decreasing fertility with the increase in age at marriage of women. This could be attributed to their greater chances of being literate and gainful employment, lesser parental control, being aware of fertility control methods and benefits and contraceptive usage, greater awareness of small family size etc. The analysis shows that average fertility decreases with increase of age at marriage. This is perhaps due to small population size and taking into account abortion, still birth and child loss. This implies that marriage at early age effect adversely on fertility pattern of Santal women. Average conception, abortion, still birth, child loss are comparatively less among mother whose age group are above 25 years. Prenatal death & child loss is positively correlated with (early) age of mother and no. surviving children is negatively correlated with early age of mother.

The analysis shows that, no. of live birth is higher (3.04 per couple) among Nuclear family than that of Joint family(2.28 per couple). The average number of children ever born seems higher in nuclear family set ups than in joint family which may be due to lack of privacy and relatively lesser husband wife communication in traditional Joint family set up, which supports findings of many scholars (Caldwell et al., 1984, Driver, 1963; Gould, 1972; Nag, 1972). Cross comparison of educational status parents and fertility among Santal reveals that, illiterate women seem to have borne more children than their literate counter-parts. The average number of children ever born to ever-married women is higher where husbands are illiterate, than literate. Also, women seem to have borne more children when husbands are less educated, than higher educated. This study supports the finding of many scholars on education-fertility relationship (Chaudhury, 1984, Jain and Nag, 1985). The present study reveals that the average number of children ever born is relatively quite low when husbands are engaged as skill labourer, it is the highest where they are engaged as daily wage labourer and the second highest where they are private job holder service. My study also supports the finding of Pick et al. (1988) study on Mexico which reveals that besides education, occupation too had a negative impact on fertility, and also with Pandey et al. (1987) study in rural Uttar Pradesh which reveals that agricultural labourers having the highest fertility whereas when the husband’s occupational category is service, the fertility level was the lowest. Similarly women’s occupation too shows differential fertility.
The study reveals that the infant and child mortality is high in age group 45-49 i.e. 0.875% (7). No infant and child death is found among the mother of age group 15-19, 20-24, and 40-44. It is 0.434% (10) among mother belongs to 35-39 years age group. Mothers of Age group 30-34 have 0.2% (4) infant and child deaths. The child mortality rate can be related with fertility or in other words one can say that it influence the fertility rate indirectly. Both high fertility and degree in differences in the fertility depend along with other factors on mortality and especially on infant and child mortality. Child mortality in the studied population is associated with various socio-cultural factors education, occupation, standard of living, sanitation, drinking water facilities, ventilation of house, medical facilities etc. which supports the finding of many scholars (Elizabeth 2000; Emma Kerkeni et al. 2007; Mostafizur Rahman et al. 2008).

The analysis shows that the average number of conception and average number of death to ever married Santal women seems to decrease with increasing income levels, but the average number live birth and surviving children seems to be increase with increasing income levels. But there is a deviation to the income group > Rs 10,000 that may be due to few women in this income group. Higher conception and death rate in low income group may be due ignorance, lack of education, awareness etc. Simultaneously higher surviving rate among high income group is may be due better awareness, care of pregnant women and child, better health care. The trend shows that there is a negative correlation between income & high fertility which supports the finding of scholars (Mamdani, 1981; Dastidar, 1996) study in developing countries.

Present study indicates that Women who have adopted family planning method have average live birth of 2.12% whereas who have not adopted any family planning method have average live birth 3.02% more than that adopted women. Family planning methods have a direct impact on fertility. The average no. of live birth is higher (3.29%) among women who use personal Latrine & toilet than who are not using this and depend on open defecation(2.60%) which implies that personal toilet use leads to better hygienic condition and higher fertility among the Santal. Similarly the average number of children ever born seems to be lowest (2.51) among household where the sources of drinking water is pond, streams, than drinking water source is tube well and supply govt. water (3.29), which indicates Unhygienic drinking water affects adversely on fertility performances. Satisfactory or unsatisfactory ventilation in the house also seem to influence Santal fertility. Satisfactory ventilation seem to higher(3.35%) fertility, while suffocated condition leads to lower(2.61%) fertility among Santal women. The mean age at menarche among Santal is 12.7 years. But mean age at marriage is 17.2 years & Age at 1st conception is 18.1 year & average age of menopause is 46.38 years. Early menarche age among Santal indicates that their Nutrition, educational, environment is improving as compared with other population group. Though the Santal
girl attains menarche at 12.7 age, but they marry at an age 17.2, i.e after 4 years of puberty. But they conceive child immediately after marriage i.e at 18.1 ages. Women belong to 15-49 years are taken for this study and women adopting family planning methods are also taken into consideration. So complete fertility cannot be exactly assessed from these few Samples i.e. from 90 ever married women. Survivability Index of Santal reveals that Survivability rate is 79.86%. Total no. of living child, percentage of survivability is due to better awareness, education, income, and living condition. This study also partly supports the findings of many Scholars.

These results broadly indicate that fertility is still relatively high in the studied population and needs to be rectified to bring about a positive change in their health and well-being. Therefore, in addition to acceleration of developmental activities, there is a strong need of information, education and communication by adapting the generalized messages under the programme to suit the cultural behaviour and intellectual level of this migrated tribal groups. Promotion of small family norm among the tribal is also required urgently. To achieve these, it is important to launch community needs assessment studies and studies on health seeking behaviour. Based on the findings of these studies, new messages could be designed to drive the point home about small family and its benefits as well as related aspects, shunning of child marriages, as well as early and frequent child bearing etc. The non-governmental organizations, religious bodies, local leaders who have a strong hold on the local populace, may be asked to participate in the IEC programme, apart from other sectors, particularly the education sector.

References


Deka U., Mohanty R., Das P.K., Effects of Antigenic incompatibility on Reproductive performances of four ethnic groups of Orissa Man in India, 80(3&4): 231-250.


WHO, Programme on Maternal and Child Health and Family Planning, Division of Family Health. 9/15/13 Rural and Remote Health Journal - View Article

Health, Disease and Ethno-Healing Practices: Continuity and Change among the Santals of Mayurbhanj District, Odisha.

SAUNA MAJHI *

All societies have health-care system, beliefs, customs, specialists and techniques aimed at ensuring health and preventing, diagnosing, and curing illness. A society’s illness – causation theory is important for treatment. All cultures have health-care specialists. If there is a “world’s oldest profession” besides hunter and gatherer, it is curer, or shaman. (Foster and Anderson 1978) (C.P. Kottak 1997). During the last three decades Anthropologists have increasingly turned their attention towards the problems of health and disease of the people. However, ethno-medicine of the tribal communities is now influenced by a number of forces external to the community, which are capable of bringing out changes into this traditional system. Hence, the problem proposed to be investigated in the present study is the ethno-medical practices found among the Santal and the extent to which this system has been influenced by various other factors responsible for bringing changes. The study has been undertaken in Santal dominated villages of Mayurbhanj district, Odisha. Anthropological methods were adopted for the collection of empirical data. The district of Mayurbhanj claims 75.27 percent of the total Santal population of the state (2001 census). It is understood that the Santal possess effective methods in their ethno-medicinal practices to cure the diseases which are seen among them since the remote past.

During the last three decades Anthropologists have increasingly turned their attention towards the problems of health and disease of the people. As a consequence a specialization known as Medical Anthropology came into being. This sub-discipline is engaged in carrying out researches in the field of a health, drug abuse, definition of health and disease, ethno medicine, nutritional concepts, ethno-physiology, doctor-patient relationship, body symbolism, preventive medicine and so on.

Some researchers like Weaveer (1968) have given importance to applied dimensions of Medical Anthropology. In his paper, “Medical Anthropology: Trends in research and Medical Education”. Has stated that “Medical Anthropology is that branch of applied Anthropology which deals with various aspects of health and disease.” (Robin D Tribhuwan 1998). Medical anthropology is the study of human health and disease, health care system, and bio-cultural adaptation. The discipline draws upon the four fields of anthropology to analyze and compare the health of regional populations and of the ethnic and cultural

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enclaves, both prehistoric and contemporary, collaboration among paleo-pathologists, human biologists, ethnologists, and linguists has created a field that is autonomous from any single sub-discipline, with strong potential for integration of physical and cultural anthropology. The field is also highly interdisciplinary, linking anthropology to sociology, economics, and geography, as well as to medicine, nursing, public health and other health professions. (A McElroy- www.univie.ac.at).

Ethno medicine refers to the study of traditional medical practice which is concerned with the cultural interpretation of health, disease and illness and also addresses the healthcare-seeking process and healing practices. The practice of ethno-medicine is a complex multi-disciplinary system constituting the use of plants, spirituality and the natural environment and has been the source of healing for people for millennia. (LAD Willinams, www.caribbean.scielo.org)

The ethno-medical perspective focuses on health beliefs and practices, cultural values, and social role. Originally limited to study of primitive or folk medicine, ethno-medicine has come to mean the health maintenance system of any society. Health ethnographies encompass beliefs, knowledge, and value of specialists and lay people: the roles of healers, patients or clients, and family members; the implements, techniques, and pharmacopoeias of specialists; legal and economic aspects of health practices; and symbolic and interpersonal components of the experience of illness. (A. McElroy.www.univie.ac.at).

Anthropological attention was first drawn to the significance of theories of illness in a pioneering paper by Forrest E Clements (1932). It clearly demonstrated that the explanations of illness current among most of the peoples of world have little in common with those recognized by modern medical science and relate much more closely to the ideology of primitive religion. Indeed, such scholars as Edward B Tylor (1871) have suggested that religion itself is derived from them. This view will receive ample corroboration in this volume and indeed may be said to run through its pages like a leitmotif. (G P Murdock 1980)

Health is something of an enigma like the proverbial elephant, it is difficult to define but easy to spot when we see it. ‘You look well’ stands as a common greeting to a friend or a relative who appears relaxed, happy and buoyant- ‘feeling good’. Any reflection of the term, however, immediately reveals its complexity. The idea of health is capable of wide and narrow application, and can be negatively as well as positively defined. We can be in good health and poor health. Moreover, health is not just a feature of our daily life, it also appears frequently on the political landscape.

One the surface if may seem somewhat perverse to begin a book on the sociology of health and illness by considering the medical model. However, given the importance, not to say dominance of medical science and medical practice in modern times, understanding the medical approach to health is a necessary starting point. Much of
the what contemporary populations thinks about health and illness, and much of the focus of research – including sociological research – strongly influenced by the prevailing medical model. In public debate, the medical approach remains central. It is therefore with this topic that we begin.

The uncovered side of the coin is health. The biological view of disease, which is briefly presented in effect implied that for practical purpose health may be defined as the absence of identifiable disease or infirmity - a negative view. But among us health has much more commonly received recognition as an idea, for example by the World Health Organization (WHO), whose constitution beings: “Health is state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (J B Loudon 1976). This is hardly surprising, given the fact that people turn to medicine in times of trouble, not when they are feeling well. It has also been found that promotion of positive health, whether by doctors or ‘health promoters’. Competes with other valued goals, for individuals and for societies as a whole. Matters become even more complicated when it is realized that the presence of ‘disease or infirmity’ does not, in any event, mean that people always regards themselves as unhealthy. The phrase ‘complete well-being’ remains as elusive as it is positive, and health, illness and medicine are related in complex ways. (www.nos.org)

A disease is an abnormal condition affecting the body of an organism. It is often construed to be a medical condition associated with specific symptoms and signs. It may be caused by external factors, such as infectious disease, or it may be caused by internal dysfunctions, such as autoimmune disease. In human, “disease” is often used more broadly to refer to any condition that causes pain, dysfunction, distress, social problems and/or death to the person afflicted, or similar problems for those in contact with the person. In this broad sense, it sometimes includes injuries, disabilities, disorders, syndromes, infections, isolated symptoms, deviant behaviours, and atypical variations of structure and function, while in other contexts and for other purposes these may be considered distinguishable categories. Diseases usually affect people not only physically, but also emotionally, as contracting and living with many diseases can alter one’s perspective on life, and their personality.

Death due to disease is called ‘death by natural causes’. There are four main types of disease: Pathogenic disease, deficiency disease, hereditary disease and physiological disease. (www.en.wikipedia.org)

All societies have “health-care system”-beliefs, customs, specialists and techniques aimed at ensuring health and preventing, diagnosing, and curing illness. A society’s illness-causation theory is important for treatment. When illness has a personality’s cause, shamans and other magico-religious specialists may be good curers. They draw on varied techniques (occult and practical), which comprise their special expertise. A shaman may cure soul loss by enticing the spirit back into the body. Shamans may case difficult child births by asking spirits to travel up the vagina and guide the baby
out. (Levi-Strauss 1967). All cultures have health-care specialists. If there is a “world’s oldest profession” besides hunter and gatherer, it is curer, or shaman. The curer’s role has some universal features (Foster and Anderson 1978). Thus curers emerge through a culturally defined process of selection (parental prodding, inheritance, visions, dream instructions) and training (Apprentice seamanship, medical school). Eventually, the curer is certified by older practitioners and acquires a professional image. Patients believe in the skills of the curer, whom they consult and compensate (C.P. Kottak, 1997).

The tribal communities in India constitute an important section of our society. Even though they are numerically in significant, their rich culture and unique way of life always attract the society. The objective of this research paper is to examine the medical practices and healing rituals existing in the tribal communities and to evaluate the changes occurring in the traditional medical system as a result of the influence of modern medicine. Most of the tribal communities, as a rule, live inside dense forests in hilly areas and consequently enjoy effective isolation from the mainstream of the country. Their isolated life prevents them more or less from exploiting many of the advantages of modern civilization. On many occasions they are found rejecting the programmes of modernization implemented by the governmental and voluntary agencies. They are still depending upon their own traditional medical practices when contracted by diseases. The ingredients of their medicines include herbs in toto, roots, barks, leaves, fruits and other plant parts, animal derivatives and also a few minerals. They have certain age-old techniques and methods of preparation and administration of medicines for different diseases. Healing rituals employed for invoking the intervention of supernatural forces, are an integral component of the treatment procedure. One the whole, it seems that traditional medicine helps the tribal’s to check the diseases satisfactorily and to lead a healthy life.

However, ethno-medicine of the tribal’s is now influenced by a number of forces external to the community, which are capable of bringing out changes into this traditional system. Modern medicine is the most important agent of change influencing the ethno-medical system. As a part of the tribal welfare programmes, the government has opened a number of curative centers like hospitals, dispensaries and Primary Health Centers (PHC) in the tribal areas and also has employed mobile dispensaries to improve the availability of medical facilities for them. In addition to this modern medicine is also available to them from a number of private nursing homes and hospitals, functioning in rural areas within an easily reachable distance from the abode of the tribals. However, on many occasions, the tribals show much reluctance in accepting modern medicine, for the treatment of diseases. It is observed that sometimes their resistance towards modern medicine is disease specific. They accept modern medicine for certain
diseases, but reject it for some others. This selective approach is a major hurdle for the health personnel in the successful implementation of their programmes, and is also an interesting topic for social anthropologists to deal with.

Hence, the problem under study is the ethno-medical practices found among the Santal and the extent to which this system is influenced by various factors of change. The problem has two major and equally important aspects. The first aspect is a descriptive study of the traditional ethno-medical practices which are instrumental in the diagnosis, healing and prevention of various disease and its inner ramifications with other aspects of tribal life, like social organization, religion, life cycle, etc. The second aspect of the problem deals with the challenges of medical pluralism upon ethno-medicine and the ways in which this system manages to survive (even through in a subdued manner) in a period of general social change which is occurring as a result of various tribal welfare measures of the government and also with increased interaction with the non-tribals.

This study was conducted in three Santal dominated villages namely Dolsora, Asna, and Bhalu of ‘Asna’ Grampanchyat, Bhalda Block of Mayurbhanj district is lying at the northern border of the state of Odisha. Besides Santal, other tribal communities like Munda and Ho are also inhabited there. The Bhalda Block is situated at a distance of 90 k.m. from Baripada (District Headquarter) and about 395 k.m. from Bhubaneswar (Capital of the state).

In the early phase pioneering studies on the Santals have been done by many Western and Indian scholars. Mention may be made P. O. Bodding, W G Archer, Culshaw, Mukherjee, Datta-Mazumder, P. C. Biwas, Martin Orans, Kochar etc. (Jeorge E Sommers 1977). Santals are simple credulous and gullible people who even in the scientific age also believe in magic, witch –craft, spirits and ghosts. Now a day’s education brings about a certain awakening and often generates the courage to stand up them for their own right.

In the past, Santal were nomadic in habits and used to wander from place to place in search of agricultural land. Some scholars link their traditional homeland with central India (Dandkaranya area). Later they came to the Chhotnagpur plateau and the adjoining districts of Midnapur and Singhbhum. At the close of the 18th century they made their home in Santal Parganas. At present they are spread over a large tract of land with the geographical jurisdiction of West Bengal, Bihar, Jharkhand, Odisha, Assam, Tripura and also abroad India Nepal and Bangladesh. They constitute one of the largest tribes in the country as a whole.

The family, their smallest social unit, is patrilineal, patrilocal and patripotestal. Descent is reckoned through Father’s line, According to their residential pattern after marriage a girl lives her Father’s house and stays at her husband’s place. Most of Santal families are nuclear comprising a husband, wife and unmarried children and sometimes one of the parents.
The Santal are divided into a number of clans known as “Paris”. They are unilineal descent groups whose members trace their origin back to some common mythical ancestor. Usually each of these clans is named after some natural phenomena, animal or other object.

The Santal house may have a single room or a cluster of several rooms constructed according to the needs of the family. Some houses have compounds that are mostly square in shape, the huts being arranged and all sides. They do not have separate kitchens but use any bedroom for this purpose. Generally a separate shed is build for the cattle. In every house, towards a corner of the main room there is a sacred place known as the “Bhitar”, a place for the ancestral spirits.

Most Santal settlements are more or less permanent in nature. The Santal village consists of a number of households surrounded by agricultural fields and pastures. The villages are large, the average size varying from fifty to a hundred households. The villages are finally arranged on either side of the road. Adjacent to each village there must be one common ritual place called a “Jaher” or sacred grove in which their village deities reside. The “Majhi-Than”, another ritual spot in the village, is located in front of the house of the Majhi, the secular headman of the village.

The main occupation of the Santal is settled agriculture. At present both men and women are engaged in cultivation but mainly as marginal and small farmers and agricultural labourers. Both men and women are active, strong and hard working. The economic activities of Santal communities are carried out which the co-operation and participation of both sexes.

The typical way of dressing of the Santal distinguishes them from the local non-tribes. The men wear a rough “Dhoti” named “Kachha” and women wear green red and blue check printed sarees made by local weavers. Santal women seem to be changing their tests for wearing ornaments, Tattooing is a common fashion for Santal women. They make tattoo marks of various designs on the arms, wrists and chests. (Mohapatra Sitakanta, 1986).

**Objectives**
- To study profiles of ailments among Santals.
- To study illuminating the traditional medical practices existing in Santal tribe.
- To highlight types of diseases, and traditional medicines used for treatment.
- To study the changes at present due to impact of modernization of healing practices.

The present research was conducted in three villages namely Dolsora, Asna, and Bhalu of Bahalda Block of Mayurbhanj district, Odisha. Use of anthropological tools and techniques such as a participant observation, in-depth interviews, using of interview
guide, and recording of illness episodes or therapeutic narratives, use of genealogical methods were taken effectively to elicit, information from the village and family elders, various medical specialists patients and key informants.

Participant observation method was used to cross check the validity of the data collected through in-depth interviews, illness episodes and case studies. I participated in the rituals of diagnosis and interpretation of the cause of illness, the healing rituals, the rituals associated with collections, preparation and administration of medicinal herbs and animal extracts, the ritual associated with thanks giving to the originator and curer of illness. During data collection the main emphasis was on the meaning of all objects, actions, words, utterances, gestures (symbols) which are associated with the domain of ethno-medicine. The only method of collecting information of this nature was to follow the meaning’s right through, wherever they led. This was done through free ranging unstructured interviews.

I have decided to take a sample of the household heads above 45 years of age in all the three villages. Thus the total numbers of respondents for in-depth interviews were i.e. 65 males and 25 females above 45 years all three villages.

The main purpose behind selecting this group i.e. household heads above 45 years of age was that they are well versed with the cultural meanings, the various symbolic elements and the normative behaviour secondly it was observed that these heads perform and participate in most culturally recognized rituals and ceremonies. Thirdly they are the decision makers regarding family life as well as everyday activities. Fourthly they are well informed about the symbols and meanings associated with every domain or sphere of their social life, which has been passed down through generations by what is known as oral tradition. These household heads were interviewed at various locations like their residence, on farms and even on the river banks.

Besides interviewing the village elders, key informants and medical practitioners of the Santal tribe, 30 illness episodes of non randomly selected patients from three Santal villages were recorded in details. This exercise was conducted to comprehend the etiological categories regarding the origin and cause of illness, the various pathogenic agents that cause illness, the clinically meaningful reality through which a sick person passes to get cured, as well as to understand all culturally defined actions and rituals performed by the participant actors such as family and village elders, friends and relatives and finally the medical specialists in order to restore the health of the patient.

It was also observed that the Santals believe, that people die as a result of becoming victims of witchcraft, sorcery, wrath of gods and goddesses, intervention of evil forces etc. To prevent this certain rituals are performed to please these malevolent folks that take away life. To prevent the soul of the dead from troubling the Santal community the dead bodies are treated in strange manner.
Discussion and Analysis

Every culture, irrespective of its simplicity and complexity has its own beliefs and practices regarding health and disease, it does not work in a meaningless fashion. Every system of culture tries to treat diseases in its own way. The treatment of the disease varies from one group to another (Choudhari B. 1986 : 289) ( Robin D. Tribhuwan 1998).

Interpretations of the cause of a given disease depends much on the native’s perceptions of the pathogenic agent or force responsible for the cause, the cultural situation or context in which the condition of ill health has occurred, and the degree of disruption of the patients relationship with the pathogenic agents.

Interpretations of the origin and cause of illness starts the family level, with initial diagnosis to search for meanings. Suggestions and suspicions regarding the possible origin and cause of illness is contributed by family elders, relatives, friends and village elders. Their suspicions are confirmed by the Medical practitioners, who use culturally recognized methods of diagnosis to track the origin and cause of illness. (Robin D Tribhuwan - 1998).

Shamans are part time religious practitioners who mediate between people and super natural beings and forces, Shaman is the general term encompassing curers (witch doctors), medium, spiritualist, astrologers, palm readers and other diviners. (C.P Kottak. – 1997 : 345) In Santal society shaman is generally called “Ojha”. There are different types of Ojhas classified according to their super natural power, such as Sokha, Janguru, etc. In santal society shamanism is both hereditary and non-hereditary in nature. Usually shamans are male but women shamans are also found which is very rare. Shamans apply both supernatural powers and also ethno-medicines to cure various types of diseases in Santal society. First of all shaman tries to find out, the cause of illness applying various techniques; whether the illness is of natural or supernatural origin. Techniques for example Sunun Khali (using oil) Charej Khali (dry grass) Sindur are adwachaole Khali (Vermillion and rice), Natka Tunum (Nerve Test) and Jol Nel (Testing urine with oil). If the cause of origin of the disease is natural then shaman applies ethno-medicine for its curing. But if it is found that the disease is due to the supernatural forces then shaman performs worship to please the supernatural force or beings by some times sacrificing animals like cock, hen, goat, sheep, pig, pigeon etc. In very serious cases if the patient does not cure with ethno medicine and normal worship at that time spirit call or possession act is performed. By spirit call or in the state of trance, people can directly interact with the supernatural power to know the cause of disease and its solution.

Regarding the application of ethno-medicine Santal use various types of herbal medicines which are not only known to the shaman but also to the common people. These are different types of fruits, roots, leaves, creeper, bark and animal extracts etc.
<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Name of Diseases</th>
<th>Medicinal Plants Used (in santali)</th>
<th>Botanical name</th>
<th>Plant part / Animal extract used</th>
<th>Method of Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Worm infestation</td>
<td>Jonola(tote)</td>
<td>Zea mays</td>
<td>Fruit</td>
<td>After burning it in fire, making it powder, then given for one week.</td>
</tr>
<tr>
<td>2</td>
<td>Post delivery convulsion of mother</td>
<td>Karanj(chhal)</td>
<td>Pongomia pinnata</td>
<td>Bark</td>
<td>It is given after making it juice for one day.</td>
</tr>
<tr>
<td>3</td>
<td>Maleria</td>
<td>Saparam(sakam)</td>
<td>Nyetanthes arbor</td>
<td>Leaf</td>
<td>It is given after making it juice for one week.</td>
</tr>
<tr>
<td>4</td>
<td>Mal-nutrition of baby</td>
<td>Petraolad and Tuli sunum</td>
<td>Fruit and mustard oil</td>
<td>Petraolad (fruit) boiled in mustard oil then massage in hole body for 1 month.</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>After cessation of lactation</td>
<td>Masri dal</td>
<td>Red lentils</td>
<td>Pulse</td>
<td>It is left in water for 4/5 hours then making it paste and applied on breast for 3 days.</td>
</tr>
<tr>
<td>6</td>
<td>Foreign body abscess</td>
<td>Baru sunum (joro sunum)</td>
<td>Oil</td>
<td>Cone like structure is made of using leaf and in lower part of the cone a cotton thread is attached. Oil is poured into the cone and fire is ignited on the lower part of the thread. Then oil is allowed to drop on affected part. It is applied for once.</td>
<td></td>
</tr>
<tr>
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</tr>
<tr>
<td>7</td>
<td>Jaundice</td>
<td>Miru baha/Bodoj handi/Mejali rehed/Aankh/Didhauki chhal+Doka chhal+ Ull chhal</td>
<td>Leaf/rice beer / root/ sugar can / bark</td>
<td>Any one from this list can be used after making juice and given for 15 days</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Boil</td>
<td>Pojo chhal</td>
<td>Bark</td>
<td>Paste is made and applied on the affected part.</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Fungal infection on foot</td>
<td>Amda</td>
<td>Fruit</td>
<td>Boiled or burnt then applied on the affected part for 3 days.</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Diarrhoea</td>
<td>Hilmicha</td>
<td>Leaf</td>
<td>Boiled in waite, it is filtered then given to the patient for drink for thrice a day.</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Common cold of baby</td>
<td>Rasun, Allium sativum</td>
<td>Root</td>
<td>Removing outer part of the cover and making it garlic necklace. Then binded on the neck of baby.</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Cough of baby</td>
<td>Etkej sakam</td>
<td>Leaf</td>
<td>Heated in fire covering it with sal leaves. Then it is pressed hard to get liquid part and given to baby thrice a day.</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Wart</td>
<td>Kargale kadej</td>
<td>Dry Branch</td>
<td>After burning it in fire it is applied directly on the affected part, once a day for 15 days.</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Foot crack</td>
<td>Madargam chhal</td>
<td>Bark</td>
<td>Bark is binded on the affected area for 7 days.</td>
<td></td>
</tr>
</tbody>
</table>
Cattle Diseases & Medicine Used

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Haemorrhagic septisemia</td>
<td>Etkej towa</td>
<td>Liquid part</td>
<td>Applied directly on the neck for 3 days.</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Bloat</td>
<td>Bantphola binj + bulung jawa</td>
<td>Mix of snake remain and salt.</td>
<td>Mixture is directly given to eat, once a day for three days.</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Mouth disease</td>
<td>Bengal rapah + gotom</td>
<td>Solanum melongna</td>
<td>Burnt brinjal and ghee</td>
<td>Mixture (paste) is directly applied around the mouth.</td>
</tr>
<tr>
<td>4</td>
<td>Maggoted wound</td>
<td>Petrol</td>
<td>Petrol (Oil)</td>
<td>Directly applied on the affected part thrice a day.</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Calf diarrhea</td>
<td>Mad sakam (bamnoo leaf)</td>
<td>Bambusa vulgaris</td>
<td>Leaf</td>
<td>Given to eat for 3-4 days.</td>
</tr>
</tbody>
</table>

**Case Studies**

This was the case of “after cessation of lactation” from the village Badmouda Dist- Mayurbhanj. Mrs. Kapura Tudu, W/o- Ram Tudu gave birth a child but child died within ten days, which led to the case of after cessation of lactation. Therefore it was very important to stop the continuous flow of the milk. Fortunately her aunt was aware of the remedial measures of that problem. They made a paste of pulse (Masri dal) and applied on the breast for 3 (three) days and problem was solved.

Mr. Kunu Majhi, S/o- Bikram Majhi, Village – Asna, Dist – Mayurbhanj had ‘Wart’ initially on hand but gradually it spread on the whole body. He consulted Allopathic and Homeopathy doctors but the problem did not cure. At last in the village Shaman – Chhaku Soren advised him to use a dry branch of (Kargale). The process of the use was after burning it in fire the applied it directly on the first affected part then remaining affected are automatically cured.
In the village Nargi of Bahalda Block, there was a case of mal-nutrition of child whose parents are medical professionals. The child did not cure in Allopathic Medicine. Then they used Petraolad (fruit) boiled in mustard oil and massage in whole body for 1 month. After that treatment the child slowly recovered from the problem. Now the child is healthy.

In villages cattle suffer from a problem called ‘bloat’ Budhan Majhi’s, Vill- Badmouda cow was affected with this disease. He consulted with the village Shaman Mr. Bahadur Majhi. He advised give to eat the mix of Bantphola Binj (snake) and bulung (salt) for three days. After a week the cow became healthy.

In the village – Badmouda, the cow of Mr. Basta Marndi was suffering from mouth disease. Mr. Marndi consulted with the village shaman and he was advised to applied Bengal rapah (Burnt brinjal) and gotom (ghee) around the whole mouth. Lastly the cow became cured.

Conclusion

The study has succeeded in shedding light on certain unexplored aspects of Santal culture. An analysis of the empirical data collected during this investigation really proved certain points beyond any doubt. Such information is also valuable in developing appropriate health care programmes for tribal communities. Like any other investigation this study also may raise many new questions in the mind of a reader. The major findings are summarized as follows:

The ethno-medicinal practices of Santal tribe are in a process of change due to the impact of modernization and interaction with other clusters. Initially, the non-tribal immigrants from the plains influenced the Santal culture in a big way. Afterwards, the introduction of modern medicine into the Santal universe by the both governmental and private agencies affected ethno-medicine and brought changes into this system. However, the nature of interaction between modern and ethno-medicine and the subsequent social change among Santal community is not similar everywhere.

Even in this transitional period, considerable number of ethno-medicinal beliefs and practices are still persisting in the Santal community. It is evident that, in the concepts of etiology, in the treatment of diseases and in the prophylactic measures the traditional medical beliefs and practices are still prevailing. It is also noticed that the various elements of ethno-medicine are reinforced by the principles of Santal religion.

Santals take to modern medicine only when the illness is in imported one or one which cannot be explained in terms of their logic. It is understood that the Santal possess effective methods in their ethno-medicine to treat the diseases which represent among them since the remote past. However, they do not know how to heal the newly imported diseases and therefore, seek the assistance of modern medicine.
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Identifying the future prospects of Ecotourism for Indigenous Economy in Similipal Biosphere Reserve

SONA MURMU*

Abstract: Ecotourism has been deliberated within the academic literature as an important strategy for community-economy development, due to the potential economic and social benefits that the sector can generate, while also protecting the environment. It is widely recognized in Odisha that Indigenous communities suffer considerable social and economic disadvantages as compared to other social sections. There remains significant challenges for Indigenous people in identifying suitable economic and commercial development opportunities directed by enhancing economic and human resource development within remote communities. The paper aims to present some conclusions and discussion about the suitability of ecotourism as a means of providing genuinely sustainable and alternative livelihood development opportunities for remote Indigenous communities living in Similipal Biosphere Reserve.

Introduction

Tourism is an important segment of our economy mainly in terms of its contribution towards foreign exchange earnings, generation of national income and creation of employment opportunities, particularly even in remote and backward areas. Many backward areas of Odisha like Kalahandi, Mayurbhanj, Phulbani, Koraput etc. are still unable to attract domestic tourist and international tourist. Eco-tourism in such a nature dominant regions should be conducted in a manner with minimum impact on soil, water, air, flora and fauna, host communities and the bio-physical process using little energy, causing little pollution which cannot be avoided.

Now, Tourism is one of the world’s largest export industry. The foreign exchange earnings from tourism for India, during 1999 was about thirteen thousand and forty two crores (13,042 crores). The direct employment in this sector during 1998-99 was provisionally estimated to be 14.8 million persons accounting for about 2.4% of the total labour forces. As incomes rise and transportation system improves, national and international tourism is bound to increases in quantitative terms. Eco tourism is emerging world over as the most focused area of interest for the tourists and consequently, the private investors. Since this is an area in which India has inherent strengths, the problems is in its way, need to be smoothened out, with a clearly thought out view on conversion of natural resources and development as a tourist product.

Odisha is distinctively marked for its unique and variegated tourism resources. The State has tremendous tourism potentiality, besides having historical heritages,

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monuments and beaches of international repute, the State have enviable cultural heritage and it is enriched with natural resources. All over from the temples and sanctuaries, beaches and waterfalls, hot spring and glorious lakes, dams, streams, wildlife that is visually fascinating, crafts that are colourful and vibrant and the numerous festivals, grand historical legacy and centuries old culture to a modern commercialism, from a wealth of wildlife to a scenery yet vibrant country life, Odisha has them all and much more, the State offers a complete tourist destination. Some of the most important conservation work on India’s wildlife heritage and ecological balance are conducted in this beautiful land which gives the powers of preservation totally new dimension.

Despite of rich natural resources, biological and cultural diversity very less achievement in the area of development of eco-tourism has been made in Odisha. Although the State have enviable cultural heritage and it is enriched with natural resources, only historical heritages, temples, art and craft, beaches and classical dance are nationally and internationally focused. It is now very necessary to highlight the areas where nature plays dominant role in the region as a special eco-tourism destination by the State Government and other private/corporate sectors. There is urgent need to boost the eco-tourism in Odisha, as the most significant feature of eco-tourism industry is its contribution to sustainable human development through poverty alleviation, employment generation and environmental protection in remote and backward areas.

The objective of eco-tourism is management of tourism and conservation of nature in a way so as to maintain the fine balance between the requirements of tourism and ecology on one hand and the needs of the local communities for income generating employment on the other hand (P.Aneja, 2001). Eco-tourism can emerge as an important instrument for economic development of tribal and conservation of environment in Mayurbhanj district of Odisha. The District is rich in natural resources and cultural heritage, but the natural resources are not properly harnessed by the locals and the State Government. The term eco-tourism and rural tourism itself is a very different and new thing for the inhabitants of the area, because they are living in villages near forest, they are ignorant and handicap in applying the principles of Eco-tourism. They don’t know about the vast potential of eco-tourism that needs to be tapped for economic benefit as well as for healthy conservation and preservation of nature. To get maximum benefit from culture and natural resources without harming equilibrium of environment a planned strategy must be developed. As the most significant feature of tourism industry is its contribution to sustainable human development through poverty alleviation, employment generation and environmental regeneration in remote and tribal areas.

Outcome of the ecotourism can be vital link to support the Government plan and its implementation for Eco-development and alleviating poverty especially of the tribal
communities through generating alternative sources of employment and livelihood. Community participation implies sustainable development with and by the people and not just for the people i.e. planning should emerge from the grass-root level to bottom up approach. The basic logic therefore for the success of any intervention in any developmental work depends not merely on the amount of schemes and projects pumped in, but on the confidence build and power given to the local people to decide the nature of development to be unleashed in a particular area.

Ecotourism has grown as a consequence of the dissatisfaction with conventional forms of tourism which have, in a general sense, ignored social and ecological elements of foreign regions in favour of a more anthropocentric and strictly profit centred approach to the delivery of tourism products.

The findings of various studies point out that in many cases until recently, there has been some confusion surrounding the etymology or origin of the term ‘ecotourism’, as evident in the tremendous volume of literature on the topic. For example, Orams (1995) and Hvenegaard (1994) write that the term can be traced back only to the late 1980s, while others (Higgins 1996) suggest that it can be traced back to the late 1970s, through the work of Miller (Miller 1989) on eco-development. One of the consistent themes emergent in the literature supports the fact that Ceballos Lascurain was the first to coin the phrase in the early 1980s (Thompson 1995). He defined it as ‘travelling to relatively undisturbed or uncontaminated natural areas with the specific objective of studying, and enjoying the scenery and its plants and animals, as well as any existing cultural manifestations (both past and present) found in these areas’ (Boo 1990: xiv).

In an interview (Van Der Merwe 1996), Ceballos-Lascuain illustrates that his initial reference to the phrase occurred in 1983, while he was in the process of developing PRONAURA an NGO in Mexico. Recently, however, the term has been traced further back to the work of Hatzer (1965), who used it to explain the intricate relationship between tourists and the environments and cultures in which they interact. Hetzer identified four fundamental pillars that needed to be followed for a more responsible form to tourism. These included: (1) minimum environmental impact; (2) minimum impact on and maximum respect for-host cultures; (3) maximum benefits to the host country’s grassroots; and (4) maximum ‘recreational’ satisfaction to participating tourists. The development of the concept of ecotourism grew, according to Hetzer (personal communication, October 1997), as a culmination of dissatisfaction with Government’s and society’s negative approach to development, especially from an ecological point of view. Nelson (1994) also adopts this particular stand in illustrating that the idea of ecotourism is in fact an old one, which manifested itself during the late 1960s and early 1970s, when researchers became concerned over inappropriate use of natural resources. Nelson suggests that the term ‘eco-development’ was introduced as a means by which to induce such development.
Visitors have long been travelling to natural areas under the guise of recreation and tourism. This has led some observers to question whether ecotourism is simply a new name for an old activity (Wall 1994). However, several changes apparently have occurred in the last decade. First, there has been growth in visits to many natural areas, particularly in developing countries. Second, many economic development professionals increasingly have viewed natural-area visitation as a tool for providing employment in regions that have experienced decline, or lack of development, in other industries. Third, many conservation and resource management professionals increasingly have viewed natural area visitation as an avenue for enhancing natural area finance and providing conservation-related benefits, particularly to residents living near natural areas. Further, there has been increasing attention paid to improving the sustainability of all tourism activities, including those occurring in natural areas. Thus, although ecotourism may not represent an abrupt departure from historic recreation and tourism, it does represent a change in the level of visitation for many areas and a change in the goals that various stakeholders attach to this visitation.

In other related research, Fennell (1998) found evidence of Canadian government ‘ecotours’ which were operational during the mid-1970s. These ecotours centred around the Trans-Canada Highway and were developed on the basis of different ecological zones found along the course of the highway. The first of these encounters was developed in 1976. Based on the ecozone concept, they were felt to be rather progressive for the time despite the lack of a focused look at low impact, sustainability, community development, and moral philosophy labels that are attached to ecotourism in the 1990s. The ecotours were developed at a time when the Canadian government felt it important to allow Canadian and foreign travellers to appreciate the human-land relationship in Canada, through the interpretation of the natural environment. Although a set definition of ecotourism was not provided, each of the ecotour guides contains the following foreword:

Ecotours are prepared by the Canadian Forestry Service to help you, as a traveller, understand the features of the landscape you see as you cross the country. Both natural and human history are described and interpreted. The route covered by the Ecotours is divided into major landscape type, or Ecozones, and a map of each Ecozones shows the location of interesting features (identified by code numbers). While most features can be seen from your car, stops are suggested for some of them. Distances between points of interest are given in kilometres. Where side trips are described, distances are given to the turnoff from the highway. You will derive the maximum value from this Ecotour if you keep a record of the distance travelled and read the information on each point of interest before reaching it. (Fennell 1998: 232)

Fennell goes on to suggest that ecotourism most likely has a convergent evolution, ‘where many places and people independently responded to the need for more nature
travel opportunities inline with society’s efforts to become more ecologically minded’
(Fennell 1998; 234), as also suggested by Nelson (see above). This evidence comes
at a time when researchers have been struggling to find common ground between
ecotourism and its relationship to other forms of tourism, related and unrelated.

There seems to be universal acceptance of the fact that ecotourism was viable
long before the 1980s in practice, if not in name. For example, Blangy and Nielson
(1993) illustrate that the travel department of the American Museum of Natural History
has conducted natural history tours since 1953. Probably the finest examples of the
evolution of ecotourism can be found in the African wildlife-based examples of tourism
developed in the early twentieth century and, to some, the nature tourism enterprises
of the mid-nineteenth century (Wilson 1992). There are examples in the literature that
human beings, at least since the Romantic period, have travelled to wilderness for the
intrinsic nature of the experience.

The Australia case exemplifies the development of the ecotourism phenomenon
(Lindberg and McKercher 1997). In the late 1980s, ecotourism was unknown entity
that was just beginning to emerge in the popular lexicon. Its growth was spurred by the
ongoing debate over tourism and the environment and as a direct result of the
enthusiasm for ecologically sustainable development (ESDWG 1991). At first, its
potential market base was seen to be small although, as a new product, its growth
potential was seen to be large.

However, this niche concept changed in the early 1990s. The term ecotourism
struck a chord with the tourism industry, the travelling public, and with private and
public sector agencies charged with the promotion of tourism products. Ecotourism
became a buzzword. The explosion of interest in ecotourism led to the emergence of
a lively debate among academics and industry leaders about the merits of the activity.
Ecotourism conferences resulted in the formation of a national ecotourism association,
the Ecotourism Association of Australia. In the space of four years, the Commonwealth
government (Allcock et al. 1994), state governments (DCE 1992), and even regional
associations (NPWS 1996) produced a variety of ecotourism policies designed to
encourage the industry’s development. This same period saw rapid expansion in the
number of ecotourism operators and the emergence of specialist tour wholesales and
retail travel agents to market ecotourism products (Richardson 1996; Southern 1996).

By the mid 1990s, ecotourism, as a concept, began to enter a period of maturity.
Many of the claims made in earlier years began to be disputed, and the legitimacy of
many players to call themselves ecotourism products was challenged. The travelling
public either has become more aware of what ecotourism encompasses and more
critical about the idea to accept blindly the claims that mass tourism destinations are
Assumptions regarding the benefits of ecotourism have been challenged through empirical research (Lindberg, Enrique and Sproule 1996; Driml and Common 1995). As a result, a more realistic understanding of what the product entails and the benefits it can provide is emerging.

**Similipal Biosphere Reserve**

The Similipal Biosphere Reserve in Mayurbhanj district is situated at a distance of 60 Kms. from Baripada and about 350 Kms. from Bhubaneswar, the wildlife sanctuary is spread across 2750 Sq. Kms. area and often attract, both Indian and foreign tourists for its lush green forests, hilly terrain, springs, mountains, valleys, plateaus, grass land, hillock, waterfall and rich bio-diversity. Similipal has the unique distinction of being a National Park, a Tiger Reserve, a Biosphere Reserve, an Elephant Reserve and a Wildlife Sanctuary. There is Similipal Tiger Reserve Project (STR) of National Tiger Conservation Authority (NTCA). Similipal Biosphere Reserve mainly contributes to rainfall in Odisha, when a low pressure created over the Bay of Bengal strikes at the Meghasani range.

Every year the reserve is open for tourists from November 1st to June 15th, which is considered the best season for wildlife viewing. Watching tigers, deer, elephants and other animals in their original habitat, gives a different pleasure to the wildlife lovers. The park offers an excellent exposure to the delights, not only of its wildlife, but also of its wonderful natural beauty, for this reason the tourist inflow to Mayurbhanj is on a rise. Famous for its rich flora, Similipal is a treasure house of 1076 species of plants including 94 species of orchids have been identified here, which are giving enough scope for research to the scholar’s country wide. As informed by forest authorities, there has been mixture of vegetation here, with Northern tropical semi-evergreen trees and Northern tropical moist deciduous trees along with dry deciduous hill forest and high-level Sal forests to add to its attraction. The semi-evergreen to dry deciduous forest of Similipal echo with a variety of fauna comprising of 42 species of mammals, 231 species of birds and 29 species of reptiles. As per the 2004 census, 101 tigers out of the state’s total tiger population of 192 are found in Similipal giving it the fame of a Similipal Tiger Reserve(STR). Other fauna of the sanctuary includes elephants (565 according to 1999 census), wild dog, wolf, striped-necked mongoose, honey badger, small Indian other, sloth bear, banking deer, gaur, wild boar, pangolin, rhesus macaque, Hanuman langur, common giant flying squirrel, porcupine etc. add to the rich bio-diversity of Similipal. It also provides succour to thousands of tribal people living on the fringe. A glimpse of the tribal culture is therefore a bonus at no extra cost. Similipal hill range widely known for its dense forest full of numerous plant and animal species is a complete ecosystem in itself. It is Similipal which mainly contributes to rainfall in Odisha, Jharkhand, Chhattisgarh and other nearby areas.
When a low pressure created over the Bay of Bengal strikes at the Meghasani range. Interestingly Similipal region of Odisha is located within the same range of latitude as Sahara and the Arabian desert.

Today, like other Biosphere Reserve Similipal is also facing the problem of biodiversity conservation. There is deforestation and over-exploitation of forest due to natural and human induced forest fire, wood mafia, poaching, over utilization of land and forest, man-animal conflict, climate change and Maoist activities. Species of living organisms are threatened through human introduced changes. In a ecosystem where there is importance of simple insect and fungi we can imagine how much harm is done to the Biosphere Reserve by human intervention. Now many State level land central projects have been launched to conserve biodiversity. Side by side of these programmes Ecotourism can also help in biodiversity conservation because this is the only industry which can survive, only when the environment is safeguarded and ecosystem is made strong.

Apart from the scenic beauty of Biosphere Reserve the tribal settlements adjoining the forest region can also provide centres for Community Tourism and medical tourism through the project of AYUS. With Ecotourism status to the area, Rural tourism and Culture tourism status has to be awarded to the villages situated in the fringe areas and buffer areas. Their traditional craft, dance and music can play significant role as avenues for ecotourism. These will provide them alternate employment and it will automatically reduce over exploitation of forest resources and also be revival of fading culture and tradition of the area people. In Similipal Reserve there are 15,000 tribal live in 64 villages including two communities- Kheria, Mankedia are considered as particularly vulnerable tribal groups (PVTG). Other tribal's who live in the Similipal reserve area are Ho/Kol, Santal, Bathudi, Oraon, Bhumij and others. The concept of ecotourism will create awareness among the host communities for biodiversity conservation as we have seen people conserving small chunks of the environment who had economic interest in doing so for their livelihood.

Discussion and analysis

There are 64 villages in the Buffer area and 1200 villages on the periphery/fringe area of the sanctuary, with sizable population of about 4.5 Lakhs and about 80,000 families who dependant on the agriculture and forest to meet their day to day requirement and supplementing their income through collection of forest product, micro business and daily wage labourer. Similipal has three distinctive economic categories for resource utilization. Primary category, Subsistence based economy for the fulfilment of basic needs. Tribals depend on this category are Hill Kheria, Ujia and Birhor. Secondary category, Surplus and subsistence category belongs to agricultural, farming
and service. Tribal’s engaged in this economic category are Santal, Munda, Ho, Kol, Bhumij and other Caste people on the buffer and fringe area. Tertiary category, Business category is for commercial gain and accumulation, people belonging to this category are nearly urban, Industrial entrepreneur or modern elite groups. Though the inhabitants are self sufficient for their basic needs to fill their secondary needs slowly the dependency of tribal people on forest is gradually increasing. Now the small micro economies are becoming macro economies of the tribals. Every year people are engaged in collection of ‘Mohul’ flower during the month of February-April to sell the flowers in local market. Flower collection is very easy process for them as mohul flowers are scattered on the ground but sometimes due to long grasses and bushes it becomes very difficult for them to collect flowers, in order to collect flowers they put fire below trees before the blossoming season so it becomes easy to collect flowers scattered on black ashes. Sometimes the small fire takes the shape of forest fire and it becomes very difficult to douse fire by the forest dept. and local people. To avoid manmade forest fire Government is giving each family Rs.500, but still the villagers are collecting flowers for monetary gain. Though the flower collection is not harming ecosystem, the wrong process of collecting the mohul flowers is imbalancing equilibrium of whole ecosystem. Therefore, it is high time to provide tribal people with alternate method of collecting flower through nets directly from the tree for income generation and to minimize impact on environment. Also their source of livelihood can be shifted to permanent alternative areas of livelihood to minimize dependency on forest and sensitise the inhabitants of Similipal.

Tribal people suffer considerable social and economic disadvantage. The challenge for Tribal communities and policy makers is to discover or create opportunities that will provide sustainable development of indigenous economy. Micro businesses, Indigenous and non-Indigenous, have relatively high failure rates so it is important to undertake substantial planning to avoid failure. Here ecotourism can become alternate source of livelihood as tourism does provide potential for economic development. Tourism is seen as one sector that could possibly provide micro business opportunities. Indigenous tourism enterprises are in most situations likely to be micro businesses. But the communities often do not have the capacity to undertake all the tasks necessary to establish and operate a commercially successful ecotourism enterprise. Public Private Partnerships (PPP) with stakeholders within the region can help overcome this constraint. Through ‘Cultural Dimensions of Ecotourism in Similipal, that is how dance and music, art and craft, dress and cuisine can play avenues for ecotourism and how income can be generated from the culture and tradition of the tribal inhabitants. Community tourism and culture tourism will provide alternate source of livelihood to the tribal people. And the concept of ecotourism will create awareness among the host
communities for biodiversity conservation as we have seen people conserving small chunks of the environment who had economic interest in doing so. And to protect Similipal Biosphere Reserve, the Tribal people must be provided with alternatives to livelihood to minimise over exploitation of natural resources. The development of down string business like restaurant, hotels, travel and tour will come up in the fringe areas for generation of employment. The revenue generated from foreign tourist and domestic tourists in the year 2010-11 was Rs. 6,84,020.00, in 2011-12 it was Rs. 13,36,450.00 and in the financial year 2012-2013 it is Rs. 20,06,642.00. Though the local and domestic tourist are swamping in Similipal there is sharp decline in number of foreign tourist from the previous financial year. The vast potential to earn revenue from international tourist is yet to be traced by Tourism. The visit of foreign tourist is declining due to emergence, activities of anti-social elements and the 2009 Naxalite attack still continues to be a deterrent factor for tourist.

The future prospects of Eco-tourism in Similipal is very bright, while making plans for this Eco sensitive area more attention is needed. As opening up of eco-tourism in biosphere reserves involve a very close balancing act in cultural and ecological landscape and as all protected areas have limited ecological and aesthetic carrying capacities. Therefore, it is necessary to evaluate the ongoing process of tourism activity in these fragile zones involving cultural anthropological approach and ecological approach.

Eco-Tourism activity in a destination area is generated through the existence of unique attractions. This can include Composition of Destination like - attraction, basic facilities, infrastructure, transportation, hospitality, unique cultural characteristic, natural scenery and so on. Therefore, Similipal with its rich natural heritage and with the composition of destination have strong base to support ecotourism activities. Thus it follows that if the destination area wishes to maintain tourism as a long term economic activity, it must show its concern through planning to preserve and enhance these special factors that make it different from all other destinations. The future prospects of Ecotourism in Similipal will depend on the following Ecotourism destination planning process.

1. Back ground analysis phase.
   ● Dead tourist zone
   Many places of tourist attraction are now deserted because facilities now available were not been taken care of by the Government and Infrastructure degradation. At the same time some areas of tourists interest in Similipal are yet to be explored like rural and tribal tourism, culture parks to showcase live tribal dance and songs.
   ● Utilized tourist zone
   Active or utilized tourist zone are the places for tourist spots already existing, generating revenues and employment for the local people of the area. Tourist places
directly connected with National Highways, State Highways and all well maintained accommodation for tourist are already considered to be attractive and active areas of tourist interest.

- **Potential tourist zone**

  The places are like Dams, streams, tracking places, open sky tents, camping and many other places considered to be attractive and potential. In Similipal Biosphere entertaining tourist by boating and rowing has yet to start though feasibility is existing. Also floating accommodation and river cruise can be the best tourist attractive product in near future. The exploration of medical and tribal tourism may be the best attraction for the tourist. Elephant corridors can be best attraction of people by providing watch towers and accommodation so that tourist can have the night stay in the area. This will serve the purpose of safe-guarding of agriculture activities and livelihood of the people.

2. **Detailed Research and Analysis phase**

- **Resource Analysis**

  Similipal Biosphere reserve is potential area is attractive and viable for culture and social research as the area is inhabitant by different tribal groups and other caste people. In the Similipal area there is a vast scope for various research activities in the field of social, medicine, flora and fauna.

- **Activity Analysis**

  For proper management of natural and human resources for ecotourism planning, knowing the present status and assessing the future status of area is very important. This can be done by pre-field positioning and post-field positioning.

- **Market Analysis**

  In Similipal there are plenty of forest products which can be marketed after value addition for attraction of customers to generate more income. There is also scope of cultural marketing to entertain tourist as well as to explore the activities of marketing in cities. Similipal has got the plenty strength for generating forest products to the people of area for their livelihood. This forest product can be potential source of income through tourist visiting the places. Even the forest product can be exported through government agencies.

- **Competition**

  There is a tendency for every field of earning has competition in the market. The Research and analysis institution for can carry out Socio-economic survey as well as research, and workout the solution for sustainable competition in the field of income generation.
3. **Synthesis phase**

To make eco-tourism viable and sustainable in the Similipal reserve the concept of continuity source of income to be cultivated in the mind of people through their involvement in tourism service and hospitality sector.

4. **Goal-setting, Strategy selection and objective-setting.**

The strategy for the development of tourism should be based on the following

- **Connectivity**

  There shall be proper Rail and Road connectivity in Similipal area. The existing Tata-Badampahar section railway and Rupsa-Bangiriposi railway shall have adequate facility for passenger visiting the area. The proposed expansion from Gorumahisani to bangiriposi and Badampahar to Keonjhar can bring further and strengthen the link to the areas. Presently the condition of NH-5 and state highways passing through Similipal areas is well maintained, however expansion is needed.

- **Infrastructure**

  The existing facilities of primary health centres run by Government is not to the level of satisfaction because of poor facilities available in the Hospital. Even manpower deployment is not adequately supported by the government. There is hardly any well equipped Private hospital in the area. There is a need of multi-speciality hospital in the area. The area is legging for providing accommodations tourists and visitors around the Similipal Biosphere reserve. In nearby areas Similipal Biosphere reserve like Baripada there is suitability of establishment of international standard school, college, medical college, ayurvedic research centre to make more viability of tourist.

- **Hygiene**

  The existing hotel and restaurant are not properly maintained. Sometimes servicing unhygienic is causing health hazard to visitors. The area is also mosquito menace though government have taken up step of eradication of malaria successfully in the area.

- **Safety and Security**

  The people of Similipal Biosphere reserve are very co-operative and friendly with outsiders. But because of recent anti-social activities of Maoist group has created sence of insecurity and unsafe environment in the area for visitors resulting average income from tourist has drastically comedown. Due to affect in source of income people could realise the adverse affect the anti-social activities has to be controlled and people are motivated as host and friendly for tourist to eliminate the fear of anti-social activities from the mind of tourist.
● **Affordability**

The visiting area is quite affordable for all categories of tourist. Entry fees for domestic tourist is Rs.40 as entry fee, the entry fee for International tourist is Rs.1000, twenty five times the normal fee. Forest Rest House are available on advance booking. Area is self-reliance for guest. Even in tribal village one can be offered free food and stay in their house. The concept of paying guest can be developed in the area for more attraction of tourist.

● **Accessibility**

The Similipal area is widely accessible and connected from all sides by pakka and kucha roads and the area is communicable by two wheeler and four wheeler, but tourist are not allowed to travel by two wheeler inside the Reserve area.

**Air** - Bhubaneswar is the nearest Airport- 272 km. Indian airlines has flights from Delhi, Kolkata, Chennai and Mumbai. Other airlines have flights from different metropolis of the country to Bhubaneswar.

**Rail** - Nearest railheads are Baripada and Balasore (60 km from Baripada), served by major trains and Badampahar (20 km from Jasipur Railway Station) on the South-Eastern sector.

**Road** - Pithabata, an entry point to Similipal, is 22 km from Baripada, the District headquarters of Mayurbhanj on NH 5. The other entry point Jasipur is 94 km from Baripada on NH 6. Baripada is 270 km from Kolkata and 60 km from Balasore. Both the entry points are well connected by regular bus services. Taxis and Jeeps are available at Jasipur and Baripada.

5. **Plan development phase.**

For tourism development in Similipal Biosphere Reserve Government have sufficient fund for execution of development work. In reserve area although there is connecting kucha roads there is no proper planned road for visiting site seeing places. There is provision of seasonal visits only because of non planned road. Every year connecting roads are washed by rain water and temporary wooden bridge used to vanish simultaneously. This is one of the major problems for visiting Similipal tourist spots throughout the year. Government should have Similipal Development Authority for planned and sustainable development of the area and the people.

Ecotourism prospective plan will highlight the culture and eco-tourism potential of Similipal National Park and its nearby areas in Mayurbhanj District. Similipal Biosphere reserve needs immediate attention by the State Government and the locals for sustainable conservation and development management of this eco sensitive zone. The plan should emphasize on the best possible utilization of human resources and natural resources.
## Accommodation facilities available in and around Similipal

<table>
<thead>
<tr>
<th>Name</th>
<th>Kms from Jashipur</th>
<th>No. of Suits</th>
<th>Total Beds</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Chahala E. Villa</td>
<td>35</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>2. Chahala Dormitory</td>
<td>35</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>3. Nawana FRH</td>
<td>60</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>4. Nawana Pine Villa</td>
<td>60</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>5. Nawana Dormitory</td>
<td>60</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>6. Joranda FRH</td>
<td>72</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>7. Barehniapani Fall View</td>
<td>52</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>8. Dorm - I (Jashipur)</td>
<td>-</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>9. Dorm - II (Jashipur)</td>
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<td>1</td>
<td>10</td>
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<tr>
<td>10. Tribal Hut (Jashipur)</td>
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<td>3</td>
<td>2/S</td>
</tr>
<tr>
<td>11. Jamuani FRH</td>
<td>25</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>12. Jamuani Tribal Hut</td>
<td>25</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>13. Barehipani FRH (Muktapur)</td>
<td>55</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>14. Gudgudia FRH</td>
<td>25</td>
<td>3</td>
<td>2/S</td>
</tr>
<tr>
<td>15. Gudgudia Tourist Cottage</td>
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<td>2</td>
<td>4</td>
</tr>
<tr>
<td>16. Gudgudia Dormitory</td>
<td>25</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>17. Badampahar FRH</td>
<td>16</td>
<td>2</td>
<td>4</td>
</tr>
</tbody>
</table>

There are two entry gates to Similipal Tiger Reserve, one is Kaliani, approachable from Jasipur town about 15 kms away, the other one is at Pithabata, approachable from Baripada town about 20 kms away. Baripada is on NH-5 and is well connected with Kolkata (220 km), Balasore (60 km) and Bhubaneswar (250 km) both by road and rail. Jasipur which is along the NH-6 is also well connected with Kolkata (290 km) and Jamshedpur (75 km). The STR is normally open to tourist from November to June, but the peripheral areas are open for all seasons. The tourist route in Similipal runs through the buffer areas and covers all important locations of tourist interest. For tourist movement in Similipal Biosphere Reserve three routes are followed.

Tourist Spots

Khairi Nivas

The exotic and memorable journey of tourist spanning over jungle and mountains starts from the then home of legendary tigress Khairi and the founder field Director of STR Padmashree Mr. Saroj Roy Chowdhury. Khairi lived here with her human foster parents from 1973 to 1981. Khairi’s crematorium, huge posters of Khairi and old forest bungalow of Khairi Nivas brings alive memories of Khairi.

Oski Waterfall

Tourist entering through Jasipur visits the first waterfall Oski, near the village Son Oski. A beautiful scenic spot amidst green forest refreshes the tourist. Barheipani fall is 3 kms from Oski waterfall.

Lulung

Located 300 m above sea level in the eastern fringes of Simlipal Tiger Reserve, the small village of Lulung is only 20km from Baripada. Rolling hills covered in thick forests and Palpala River are major attractions of Lulung. From Lulung a good view of surrounding peaks like the 1158m high Meghasani peak and 1178m high Khairiburu peak are visible. Besides Palpala River, other rivers like Khairi, Budhabalanga and Salandi meander throughout the forest. At Lulung beautiful Forest Cottages are available in sync with the nature surrounding it. Each cottage has a balcony attached to it facing the surrounding hills and the vast expanse of forest. The entire Tourist Complex is landscaped with nice lawns, gardens and fruit trees. There is also a lounge and a dining hall with all necessary facilities. Eco friendly solar power keeps these cottages and surrounding areas alive throughout the night.

Joranda

The Joranda Falls is located in the core area of Simlipal National Park. The Barehipani Falls is located close to the Joranda Falls. It is the 19th highest waterfall in India. The Joranda Falls has a total height of 150 metres (490 ft). The water plunges over a lofty cliff in a single drop, spreading out slightly as it falls. One can have excellent view of Joranda fall and surrounding from FRA bungalow premises and watchtower. A small mineral water fall used for bathing compliments the tourist spot and nearby in the jungle lays salt lick, where deer’s come at evening and night for salt licking.

Nawana

Nawana is 8 kms away from Joranda waterfalls. Forest Range Office is situated at Nawana. Forest rest house bungalow is available for the tourist and a watchtower for nature viewing. Spot suitable for observing Tribal life style.
**Barehipani**

The Barehipani Falls is located in the core area of Simlipal National Park, it is the second highest waterfalls of India. The Barehipani Falls has a total height of 399 meters (1,309 ft). It is tiered waterfall with two drops. The tallest single drop is 259 meters (850 ft). The waterfall is situated on the Budhabalanga River flowing over the Meghasani mountain. A watchtower for viewing the largest waterfall in eastern ghat is available at the spot. The Joranda Falls is located nearby.

**Ramatirtha**

A place of worship at the confluence of Khairi and Bhandan rivers. A scenic picnic place with an Astral garden and Gharial Research Centre are place of tourist interest. Interpretation centre, souvenir shops, bird watching trips, angling are open in all seasons.

**Sitakund**

Sitakund is an enchanting place with a waterfall attract the tourists from far and wide. Water falls on a fathomless well shaped pond, popularly known as ‘ Sitakund ‘ and a picnic spot, open in all seasons. There is facility for stay and for trekking to Machhkandana.

**Chahala**

A royal forest resort from the Maharaja times with a sprawling meadow and a saltlick for observing animals from hide.

**Jamuani**

Forest Rest House in pristine forests, bird watching trips, trekking trips to Chahala and back are major tourist attraction of Jamuani.

**Gurguria**

Known for the mesmerising scenic beauty of Gurguria Ecotourism project has been started at this location. The river Khairi passes nearby adds to the credit of tourist spot. The than Bhanja King Sri Krishna Chandra in 1855 made Forest Rest House at Gurguria. Later on FRH was renovated by Britishers. An orchidarium with 63 indigenous orchid species, beautiful tropical pine forest, elephant ride, trekking and bird watching trips are available at this tourist spot. On the way from Kaliani (entry point) to Gudgudia along the river Khairi tourist can watch the riverine forest, then after about 5kms see the large Sal trees with anecdotes and the largest Champa tree symbol of climatic climax.
Panchalingeshwar

Panchalingeshwar 85 km from Baripada and 30 km from Balasore, is a scenic place on the lap of Nilagiri Hill with a perennial stream flowing over five Lingams. The Panthasala of Odisha Tourism is available for accommodation.

Remuna

Remuna 60 km from Baripada and 10 km from Balasore is famous for the shrine of Khirachora Gopinath, visited by Shri Chaitanya and his Guru Shri Madhabendra Puri.

Bhimkund

Beautiful scenic picnic place as well as a place of pilgrimage, in all seasons along the river Baitarani 40 kms from Karanjia, where Bhim of Mahabharata used to take bath.

Samibriksha

A beautiful scenic spot amidst green forest, three kms south of Podadiha is a hillock of about 500 ft. high, where the Pandavas believed to have hid their arms in 5 caves.

Deokund

Deokund 60 km from Baripada and 110 km from Balasore, is also known as Panchasagar Tirtha, a shakti Pitha (shrine) set against the outer periphery of Similipal hill range, is a beautiful scenic spot amidst green forest with a series of water fall. Temple of Goddess Ambika on the top of hill is a special attraction of this spot. The serene environment along with the natural beauty and the deep dense forest attracts nature loving visitors. The water of the forest stream falls from the height of 40 to 50 ft. to a reservoir. The reservoir is divided into seven Seven Kundas. Inside the reservoir big ‘Mahaseer’ fishes are found which is an added attraction. Besides the splendid attraction that Similipal offers, few other places of tourist interest can be found around Similipal.

Khiching

149 km from Baripada and 55 km from Jasipur is famous for the shrine of Khchakeswari at Khichin, built entirely of chlorite slabs is unique of its kind in India. A plethora of temples also dominates the place, some of which are still in active worship the small museum here boasts of highly important historical specimens of sculpture and art. The Panthasala operated by Toutism Department provides accommodation for visitors.
Bangariposi

A scenic spot on the outskirts of Smilipal forest, Bangariposi also known as ‘Bawn Ghati’ (52 hills). Famous temple of Duarsani is located at the first Ghati/hillock from Baripada. Bangariposi has a Panthasala of Orissa Tourism to accommodate the visiting tourist.

**Tourist visits in Odisha - Calendar Year (January-December)**

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**Source**: Statistical Bulletin 2012-1st part, Department of Tourism
Tourists visited in the identified tourist centres of Mayurbhanj District

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* Similipal National Park remained closed from 1.1.2010 to 21.12.2010

Source: Statistical Bulletin 2012 -2nd part, Department of Tourism

Limitations and Conclusion

Out of India’s 427 Scheduled Tribes, Odisha accounts for 62 tribal communities who constitute 27.08 percent of State’s population (2001 census). A significant proportion of the indigenous peoples reside in remote areas of the Odisha, often the most marketable of destinations. As in many instances, their territories are targeted for hydroelectric dams, mines and industrial hub, and have become focal points of bitter
protest. Hence, the question arises are Tribal cultures another resource to be ‘mined’ by ecotourism? Therefore, a big question for the whole project future prospects of ecotourism in Similipal Biosphere Reserve is - How to do ecotourism “right”? and the challenge is ‘To bring in different actors here: locals, Govt. institutions, NGOs, tour operators etc. and look at the way eco-tourism is understood and contested’. This will look after adverse social impacts on the host communities.

The temporary halt in 2012 by the Supreme Court to tourism in core zones of tiger reserves is a wakeup call to an industry that has grown rapidly and become disruptive is some places. Rather than view the Supreme Court’s interim order as a setback, tourism operators should see it as an opportunity to set things right. While there is no question that commercial tourism must be strictly regulated, a total ban on public access to wildlife reserves would be extremely harmful, as it will negatively impact conservation education, monitoring and other conservation activities by non-governmental organisations. Sensible tourism has important role to play in conservation, and if Government and tourism stake holders has to work together , it is possible to craft solutions that benefit local communities, nature lovers, tourism operators and most importantly wildlife itself. While all of us may feel that we have a right to enjoy nature and the great outdoors, it is imperative that we understand that natural habitats are fragile, and ought to be trod on softly, observed quietly and enjoyed responsibly. Many developing countries, particularly in Africa and South America, have succeeded in establishing tourism practices that are low on impact and high on educational values. Many of their features can be emulated with appropriate adaptation. In India, Kerala’s Parambikulam Tiger Reserve has developed an enlightened model of wildlife tourism that is praiseworthy. (The Hindu 8/8/2012)

Ecotourism, done well can be sustainable and relatively simple alternative for livelihood. It can empower local communities, give them a sense of pride in their natural resources and control over their communities development. Ecotourism cannot survive unless the resource on which it is based is protected. It has the potential to maximize economic benefits and minimize environmental costs. Though, its potential is not always realized and it can destroy both the environment and local communities. How can Ecotourism be planned so that it is both ecologically sensitive and economically productive?

It is desirable that new tourism projects should not bring about any impairment to the environment. Hence due cognizance should be given to the environmental aspects and proposes that environment impact assessment should be made an integral part of all forthcoming projects of ecotourism. As it cannot be neglect the fact that it also contributes environmental pollution. Therefore, ecotourism should be done with aim of ‘ecotourism responding to the challenges of climate change’. The ecotourism plan
must take into consideration about species of living organisms should not be threatened through human introduced changes.

Proponents of ecotourism emphasize that its objective is to foster responsibility for managing the impact of tourism that is minimizing adverse effects while maximizing beneficial outcomes and preserving the natural environment. In addition, ecotourism proponents strive to confront stereotypical thinking about ‘exotic inhabitants’ populations ‘living off the land’. The ecotourist should be appreciative of, and receptive to, cultural difference of the host communities. Local inhabitants should not be looked as a commodity or subjects rather as a part of the whole entity.

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Forest, Livelihood and Poverty: A Study on Munda Tribe

ABHIJEETA DAS*
ARAKSHIT PATRA**

Abstract: Odisha is one of the largest abode of tribal population in India. Out of 427 STs, the state has housed 62 communities, who constitute around 22.08 per cent of the total population (Census of India, 2001). Almost 44.21 per cent of the total state geographical area has been constitutionally declared as scheduled area which cover most of the districts except the coastal and few inland. Out of 314 CD blocks of Odisha, 118 (37.3%) blocks are covered under Tribal Sub-Plan. With the denudation of forest resources which are vital for earning livelihood resources for ST Communities, particularly Munda Tribe, the livelihood and food security faces a great hardship. The paper is based on the findings of an empiric study carried out in Mayurbhanj district one of the most inaccessible tribal dominated districts of Odisha. Keeping in view the most basic issues the present paper has been designed to highlight Munda tribe livelihood pattern in relation to forest dependency. As they are residing nearby Similipal hill area, their degree of dependency on forest is rather better than agriculture. Poverty is main constraint which breaks their social, economic and cultural development. From time immemorial, they are living in the forest to maintain their livelihood and socio-eco-cultural entities. Women and girl children particularly from Munda families collect firewood, fodder, small timber, various NTFP’s etc. from the forest. Also, they are engaged in firewood head loading, primary processing of NTFPs at the household level such as leaf plate making, broom and mat making etc.

Introduction

Forest is the main resource centre of forest dwellers. Forest and environment are major sources of natural capital for the development of forest dwellers. It is a renewable resource which is not only a summation of trees but also a whole of all living and non-living components which supplies the basic need including food, fuel, fodder, fertilizer, water, shelter and oxygen. It also holds a deep cultural and spiritual significance. But deforestation constitutes one of the gravest crises affecting all life from today. From the international events and various people’s movements for protection of forest, the state learnt that the protection of forest is absolutely necessary to sustain the very process of development. After Forest Conservation Act, 1980 and its amendment in

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NTFPs policy 2000 and FRA 2006 protection of forest for environment and recognition forest right for forest dwellers become the main objective than for exploiting forest commercial purposes. In the forest environment, the tribes are the sole dependants of forest for livelihood, but they are being suffered in the vicious circle of poverty.

The major reasons of the vicious circle of poverty among forest dwellers are pointed as under:

(i) In the recent years, the depletion of forest, the marginalizing of forest dwellers and the consequent degradation of land resources is a reality. As man depend heavily on a large number of plants and animal products to meet his daily needs. Especially the life and livelihood of forest dwellers, which are mainly dependent on forest are seriously disturbed due to deforestation.

(ii) Increasing use of forest resources at a higher rate by man is not consciously managed; this may lead to a great scarcity of forest products and pollution of environment, which the future generations have to suffer.

(iii) Interference of non-tribal in tribal economy is shrinking the forest marketing of tribal's is exploited. As the forestland is leased out by the state to private individuals they are using the forest as they wish.

(iv) As agriculture is the main source of livelihood of some tribal’s, horticulture is not developed yet which may prove profitable for both agriculturist and forest gathering tribals. The enacted forest laws are not properly implementing yet.

(v) Absence of processing units is one of the major causes which is responsible for getting fewer prices as compared to which is fair.

(vi) One of the leading aspect of forest problems is institutional aspect. The ownership of forestland is a vital issue, which has enacted in 2006 for recognition of Forest Right Act. Still, struggle, conflict and movements for forest land are pervading. As the tribal’s are illiterate and ignorant about the forest rules, regulations creating an inner conflict between tribal’s and the state.

The symbiotic relationship between tribal’s and forests contributed immensely for maintaining an eco-cultural balance between man and nature. This has been visibly disturbed not only due to fast depletion of forest cover, but also due to commercial exploitation of forests. The household income per annum (Mallik 1994, 1996 & 1998) has been curtailed greatly by: (i) growing forest-dependent tribal population on the limited forest resources; (ii) conversion of tribal rights into concessions (National Forest Policy 1952); (iii) exploitation of tribals by the middlemen (in various forms and magnitude) mostly due to their poverty, ignorance, illiteracy and low bargaining strength, besides the existence of very high trade margins at the hierarchical stages of disposal.
of NTFP’s and absence of a forest dweller-friendly market strategy of the government; (iv) unscrupulous use of forests by the vested interests and (v) lack of commensurate financial investments for regeneration of forests. In another study (Mallik 1992) shows that deforestation in recent years in Odisha has not only increased the drudgery of the women in spending more time, but also in covering huge distances (2 to 5 kms. & above) to collect firewood, NTFPs and other forest products, but also, has caused collection of inferior fuel, such as leaves, branches, twigs, tree roots, shrubs and weeds.

Apart from a few ethnographic and anthropological studies, little consideration had been given by ecologists and environmentalists to the gender dimension of indigenous knowledge systems. When the myths associated with such stereotypical thinking were unmasked, that feminist scholarship turned its attention to the knowledge systems of women. Now, acknowledgment is increasingly being given to the role played by women in many communities as the primary natural resource managers due to their intimate knowledge of the environment that enables them to maintain livelihoods, cultural continuity and community cohesion. Based on women’s role in production, their special knowledge of forests, and their place in the cultural and religious life of matrilineal communities, women enjoyed considerable space within the household and the community to make decisions about resource use.

It is evident in the tribal community present day practices socially acknowledge women’s knowledge of forests and agriculture. When the Munda (the headmen) go from one village to another, their wives lead them. Women’s knowledge of seeds, herbs, and plants is considered precious both in the family and community. Their knowledge of the roots of a particular plant is used to brew rice beer, the most sacred and popular drink of the people.

While women certainly continued to use forests after centralization, they often had to do so clandestinely and in short visits. In addition, many forests were changed into monocrops that provided few of the resources that women controlled historically. With limited access to a much altered forest, women’s ability to fend off forces of patriarchy was much reduced.

State efforts to centralize forest management did not go unopposed. Yet these movements did not often reassert women’s equal rights with respect to forest management, or any other aspect of social life for that matter. A shift in gender power from women to men was already well underway when such movements got started and local men used the moment to further consolidate patriarchy. In the process of changing forest use from swidden systems to settled, privately-owned fields, and the change from community access to private access to forest products, women had lost the source of their power and status. Men were fighting for the return of forests, not gender equality.
However, that situation is changing and women’s inclusion in committees is becoming more a policy norm. In many places, all-women groups have come up for forest management and protection. Women are seen to perform better in many management and production tasks. But these new norms of women’s inclusion, though still limited in space both vertically and horizontally have also come about through a process of struggle by women often supported by various external factors.

Rationale behind the research work is need-based and its outcome is quite genuine. The approach to a particular problem from different angle of research is realistic and authentic. Though many researchers and activities had undertaken research on tribals and forest, further research is needed because the society is changing and also the needs of the people is being changed.

In order to have upto date knowledge about the tribals and forest more and more research is required. The knowledge about tribal’s and their relationship with forest may enable scholars and the govt. people to implement the govt. provisions and rules and regulation. As the major chunk of the population of India is tribals and they have not been covered under the programmes and policies of the Government. So in order to make the programmes and policies used in tribal areas one must have to be awarded of time-to-time changes in the society

Concentration of ST/SC Population

The scheduled tribe (ST) and scheduled caste (SC) population and more particularly the ST population are very backward because of their tradition bound nature, ignorance, illiteracy, lack of awareness, dwelling in the inaccessible areas, etc. As a result, most of them have very poor living conditions. They are unable to afford the bundle of goods and services including food, education and health which are necessary for minimum existence. The SC/ST households, being disadvantaged, have a considerably higher incidence of poverty than other groups (Vaidyanathan 2001). So, it is the scheduled tribe population, which is mainly responsible for the poor living condition of the people of the state. In Odisha, the percentage of scheduled tribe population was about 23 per cent in the census as against about 8 per cent in India.

Objectives

1. Firstly the paper tries to examine the income, employment status of Munda tribe in Shyamakhunta block;
2. Secondly, it tries to find out the dependency of forest in the socio-economic life including forest activities; and
3. Thirdly to assess the poverty status of Munda tribes in the block.
Research Methodology

Consistent with the objective of the study different techniques are used for the analysis of the primary data collected from 182 selected respondents of fifteen villages by participant observation, interview, focused group discussion, key informant interviews etc of the Munda tribes according to a well set questionnaire under the sample Shyamakhunta blocks of Mayurbhanj district in the year 2012. The secondary data are collected from several published sources such as books, journals, bulletins, reports and publications of Government and research institution.

The data analysis is undertaken mostly with the help of several managerial and statistical devices, comparative and experimental methods of analysis are adopted. Various statistical tools like mean, Standard Deviation, Co-efficient Variation and Correlation coefficient are adopted for analysis. Here, for analysis the statistical tools SPSS (Statistical Package for Social Science) software package is used for calculation in order to plot different tables.

The study area and people

Mayurbhanj

It is one of the thirty districts of Odisha, which spreads over an area 10,418 sq km. The district accounts for 6.69 per cent of the total land mass of Odisha and hence the district is regarded as the largest among the 30 districts of the state. It is a land locked district which is bounded by Jharkhand and West Bengal state in the north, on the south by Keonjhar and Balasore. On the east side the district is bounded by West Bengal, Balasore, Keonjhar and Jharkhand state are located on the western side of the district. According to the data available through the 2011 census, the total population of the district was 25,13,895, which works out to be 5.99 per cent of the total population of Odisha. As per 2011 census, the district is characterized with a predominance of tribal population as the scheduled tribes constitute 58.72 per cent, out of total ST population, male constitute 49.37 per cent and female constitute 50.63 per cent. Literacy percentage in the district is 54.35, out of total literacy male constitute 57.99 per cent and female constitute 42.01 per cent. This tribal dominated district is inhibited by about 53 types of tribes, out of which the major tribes found in Mayurbhanj are the Santals, Munda, Kolha, Bhuyan, Bathudi, Gond etc.

Shyamakhunta

It is one of the 26 blocks of Mayurbhanja district which is predominately dominated by the scheduled tribe population adopted for the research work. The block has a total geographical coverage of 121 Sq.Km. and the block is located in the central part of the district. The block is bounded by Bangiriposhi and Kuliana blocks, Khunta and Barsahi.
block in the South. Similipal hills adorned the western side and Sadar block of the Mayurbhanj district is located in the eastern side of the block. About thirty kilometers of the reserve forest area of Simlipal Sanctuary is also located within the block. The block is situated 13 km far away from district head quarter, i.e., Baripada. The block is divided into 14 Grampanchayats for the panchayat level administration, which consists of 118 villages. As per the estimation there are around two millions of Munda People live in our country. Since the pre-independent India, this tribe is one among the highly respected tribes in our country. Among these tribal people, Birsa Munda, the Munda who turned to be a Prophet, is the most respected and revered one who has fought for the freedom of India. Even today his contribution to the Independence of India is recognized with high regard. The Munda tribe speaks a language which is called as Mundari. This language belongs to the Munda sub group of the Austro-Asiatic language family. The term Munda given to this community designates the name of the leader of the tribal community. Normally, the Munda identify them as “Hodoko” which means “Human Beings”.

**Empirical Findings**

In this regard, the primary purpose of this paper is to present the findings from field research with respect to livelihood and chronic poverty in the forest-based block Shyamakhunta of district Mayurbhanja in the emerging deforestation activities, which have begun to destroy the livelihood and food security base of the forest-dwellers, on which they had been depending upon from the time immemorial. In order to know their nature and degree of forest dependence, commercialization of NTFPs, changing consumption pattern, level of living, food security status, nature of their vulnerability and chronic poverty, have been indeed chosen to employ two criteria; (a) income group index; (b) sex index while grouping the sample households (from Shyamakhunta block of Mayurbhanj) due to differentiation of their living status in the forest region.
Table No.-1:
Distribution of Sample HHS according to various Income Groups and Size of Operational Holdings

<table>
<thead>
<tr>
<th>Size Class</th>
<th>Up to 6000</th>
<th>6000-11000</th>
<th>11000-15000</th>
<th>15000-18000</th>
<th>18000-25000</th>
<th>25000&amp; above</th>
<th>All Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>28(15.38)</td>
<td>64(35.16)</td>
<td>28(15.38)</td>
<td>22(12.09)</td>
<td>22(12.09)</td>
<td>18(9.89)</td>
<td>182(100.00)</td>
</tr>
<tr>
<td>Landless</td>
<td>2(22.22)</td>
<td>3(33.33)</td>
<td>3(33.33)</td>
<td>1(11.11)</td>
<td>0(0.00)</td>
<td>0(0.00)</td>
<td>9(100.00)</td>
</tr>
<tr>
<td>Marginal</td>
<td>18(13.74)</td>
<td>48(36.64)</td>
<td>20(15.27)</td>
<td>16(12.21)</td>
<td>16(12.21)</td>
<td>13(9.92)</td>
<td>131(100.00)</td>
</tr>
<tr>
<td>Small</td>
<td>8(29.63)</td>
<td>5(18.52)</td>
<td>3(11.11)</td>
<td>3(11.11)</td>
<td>4(14.81)</td>
<td>4(14.81)</td>
<td>27(100.00)</td>
</tr>
<tr>
<td>Medium</td>
<td>0(0.00)</td>
<td>8(66.67)</td>
<td>2(16.67)</td>
<td>2(16.67)</td>
<td>0(0.00)</td>
<td>0(0.00)</td>
<td>12(100.00)</td>
</tr>
<tr>
<td>Large</td>
<td>0(0.00)</td>
<td>0(0.00)</td>
<td>0(0.00)</td>
<td>0(0.00)</td>
<td>2(66.67)</td>
<td>1(33.33)</td>
<td>3(100.00)</td>
</tr>
</tbody>
</table>

Source: Primary Data 2012-13

It is confirmed from the data collected that operational holding of land of many provide them some amount social security and some income from agricultural activities. It is revealed from Table-1 that 131 (71.98%) are marginal farmers (Less than 2.5 acres of land), nine are landless and 27 households possess up to 5 acres of land, 12 households possess up to 7.5 acres of land and 3 households possess more than 10 acres of land.

From the point of income categories, out of total sample (182), highest 35.16 percentage from the income group Rs.6, 000/- to Rs.11, 000/-, followed by 15.38 percentage from up to Rs.6, 000/- and Rs.11, 000/- to Rs.15, 000/-, 12.09 percentage from the income group Rs 15,000/- to Rs 18,000- and Rs 18,000/- to Rs 25,000/- and rest 9.89 percentage from the income group above Rs 25,000/-. Among the size class, though the landless have no land, but they have generated income from non-land resources.
Table No.2:
Source wise Per Household Annual Income according to various Sources of Income (Value in Rs)

<table>
<thead>
<tr>
<th>Income Groups</th>
<th>No. of HHs</th>
<th>Forest Sources</th>
<th>Non - Forest Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>NT- FP</td>
<td>Fuel Wood</td>
</tr>
<tr>
<td>All</td>
<td>182</td>
<td>994.15</td>
<td>1019.06</td>
</tr>
<tr>
<td>Up to 6000</td>
<td>28</td>
<td>868.25</td>
<td>1225.46</td>
</tr>
<tr>
<td>6001-11000</td>
<td>64</td>
<td>1048.4</td>
<td>1269.54</td>
</tr>
<tr>
<td>11001-15000</td>
<td>28</td>
<td>1353.46</td>
<td>1280.67</td>
</tr>
<tr>
<td>15001-18000</td>
<td>22</td>
<td>991.58</td>
<td>870.52</td>
</tr>
<tr>
<td>18001-25000</td>
<td>22</td>
<td>805.07</td>
<td>480.45</td>
</tr>
<tr>
<td>25000&amp; Above</td>
<td>18</td>
<td>672.45</td>
<td>240.33</td>
</tr>
</tbody>
</table>

**Source**: Primary Data 2012-13

While looking at the constituents of income sources from various sources in the block as a whole according to income groups (Table-2), it is noticed that there is an inverse relationship between the size of income group and percentage of income derived from forest sources. In other words, as we move up the income class ladder from Rs.6000/- to Rs.25000/- and above group the contribution of income from forest sources in terms of percentage goes down. This precisely suggests that lower income group households derive more income from forest sources and depend more indeed compared to households of higher income groups, who derive larger income from non-forest sources. However, a positive relation is distinctly visible in case of non-forest sources of income (with increase in size of income group) from Rs.3582.50/- in the lowest group (up to Rs.6,000/-) to Rs.32009.58/- in the highest income group (Rs.25000/- & above).
### Table No.-3:
**Per Household Value of Total collection, Sale & Consumption from forestry sources (in Rs)**

<table>
<thead>
<tr>
<th>Sl.No</th>
<th>Special Indicators</th>
<th>Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>No. of HHs</td>
<td>182</td>
</tr>
<tr>
<td>2</td>
<td>Total Value of Collection from all forest sources ((3+4+5))</td>
<td>2632.25</td>
</tr>
<tr>
<td>3</td>
<td>Sale</td>
<td>1066.97 (40.53)</td>
</tr>
<tr>
<td>4</td>
<td>Consumption</td>
<td>1536.82 (58.38)</td>
</tr>
<tr>
<td>5</td>
<td>Wastage</td>
<td>28.46 (1.08)</td>
</tr>
<tr>
<td>6</td>
<td>Total Procurement value excepting wastage ((2-5)=(3+4))</td>
<td>2603.79</td>
</tr>
<tr>
<td>7</td>
<td>Income from all forest Sources (excepting value of consumption of forest products) ((2-4))</td>
<td>795.43</td>
</tr>
<tr>
<td>8</td>
<td>Total Income from All sources</td>
<td>14474.50</td>
</tr>
<tr>
<td>9</td>
<td>% of value of total forest collection to total income from all sources ((2/8*100))</td>
<td>18.19</td>
</tr>
</tbody>
</table>

**Source**: Primary Data 2012-13

The collection value of sale and consumption per household is presented in Table-3. It is evident that collection of types of NTFP’s is made for purpose of meeting food sustenance and also, for sale. Due to the introduction of JFM in the sample villages, the members of VSS’s are entitled to collect their daily food sustenance from the protected forest areas due to grant of usufruct right over the products in lieu of protection and conservation. It is noticed from table that while sale value of forest products constitutes 40.53 per cent and the value of forest products for consumption constitutes 58.38 per cent and the value of wastage constitutes 1.08 per cent in the sample block.

It seems the value of consumption constitutes a major part of the total procurement in all sample Mundas of the sample block. In an attempt to ascertain the degree of dependence on forest source it is distinctly visible that 18.19 per cent income is derived from forest sources to total annual income from all sources in villages of sample blocks and most of the Munda people do not depend much on forest source. It is exclusively due to conservation and protection of village forest which is far from the forest region of the block of Mayurbhanj.
Table No.- 4: 
Per Household Sale of various forest Products (by sex) according to Income Groups (in Rs)

<table>
<thead>
<tr>
<th>Income Groups</th>
<th>No. of HHs</th>
<th>No. of Person Engaged</th>
<th>Male</th>
<th>Female</th>
<th>Child</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>182</td>
<td>96</td>
<td>520.72</td>
<td>1008.55</td>
<td>4.438</td>
<td>1533.71</td>
</tr>
<tr>
<td>Up to 6000</td>
<td>28</td>
<td>10</td>
<td>544.39</td>
<td>913.62</td>
<td>10.24</td>
<td>1468.25</td>
</tr>
<tr>
<td>6001-11000</td>
<td>64</td>
<td>22</td>
<td>716.21</td>
<td>1074.05</td>
<td>8.14</td>
<td>1798.4</td>
</tr>
<tr>
<td>11001-15000</td>
<td>28</td>
<td>36</td>
<td>724.36</td>
<td>1429.01</td>
<td>0</td>
<td>2153.46</td>
</tr>
<tr>
<td>15001-18000</td>
<td>22</td>
<td>18</td>
<td>210.14</td>
<td>1101.44</td>
<td>0</td>
<td>1311.58</td>
</tr>
<tr>
<td>18001-25000</td>
<td>22</td>
<td>4</td>
<td>193.77</td>
<td>791.3</td>
<td>0</td>
<td>985.07</td>
</tr>
<tr>
<td>25001 &amp; Above</td>
<td>18</td>
<td>6</td>
<td>251.21</td>
<td>421.24</td>
<td>0</td>
<td>672.45</td>
</tr>
</tbody>
</table>

Source: Primary Data 2012-13

The income-group wise sale of NTFPs per household by the male, female and child is presented in Table-4. Though, the per household sale of NTFP’s by all is Rs.1533.71/- in the block and no definite trend across the income groups is noticed excepting that the sale value of female persons is higher than their male counterparts irrespective the size of the income group. The contribution of children in the blocks however is very negligible. Thus, female participation in sales activities in tribal economy is of crucial significance.

This precisely shows how vulnerable the forest dependent tribals in different villages of Shyamakhunta blocks are exclusively due to massive deforestation, destruction of the forest resource by mining activities in the reserve forest and dense forest areas resulting in collection of inferior fuel wood, dry leaves and charcoal from the adjacent forests and VSS assigned area. Evidently, no nutritious fruits, roots, oil seed etc have been collected for their food sustenance, thus, their food security seems to have been seriously affected due to the emerging recent devastating deforestation and the so-called infrastructural development in the forest regions.
Table No.- 5:
Sex-wise per Household per Person Working days engaged in Forestry Activities According to Income Groups

<table>
<thead>
<tr>
<th>Income Groups</th>
<th>No. of HHs</th>
<th>No. of Person Engaged</th>
<th>Male</th>
<th>Female</th>
<th>Child</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>182</td>
<td>197</td>
<td>52.16</td>
<td>84.85</td>
<td>11.14</td>
<td>148.15</td>
</tr>
<tr>
<td>Up to 6000</td>
<td>28</td>
<td>9</td>
<td>48.75</td>
<td>66.5</td>
<td>7.5</td>
<td>122.75</td>
</tr>
<tr>
<td>6001-11000</td>
<td>64</td>
<td>33</td>
<td>68.38</td>
<td>87.69</td>
<td>16.23</td>
<td>172.31</td>
</tr>
<tr>
<td>11001-15000</td>
<td>28</td>
<td>69</td>
<td>62.71</td>
<td>129.04</td>
<td>23.67</td>
<td>215.42</td>
</tr>
<tr>
<td>15001-18000</td>
<td>22</td>
<td>32</td>
<td>47.82</td>
<td>119.27</td>
<td>5.27</td>
<td>172.36</td>
</tr>
<tr>
<td>18001-25000</td>
<td>22</td>
<td>31</td>
<td>31.27</td>
<td>43.47</td>
<td>0</td>
<td>74.73</td>
</tr>
<tr>
<td>25001 &amp; Above</td>
<td>18</td>
<td>25</td>
<td>14.25</td>
<td>43.04</td>
<td>0</td>
<td>57.29</td>
</tr>
</tbody>
</table>

Source: Primary Data 2012-13

The engagement in forestry activities such as collection, processing forestry activities and so also in sales, despite differentiation depends on availability and potential of types of NTFPs. Therefore, Table-5 that presents sex-wise per household annual per person days employment in forestry activities in the sample blocks indicate that while the Munda households reported to have secured 148 days of employment. However, the female person days of Munda households in the block are 85 days which is higher than their male counterpart. In connection to income categories, the highest (69) no of person engaged in forestry activities in the income groups Rs11, 001/- to Rs 15,000/-, as the higher sample selected from lower income groups. Among the sex, females have the highest person days of employment in forestry activities than their male counterpart. Per person days employment of male and income groups presents in inverse relationship as the per person days employment increase with the decrease of income groups. As the female is the main actor in the socio-economic life they have more involvement in forestry activities. It is evident that the female engaged 129 days engaged in forestry activities in the income group Rs 11,001/- to Rs 15,000/-. Next to 119 days engaged in forestry activities in the income group Rs 15,001/- to Rs 18,000/- . Interestingly, the female in higher income have the lowest person days of employment in forestry activities.
Table No.- 6:
Item-wise Average Annual per Household Consumption Expenditure, Income & Total Average Poverty Estimates According to Income Groups (Value in Rs)

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Items</th>
<th>All</th>
<th>Up to 6000</th>
<th>6001 - 11000</th>
<th>11001 - 15000</th>
<th>15001 - 18000</th>
<th>18001 - 25000</th>
<th>25001 &amp; Above</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. of HHs</td>
<td>182</td>
<td>28</td>
<td>64</td>
<td>28</td>
<td>22</td>
<td>22</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>Total Income From All Sources</td>
<td>14474.5</td>
<td>6176.21</td>
<td>9720.25</td>
<td>13848.5</td>
<td>17253.01</td>
<td>21695.53</td>
<td>33039.03</td>
</tr>
<tr>
<td></td>
<td>Forest based food</td>
<td>592.441</td>
<td>202.5</td>
<td>463.08</td>
<td>1693.92</td>
<td>886.55</td>
<td>233.33</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>Non-forest food</td>
<td>12367.1</td>
<td>5576.25</td>
<td>13299.23</td>
<td>9069.17</td>
<td>10950.91</td>
<td>14783.67</td>
<td>23524.17</td>
</tr>
<tr>
<td></td>
<td>Other Non-food</td>
<td>2544.57</td>
<td>1287.5</td>
<td>1396.15</td>
<td>2287.92</td>
<td>2866.36</td>
<td>4447.47</td>
<td>6251.25</td>
</tr>
<tr>
<td></td>
<td>Annual Consumption Expenditure (3+4+5)</td>
<td>15504.1</td>
<td>7066.25</td>
<td>15158.46</td>
<td>13051</td>
<td>14703.82</td>
<td>19474.47</td>
<td>29800.42</td>
</tr>
<tr>
<td></td>
<td>No.&amp; % of HH’s Income below Consumption Expenditure</td>
<td>138(75.82)</td>
<td>28(100.00)</td>
<td>64(100.00)</td>
<td>19(67.86)</td>
<td>15(68.18)</td>
<td>6(27.27)</td>
<td>6(33.33)</td>
</tr>
<tr>
<td></td>
<td>No.&amp; % of HH’s Income above Consumption Expenditure</td>
<td>44(24.18)</td>
<td>0(0.00)</td>
<td>0(0.00)</td>
<td>9(32.14)</td>
<td>7(31.82)</td>
<td>16(72.73)</td>
<td>12(66.67)</td>
</tr>
</tbody>
</table>

Source : Primary Data 2012-13

Item-wise average per household consumption expenditure, total average income and poverty estimates according to the ethnic group (Table-6) suggests as much as 75.82 per cent (138) of total households, who fail to meet their annual consumption expenditures from their all sources of income. It is revealed from the table that all the Munda households are unable to meet their consumption in the income groups up to Rs. 6000/- (28) and Rs 6000/- to Rs 11,000/- (64), next 67.86 per cent (19) in the income group Rs 11,000/- to Rs 15,000/-, 68.18 per cent (15) in the income group Rs 15,000/- to Rs 18,000/-, 27.27 per cent (6) in the income group Rs 18,000/- to Rs 25,000/-, and 33.33 per cent (6) in the income group Rs 25,000/- and above. These households are indeed live in poverty and very much prone to under-consumption,
indebtedness against mortgages, land alienation and mortgages of their BPL cards. But, those, who at least are identified above this total annual consumption expenditures cannot be called very safe, since the income sources are not sustainable, and at any moment, they could be turned vulnerable.

Table No. - 7: Estimates of Poverty

<table>
<thead>
<tr>
<th>Poverty</th>
<th>Status No. of HHs</th>
<th>Income Groups</th>
<th>Average Income</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Non-Poor</td>
<td>16</td>
<td>Above &gt;22000</td>
<td>33326.66</td>
<td>8.79</td>
</tr>
<tr>
<td>Not-So-Poor</td>
<td>24</td>
<td>Below &lt;22000</td>
<td>18861.23</td>
<td>13.19</td>
</tr>
<tr>
<td>Poor</td>
<td>50</td>
<td>Below &lt;18000</td>
<td>13643.54</td>
<td>27.47</td>
</tr>
<tr>
<td>Chronic Poor/ Ultra poor</td>
<td>92</td>
<td>Below &lt;11000</td>
<td>8740.56</td>
<td>50.55</td>
</tr>
<tr>
<td>Total</td>
<td>182</td>
<td>135</td>
<td>83.54</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Source: Primary Data 2012-13

Further, the estimates of poverty among the sample households presented in Table 8 (according to income groups), provide us additional information regarding magnitude of their poverty in the sample blocks. It is categorized as 'Chronic Poor' households. Despite, variations across the sample villages in the block, of total all sample households, 16 are 'Non-Poor', 24 are 'Not-So-Poor', 50 are 'Poor' and 92 are 'Chronic Poor' households in the block, who indeed belong to Munda tribes. It is evident from table that more than 50 per cent are living under poverty.

BPL Poverty Estimate

At this stage, an attempt is made here to ascertain categories of poor sample households on the basis of poverty level estimates by the Planning Commission (following well defined monthly consumption expenditures computed by the NSS from time to time) on the one hand and total income (forestry and non-forestry sources) accrued to sample households of sample villages in the Shyamakhunta forested regions (blocks) of Mayurbhanja district on the other. Accordingly, data on prescribed annual poverty level of income (of standard household size) of different periods and the average current annual income of standard family size sample households. However, we propose here to identify four categories of poor households on the basis of the empirical data on per household annual total income vis-à-vis poverty level
It is believed that the economic disparity and social exclusion are distinctly reflected in high incidence of poverty and its concentration in forest based economy of the state of Odisha. A pertinent question that often arises in the context of high incidence of poverty among the tribals is whether poverty among the Munda tribal communities is high mainly due to their social identity and marginalization. Alternatively, poverty and vulnerability among the tribals are very high due to their greater dependence on forest and their physical isolation from the centre of governance. However, in the light of poverty estimates generated by Haan and Dubey (2003) for the year 1999-2000 it is noticed that 73.0 per cent of tribals are poor in Orissa with fairly low in the northern region (61.7%).

Table - 8:
Rural Poverty Estimates According to Planning Commission (in Rs.)

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Poverty Level Annual Income</th>
<th>Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>&gt; 22000</td>
<td>Non-Poor</td>
</tr>
<tr>
<td>02</td>
<td>&lt;22000</td>
<td>Not – So-Poor</td>
</tr>
<tr>
<td>03</td>
<td>&lt;18000</td>
<td>Poor</td>
</tr>
<tr>
<td>04</td>
<td>&lt;11000</td>
<td>Chronic Poor/Ultra Poor</td>
</tr>
</tbody>
</table>

The proposed categorization of status of households on the basis poverty level income estimated by the Planning Commission at different points of time is somewhat more scientific (despite series of criticisms on the methods of its computation) for the limited purpose of the use here so as to argue the extent and magnitude of poverty in the studied block of Mayurbhanj. Therefore, it may be a rough and ready method in classifying/categorizing the sample households on the basis of total income derived from both forestry and non-forestry sources vis-à-vis poverty level income estimates by the planning commission. Indeed, it is roughly estimated the poverty level annual income (Rural) at Rs. 22,000/- (prescribed for the 11th Five Year Plan) and propose to argue that those who have earned above this level of income may be categorized as ‘non-poor. By this, it is believed that such a categorization of households is not very rigid, (and at any time, they could enter into BPL) but this enables to identify at least the sample households and their extent of poverty/livelihood status in a definite statistical framework to support the analytical view points on poverty in the forested regions of Mayurbhanj.
On inspection of Table-7 which presents the estimates of Poor/BPL households, interestingly, it is noticed in the block, (which is a fully scheduled one) 16 (8.79 %) sample household in the block has total income over and above the prescribed poverty level of income of Rs. 22000/-, followed by have identified 13.19 per cent (24) households in the Rs. 22000/- category, 27.47 per cent (50) households below the level of income of Rs.18000/- and the rest 50.55 per cent ( 92) of total households (182) having income below the level of Rs.11000/-(around half of the present level of income). Therefore, according to the categorization, while we call above Rs.22000/- per annum income holders as “Non–Poor” and below Rs.22000/- annual income holders may be called “Not-So-Poor” category.

**Table No.- 9: Standard Deviation & Corelation between Income and Consumption**

<table>
<thead>
<tr>
<th>Income Groups</th>
<th>Income</th>
<th>Consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Forest</td>
</tr>
<tr>
<td>All</td>
<td>14474.50</td>
<td>2632.25</td>
</tr>
<tr>
<td>Up to 6000</td>
<td>6176.21</td>
<td>2593.71</td>
</tr>
<tr>
<td>6001-11000</td>
<td>9720.25</td>
<td>2829.48</td>
</tr>
<tr>
<td>11001-15000</td>
<td>13848.50</td>
<td>3822.67</td>
</tr>
<tr>
<td>15001-18000</td>
<td>17253.01</td>
<td>2543.92</td>
</tr>
<tr>
<td>18001-25000</td>
<td>21695.53</td>
<td>1992.19</td>
</tr>
<tr>
<td>25001 &amp; Above</td>
<td>33039.03</td>
<td>1029.45</td>
</tr>
<tr>
<td>STDEV</td>
<td>8800.64</td>
<td>847.17</td>
</tr>
<tr>
<td>CORREL</td>
<td>-0.76</td>
<td>-0.38</td>
</tr>
</tbody>
</table>

To assess the dependency of forest, it is very crucial to analyze the Standard Deviation and Corelation between which is depicted in Table-8. It reveals that total forest based income is 847.17, but consumption expenditure from forest is 565.56 which signifies that munda people greatly depend on forest from the standard deviation calculation but co-relation calculation shows that consumption expenditure from forest sources is half of the total forest income.

**Marketing of MFPs.**

All biological materials (other than timber) mentioned above and many more, which are extracted from the forests for human use, are the base of livelihood of tribals. Apart
from the obvious fruits, nuts, honey, wood, meat, leaves, resins etc. Other things like various stems are cut sized for the construction of walls for house etc. Marketing of MFPs is not yet systematically done. They sale those at their homes or at the village markets for cash or kind. LAMPS, meant for marketing of products are giving the tribals the fair price but are not functioning properly. The tribals are also do not know anything about the govt. fixed prices and the marketing facilities. They face a great problem in selling their products. The economy has given rise to all kind of exploitation they cannot get a good price for the forest products that they sale in the market they are cheated in weights and measures and further, they are not actuated monetary incentives to produce more so as to get the benefit of economic motivation.

The process of extraction of MFP’s and their presentation and processing is also primitive type. They employ their indigenous knowledge of preservation and as they are not trained in this regard they cannot keep the goods for a fairly long time. Sometimes the goods get roasted and frozen are thrown away. In rainy season the people face more difficulties.

Though they collect the products regularly, the marketing/selling is not possible regularly. For this purpose the village markets are not enough, so they have to go to Baripada to sale the products. Baripada, the district head quarters is approximately 25 kms away from the tribal forest and they have to go there by walking. They have to halt at Baripada and sleep on the roadsides at night. Now a- days some have their own bicycles which helped them a lot in transportation.

**Conclusion and Suggestion**

Tribal communities in the block have very close links with forests. They are dependent on forests for a major part of their means of livelihood and have cultural links with forest. Though deforestation and increasing restrictions imposed upon the uses of forest resources by govt. have adversely affected the lives of tribals they are still struggling for survival. The major findings are shortened and are mentioned below.

(i) A little change is seen as a result of implementation of government policies designed for tribals but most of the tribals waiting for basic facilities like good housing, roofing, ponds and wells for drinking water, toilets and latrines.

(ii) The traditions of forest gathering are combined with a lack of concept of future planning and enterprising spirit to improve their circumstances.

(iii) Most of the tribal population live on agriculture but an advanced technique of cultivation is not accepted / adopted yet, and the people faced food scarcity because of less productivity.
(iv) The practice of animal husbandry is equally dependant on forestry or the forest products rich grazing ground for the cattle and other domesticated animals with its huge repository of grass and green foliage.

(v) The knowledge of medicinal herbs and plants around them take care of their health problems and keeps them fit to pursue the economic goals in adverse natural conditions.

(vi) Besides meeting their food demands and medicine requirements, the forest provides the tribals with all required raw materials for home construction.

(vii) Tribals collect the dried or scattered things for daily use and the bamboos for making mats and baskets. The forest officials threat on the tribals and get back the forest produces. The present Government Forest Policy has led to the exploitation of the tribals by the forest officials.

(viii) The contractors become the master of forest and the tribal people are left at their mercy, contracts provide employment to the tribes and they purchase MFPs and the cost by trees on the private land of tribals at a very low price because they have the base permit.

(ix) Women are more intensely associated with NTFP in all its aspects. They spend considerably long house in collection of NTFP’s from different terrains and far away places inside the forests as also processing and marketing of NTFP, but do not get to receive what is right fully and the neglected.

(x) No tribal people have any idea on forest policies and they also admit know that the government roles of the forest products and are uneducated enough not to understand how they are exploited by the market forces and have almost accepted the hardship and suffering and denial of their rights.

From the discussion it is seen that the changing eco-system is leading to a significant negative change on tribal economy. In order to save both the degradation of forests and tribal economy the following remedial measures are suggested.

(i) First of all the tribal agriculture should be considered. For a long time, agriculture has been the main source of livelihood, but the units of their land ownership are extremely small. Since ownership rights of land among tribals are awfully insecure and alienation of land is common, tribal people are hardly attached to their property rights. This is the proper time when co-operatives can be organized among tribals for deriving economics of large-scale production.
(ii) Horticulture should be developed to a wide extent. These are the regions in which abundant fruit crops are grown but unfortunately the tribals do not derive any benefit from these crops due to lack of marketing facilities and preservation. Middlemen are exploiting them. So fixed rates should be imposed on these products and the fruit processing industries should be set up.

(iii) The farming, gotery and poultry can be conveniently taken up in this area. There will be no difficulty for food or fodder In other words, mixed farming is an essential aspect of economic development here.

(iv) Deforestation is caused largely due to insufficient availability of firewood in villages. Village forest should be developed on government lands. Quick growing species should be planted to give quick results under the social forestry scheme.

(v) Some money may be spent on the village forest committees for the maintenance of these forests so that the people will give more attention towards protection of forests. This will reduce government expenditure in entrusting as large number of forest guards, forecasters etc. who are quite in effective in maintaining these forests in the face of non-co-operation from the village community.

(vi) A system of awards right from the Gramasabha to National level should be introduced to encourage the village community for proper up-keep of their village forests.

(vii) Contractor system may be abolished in order to check exploitation of tribals by who usually take the lease on forest produce. Government may provide facilities to sell the products in the open market or through tribal cooperative societies. The outsiders should be restricted to collect the forest products in the tribal using forest areas.

(viii) Employment opportunities throughout the year may be promoted through the development of forest-based small and household industries and proper training may be given to tribal women. Training mainly in carpentry or other forest based artistry so that they can get new materials from forest.

(ix) Restrictions on stone quarry near or inside the forests should be made so that the forests can be saved and if required that the stone crusher’s workshops should be set up far away from forest area.

(x) Both the policy of tribal development and forest development should be implemented in such a way that the interest of farmer should not be hampered at the cost of the later or vice versa.
(xi) Last but not the least emphasis should be given on modernization of tribal economy. It has been said by Gunar Myrdal that economic development depends on two factors, attitude change and institutional change. Suggestions for institutional developments are made but no institution can work unless the people are interested to make them work. In order to bring the tribals into the mainstream awareness should be created regarding their rights and duties. Their responsibilities and involvement and the changing pattern, which is envisaged for them and the work, they have to do in bringing about such changes. A conscious and willing tribal community can change tribal life and prevent exploitation much more quickly.

Suggestions Rendered by the Respondents
(i) Adequate measures for generation of employment and income based on forest resources have to be taken. In this context, forest based small scale industries cottage industries / processing units, depending on the availability of forest resources, may be set up in local areas.

(ii) Alternative employment opportunities in the locality have to be created so as to reduce the over dependence on forest. In this context, provide irrigation facility may be one of the possible alternatives.

(iii) Support services such as processing, packaging and marketing of forest products are necessary.

(iv) VANA Samrakshyan Samitis may be formulated with the provision of forestland and well defined property right.

(v) Forest dwellers and Gram Panchayat members should be aware of the new NTFP policy and Joint Forest Management.

(vii) The Primary collectors of forest products should be aware of the minimum price fixed by the government or authorized agencies.

(vii) Self-help groups among the primary collectors of forest products should be formulated.

(viii) Institutional credit may be provided to these self-help groups.

(ix) Gram Panchayat should strictly prohibit the unregistered businessmen / middlemen to involve in trading / procuring of forest products.

(x) There are number of non-timber forest products such as mahua seed, kusuma seed, sal seed and sal leave, etc. collected within a specific time period in a
year. But due to lack of storage facilities, primary collectors do sale them at below the support price fixed by the government. So storage facilities for these products may be provided.

(xi) The forest dwellers which do not have alternative source of livelihood must have to be ensured the right to own a specific area of forest land particularly for cultivation.

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Development and Socio-economic Changes among Rural Women of Chilika Lake, Odisha, India.

GEETANJALI PANDA *

Abstract: The paper highlights impact of development processes on socio-economic life of Fisher women of Chilika Lake, the largest brackish water lagoon of India, situated in the eastern coast of Indian peninsula. A wet land like Chilika Lake is the major occupational source for fishermen, the dominant ethnic group of this area. The lake is connected with Bay of Bengal near Arakhakuda village, the study area where it provides scope for multipurpose development projects for culture, capture of fisheries, tourism, trade defense out of which fishing is the principal activity. The fisherwomen not only play significant role in the pre and post-harvest operation in capture of fisheries, their presence is also conspicuous in all the stages of culture of fisheries. Their role in household management is far higher than the women of other sectors. The main occupation of women include collecting fish, drying, curing, marketing of fish, shrimp processing and net making. The overall structural changes in the marine fisheries sector have brought about export oriented development efforts which dislodged a good proportion of women from employment. After mechanization and intensification of multi-day fishing, the household responsibility of fisherwomen has increased to a greater extent. Adoption of modern equipment like fish finder, GPS, and mobile phone has enabled them not only to venture for deep-sea fishing but also to extend fishing trips up to five days per week. Though the family income is more, the continued absence of fisherman for a long time forces her to bear more responsibilities.

Introduction

Chilika lake, the largest brackish water lagoon of India, situated in the eastern coast of Indian peninsula. A wet land like Chilika lake is the major occupational source for fishermen, the dominant ethnic group of this area. The Chilika lagoon remains a vital lifeline for more than 200,000 people who live in 141 villages. Their main occupation is catching fish in the Chilika Lake and sea (Bay of Bengal). (Sabita Acharya,2000)

In recent years the marine fish economy has gained importance because of substantial foreign exchange earned through export of prawn and other variety of fishes. As in all subsistent economies, women play an active role in the Nolia fishing communities of Puri district of Satpada area, Arakhakuda village. The fishermen around the Chilika have their expertise in both marine fishing and inland fishing.

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With the increasing commercialization and mechanization of marine fishing the rights of traditional fishing communities have been in focus. Fisheries now have become a market driven developing sector which require massive capital inputs. Traditional and subsistence fishing have become resilient. The processes of modernization and commercialization not only put enormous pressure on marine ecosystem but also threatened the very survival of traditional and subsistence fisheries. It is imperative, first on the part of the traditional sector and secondly on the part of those who promote it to find ways and means to keep their economy and culture dynamic and resilient. Sustainability of the marine fisheries economy very much depends on culture and their social way of life of the fisher folks that are invaded and suppressed by the corporate that put huge amount of capital on the fisheries project. Instead of invading and suppressing the traditional knowledge and culture, modern technology can be used to enrich them, provided the traditional communities are empowered to regain their lost control over resources. (Nirmal and Baral, 2001)

According to a United Nation’s report women perform 2/3rd of the world’s work, receive only 10% of the world’s income and own only 1% of the total assets. The transformation of fisheries sector, mainly brought by mechanization, has engendered multi-faceted changes in the role and contribution of fisherwomen.

In Indian scenario there are about 0.5 million fisher households located all along the Indian coast and a total of 3 million fisher folk inhabiting the coastal villages. The average number of sea going fishermen is 282 in a coastal village. Out of the 1.2 million fisher folk in post harvest sector, women occupy a considerable proportion of more than 0.5 million (Sathiadhas et al., 1998). They play a significant role in the pre and post- harvest operations in capture fisheries while their presence is conspicuous in all the stages of culture fisheries. Their role in household management is far higher than the women of other sectors. Majority of the labour force in the pre-processing and processing plants of shrimp are women. Women also occupy a very good proportion of the workforce in export oriented processing of cuttlefish, lobsters, and finfish varieties. In Tamilnadu, women engage themselves in seaweed collection in addition to the traditional jobs of fish curing, marketing, net making and prawn seed collection. Salt-pans are another major sector, which employs a lot of women in Tamilnadu, where the ratio of women to men is 4:1. In Andhra Pradesh, the main occupation of women include collecting fish, and molluscan shells in addition to their contribution in fish drying, curing, marketing, shrimp processing and net making. In West Bengal, fishermen spend only little time in actual fishing and engage themselves in net making, which in other states is dominated by women. Women from communities other than fisher folk carry out fish drying and curing. In Maharashtra women play a major role in fish marketing and control Women in Fisheries.
The entire fisheries economy is revolving around Mumbai. In Gujarat women mostly do the handling and processing activities. In Lakshadweep, particularly Minicoy, the major fishery products known as *masmin*, *riha*, and *akru* of tuna are produced mainly by women. However, the overall structural changes in the marine fisheries sector brought about by mechanization, extensive use of ice in local markets and export oriented development efforts have dislodged a good proportion of women from employment sectors like fish drying, curing, dry fish trade and net making. The scope of providing alternate employment for more women in the sector and thereby invigorating their socio-economic progress as well as the growth of marine fishery sector remains unexplored.

This paper highlights impact of development processes on socio-economic life of fisherwomen of Chilika lake. It is an ethnographical study based on fieldwork methods. Empirical data were collected through anthropological methods like observation, interview, case study, sampling and Schedule.

Arakhakuda village the study area comes on the way to Satpada from Puri. It is twenty (20) km distance approximately. The village is one side open to road and another side is bounded by the Chilika Lake. It comes under Krushnaprasad block having population around 5000(collected from secondary sources). From which I have taken census of 250 households and data from some surrounding villages are also taken for cross checking. The villagers under study (Arakhakuda), are called themselves as Nolia in Orissa due to the traditional wearing of golden rings in their ear. The fishermen are originally migrated from coastal Andhra Pradesh and they are Telugu speaking people. Where as in some other villages people are Oriya speaking Nolias who are from Kujang and Paradeep. They considered them as superior than Telugu speaking Nolias. So we found a mixture of both culture in Arakhakuda village and they are trying to integrate them in to the mainstream of Oriya culture.

**Discussion and analysis**

**Social issues**

In all subsistence economy women play double burden of work that are managing the household and caring for the children. Their most basic struggle revolves around trying to get enough for their families and for themselves, and procuring the most basic necessities of life such as food, fuel and water. They play a significant role in the pre and post- harvest operations in capture fisheries while their presence is conspicuous in all the stages of culture fisheries. Their role in household management is far higher than the women of other sectors. The indirect role women play are concerning decision making, financial management, family welfare, net making, running petty shops and mobile food supply for the workers at the landing centers and fish markets. The more
direct involvement of women is in post-harvest related activities viz. unloading, segregating, fish trading, making dry fish etc.

The fisher women, being exposed to modernization, have become aware of the great risk involved in the traditional type of delivery which is done by Dhai. They are now increasingly taking the help of trained women for delivery. There is one ANM (assistant Nurse cum mid wife) posted in the local gram panchayat. These young women have taken short training in conducting delivery. They are called as ASHA members. The ANM and ASHA members distribute some tablets among pregnant women. Most of women have been administered anti-polio vaccines.

The child marriage is in practice in this village. There for voice has been raised in recent years by several groups and organizations through audio and visual media against child marriage. Now the people are not practicing child marriage anymore. Dowry system is very much prevalent among the traditional fisher folk in Orissa. In the past, marriages were taking place generally within the same village or in nearby villages. However, in recent years a new trend has developed. Marriages are taking place in distant places of the state and even outside. Some of the places in which the fisher women boys and girls have been married are Puri and Paradip town of Orissa and Srikakullam town of Andhra Pradesh due to easy communication facilities and transport facilities. The surrounding villages of Arakhakuda like Gobakunda, Sipakuda, Jenapur are more or less followed the same tradition. Young boys and girls have tended to wear modern dresses. Full pants and shirts are also popular among other fisher women youths. Similarly young fisher women girls have developed fascination for modern dresses whether educated or uneducated. They wear frocks and salwar-kamij. From their clothes one can have an idea about the educational and economic background of fisher women. Those fisher women who have better educational and more developed, dressed themselves better than other women.

Tattooing is common to fisher women (both men and women). A Fisher woman tattoos her name or the name of her husband on the body of her right hand. She believes that after her death she will not be punished by Yama (the lord of death), if she has tattoo her hand some fisher women tattoo a black spot on the center of the forehead. It is interesting to note that tattooing has become a fashion for some modern young men and women of cities and towns of India, particularly among cinema stars and models. But these people are due to this modernization hesitate to do tattoo or adopt their traditional culture. Most of men and women are illiterate. Traditionally, they have been averse to getting education. They have failed to positively respond to the educational initiatives of Government and voluntary organizations. However, the efforts of Government and voluntary organizations to spread education among fisher women have not been a total failure. They have achieved some success. Many fisher women
boys and girls have not only passed M.E. and High School the drop out in schools is much higher in case of girls than boys. Education is the gate-way to development and Fisher women need to be sensitized about this. Without education, fisher women will fail to move (Susmita, 2011)

Recent development in fishery sector

Fisheries sector, a sunrise sector in India, has recorded a faster growth than that of crop and livestock sectors. With the change of consumption pattern and technological development this sector is undergoing rapid transformation and the policy support, production strategies, public investment in infrastructure, and research and extension for fisheries have significantly contributed to the increased fish production in the sector. It has assumed added importance. This sector not only contributes to the livelihood of a large section of economically-underprivileged population of the country but has become foreign exchange earner and generator of employment for many.

Technological development

1. Quality of seed production
2. Availability of low cost feed material
3. Redesigning and fabrication of fishing gears and nets
4. Availability of GPRS to fishermen

Infrastructural development

1. Construction of fishing jetties and landing centers
2. Construction of cold storage near landing centers
3. Introduction of motorized boats
4. Supply of ice box
5. Cool chain facility

Market development

1. Institutionalizations of fishermen cooperative marketing societies
2. Creation of cold storage facility near jetties
3. Grading and standardization

It's Impact in economic life of the fishermen communities

The indirect role women play are concerning decision making, financial management, family welfare, net making, running petty shops and mobile food supply for the workers at the landing centers and fish markets. The more direct involvement of women are in post-harvest related activities viz. peeling, fish trading, export oriented
works, making value-added products, small scale entrepreneurship, fish curing, etc. They collect fresh raw materials from landing centre directly and the items are processed within four hours. The better quality of the products helped them to fetch good price and assured market. Now they supply the products to leading super markets and even export agents. Assured quality of products, integrity of group members, training in improved and hygienic methods of handling and above all their enthusiasm helped the group to reap success.

This is a case study of simple women who with the changing technological process changed her and mobilized others and finally example for both family and others women.

**Case study**

Buli Dei is a widow of around fifty-six years, but her energy and enthusiasm is not less than any teenage people. She could able to group women of the village to form a mahila samity “Maa Mangala” with the help of an NGO “STEP” amidst all protest from male members of the village. The Maa Mangala Mahila Samity then transformed to Maa Mangala SHG. The group was linked to bank to got a loan to the tune of Rs 1.30 lakh to bought a dry fish making machine where they could make dry fish in more scientific manner. The group members were trained to make dry fish, fish pickles and its preservation. They could able to sale their SHG products to earn 300% profit against the normal dry fish vending business in local market. The members of SHG were trained to make dry fish in scientific and mechanized way.

Mainly in summer and winter season all members of SHG are involved in dry fish business. These entire products are sold in Balijatara and in Krushak Mela. The ORMAS provide technical training for preparation of dry fish, capacity building of the groups and helping them in marketing of these products. Fishery Department also has helped them a lot. The group also got exposure and went to places like Keonjhar, Anugul, Dhenkanal and Rourkela.

Women in fishery occupations are technologically marginalized to a greater extent. The commonly used Alim/chapada net for collecting sea fish is very heavy and having a very fine nylon net. It also required a careful handling. But women cannot handle it. As a result the male workers go to deeper areas and collect huge quantities of fish in less time. The negative impact of the technological changes on the small-scale entrepreneurs is often ignored. The net makers have almost vanished due to demands of modernized net. According to Marine fishers census 2005, of 756,931 fisher folk involved in fishing and allied activities, 365,463 are women. From them 152,692 women engaged in marketing of fish as against 54,670 men.
The fish trading women face severe competition from the men folk who use two wheelers in domestic marketing because usually they went for marketing of fish by foot only.

Shrimp culture is also another important factors for Women because of which their social and economic life is totally changed. Now a day this field is totally controlled by non-fishing caste people. These people are by government allotted some patches in Brahmagiri of Puri district for shrimp culture. Due to this culture changing like - 1) the reduction in use of capture fishing equipment, 2) large scale encroachment, 3) decreasing of salinity of lake and 4) increase of middleman role in their villages.

The processes of modernization and commercialization not only put enormous pressure on marine ecosystem but also threatened the very survival of traditional and subsistence fisheries. As fisher folks are mostly illiterate they could not able to coup up with the changes that fisheries sector witnesses in recent years. Suddenly the incomes of traditional fishermen have gone down. Due to lack of alternate employment they are forced to borrow money usually from private moneylenders at very high interest rate of 10% /month or even more. Though they work hard in peak season, but still their expenditure on rituals and drinking habits drag them in the same situation as before. That’s why they are unable to pay back the money, as it would have doubled by then. The vicious circle of indebtedness continues. The problem is not the lack of opportunities but is of unawareness about the avenues and faith on kin people who are mainly the moneylender.

With the introduction of new technology in fishing activities fishermen could adventure into deep sea fishing instead of overnight they could able to stay in sea for 2 to 3 days. Satellite information through mobile also makes them able to locate fish, weather condition etc. Income of fishermen has also increased in a big way.

The general improvement in the well being of the fisher folk brought about by the twin forces of motorization and mechanization have lessened the burden of womenfolk to a great extent by freeing them from taking up responsibilities of supplementary income generation, debt management etc., in addition to household management. This change is quiet characteristic of womenfolk in any society that ascends the class hierarchy. The increase in the income of the husband has made the role of wife redundant or confined to that of a typical housewife. Her role in decision making has declined (Shet, 1994) probably because she is not having any stake in the earnings of her husband. Though the financial dependence makes her less assertive, uncharacteristic of an empowered woman who ought to have an equal say in the
affairs of the household, she is able to lead a less stressful life. However, the advent of multi-day fishing in recent times seems to have altered this pattern. Adoption of modern equipment like fish finder, GPS, and mobile phone has enabled the fishermen not only to venture for deep-sea fishing but also to extend fishing trips up to 10 days. Though the family income is more, the continued absence of fisherman for a long time forces her to bear more responsibilities.

Lack of time to look after household affairs and keeping social contacts create some imbalance both in the family and society but these are minor consequence of the technological as well as social marginalisation, which are to be dealt with appropriate measures. Low literacy rate and poor political commitment of fisherwomen seems to be very minor in their view, but are most important factors underlying the above issues.

**Conclusion**

The fisherwomen are aware of diversity, alternative sources of income, low ecological impact of their fishing practices, community harmony, familial equilibrium, and the changing methods in fishing. The fisher women are changing, though the process of change is slow. However, during the last decade, the pace of change has increased and it is expected to continue with significant implications for the fisher women society. With the passage of time, they have adopted and internalized more and more of different aspects of development. The changes are more marked and substantive among Fisher women girls than among middle age and elderly women. They have been exploited and oppressed by local dominant caste on the one side and on the other, by Government officials and political leaders. They have been long neglected by the Government. Though some policies have been made by the Government for their welfare, these have not been properly implemented.

With regards to the technological development in fisheries fisherwomen have been marginalized in a great way. They have now a little say on the decision making process of the family as their economic contribution to the family is decreased to great extent. Their role in net repairing, grading of fish after landing, vending of fish to nearby village and market are also not there. They are not only economically marginalized but also socially they feel alienated.

Attempts should have been made to achieve convergence in the sector by various government departments and agencies, the possibilities of social and economic development through incorporating more women participation has not yet been successful. More effort is to be put towards filling the gaps in program planning rather than program implementation. The various social, psychological, institutional, and economic issues challenging empowerment of fisherwomen have to be seriously taken into consideration while chalking out new development strategies.
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An Epidemiological Study of Blood Pressure in A Migrant (Marwari) Community of Khurda District, Odisha

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Abstract: The present study is attempted to investigate the prevalence of blood pressure and the variation of blood pressure among the people of Marwari community of Khurda District, Odisha. These marwaries are going through on transitional phase comprising urban and peri-urban society. From the present study, the strong significant phenomenon is found on hypertension which posses the higher value of the systolic and diastolic blood pressure. The mean value and standard deviation of systolic and diastolic blood pressure is calculated with the relation of anthropometric variables, such as Height, Weight, Body Mass Index, Calf Skinfold, Suprailliac skinfold, Abdomen skinfold. There are considerable sex differences, such as the mean systolic and diastolic blood pressure is more among male then female. The age factor is mostly emphasized for the variation of blood pressure.

Introduction

Epidemiology is defined as the study of the distribution and determinants of health related states or events in specified population, and the application of this study is to control the health problems”, (Last, 1988). An epidemiology has expanded its concern in this century to encompass the full range of human disease and disorder, researcher have been forced to grapple with complex assemblages of psychological, social, cultural, demographic and genetic factors in their guest to identify etiologic relationships and improve health services. Epidemiological approach is a significant tool for showing association between illness of health and environmental exposures. It is also a powerful aspect in bio-medical studies to recognize the causative and influencing determinants (independent variables) of a disease. In the present study, blood pressure is taken as the dependant variable while genetic and non-genetic factors are taken as independent variables since blood pressure is a quantitative as well as a multi factorial trait conditioned by both environmental and genetic factors.

In recent years, the epidemiological study mainly gives the emphasis on variation of metabolic disorders such as hypertension, coronary heart disease, cancer, obesity and the insulin resistance syndrome, etc, is widely applied world-wide precisely because of these diseases are based on the result of multiple effects of both genetic and environmental factors, which is much oriented with bio-medical and bio-cultural perspectives. It is widely believed that dietary leads to increased hyper tension (high

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blood pressure) and higher risks of heart attack or stroke. Epidemiological studies also show a steadily increasing trend in hypertension prevalence over the last 40 years, more in urban than in rural areas. In the most parts of world high blood pressure and other cardiovascular risk factors are becoming proportionately more important cause of morbidity and mortality and the control of high blood pressure will became an issue in many countries (World Hypertension League, 1995) So, Epidemiology of blood pressure mainly high blood pressure is usually referred as Hypertension, refers to arterial pressure being abnormally high, when the normal blood pressure is the force of the blood pushing against the walls of arteries.

Blood pressure refers to the force exerted by circulating blood on the walls of blood vessels, and constitutes one of the principal vital signs. The pressure of blood is at its greatest when the fresh blood is pushing through the artery as a result of the ventricular contraction of the heart, this is called systolic pressure (Sis-Tol-iK). When the pressure of the blood against the artery walls, the heart relaxes between the beats blood pressure falls, this is called as diastolic (Di-a-stol-ik). Normally, Blood pressure is a quantitative multi-factorial traits conditioned by both environmental and genetic determinants Arterial blood pressure is an important physiological marker, attained great etiologic significance in the epidemiology of heart disease, kidney defects due to its presumed association with age, sex, height, weight adiposity, skin fold thickness, diet, personal habits and psychological stress, etc. Blood pressure is heritable, that results from a single gene defect and is inherited in a simple mendelian manner. The association of blood pressure with polymorphism in multiple genes.

Studies relating to blood pressure were made by many biological anthropologists and physicians in different area. Enlanger and Hooker (1904) and other observer have shown that a small variable changes in arterial blood pressure was accompanied with changes in posture. The changes in diastolic pressure are usually negligible while systolic and pulse rate tend to rise slightly with the assumption of upright posture. Donation (1929) and Vint (1937) indicated that essential hypertension was extremely rare in certain black population in Africa, Donation (1929), Sounders (1933), Murli (1949), Truswell et.al. (1972), Olivan et.al. (1975) reported that the prevalence of high blood pressure appears to be lower in populations which still retain some traditional aspects of tribal society and higher in populations which have adopted western and urbanized mode of life. Various studies carried out on traditional population have demonstrated that increase in blood pressure is not an inevitable consequence of ageing (Epstein and Eckaff, 1976).Simpson (1959), Layal (1962) and Miaol (1967) have mentioned that the changes in endocranial system with the unset of menopause seem to have influence on blood pressure to rise steeply after the age of 45 years. Several cross sectional and prospective studies (Karnel et.al.1967), Stamler et.al. 1975, Tyroler
et.al.1975) report involved in the higher prevalence of hypertension and in the increase in mean blood pressure. Miall and Lavell (1967 and Roser et.al (1977), individual from their longitudinal study in two communities reported that the high blood pressure occurred in individuals who had the higher pressure in their mid 30’s and higher in mid 50’s. Sier et.al (1970) found an association between obesity and hypertension in frail male civil service employees and correlation was strong for diastolic then for systolic pressure. Rimm et. Al (1975) observed a relationship between obesity and blood pressure among women with different degrees of overweight and hypertension for both men and women in large population studies. The Framingham offspring study, Havlic et.al (1979) and several other population survey in Jermany, Sehakreeht et.al, (1980), Walter et.al (1987) have also demonstrate the association of obesity and hypertension. Boe et.al (1975), Stamler et.al (1975), Reed et.al (1982) studied the association between blood pressure and body composition has long been reorganized in adults. Karnel et.al. (1967), Miall et.al (1968), slemler et.al (1975), Tyroler et.al (1975) Gershatoer and M.C. Garvej (1995) reported adiposity as the most influential factor involved in the higher pressure. Skarfors wet.al (1991) stated that increase in BMI indicated as strongest predicator of hypertension. Epstein and Eckhoff 1967, Sierrogel 1983, ward 1983 studies blood pressure in different societies and started that blood pressure profiles and etiological factors affecting blood pressure shown to be different for traditional societies and westernized / urbanized societies. Further while some of the factors that contribute to increase in blood pressure seem to cut across cultural patterns and geographic regions. There are certain factors that seem to be population specific. Palmai (1962) Whyte (1959) and Tibblin (1967) also observed positive correlation between skinfold thickness and blood pressure. Kannel W.B., Skinner Jr, Namara P.M. (1967) found a strong relation of adiposity with bloods pressure and development of hypertension. Johnson. T (1971) reported differences in the prevalence rate of hypertension between males and females. Kannel and Dawber (1973) reported there was positive relationship between blood pressure levels occurring in childhood and in adulthood. Siervogel et.al (1982) observed highly significant positive co-relation between blood pressure and percentage of body fat, total body fat mass, but not with lean body mass or fat cell size and suggested that the fat mass is important etiological component in elevated blood pressure. The change in skinfold thickness is closely accompanied by a parallel change in blood pressure levels. Admas et.al (1986) observed that body mass index is a significant independent predicator of systolic pressure explaining 10.7 % of the variance in male, 19.6% variance in females. However, they reported no significant association between body mass index and diastolic blood pressure. Similarly white, L.H perira and J.B Graner (1986) obtained positive correlation between the body mass index and waist-hip ratio with hypertension. Lever and Harrappa (1992) stated that though raised blood pressure is a problem of adults, the origin of
this condition are likely to rise in childhood and the tendency of blood pressure is to rise with age occurs since early childhood. The rise is accelerated during adolescence.

Padmavati S, and Gupta S, in 1959, studies blood pressure in urban and rural groups in Delhi. Celine V.J and matihu in 1970, blood pressure variation in ageing study in the central Indian population. Sambhasiva Rao 1981, “A study of arterial blood pressure” correlates among the population of Visakhapatanam area-A.P and Nirmala A. (1987), published in anthropological study of blood pressure on some population of Andhrapradesh, relates bloods pressure to many aspects such as anthropometry, Socio-economic studies, diet, smoking, physical activities, rural and urban differential postures, diurnal variation and ethnic variation. Nirmala and Reddy (1991) found positive and significant correlations of sum of skinfolds with blood pressure which explained about 7% of variation in systolic and 17% of variation in diastolic blood pressure. Nirmala and Reddy (1993) reported that body mass index, sum of skinfolds and fat patterning are positively correlated with blood pressure among Reddy Community of Andhra Pradesh and these measures explained 15% to 16% of variability majumdar p.p., Das R.N, Nayak S, Bhattacharya S.K, Mukherjee BN studied genetic epidemiology of blood pressure in two Indian populations that is Marwaries of Calcutta and the Hindu middle-caste agriculturists of Digha. Shilphi Gupta, SatulantiKapoor studied the sex differences in blood pressure levely and its association with obesity indices : who is at greater risk (2007), Mithun Das and Kaushik Bose studied obesity and blood pressure among Adult Marwaries of Howrah, West Bengal India.

A Dash, Y.S Kusuma Kumari and P.K Das (1999-2000) stated the epidemiological study of blood pressure in a tribal community – the case of paraja of Damanjodi, Koraput (Orissa), They started the inter generational variation in blood pressure, familial correlation of Blood pressure, variation of blood pressure according to age and sex, Variation of blood pressure of pregnant women, relation of blood pressure with physical activities in case of male and female, variation of blood pressure according BMI ( Body Mass Index) ST (Skinfold Thickness) Y.S Kusuma, B.V. Babu and J.M. Naidu ( 2004) published the prevalence of hypertension among a few cross-cultural populations of Visakhapatnam dist, Andhra Pradesh, India. In Orissa, different scholars have undertaken epidemiological studies in tribal, rural and urban populations with respect to hypertension. The overall observation is that incidence of high blood pressure is on the rise in Urban areas than in rural and tribal populations and the report is based on obesity, dietary habits and changing life styles are major determinants of hypertension (Kusum Kumari, P. K. Das, A Dash and others, 2001, 2002, 2004).

Viewing in terms of these perspectives, the broad objective of the present research is to study the determinants of hypertension or high blood pressure in one of the migrant population groups of Khurda District - The Marwari. When blood pressure is a multi-
factorial trait, which is regulated, by a variety of mechanisms that involve the products of several genetic loci and a number of environmental factors (physical and socio-cultural such as climate, diet, life style, nature of job, physical exercise, diet, life style, nature of job, physical exercise, obesity, stress and strain, aging, disease and behavioural activities. In order to these subsequent aspects, marwaris are more vulnerable to these factors basing on obesity, which in turn help enhance hypertension.

Materials and Methods

The data on blood pressure and anthropometric variable measurements were collected from 252 Marwari families comprising a total number of 592 individuals. This community belongs to the urban and peri-urban area also. When urban community belongs Bhubaneswar city comprises 260 members and peri-urban community belongs to Jatni and the villages of Khurda comprise 173 and 159 members respectively, Total 592 individual samples (295 male and 297 female) are collected randomly. A substantial proportion (49.8% of male, 50.2% of female) possesses higher value for the systolic and diastolic blood pressure.

Blood pressure was measured with a mercury sphygmomanometer as suggested by Rose et.al. (1980). Height, weight, upper arm Girth, Calf Girth, Bi-Acromial Breadth, Bicristal Breadth were measured by Antropometre Rod (of Martin) weighing machine, Rod compass (of Martin) for each participant. Six skinfold measurements (biceps, triceps, subscapular, suprailliac, abdominal and calf) were obtained for each subject. Skinfold thickness was measured according to the methods of Weiner and Lourie (1981) using large skinfold caliper.

Table - 1: Category of Hypertension among Marwari population

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>SBP</th>
<th>DBP</th>
<th>Male</th>
<th>Male</th>
<th>Female</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NO</td>
<td>%</td>
<td>NO</td>
<td>%</td>
<td>NO</td>
<td>%</td>
<td>NO</td>
</tr>
<tr>
<td>NORMAL</td>
<td>120</td>
<td>80</td>
<td>33</td>
<td>11.19</td>
<td>37</td>
<td>12.46</td>
<td>70</td>
</tr>
<tr>
<td>PRE HYPERTENSION</td>
<td>120-139</td>
<td>80-89</td>
<td>165</td>
<td>55.93</td>
<td>156</td>
<td>52.53</td>
<td>321</td>
</tr>
<tr>
<td>HYPERTENSION STAGE1</td>
<td>140-159</td>
<td>90-99</td>
<td>76</td>
<td>25.77</td>
<td>82</td>
<td>27.60</td>
<td>158</td>
</tr>
<tr>
<td>HYPERTENSION STAGE2</td>
<td>&gt;160</td>
<td>&gt;100</td>
<td>21</td>
<td>7.11</td>
<td>22</td>
<td>7.40</td>
<td>43</td>
</tr>
<tr>
<td>TOTAL</td>
<td>295</td>
<td>100</td>
<td>297</td>
<td>100</td>
<td>592</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

Hypertension affects approximately one billion individual’s worldwide (JNC7, 2003). Rates of Hypertension have been shown to increase in traditional population undergoing
modernization and also among migrants show the higher percentage of pre-hypertension and hypertension. When the normal systolic pressure and diastolic pressure is $\leq 120$ and $\leq 80$, pre-hypertension systolic pressure is $120 – 139$ or $80 – 89$, stage 1 hypertension is $140 – 159$ or $0 – 99$, stage 2 hypertension $\geq 160$ or $\geq 120$.

Table 1 reveals that the male shows 11.19% and Female shows 12.46% in case of normal blood pressure (systolic and diastolic pressure), pre-hypertension cases are 55.93% of male and 52.53% female, hypertension stage 1 cases are 25.77% of male and 27.60% of female, hypertension stage 2 cases are 7.11% male and 7.40% of female so, the pre-hypertension and hypertension stage 1 value is more than normal blood pressure value hypertension stage 1 value is higher in case of female than male but the pre-hypertension value is higher in case of male than female.

**Table - 2 : Variation of Blood Pressure in relation to age and sex**

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean SBP</td>
<td>S.D.</td>
</tr>
<tr>
<td>15-25</td>
<td>118.6</td>
<td>5.4</td>
</tr>
<tr>
<td>25-35</td>
<td>124.6</td>
<td>7.3</td>
</tr>
<tr>
<td>35-45</td>
<td>133.6</td>
<td>10.9</td>
</tr>
<tr>
<td>45-55</td>
<td>139.5</td>
<td>12.0</td>
</tr>
<tr>
<td>55-65</td>
<td>147.1</td>
<td>19.4</td>
</tr>
<tr>
<td>65-75</td>
<td>154.3</td>
<td>14.5</td>
</tr>
<tr>
<td>75-85</td>
<td>137.5</td>
<td>24.7</td>
</tr>
<tr>
<td>85-95</td>
<td>140.0</td>
<td>90.0</td>
</tr>
</tbody>
</table>

The level of Blood pressure varies with age and sex. It is observed from the results of many studies that the mean values of Blood pressure of same age group of male and female are different since the biological and environmental factors influencing blood pressure differ considerably sex-wise.

Robert and Mover (1977) in a cross-sectional study on sample of age, range between 6-74 years show that the mean value of blood pressure in males are higher than the females up to 54 years and there after females tend to show higher blood pressure values. In a similar study Nirmala and Chengal Reddy (1992) reported that females showed higher incidence of hypertension than females in a population of Andhra Pradesh.
Table – 2 shows that the highest mean value of systolic blood pressure within the age group of 65 – 75 in case of male, when the mean value of diastolic pressure is highest within the age group 65 – 75. But the highest mean value of systolic pressure tends within the age group 75 – 85 in case of female and the mean value of diastolic pressure is higher within the age group of 75 – 85.

Table - 3: Variation of Blood Pressure according to different area / Location.

<table>
<thead>
<tr>
<th>AREA</th>
<th>NORMAL</th>
<th>PRE HYPERTENSION</th>
<th>HYPERTENSION_ STAGE 1</th>
<th>HYPERTENSION_ STAGE 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SBP MEAN ± S.D.</td>
<td>NO</td>
<td>DBP MEAN ±S.D.</td>
<td>NO</td>
</tr>
<tr>
<td>BHUBANESWAR</td>
<td>42</td>
<td>114.17 ± 4.32</td>
<td>37</td>
<td>74.86 ±-2.84</td>
</tr>
<tr>
<td>JATNI</td>
<td>18</td>
<td>111.39 ±3.05</td>
<td>18</td>
<td>74.83 ±-2.33</td>
</tr>
<tr>
<td>KHURDA</td>
<td>21</td>
<td>111.19 ±3.95</td>
<td>16</td>
<td>74 ±3.20</td>
</tr>
</tbody>
</table>

Donation (1929) and Vint (1937) indicated that essential hypertension is extremely rare in certain black population in Africa. Donation (1929) Sounders (1933), Muri (1949), Truswell et.al (1972), Oliver et.al (1975) reported that the prevalence of high blood pressure appears to be lower in populations which still retain some traditional aspects of tribal society and higher in populations which have adopted western and urbanised mode of life (Sahriere 1958, Abraham’s et.al. 1960), Akin Kugbe (1969), Johnson (1917), Levitt et.al (1974), Scotch (1963), Cruz-Cokeet.al (1964) Hanna and Baker 1979).

Table – 3 shows that the mean and standard deviation of systolic pressure is high in the stage 2 hypertensive in Bhubaneswar city, but the mean value and std. Deviation of diastolic blood pressure is high in the stage - 1 hypertensive. In the Jatni area, the mean value and std.deviation of systolic and diastolic blood pressure is high in case of stage - 2 hypertensives. In Khurda area, the mean value and std.deviation of systolic and diastolic blood pressure is high in case stage - 2 hypertensives.
The prevalence of hypertension were recorded by among tribal population of Andhra Pradesh (Reddy, 1998), high altitude population of Himalayas (Puri et al, 1986) rural population of Maharashtra (Jaioo et al, 1993), Uttar Pradesh (Agarwal et al, 1994), West Bengal (Majumder et al, 1994), Delhi (Chadha et al, 1997), etc, most of rural population recorded relatively lower prevalence’s than urban groups, most of the studies on urban population recorded higher prevalence’s of hypertension is lower (1.4%) among middle caste agriculturists while it is higher (17%) among marwaris, a business community living in Calcutta city.

Table – 4 shows the peri-urban and urban area. When peri-urban area considers the interior Khurda and Jatni area, urban area tends to the Bhubaneswar city. So the mean value of systolic and diastolic pressure is higher in case of male than female in peri-urban area. Likewise the standard deviation of systolic and diastolic pressure is higher in case of male than female. But in the urban area the mean value and std.deviation is highest than the peri-urban area.

<table>
<thead>
<tr>
<th></th>
<th>PERI-URBAN</th>
<th>URBAN</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>SBP</td>
</tr>
<tr>
<td>Female</td>
<td></td>
<td>N</td>
</tr>
<tr>
<td>N</td>
<td>166</td>
<td>125.0422</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12.80405</td>
</tr>
<tr>
<td>Male</td>
<td></td>
<td>N</td>
</tr>
<tr>
<td>N</td>
<td>166</td>
<td>133.5361</td>
</tr>
<tr>
<td></td>
<td></td>
<td>13.64824</td>
</tr>
<tr>
<td>Female</td>
<td></td>
<td>N</td>
</tr>
<tr>
<td>N</td>
<td>131</td>
<td>128.0687</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15.30922</td>
</tr>
<tr>
<td>Male</td>
<td></td>
<td>N</td>
</tr>
<tr>
<td>N</td>
<td>129</td>
<td>134.5039</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15.54134</td>
</tr>
</tbody>
</table>
Table - 5:
**Variation of Blood Pressure in relation to Body Mass Index**

(BMI) = (Wt in KG/Ht in mt²)

<table>
<thead>
<tr>
<th>BMI</th>
<th>MALE MEAN SBP ± S.D.</th>
<th>MALE MEAN DBP ± S.D.</th>
<th>FEMALE MEAN SBP ± S.D.</th>
<th>FEMALE MEAN DBP ± S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below 20</td>
<td>122.50±9.87</td>
<td>80.00±5.48</td>
<td>137.17±22.18</td>
<td>80.17±6.82</td>
</tr>
<tr>
<td>20-25</td>
<td>126.92±10.62</td>
<td>84.43±6.66</td>
<td>121.53±12.77</td>
<td>81.08±7.37</td>
</tr>
<tr>
<td>25-30</td>
<td>136.68±11.77</td>
<td>89.30±6.82</td>
<td>126.13±11.95</td>
<td>82.95±6.73</td>
</tr>
<tr>
<td>Above 30</td>
<td>154.12±16.63</td>
<td>93.77±7.01</td>
<td>135.55±16.01</td>
<td>88.42±8.36</td>
</tr>
</tbody>
</table>

Body Mass Index (BMI) represents the fat content and nutritional status of a person. High BMI value influences the level of Blood Pressure. The normal range of BMI is (18.5 – 25). The value of BMI shows considerable variation among different populations. This is probably due to variation in the interaction between genotype and the environment.

Stemler et.al (1975) found a constant association between overweight and hypertension for both men and women in large population studies. In the review, A study was conducted by Y.S. Kusuma, P. K.Das in 2007 that Hypertension in Orissa, India; a cross-sectional study among some tribal, rural and urban populations. (BMI is the important factor of their study).

Table –5 shows the mean value of systolic blood pressure is high in case male, when the BMI exceeds to above 30. Likewise the mean value of diastolic blood pressure is increased gradually according to the increasing of BMI. So the systolic and diastolic pressure becomes higher in the condition of more BMI in case of male. But in case of female the mean value of systolic pressure is higher in case of below 20 BMI, then decreasing, lastly increasing in the cases of above 30-BMI, but diastolic blood pressure is increasing according to the increasement of BMI in case of female.
Table 6: Blood pressure in relation to the sum of three trunk skinfold thickness (TSF3) = (abdominal skinfold + subscapular skinfold + supra-iliac skinfold)

<table>
<thead>
<tr>
<th>SEX</th>
<th>TSF3</th>
<th>NOR_ SBP</th>
<th>NOR_ DBP</th>
<th>PHYPT_ SBP</th>
<th>PHYPT_ DBP</th>
<th>HYPT_ SBP_ ST1</th>
<th>HYPT_ DBP_ ST1</th>
<th>HYPT_ SBP_ ST2</th>
<th>HYPT_ DBP_ ST2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FEMALE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>297</td>
<td>38</td>
<td>35</td>
<td>184</td>
<td>161</td>
<td>58</td>
<td>80</td>
<td>17</td>
<td>21</td>
</tr>
<tr>
<td>Mean</td>
<td>8.5872</td>
<td>112.18</td>
<td>73.89</td>
<td>125.12</td>
<td>82.11</td>
<td>143.95</td>
<td>92.14</td>
<td>167.82</td>
<td>101.9</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>1.84983</td>
<td>4.203</td>
<td>2.676</td>
<td>5.658</td>
<td>2.945</td>
<td>4.605</td>
<td>2.647</td>
<td>10.303</td>
<td>3.7</td>
</tr>
<tr>
<td><strong>MALE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>295</td>
<td>43</td>
<td>36</td>
<td>173</td>
<td>159</td>
<td>57</td>
<td>79</td>
<td>22</td>
<td>21</td>
</tr>
<tr>
<td>Mean</td>
<td>8.5569</td>
<td>113.3</td>
<td>75.42</td>
<td>125.85</td>
<td>81.93</td>
<td>144.63</td>
<td>92.06</td>
<td>167.14</td>
<td>103.33</td>
</tr>
</tbody>
</table>

Three trunk skinfold thickness (TSF3) represents the deposition of fat and nutritional status of a person and estimation of obesity. High trunk skinfold thickness is influenced upon the level of blood pressure and excess deposition of fat lead to the rise in the flow of the blood leading to hypertension. In the present context, an association of variation in blood pressure has been made with three trunk skinfold thickness (TSF3).

Blair et al. (1984) from their study and by reviewing other studies reported that the total body fat appears to be less important indicator of health high blood pressure compared with lower body fat. Blair 1988 also reported that regardless of age and the total amount of body fat, subcutaneous fat on the trunk is more highly related to coronary risk factor than subcutaneous and fat on extremities; large body size and fatness are associated with high blood pressure in industrialized nation. A Nirmala, P. Chengal Reddy and K.M. Reddy in 1993 studied on the influence of adiposity on blood pressure in Andhra Population. The effect of five measures of adiposity, three measures of fatness (Body mass index, the sum of skinfold and sum of the trunk skinfolds) and two measures of fat patterning the ratio of trunk to extremity subcutaneous fat and the ratio of sub-scapular and supra-iliac skinfolds on the systolic and diastolic blood pressure from Reddy community of Elittor district, Andhra Pradesh. All measures of adiposity except fat patterns index are positivity correlated with blood pressure.

Table 6 shows the higher mean value of TSF3 in the stage 2 hypertension in case of female. Likewise the mean value of TSF3 of male is higher in the case of
stage 2 hypertension. So it is observed that the blood pressure level among the marwaris increased with higher TSF3. An overall increasing trend is evident in both sexes for both systolic and diastolic blood pressure.

**Conclusion**

The study provides the more prevalence of pre hypertension and hypertension among Marwari population than the normal blood pressure (both systolic and diastolic pressure). They are migrants living in Orissa revealing moderate and high status of living shows the sedentary way of life and rich dietary habit emphasized the qualitative and quantitative foods which indirectly influenced upon the body mass index, three trunk skinfold thickness is also related with high blood pressure simultaneously.

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Settlement Pattern and Mode of Subsistence of Kondhs of Nuagaon: An Ethnoarchaeological Study

RAMAKANTA MAHANANDA*

Abstract: Although use of ethnography for archaeological interpretation is known to have existed even from 19th Century (Longacre 1991), ethnography found an impetus with the growth of processual archaeology during 1960’s (Ascher, 1962). Ethnographic studies can work as flesh and blood for the skeleton of archaeological researches. Thus in this study, an attempt has been made for an ethnographic study of the Kondhs with special reference to their strategies of settlement and subsistence. Although study of the strategies of settlement and subsistence of various ethnic groups of Orissa is well-known, the main feature of the study; the subsistence strategies of the Kondhs of Nuagoan, have been used as a key understanding of the subsistence pattern of Neolithic culture in relation to their hunting, gathering and fishing.

Introduction

From the 1960s, the field of ethno-archaeology has emerged as a discipline explicitly concerned with examining the archaeological relevance of contemporary phenomena including topics such as site formation and depositional processes, documentation of traditional technologies, community forms and settlement patterns, the relations between humans and their environment, and the study of material implications of a variety of social systems.

Ethno-archaeology means the explicit use of ethnographic data for the purpose of archaeological interpretation. According to this view, ethnographic data may be generated from published or unpublished written accounts, photographs, informants, oral accounts, public or private collection of artifacts, experiments or observations deliberately made for archeological purpose in living society. In other words, studies on material culture of living communities are used as an aid for understanding the past cultural system, unearthed by archaeological work. The importance of knowledge of contemporary societies for interpreting the past is a basic tenet of virtually all archaeological work. Usually, there are mainly two approaches in ethno-archaeological studies i.e. the first one is the direct historical approach and the second one is the general comparative approach. The present study puts emphasis on the second approach (Basa, 1992). Longacre (1991a) has emphasized that ethnoarchaeological

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research should be undertaken by archaeologists since ethnographers tend not to collect the systematic and quantitative data necessary for archaeological interpretation.

The focus of a much recent ethnoarchaeological work has been the identification of general patterns in human behavior and their material consequences. From this perspective, ethno-archaeology is a search for the cross-cultural regularities which coupled with uniformitarian reasoning, can aid our interpretation of the archeological record. As such ethnoarchaeological research provides archaeologists with an opportunity to know the diverse environmental and cultural factors that effect or determine the nature of the static archaeological remains that we recover.

Archaeologists are now in a position to develop more sophisticated and testable models for the interpretation of archaeological sites and more importantly, of the human past. Ethnoarchaeological studies in South Asia, as elsewhere, do not provide a blueprint to the past. Rather, they provide a framework for understanding the material consequences of the behavior and technologies as well as rich laboratory for the documentation of the diversity and regularities in human behavior in well-defined cultural context. South Asian ethnoarchaeological studies can be broadly divided into four main categories:

(a) Strategies of Settlement and Subsistence

(b) Traditional technologies and organization of craft production

(c) Social organization and belief systems

(d) The formation of archaeological sites

Primary among the researches on patterns of traditional subsistence and settlement in South Asia have been studies of surviving hunter-gatherer populations. Ethnoarchaeological studies of South Asian tribal populations have focused on general patterns of subsistence and settlements. Scholars have noted that they have the broad knowledge that members of these groups traditionally have their natural environments (Murty 1981) and that most of the groups traditionally exploit a very wide range of plant and animal resources (Murty 1981).

It has also been observed that the extint groups were traditionally mobile with system to a settle responsive to the seasonal availability of food and water (Paddayya, 1982). Ethnoarchaeoloical studies of contemporary hunter-gatherer or tribal populations have focused on subsistence resources, patterns of seasonal movement and technology (Mishra & Mate 1964). The ethnoarchaeological studies of tribal groups on the Indian subcontinent have also stressed the degraded nature of the contemporary environment and the loss of many wild plant and animal resources as a result of
agricultural expansion and modernization (Raju, 1988). The tribal populations provide forest products including honey, sap, fibers, wood and labour to the agriculturists in exchange of agricultural products and craft goods (Nagar and Mishra 1989). Ethnoarcheological studies of South Asian villages have focused primarily on the documentation of specific material culture parallels between ancient and contemporary villages such as in house forms (Dhavalikar 1983, Nagar 1969, Rao 1965), often in the context of arguing for historic continuity between prehistoric and modern populations. These studies have not, for the most part, focused on the broader structure of subsistence and settlement.

Generally three factors are considered by the tribals for the selection of a particular site for habitation (Mahapatra and Pattanaik 1986): Firstly, there should be a perennial source of water nearby. Secondly, the placement should be auspicious. Thirdly, the place should be free from evil effects of ghosts and spirits. Besides these, availability of forest for hunting and gathering and of suitable land for swidden or settled agriculture is important for settling in a particular place. However, the settlement varies from tribe to tribe. The Koyas living in Malkangiri subdivision of Koraput are settled midst the forest with irregular distribution of houses (Mohapatra 1970). In a Koya house, one room is a store room for grains and the other is the kitchen. There are no windows. Fencing on all sides is a regular feature of the Koya settlement.

Tribes of Orissa follow a wide range of strategies of subsistence. The chief ingredients of a subsistence economy are simple technology, small scale units of production, and social units of production, distribution and consumption being limited to family and lineage. Behura (1990) has divided the strategies of subsistence of Orissan tribes into 6 types, although in many cases more than one strategy in adopted. Those six types are (i) hunting, collecting and gathering (ii) cattle herding (iii) simple artisan (iv) hill and swidden cultivation (v) settled agriculture and (vi) urban industrial workers.

Orissa is famous for its handicrafts of metal, objects, textiles and filigree. Traditionally, making handicrafts is the occupation of specific groups of caste. Behura (1965) has studied the potters of Orissa in detail. Tripathy (1988) has made a brief survey of mortuary practices of different tribes of Orissa.

**Area of Study**

The district of Kandhamal is one among the 69 identified most backward districts of independent India. The proposed study will be conducted in the Nuagaon village of Kotagarh block in the district of Kandhamal. The district of Kandhamal is between 19’34 N and 20’36 N and 83’34 and 84’34 E, with an area of 7649 sq. k.m. It constitutes 2 sub-divisions, 12 community development blocks, 2 NACs, 153 gram panchayat and
2515 villages. The total population of the district is 6,48,200 out of which ST population is 51.96%. The physiography of the entire district is in a high altitude zone with inter-spreading inaccessible terrain of hilly ranges and narrow valley tracts which boosts the socio-economic conditions of the people and the development of the district.

I have selected the Nuagaon village of Kotagarh block which is only 8 km away from Kotagarh town under Baliguda Sub-division of Kandhamal district in the state of Odisha. Kotagarh block is totally covered with hilly mountains. There is only Kondh tribe in Nuagaon village which is settled here for the last hundred of years. The total number of household is 187, consisting of 1,153 people. The villagers mainly depend on agriculture; but their secondary source of income is gathering and collecting different types of fruits and leaves from the nearby jungle. Apart from that they collect the skin of different animal and bark of different trees for their livelihood. They go for group hunting and individual hunting also. Besides this, they fish at the nearby fountain.

**Settlement pattern of Nuagoan Kondh**

Every place has a history of its first settlers like that of nomenclature. An area becomes a place of habitation when a group of people migrates from one place to some other place and settle down permanently. According to the people of Nuagoan, once upon a time they lived on top of the hill. They started migrating from the top of the hill in search of a new place where they could lead a healthy life. The villagers who descended were Kutia Kondhs. They used to live in the dense forest but now they identify themselves as Adivasi or Kondh. Other reasons of migration are poverty and their homeland being declared as reserve forest by the Forest Department.

**House Pattern**

The village of Nuagoan is of linear pattern and the two rows of houses is flanked by a wide street. The people like to live in a thatched house. The settlement of an individual is permanent in his plot. However, all the houses of the village are situated one after another facing each other. The houses are rectangular in shape. One or more double rows of attached houses face each other in a rectangular space.

**The Roof**

The roof is made of straw. The thatched roof is constructed with a long beam of bamboo at the apex of the roof. Clobs are attached to this beam of bamboo. These sticks are attached in vertical manner to the beam while other bamboo sticks are tied to these clobes in a horizontal manner. On such a frame of bamboo beam with a network
of bamboo sticks bundles of paddy straw are spread for making the roof. The roof is made of paddy straw. The roof is closed by tow slopes or four slopes of every house.

Wall

In the village of Nuagoan, most of the walls are of mud, mud bricks and lateritic stone. It is plastered by mud, cow dung and clay. They also decorate it with different colours, especially light red and white. The stones are available in the near forest and they collect it by themselves. The bricks are made by them.

Floor

The floor is made of stone chips and clay like the wall. It is plain and smooth. The people of Nuagoan plaster the floor with cowdung every day.

Doors and Window

Almost all the houses have only one door in the front side of the house. Some houses have doors in the inner side. The door in the inner side usually leads to the storage house. The doors are made of wooden planks which are prepared from teak wood and Sal wood. Some doors are made of bamboo sticks also. There are no windows in most of the houses. But there are skylight found in each and every house. Most of the houses are divided into general room, storage room and verandah in the front side and are found to be neat and clean.

Vegetation area or Kitchen garden

Vegetation area is located on the back side of the house. They raise boundary around the house with bamboo sticks or Sal sticks or beam and other materials. They cultivate chilly, maize, pumpkin, papaya and cucumber in their vegetational area.

Garbage

The garbage area is kept away from the house. Some are in the corner of the vegetation area and some are near the field. The cow dung, goat dung and pig dung are also kept in the village garbage.

Cowshed

The villagers of Nuagoan rear and keep their cows, goats and pigs in a common area. The cowshed is at a little distance from the house each house. The cowsheds are also situated in a linear pattern. The walls of the cowshed are made of bamboo sticks or Sal sticks and the upper part of the houses are thatched by paddy straw. The floors are made of either store or slice wood with mud. There are four pillars in each cowshed. As a whole the cowshed has an open wall in linear pattern. But the goats
and chickens are kept in the varandha. The villagers collect the cow dung everyday and clean the cowshed. There is only one gate to enter the cowshed. The common cowshed of the village is open for all. The cowshed is separated from the place of habitation. The cowshed is in a linear pattern.

**Subsistence strategies of the Kondhs of Nuagoan**

The term subsistence economy is rarely explicitly defined in social sciences. It is employed principally in connection with rural societies in, technologically, poorly developed countries and is often synonymous with the term subsistence farming and subsistence agriculture. In the field of Anthropology, the term is applied to the primitive hunting and gathering society. However, it is also meaningful to apply this term to an economy which provides bare subsistence (M.J.Herskovits, 1940). Bohnnan (1993:11) defined economy as the way in which resources, technology and work are combined to satisfy the material requirements of human beings and of social groups. The Kondhs of Nuagoan are settled agriculturists. Although the primary mode of subsistence of Kondh is agriculture, in this paper emphasis is also given on other strategies of subsistence of the Kondhs of Nuagaon such as

(i) Gathering
(ii) Hunting
(iii) Fishing
(iv) Agriculture

(i) Gathering: Collection of food is the most primitive method upon which the living of the ape man or primitive man was based. Man collected fruits, roots, tubers, insects, shell fish or wild plants for consumption and ate these raw. With the invention of fire, there was subsequent development in the human civilization and coming of new ways of procuring food like hunting, fishing, agriculture and domestication. But it can not be forgotten or ignored that the root of the civilization is in the economy of gathering food.

- **Gathering of fire wood & other forest products**: Elements of the economy of food gathering still prevail in several parts of the tribal belts of Orissa. An example of this is Nuagoan among the Kondhs. Collection of firewood and forest products is an old practice and is still being practiced by the people of Nuagoan. They learnt the technique of collection of firewood and forest products from their ancestors. Both male and female go to the forest for the purpose of gathering. In the hamlet, we can see more female than male go to the forest for collection of firewood. The Kondhs of this village are extremely poor. When they have no work they go for gathering of firewood.
and collect the jungle fruits from the nearby forest. The villagers have been traditionally depended on forest as they are originally food gatherers and hunters. For the collection of firewood, they go to the nearby forest.

They rise early in the morning and take their breakfast before 7.30 am and set out for forest. They reach the forest at about 9.30 am. From the time they reach the forest they remain engaged in cutting and collecting wood till 5 pm. They take their lunch during their leisure hours. They cut firewood in the forest. After cutting, they bind them in bundles. One bundle has nearly 15-20 pieces of wood. The villagers bring these bundles to village on their head and shoulder. They prepare some rope from the bark of few trees for their own purpose and to sell in the local market. Generally young male and female of the age group 17 to 45 years are engaged in this work. There are a lot of small trees and bushes near the village which are used for firewood. They collect whatever dried wood they get from the jungle wood to use it as firewood. They collect dry branches of the large trees. They collect each and every type of wood which get dried in the bush and forest. Irrespective of sex and age, all the family members collect firewood.

Table No.1:
The following trees are collected by the people of Nuagaon from the jungle.

<table>
<thead>
<tr>
<th>English Name</th>
<th>Local Name</th>
<th>Tribal Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cedar tree</td>
<td>Gamhari gachha</td>
<td>Graba dedi</td>
</tr>
<tr>
<td>Bamboo tree</td>
<td>Baunsa gachha</td>
<td>Madi dedi</td>
</tr>
<tr>
<td>Teak tree</td>
<td>Saguan gachha</td>
<td>Saguan dedi</td>
</tr>
<tr>
<td>Kendo</td>
<td>Kendu gachha</td>
<td>Murudi dedi</td>
</tr>
<tr>
<td>Kusum</td>
<td>Kusum gachha</td>
<td>Kahamu dedi</td>
</tr>
<tr>
<td>Mango tree</td>
<td>Amba gachha</td>
<td>Mah mrahandi</td>
</tr>
<tr>
<td>Mohuli</td>
<td>Mahula gachha</td>
<td>Erpi mrahandi</td>
</tr>
<tr>
<td>Berry tree</td>
<td>Jamukoli gachha</td>
<td>Nandru mrahandi</td>
</tr>
<tr>
<td>Karanjia tree</td>
<td>Karanjia gachha</td>
<td>Karanjia dedi</td>
</tr>
<tr>
<td>Banyan tree</td>
<td>Bara gachha</td>
<td>Bradi mrahandi</td>
</tr>
</tbody>
</table>
Table No.2: Collection of Rope

<table>
<thead>
<tr>
<th>Oriya Name</th>
<th>Tribal name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sially lata</td>
<td>Paeri darka</td>
</tr>
<tr>
<td>Marady</td>
<td>Marady darka</td>
</tr>
<tr>
<td>Bara gachha</td>
<td>Baradi darka</td>
</tr>
<tr>
<td>Khajuri gachha</td>
<td>Khajuri darka</td>
</tr>
<tr>
<td>Chana pata</td>
<td>Chana darka</td>
</tr>
</tbody>
</table>

The people collect leaves in a very traditional pattern. They collect leaves only for the purpose of making plates. They collect *Paeri akka, Jargi akka and Murudi akka* to make plates. After collecting the leaves, they stitch them to the flax tree. One plate is made with 4-8 leaves. In the hamlet, we can see more female than male go to the forest for the collection of firewood and more male than female go to the forest for cutting the firewood. But only women collect leaves from the jungle. They sell firewood at nearby the market. But they themselves don't sell the firewood.

In the selling of firewood, the system of middle man exists. The Kondhs collect the wood and sell them to the middle man and the man in turn sell it to the big shopkeeper and get a good amount of money. As the money comes through a long chain, the Kondhs become the loser. There are also some Kondhs who sell their wood directly to the big shopkeeper.

**Collection of food stuff**

Besides firewood, people also collect food stuffs from the forest. Since they are very poor people they cannot pay much to buy different varieties of vegetable from the market. So they collect food stuffs from the forest. They collect food stuffs season-wise which is enumerated below.
Table No. - 4: Collection of food stuff season-wise

<table>
<thead>
<tr>
<th>Season</th>
<th>Name of the fruits</th>
<th>Kondhs local name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summer</td>
<td>Mango</td>
<td>Maha</td>
</tr>
<tr>
<td></td>
<td>Jack fruit</td>
<td>Panasi/padasi</td>
</tr>
<tr>
<td></td>
<td>Popeye</td>
<td>Amruto</td>
</tr>
<tr>
<td></td>
<td>Kendo</td>
<td>Murudi</td>
</tr>
<tr>
<td></td>
<td>Berry</td>
<td>Nandra</td>
</tr>
<tr>
<td></td>
<td>Guava</td>
<td>Jami</td>
</tr>
<tr>
<td></td>
<td>Date</td>
<td>Kajuri</td>
</tr>
<tr>
<td></td>
<td>Tamarind</td>
<td>Nedi</td>
</tr>
<tr>
<td></td>
<td>Kusum</td>
<td>Kahaamu</td>
</tr>
<tr>
<td></td>
<td>Bel</td>
<td>Bel</td>
</tr>
<tr>
<td></td>
<td>Anla</td>
<td>Jugura kanga/jura</td>
</tr>
<tr>
<td>Rainy</td>
<td>Harida</td>
<td>Harida</td>
</tr>
<tr>
<td></td>
<td>Bahada</td>
<td>Bahada</td>
</tr>
<tr>
<td></td>
<td>Sreka kanga</td>
<td>Sreka kanga</td>
</tr>
<tr>
<td></td>
<td>Ranga kanga</td>
<td>Ranga kanga</td>
</tr>
<tr>
<td></td>
<td>Guava</td>
<td>Jami</td>
</tr>
<tr>
<td></td>
<td>Jack fruit</td>
<td>Panasi</td>
</tr>
<tr>
<td>Winter</td>
<td>Bhalia</td>
<td>Ganju</td>
</tr>
<tr>
<td></td>
<td>Custard apple</td>
<td>Sita phala/Ram phala</td>
</tr>
<tr>
<td></td>
<td>Bana koli</td>
<td>Kane kanga</td>
</tr>
<tr>
<td></td>
<td>Sajana</td>
<td>Munga</td>
</tr>
<tr>
<td></td>
<td>Neem</td>
<td>Lima</td>
</tr>
<tr>
<td></td>
<td>Lemon</td>
<td>limbu</td>
</tr>
</tbody>
</table>

There are some rare roots and tubers which are not found anywhere except in the forest. Kondhs like these very much. According to the opinion of the villagers, they can live upon the roots and tubers without depending on other vegetables throughout the year. Those products are i.e. wild potato—saru kurenga, kara kurenga,
mula kurenga, rega kurenga, pita kurenga, mundi napanga and tuhuta napanga. They collect some mushroom such as menda kundu, patruka, pisaku, putukuli, putubuhedaka, landu kudu, pita kanda and gapka kutka. Kondhs collect some roots and tubers to use them as medicine. Kondhs avoid going to the hospital.

They mostly depend on medicinal herbs known to them. According to them, if they go to the hospital, it causes them heavy expenses and somebody has to be always present near the patient. But at home, it is not required for somebody to be always present near the patient. Here, all the family members look after the patient. Such herbs are more efficacious and have more power of curing diseases than the modern medicines. Some of the herbs which are available in the forest are listed below:

Table No. - 5: Herbs used by the Kondhs

<table>
<thead>
<tr>
<th>Herbs</th>
<th>Desease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patal Garuda</td>
<td>For snake bites</td>
</tr>
<tr>
<td>Gada</td>
<td>For snake poison and witchcraft</td>
</tr>
<tr>
<td>Apamarg</td>
<td>For headache and injury</td>
</tr>
<tr>
<td>Laza punga</td>
<td>For scabies</td>
</tr>
<tr>
<td>Bisalya karani</td>
<td>For injury</td>
</tr>
<tr>
<td>Jahaja male</td>
<td>For cow</td>
</tr>
<tr>
<td>Ambala</td>
<td>For dissentry</td>
</tr>
<tr>
<td>Anla</td>
<td>For injury</td>
</tr>
</tbody>
</table>

Most of the people use methods commonly used to cure from a common disease. Thus the forests benefit the Kondhs in many ways. The villagers earn their livelihood from the forest. The people can utilize the resources in a proper way when they will be able to improve their daily lives.

(ii) Hunting: From the ancient days till the present era, hunting as an occupation, is prevalent in almost all societies. The people or the groups who depend solely on hunting and actively seek grain with specialized technology are called hunters. Anthropologists, normally apply the term hunter only to the groups who depend primarily upon hunting games for their food. Hunting has been practiced as a means of livelihood since time immemorial. The people of Nuagaon do not observe any kind of ritual for hunting. But
they pray to God for the sake of their life and good hunting expedition. There is no particular time for them to go for hunting. Whenever they get time they go to the forest in a group or alone for hunting.

- **Procedure of hunting**: Before entering the forest, the hunters divide themselves into two groups: one group possesses hunting implements and the other group with some trap (*phasa*). They make different kinds of sound. Due to the noise, the big animals are compelled to run at the desired direction of the hunters and then the hunters easily kill them with the help of bow and arrow. In the second method, they go to the jungle and prepare a platform of wood on the branches of the tall trees. They called the platform as ‘Mancha’. From this Mancha they shoot the animals. In the third method of hunting, they hunt with the help of traps. They use various types of traps for hunting different animals. Before the hunting starts, the hunter set those traps ready. Then they go to the other part of the forest and scare the animals by showing fire, beating drums and making sounds by other methods. The animals run away from one part to another part and they fall into the trap. They then kill the animals and collect the carcass from the trap. The fourth method of hunting is that the Kondhs go to the forest in the evening. They hide themselves behind big rocks near places where water pools are there to which animals come to drink. When animal come they shoot down.

<table>
<thead>
<tr>
<th>English Name</th>
<th>Kondhs local name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Axe</td>
<td>Kurod</td>
</tr>
<tr>
<td>Twig cutter</td>
<td>Daki</td>
</tr>
<tr>
<td>Sickles</td>
<td>Kelea</td>
</tr>
<tr>
<td>Rabbit trap</td>
<td>Mladu Taranga</td>
</tr>
<tr>
<td>Digging stick</td>
<td>Gadi</td>
</tr>
<tr>
<td>Basket</td>
<td>Baga</td>
</tr>
<tr>
<td>Arrow</td>
<td>Ambu</td>
</tr>
<tr>
<td>Bow</td>
<td>Dhanu</td>
</tr>
<tr>
<td>Hatchet</td>
<td>Tapa kuradi</td>
</tr>
</tbody>
</table>
(iii) **Fishing** : Fishing is practiced across all tribal communities. Some people practice it for their livelihood and some practice it as hobby. Kondhs of Nuagoan practice it as their hobby. They take it as a secondary occupation. They like to go for fishing in their leisure time. For fishing, they do not observe any kind of ritual. But they pray to God to get good quantity of fish before using any type of fishing net and bamboo-made traps. There are two types of fishing practiced by the Kondhs of Nuagoan: individual fishing and collective or group fishing. They go to ponds, rivers, canals and cultivated land near the village. Besides fish, they catch big or small tortoise and crab for eating. Fish is termed as 'Minu' in the Kondh dialect.

**Distribution** : After catching fishes, they are equally distributed by the members who are involved in this expedition among themselves. The head of the group takes charge of the distribution. He gets little more in his share compared to other participants.

(v) **Agriculture** : The chief source of livelihood of Nuagaon people at present is agriculture and agricultural labour. They work on daily wages in the orchard and paddy fields of prosperous cultivators of the village and assist in sowing, transplantation, weeding harvesting, winnowing and other agricultural activities. Agriculture is the primary source of subsistence of the Nuagaon village. The production of crops depends upon four basic factors: climate, soil, temperature and culture. Thus, the environment together with the technology is available for manipulation. It determines the nature of the system of farming and the specific crops to be cultivated. The Nuagaon village is situated at the foot of the hills.

A major portion of this area is covered with hills and laterite-soils and forest. The agricultural land is made of alluvial soil. Above alluvial soil, the laterite soil capping is dominant. The forest is within the dry evergreen forest zone. The Nuagaon villagers have small land holdings but there is a lack of proper irrigation. The rotation of crop is practiced to some extent to preserve the soil martinets but the land is not allowed to rest for some years after cropping. A field is without cultivation for atleast three month between one annual cropping season and the next. There are two cropping seasons out of which Kharif season is the most important and dependable as paddy being the staple food of the area is cultivated in this season. In the Ravi season, only pulses and oil seeds are cultivated and people do not pay importance to these crops as they pay attention to paddy cultivation.

**Agricultural Cycle** : The cycle of agriculture among the Kondh is not different from that of other neighbouring communities. It starts with the processing of the field during the month of May-June, just before the arrival of South-West monsoon. While
sowing is usually done during June, transplantation of paddy becomes necessary at least once, during August. They then keep vigilant watch on the field till the harvest in the month of November-December. They cultivate oil seeds and vegetables after harvesting paddy. Few people cultivate summer crops and summer paddy.

**Implications of the present study of Pre-Historic Archaeology**

The study of the settlement of the Kondhs gives ideas about the relationship between ecology and settlement in terms of Kondhs criteria of selecting a place for settlement. The Kondhs of Nuagaon follow a linear pattern of settlement as houses are constructed on both sides of the road. Since archaeological sites are yet to be excavated horizontally in Orissa, it is not possible at the moment to relate the Kondhs pattern of settlement with any archaeological sites of Orissa. However, there is no denying the fact that the present study on Kondhs pattern of settlement would serve as an ethnographic data base for archaeologists.

**Palaeolithic and Mesolithic Culture**

While during Palaeolithic period, the known form of subsistence was hunting-gathering, during Mesolithic period the hunting-gathering and fishing modes of subsistence were at an advanced level. The Neolithic period witnessed the emergence of domestication of plants and animals. The Mesolithic man was basically a hunter and gatherer. In this regard the primary mode of subsistence of Kondhs which is agriculture is of lesser importance. On the other hand, gathering of forest products and hunting activities of the Kondhs have many implications for the subsistence of the Mesolithic. The modes of subsistence of the Kondhs include gathering, hunting and fishing.

**Gathering**

At present, dense forest is not found around the area mostly due to timber smugglers and partly due to indiscriminate felling of valuable trees by the local communities. The area is converted into barren hillocks and undulated land surface. This has limited scope of hunting and gathering as a means of subsistence for the Kondhs of Nuagaon.

**Hunting**

The Kondhs of Nuagaon resort to hunting at individual level and group level. The people go to forest for individual hunting in their leisure time. Traps, bow and arrows of various kinds are used in hunting expedition. They are able to get different kinds of birds and rabbits. In group hunting, all the members of the village move for hunting expedition to the forest under the leadership of a senior person among them. More
than ten persons go in a group. Other participants pray along with the senior person. According to the direction of the leader, the group starst an intensive search of the game. They cut the flesh of the animals after the hunting. There is equidistribution of flesh among all the participants but the actual hunter gets little more than others. They use same implements as in individual hunting. They hunt animal like wild bear, deer, elk, rabbit and birds like weaver, bat, wild fowl, parrot and peacock. Some birds which they catch for domestic purpose are like myna and peacock.

Fishing

Fishing plays an important role in Kondhs’ practices for procuring food. They go for fishing in local streams, ponds and pools. Community or collective and individual fishing are very common among them. At present, fishing is not a significant alternative of subsistence for the Kondhs, precisely due to drying up of springs and other water resources. They go for fishing in their leisure time. Various types of fishing nets and bamboo-made traps are designed by the Kondhs for fishing. They are able to catch different types of fish like Tlaki minu, magari minu, pitanga minu, suri minu and ganga minu. The above description implies that the Mesolithic man had abundant plant and animal resources for hunting, gathering and fishing. This shows the potentiality of subsistence by hunting, gathering and fishing by Palaeolithic and Mesolithic man.

Neolithic culture and Agriculture

The main form of subsistence of the Kondhs of Nuagoan is agriculture. From the point of view of ethno-archaeology, this is relevant at a general comparative level. The state of Orissa is very rich from Neolithic point of view. It is generally accepted that emergence of agriculture is associated with Neolithic culture. Therefore, agricultural strategies of the Kondhs of Nuagaon may provide some clue in understanding the strategies of subsistence of the Neolithic and subsequent cultures. The chief source of livelihood of Nuagaon at present is their manual labour. They work on daily wages in the orchards and paddy fields of the prosperous cultivators of the village and assist them in sowing, transplantation, weeding, harvesting, winnowing and other agricultural activities.

The agriculture is the primary mode of subsistence. As the Kondhs are agriculturists, they use agricultural implements made of wooden and iron which are very common items used during agricultural operations. There are two types of crops cultivated by them: Kharif and Rabi crops. Paddy is the major Kharif crops and oil seeds, dal vegetables and green vegetables are the main Rabi crops. Rice being the staple food
of the villagers, they take utmost care for the production of paddy. The possession of paddy land at present is encouraged to practice scientific methods of agricultural operation, which can produce more crops from the same piece of land.

Thus in this study, an attempt has been made for an ethnographic study of the Kondhs with special reference to their strategies of settlement and subsistence. Although study of the strategies of settlement and subsistence of various ethnic groups of Orissa is well known, the main feature of the study is the strategies of subsistence of the Kondhs of Nuagoan for archaeological purpose. The study will be used as a key resource to understand the subsistence pattern of Neolithic culture in relation to their hunting, gathering and fishing.

At a general comparative level, the agricultural activities of the Kondhs of Nuagaon have important implications for subsistence of Neolithic cultures. What is necessary now is to make an indepth study of the strategies of subsistence of other ethnic group in various parts of Orissa for understanding the strategies of subsistence of Prehistoric cultures of Orissa.

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Role of Sebayats in Daily Ritual performances of Lord Jagannath of Puri Temple

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Introduction

Jagannath Dhama, Puri is one of the most sacred places of pilgrimage in India. It’s the meeting point of three strong cultural traditions; the Aryans, the Dravidian and the Tribal. These three cultures are still reflected and manifested in the mode of worship of Lord Jagannath. The basic fact about Odishan culture and the life of Odia people lays around the worship of their god Jagannath, the Lord of the universe and the great Jagannath Temple of Puri. In each and every household of Odisha whether it be in a village or in the city Lord Jagannath is worshiped as the prime God since time immemorial. In each and every custom we relate ourselves with our God. Most of our festivals and our day to day life revolve around Lord Jagannath. To the people of Odisha the feeling is so strong that they identify themselves with the God and the Temple of Puri. Thus the life of the people of Odisha revolves around the Great Jagannath culture presided by their Great God Jagannath and whose epicenter is the Jagannath temple of the Shree Kshetra Puri.

The origin and the antiquity of the Jagannath worship at Puri are still shrouded in mystery. Jagannath Temple is essentially a Vishnu temple, dedicated to Lord Jagannath. *Jagat* means ‘world or universe, which is impermanent and will one day go’. *Natha* means ‘lord or master, the one who is beyond change and maintains and protects all’. The culture of *Vaisnavism* was introduced into Odisha, and then known as *Kalinga*, in the 4th century A.D. In 1135 A.D. *Ananta Varma Chodaganga Dev* of the *Ganga Dynasty* started the construction of the temple at Puri, although it was never completed in his lifetime. Latter, which was completed in 1174 A.D. by *Ananga Vima Deva*. The Jagannath temple is a *Rekha Deula* or a linear temple with curvilinear tower on a *Pancha Ratna* plan built in an elevated ground about 20 feet above the level of surrounding area, presents an imposing sight and can be seen from miles away. The height of the temple is 214 feet and 8 inches, which covers 9.83 acres in its area. The temple building is divided into four parts: *Bhoga Mandapa* or offering hall, *Nata Mandapa* or dance hall, then *Jagamohana* or the audience hall and finally the *Vimana* or the main temple where the three deities *Jagannatha, Suvadra, Balavada* along with *Sudarsana* presides on their *Ratnasinhasana*.

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This paper is on the sacred specialists and the sacred performances performed by them in the sacred center Puri. Sacred specialists of a place of pilgrimage maintain a distinct style of life and transmit certain elements of the great tradition to rural population of India by popularizing certain text, by organizing pilgrimages and by officiating as the ritual and temple priests. The word ‘Jagannath’ literary means the Lord of Universe. He is also the ‘Devadhideva’ Lord of the Lords and the ‘Rajadhiraj’ that is King of the Kings, who enjoys all the worldly pleasures and to serve the lord many Neetis are performed. Neetis are the rituals or the daily sacred performances, performed for the three deities. These neetis are very elaborated and complicated in their manner. Again neetis are divided into four types as per their occurrence like- Dainika or daily, Samayika or periodically, Janijatara or festivals, Gupta or secret. There are about 26 types of daily rituals staring from Dwaraphita and Vitarasadha from the sun rise to Khata seja lagi and pahad in the midnight. Lord Jagannatha is the king of the state and live the life of a king. The divine is worshiped here as a human being and is treated as the only living God in the Universe. To perform the various sacred performances many society of worshiper families are formed and they are sacred specialists of the temple and are called as the Nijogas and they are grouped according to the services they provide in the temple. And the members of these Nijoga systems are known as the Sebayatas or the Sebakas of God Jagannath and his temple.

The objectives behind this research paper is to study the various sacred performances or the rituals or the Neetis, especially the daily ones. Here this research paper also has tried to identify various sacred performers or the servitors or the Nijogas engaged in these daily rituals. One more side of this paper is that it reflects the various changes in these sacred performances and sacred specialists system. This paper also describe the various social and cultural and economic effects of these sacred performances and the elaborate system of division of labour on the life of these sacred specialists.

To conduct this research and for empirical observation and logical reasoning I have used various anthropological research methods. Methodology means descriptions, explanation and justification of methods and not the methods themselves (Ram Ahuja, 2001). In this paper the data collection includes both Primary & Secondary data. The secondary data consists of Religious Texts of different types and Oral Traditions of the temple. The primary data is based on Social and economic survey of temple personnel (both direct & indirect servitors).It had been very difficult to catch hold of the various workers at a time. So sampling techniques have been adopted in the survey
procedure of the temple workers. In view of the survey done a brief sample structure may be created. A sample is a portion of people drawn from a larger population. It will be the representative of the population only if it has same basic characteristics of the population from which it is drawn. So here my concern in sampling is not how many sebayats will be taken but how many Nijoga system will be chosen which will be studied in order to make inferences about the whole servitors population. Again in sampling I did also include simple random sampling, stratified random sampling by dividing the population into a number of strata and sub groups, systematic or interval sampling taking every $n^{th}$ person from a pre-dominant list of persons. After that I used schedule forms containing some set of structured questions or blank tables, which are to be filled by me after gathering information from the informant. On the basis of the nature of information elicited, questions were primary, secondary and tertiary. Primary questions are information directly related to my topic, secondary that do not related to the topic and the tertiary are neither primary nor secondary. These are also known as padding questions or probe questions. In my study made some schedule containing some direct question and table keeping them in order. To avoid any bias, I did also use the method of Interview. It also includes the system of group, individual interviews and the key informant.

J. J. Honigmann (1967) in his book ‘Understanding Culture’, describes religion as “the most general and notoriously imprecise word. It has been used to cover many things: magic, Christianity, Hindu, philosophy, Atheistic Buddhism, and the emotional appeal of Communism. I will apply it to a very specific kind of behaviors, one often stringently standardized in society, ritual makes. Coping with life’s difficulties through prayer and magic, a subject sometimes shunted under that obliging label, religion, has been treated earlier and will be introduced again only as it, too, exhibits qualities of Ritual.”

L. P. Vidyarthi in 1961 put forward his theory of “Sacred Complex” after being influenced by the theoretical and methodological contributions of Redfield and Singer towards an understanding of Indian civilization. Within this framework he modified the terms used by Singer and developed a set of analytical concepts and descriptive terms to describe sacred centers. Vidyarthi uses the work ‘Sacred’ instead of ‘Cultural’ to define the analytic concepts like ‘Sacred Geography’, ‘Sacred Performance’, ‘Sacred Specialist’ because the word ‘Culture’ has a very broad meaning in Anthropology and word sacred has religious meaning in the context of studying a Hindu sacred place. Vidyarthi calls the totality of the sacred geography, sacred performance and sacred
specialists as “Sacred Complex” of a Hindu scared place. According to him the sacred complex of a place of Hindu pilgrimage itself is an intricate combination of the great and little traditions (1961). In India the presence of Hinduism is higher in percentage than any other religion. Hindu tradition and rituals are also marked in the very ancient history of our civilization. The social stratum, tradition, rituals of Hinduism has been described as religious tradition with many significant dimensions. For all these linguistically diverse Hindus of different center of India living within and beyond the national boundary the various sacred centers plays a significant role.

Makhan Jha in his book “Pilgrimage: Concepts, Themes, Issues and Methodology” (1977) described that the innumerable Hindu sacred centers can be conceived as a system of nods having varying degrees of social-religious traits. The distribution of holy places of various sects throughout India has created an essentially continuous ‘sacred geography’ in which various regional culture diversities become less significant for the movement of pilgrims over long distance.

T. S. NAIDU in his paper ‘Pilgrimage and Pilgrims: A case study of Tirupati Tirumala Devasthanams’ in the book “Dimensions of pilgrimage” (1985) explain that the concept of pilgrimage exists in all major religions, although its meaning varies to a great extent within the canonical structure of each religion. The animistic basis of popular beliefs affected the higher forms of Hinduism and even the local development of other religion. So in Hinduism, the institution of pilgrimage to holy places is an ancient and continuing religious tradition.

The sacred specialists or the nijogas are the traditional servitors of the Jagannath temple. By traditional we mean that it is a hereditary duty, passed on from generation to generation. These are the people who cultivate, preserve and promote the classical cultural tradition. They are engaged in the pursuit of knowledge since time immemorial. In Jagannath temple the deity maintain and enjoys a royal treatment that comprises a variety of rituals daily and also some special one in various festive occasion. To serve these various rituals there are also verities of worshipers. To perform their duty and to monitor and to regulate themselves they have divided themselves into many groups and this system is called Nijoga system. These Nijogas are often referred as the Chhatisnijoga or the Thirty-Six categories of servitors of the Jagannatha Temple. According to the Madalapanji of the Temple Chronicles, Ananga Bhima Dev established this Nijogas system in the temple. But with the march of time and according to the necessity, the number has increased considerably. According to the report of the then Collector of Puri C. Grome in 1805 there were about 203 types of servitors in Jagannath

There are about 26 types of daily rituals starting from the Dwarapita or opening of the gate at 5 am to the Ratra Pahuda at 12 pm, except that there are also various special pujas and rituals on various festivals. The Dainika neetis or the daily rituals of the Lord Jagannath are very much like a human being. And to perform these rituals of the 43 Nijogas, as many as 36 are essentially required in daily basis. That is why this nijoga system is called as the Chhatis Nijoga system. One servitor of a particular Nijoga must be present daily to carry out the ritual properly. No man can do these traditional duties except a member of that particular Nijoag family. They work here in rotation (about 3 days in every 6 week one family is employed). In order to be fit for temple service, one initial ceremony is held in the temple called ‘Saree Bandha’ which actually gives the real permission to a servitor to serve the lord. The servitors of various nijogs employed in different daily rituals are respectively: Bhitarachhu-mahapatra, Pratihari, Muduli, Akhanda Mekap, Palia Mekap, Talichha mahapatra, Puspalka, Khuntai, Changada Mekap, Dhoa or Luga-Dhua-Panikunda, Suarabadu, Paniapat, Mukhapakha, Darpania, Amalughatuary, Bhandara mekap, Mahabhoi, Khuri nayaka, Chadhaukarana, Gochhikara, Patribadu, Pradhani, Pujapanda, Palia mahasuara, Bidajogania, Sudhasuara, Ganthua, Baiyantari, Garabadu, Bhitaragayeni.

The daily sacred performances and the various sacred specialists involved in are:

**Dwaraphita and Vitarasadha,** is the opening of temple doors. The door of the sanctum are to be opened by 5 in the morning, as stated in the Temple Record of the
Rights in the presence of five servitors. On certain days like the Kartika Purnima and Dhanu Sankranti, the doors are to be opened between 2 to 3 A.M. Presence of five servitors is necessary for this ritual. They are Bhitarachhu Mahapatra, Pratihari, Muduli, Akhanda Mekap and Palia Mekap.

**Mangalalati**, is the offering of auspicious lamps to the deities early in the morning around 5.30 A.M. Bhitarachha Mahapatra, and two other Puspalaka servitors perform this Neeti standing bellow the pedestal (Ratanabedi).

**Mailam and Tadapalagi**, the scheduled time for mailam is 6 A.M. In this ritual Tulsi, the flowers and the cloths were removed from the deities, worn on the previous night. after the removal of clothes, another clean and washed set of clothes known as Tadapa and Uttariya are worn by the deities. The nijogas associated with this particular ritual are three Puspalaka Sebakas, Khuntia, Changada Mekap, Akhanda Mekap and Dhoba. The clothes are washed by the Doba sebak who is actually brahmin by caste.

**Abakasha**, the time is between 6 to 6.30A.M in the morning for the purification rites of the deities, such as brushing the teeth and bath. During these rituals Puspalaka servitor sprinkle water mixed with camphor, curd, amla, and sandal on three brass mirrors and also show toothstick and tongue scrappers made of gold symbolizing bath and brushing of teeth. After that the astrologer reads out the astrological detail of the day. These rites are performed by Suarbadu, Paniapat, Mukhapakhala, Khuntia, Darpania, Amla Ghatuari, Padihari/ Pratihari, Bhandara Mekap, Mahabhoi, and Khuri Nayak.

**Mailama**, the time specified is 6.45 to 7 A.M. The deities change their cloths and wear another one and during this ritual an Akhanda Balita, a lamp is lighted inside the sanctum that burns till the time of retirement of the deities to the bed i.e. Pahada. The servitors associated with this rituals are Puspalaka Sebakas, Khuntia, Changada Mekap, Akhanda Mekap and Dhoba.

**Sahanamela**, the time of Sahanamela in the Record of Rights of the Temple is 7 A.M. During Sahanmela pilgrims are allowed to go up to ratna bedi and to see the deities at a very close distance. This ritual is usually conducted for 1 hour. The sebakas present in this ritual are Puspalaka, Mekapa, Khuntia, Chadhau Karana, Gochhikara, Pratihari, Suarbadu and also the Temple Police.

**Beshalagi**, This is performed between 8 to 8.30 am. The deities are again dressed up and they wear different robes and gold ornaments studded with precious stones to suit different festive occasions and days. The nijogas present in the rituals are Palia Khuntia and Palia Puspalaka.
Rosha homa, the time is between 8.30 to 9 am. Homa or fire sacrifice is done in the sacred kitchen of the deities before cooking of the oblation. This important ritual is done by Puja Panda sevaks, Dhopakhalia and Mekap.

Suryapuja, next follows the sun worship. The sun god in the inner enclosure near the Mukti mandap is worshiped by a Puja panda servitor which is performed in between 8.30 to 9 am.

Dwarapala puja, the divine gate keepers at the Jaya-Bijaya gate in the main temple are worshiped by the Puja panda.

Gopala Ballabha Bhoga, The prescribed time is 9 am. This is the time for breakfast of the deities which consists of Khai or sweet popcorn, khua ladoo, kora or coconut sweets, ripe banana, curd and chipped coconut etc,. This is made at Anasara pindi just outside the Kalahata door. The nijogas present during this rituals are Puja Panda, Sudha uara, Suara Badu, Ballav Jogania, Patri Badu, Gara badu, Palia Mahasuara, Pradhani.

Sakala dhoopa, The specific time is 10 in the morning, this is also called the kotha bhoga or raja bhoga. Previously the Raja, the superintendent of the temple bore the cost of materials for the preparation of oblation which is now borne by the temple administration. The oblation after being offered to the deities becomes Mahaprasad and is then distributed as khei or dues among the servitors of the day including the king. The following sevakas are engaged in these rituals, Puja panda, suarabadu, paniapata, Pradhani, Paliamahasuara, Pratihari, Pantibadu, Garabadu, Roshapaika, Palia patri, Changada mekap, muduli, Chandana ghatuari, Plaia mekap, Palia khuntia, Hadap naik, Bidia Jogania, Sudu suara, Gochhikara, Dakhinighara, Pratihari, etc.

Mailama, The prescribed time is 11 am, after morning dhoopa the deities change their clothes and again dressed according to the day. This ritual is performed by Changada mekap, Palia khuntia, and Palia mekap.

Bhoga mandap, After the dressing rituals take place in bhoga mandap Pujapanda, suarabaduPlaia mekap, Sudu suara, bhoga mandap Pratihari perform this ritual.

Madhyana dhoopa, the time is between 12.30 to 1 pm, the oblation offered in the ratna bedi are worshiped and huge quantities of food offerings such as rice, dal, curries, cakes of 56 types that are popularly known as Chhapan bhog are given to the deities. The following sevakas are engaged in these rituals, Pujapanda, suarabadu, paniapata, Pradhani, Paliamahasuara, Pratihari, Pantibadu, Garabadu, Roshapaika, Palia patri, Changada mekap, muduli, Chandana ghatuari, Plaia mekap, Palia khuntia, Hadap naik, Bidia Jogania, Sudu suara, Gochhikara, Dakhinighara, Pratihari, etc.
**Madhyana pahuda**, If rituals are performed as scheduled and in time the deities retire for an afternoon nap, the doors of kala hata, Jaya-Bijaya and Benerana or the south gate of the main temple remain closed. This ritual is performed between 1.30 to 3pm. Pali khuntia, khataseja mekap, puspalka, akhanda mekap, hadapnayak, garabadu, pratihari, and muduli performed this ritual.

**Dwara phita**, during this ritual all the gates are opened again for the devotees. Pali khuntia, akhanda mekap, palia pratihari, muduli, and Vitarachhu mahapatra performed this ritual.

**Sandhya alati**, after opening the doors the evening lamp offering to the deities is made. Sometimes on ekadasi days the mailama is done. Talichha, garabadu, puspalka, suarabadu, Plaia mekap performed this ritual.

**Sandhya dhoopa**, the time is between 7pm to 8pm, the puja is like that of the morning and afternoon dhoopas but the oblation items are less in quantity and number. After this oblation again alati or lamp offering is made which is known as Jaya mangala alati. The following sevakas are engaged in these rituals, Pujapanda, suarabadu, paniapata, Pradhani, Paliamahasuara, Pratihari, Pantibadu, Garabadu, Roshapaika, Palia patri, Changada mekap, muduli, Chandana ghatuari, Plaia mekap, Palia khuntia, Hadap naik, Bidia Jogania, Sudu suara, Gochhikara, Dakhinighara, Pratihari, etc.

**Sahana mela**, Like the morning sahana mela devotees are allowed to see the deities in a close distance. The sebakas present in this ritual are Puspalaka, Mekapa, Khuntia, Chadhhau Karana, Gochhikara, Pratihari, Suarabadu and also the Temple Police.

**Mailama and chandan lagi**, during this ritual deities change their clothes and are anointed with sandal wood paste mixed with camphor, saffron and kasturi. The sevakas required in this rituals are suarabadu, ghatuari, muduli, paliamekap, paliapadhiari, garabadu, hadapa nayaka and paila khuntia.

**Bada singhar besha**, after chandan lagi the deities are dressed up again for bada singhar besha the deities wear Bada lagi patta or silk robes in which Gita gibinda of Jay Dev are woven into the texture of these robes, the deities wear flowers and floral ornaments and head gears. mekep, puspalka and khuntia nijoga perfomre this ritual.

**Badasinghar dhoopa**, the time for this dhoopa is 11.15 at night and this is the last oblation of the day. The quantity of oblation is much less consisting of pakhala or watered rice, kadali bara or raw banana cake, khiri, kanji etc. Suarabadu, pratihari,
paniapata, pradhani, paliamahasuara, pantibadu, roshapaika, patribadu, garabadu, changada mekap, ghatuari, parisabadu, paliamekapa, paliakhuntia, hadapnayak, bidia jogania, puranapanda, gochhikara, ghantua, baiyyanti, etc performed the ritual.

**Khata seja lagi and pahad**, the time is between 11.45 to 12 am the bed steads of the deities are arranged. The idol of *sayana thakura* from store room are taken to the ratna bedi and placed near lord Jagannath. This idol is the metallic conjoined idol of *purusha* and *prakriti* or lord Vishnu and goddess Lakshmi. Then follows offering of green coconut beetles and alati to the deities. *Pali khuntia, khata seja mekap, puspalaka, akhanda mekap, hadapnayak, garabadu, pratihari, and muduli* performed this ritual. During this the *bhitara gayani* or ladies servitor sings songs from Gita Gobinda standing at the kala hata door. Then the idol is taken to the bed stead of lord Jagannath and then to the store room. Thus the deities retire to their beds. After that sealing and locking of the doors of the temple are done. The temple premises are vacated only leaving a few temple police official and servitors to keep the watch in the night.

In due-course many changes have seen in the temple rituals and also in the nijoga system. In many rituals like Dwaraphita, Abakasha, Sakaladhupa, Madhyannadhupa, Ratrapahuda, etc the number of participation of servitors has decreased. Earlier the Sahanamela was done twice but it is now practice for only once. During the Dwarapal puja ritual Jagamohana and the outer wall of the temple were cleaned by the various mathas for which they were given lands, but now this is done by the temple sweepers. Many nijoga system have been extinct in times and their respective services also have stopped, like the Mahari, Madeli, Binakara, Devadasi etc.

Puri temple and the Lord Jagannatha symbolize the universal brotherhood. But the traditional caste system and the various social stigma is still prevalent here. A close analysis of the caste structure shows that the Brahmins are the masters and the sole controlling body involved in the service to the lord accounting for more than 60% of the total workers. They hold all the prestigious posts and regulate the entire rituals held within the temple. They are mainly concerned with the performances of the daily worship of the lord.

In the ritualistic hierarchy the Brahmins are followed by the karanas who also hold a position of dignity and respect guiding important rituals related to the lord. The vaishyas stand next to the karanas in the social scale who work as indirect servitors mainly acting as various helpers providing items of necessity required in the day to day rituals of the god. They do not hold high posts as well as respectable status. The lowermost class is represented by the sudras who are considered as untouchables and are
assigned with various laborious jobs such as sweeping the temple premise, cleaning, fetching water etc. They have no accessibility to the lord. It will be very much interesting to note here that Jagannatha culture has been considered for its universal brotherhood but even today only the Brahmins have the right to prepare food for the lord in the kitchen. Only the sudras are allowed to carry the oblation (cooked food) from the kitchen towards the sanctum, where the idols are placed but are not allowed in the ratnavedi, the place where the deities actually stands. Only the Brahmins can go there.

So a clear division of labor is noticed inside the temple and works are assigned to the people on the basis of their social and economic status. Of the total servitors who earn their livelihood by working inside the temple around 30% of them also work outside the temple. This section of people are mainly the indirect servitors who are not attached with the daily rituals. The workers outside the temple are engaged in various services such as decorators, painters, agriculture etc. The workers of lord Jagannatha temple derive their income from the temple in lieu of the services they render. This salary is given by The Lord Jagannatha Temple Office which is fixed depending upon the type of work they do. Extra income is also earned from the pilgrims as donations (not all workers); some earn a handsome sum of money from their landed property, that are mainly from the rice fields. So the income is drawn from three sources. But it can be said that not all workers derive their income from all these sources. Regarding the mode of payment to these workers, direct as well as indirect a fixed salary in cash is paid to them by the Lord Jagannatha Temple Office in return of their services. But some upper class Brahmins do not take cash but take a share of the oblation or the food offerings which is being offered to the lord. This is known as the Khei. It is a common practice that every servitor of the lord will receive a share of this Jagannatha Ballava bhoga (as it is called). Some pandas or Brahmins who act as guides and help the tourists and pilgrims earn an extra income mainly in cash. But there are some workers mainly the sudras who do not get anything from the temple but manages a few from the pilgrims; whereas the upper caste Brahmins priests and pandas are well served both by the temple as well as by the pilgrims. So the workers who gets nothing from pilgrims mainly represent the lower class sudras and few sellers within the temple premise; whereas there are workers who get nothing from the temple also represent the deprived class, i.e the sudras.

After dealing with the various aspects of the life of these temple workers the following deductions can be drawn that a clear division of labor based on class, caste exist in the temple of the lord Jagannath who Himself stands for equality & universal brotherhood. The Brahmins or the upper class are the main servitor group involved in the daily worship of the God & hold the highest post in all the ceremonial arrangements related
to the lord. The lower class and Sudras are the indirect servitors who had no real access to the lord & are employed in various laborious jobs. Some reform measures must be adopted in the part of the temple office as well as the Government to improve their present status. The foremost necessity of the hour is to change the discriminatory attitude prevalent in the mind of the upper class servitors which will in reality would satisfy the universal lord & enhance the sacredness of the place as they themselves belief that the real happiness of Lord Jagannatha lies in the well-being of His subjects.

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Multilingual Education: An Overview of Juang Children of Keonjhar, Odisha

SAROJ MOHAN PALO*

‘The Juang’ is one of the major aboriginal tribes of Odisha which are found in the districts of Keonjhar. They are mainly the habitants of Banspal and Harichandanpur block. According to Dr. Varrier Elwin, the word ‘Juang’ in the tribal dialect means ‘Man’. An alternative term is ‘Pattua’ which their neighbors use to denote the word ‘Juang’. ‘Pattua’ means those who wear of dresses made from leaves. The ‘Juang’ inhabit in hills and forest areas in the south and the west of the district of Keonjhar in Odisha.

The area inhabited by the Juang of Keonjhar is divided into four pirhas namely Jharkhand, Sathkhand, Rebena and Kathua which are the maximal traditional territorial unit. The Juang of Jharkhand pirh consider themselves superior to the Juang of other pirhs. The Juang lives in both small and big villages. A typical Juang village is situated on hilltops or slopes or in valleys amidst hills and forest. A village in the Juang society is the largest corporate group and it has a formally recognized territory of exploration with well-delineated land boundaries. The Juang living in Keonjhar depends upon shifting cultivation because of which it uses pre-agricultural technology.

The ‘Juang’ is permitted to cultivate, hunt and cut down trees from that part of the forest which belongs to its village. It claims itself to be the autochthons of the area from where it has migrated to other parts of the state. It classifies itself into two sections i.e. the Thaniya (those who dwell in their original habitation) and the Bhagudiya (those who have moved away to other places). In the Juang society, the village is the largest corporate group with formally recognized territory. Within the delineated land boundaries, it possesses its land both for settled and shifting cultivation and the village forest for exploitation. It shifts its village sites frequently as it considers it inauspicious to live at a particular place for a longer period. Each Juang village is marked by the presence of a dormitory known as Majang where its traditional dance takes place and the village panchayat sits. It also serves as a guest house for the visitors to the village.

The Pradhan, the secular headman and the Nagam or Boita or Dehuri, the village priest constitute the traditional village panchayat of the tribe. A group of neighbouring villages constitute a pirh which is headed by a Sardar who decides inter-village disputes. The Juang is a patrilineal and its society is marked by the existence of totemistic clans.

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which are divided into two distinct groups known as ‘Bandhu clans’ and ‘Kutumba clans’. The totem is never destroyed or injured by its members. The clans are exogamous and their marriage within the same clan is considered incestuous.

The Juang living in Keonjhar depends upon shifting cultivation for which they still use pre-agricultural technology. The Juangs struggle hard to earn their livelihood. The wetland in the area is inadequate and the yield from the land is poor. Most of them cling to their age-old primitive practices. The Juangs depend on shifting cultivation which is the primary source of their livelihood. Besides shifting cultivation, collection of minor forest produce is another major source of livelihood. The Juang’s life is marked by the celebration of a number of religious festivals in honour of their gods and goddesses. For them, Dharam Devt and Basumata are the supreme deities. The former is identified with the Sun God and the latter with the Earth Goddess. Gramashree is the presiding deity of the village. There are also a number of hills, forest and river deities in the Juang pantheon. They believe in the existence of spirits and ghosts. They use a kind of drum known as ‘Changu’ at the time of dancing.

The Juangs are mostly concentrated in Banspal, Telkoi and Harichandanpur Blocks of Keonjhar District. According to 1991 census, the Juang population was 35665 or 0.5 percent of tribal population of the state. According to 1981 census, their population was 30876. Thus the rate of growth of the Juangs during the decade 1981-91 was 15.51 as against 18.89 and 20.06 percent of the state’s tribal and general population respectively. According to 2001 census, the percentage of literacy among Juang is 25%. The main reason for low literacy is engagement of girl children in household work and lack of prioritization of education.

Multilingual Education aims at imparting mother tongue-based multilingual education to children at primary stage of the linguistic minority community of the state through thematic approach-based on the philosophy of National Curriculum Framework 2005.

Community as creator of culture

In 1871, E B Tylor defined culture as “that complex whole which includes knowledge, belief, art, morals, law, customs and any other capabilities and habits acquired by man as a member of society”(1924:1). This indicates that a community or a society has its own cultural system which distinguishes itself from the others.

Culture is the learned behaviour of mankind expressed in different forms and created by the community. Education is a part of the human culture which is learnt from one generation and passes on to the other. Learning takes place in the social
context with purpose and meaning. Children learn many things from home, neighbour and society prior to their enrollment in the schools. They learn many things through working. Learning in tribal society is not a conscious effort. It is rather a bi-product of a purposeful necessity.

Community as the creator and consumer of culture is found in the tribal society. Diversity of culture in a society/state is the foundation of multiculturalism and multilingualism. People from different culture and using different languages live together in communal harmony. According to Putnam, “they form their ‘social network’ bound by mutual trust and shared understanding of the common goal by virtue of social capital in it enables its member to leverage a far wide range of resources than are available to a stand alone member in a community” (Putnam, 2000)

Sarva Shiksha Abhiyan (SSA), which was launched in 2001 in partnership with the State Governments, is a comprehensive and integrated flagship programme of the Government of India (GOI) that aims to attain Universalisation of Elementary Education (UEE) in the country. SSA aims to provide useful and relevant education to all children in the age group of 6-14 years by 2010. Further, the Right to Education Act (2009) made elementary education a fundamental right of every child aged 6-14 years, thus reflecting India’s deep commitment to education.

The National Policy of Education 1986 and the Programme of Action 1992 specified objectives and strategies for the education of the children hailing from the scheduled tribes and scheduled castes

Art.46 : State to promote the educational need of the weaker sections of the society (SC & ST)

Art.350-A : Adequate facilities for instruction in mother tongue at the Primary stage of education to children of Linguistic Minority groups

Art.21-A : Free and Compulsory Elementary Education of equitable quality for all children up to 14 years of age

National Curriculum Framework 2005 reads as following:

- The mother tongue is a critical conduit, that social, economic and ethnic backgrounds are important for enabling children to construct their own knowledge. Foreword, page 4

- The fact that knowledge is constructed by the child implies that curricula, syllabi, and textbooks should enable the teacher in organizing classroom experiences in
consonance with the child’s nature and environment, and thus providing opportunities for all children. (Executive Summary, page 8)

**Five guiding principles of NCF 2005 are**

1. Connecting knowledge to life outside the school
2. Shifting learning away from rote methods: Meaning & Communication
3. Enriching the curriculum to provide for overall development of children rather than remain ‘textbook centric’
4. Making examinations more flexible and integrated into classroom life
5. Nurturing an over-riding identity: How does the tribal child become a true citizen of India

**How MLE ?**

- Begins with mother tongue (L1, home language) as a medium of instruction
- Builds strong bridges to other languages, while maintaining the use of L1 for as long as possible
- Builds on what we know about how children learn best (from known to the unknown)
- Building on the child’s prior knowledge, using his/her world or real knowledge and moving to new knowledge
- Allows the child to construct knowledge
- Uses the language the child knows best to teach reading and writing skills
- Allows the child to learn academic concepts in mother tongue

**Methods** : Observation, Questionnaire, Focus Group Discussion, Interview

**Objectives**

- Ensure equity and quality education to tribal children
- Develop socio-economic status through literacy
- Construct curriculum and instructional materials in ten tribal languages. Language and culture determine what and how the children are to learn. Therefore, each tribal group has prepared its own curriculum and instructional materials based on the guiding principles of National Curriculum Framework-2005

**Position of Schools in Tribal Areas**

School as a social institution is a recent development in the tribal areas of Odisha. Schools in tribal areas are state institutions following the culturally-dominant curriculum
and aim at mainstreaming all tribal children in the dominant state language and culture. Even the teachers from tribal communities don’t use tribal language in classroom for the comprehension of the tribal children. Thus both tribal teachers and children are denied to use their language in classroom. Unfortunately, there is a huge gap between the national goals and aspirations to maintain the cultural and linguistic diversities in school system and the practice that is adopted in the schools of the tribal areas.

Need of Multilingual Education Programme in Keonjhar

The Juangs have their own dialect which has been described by Col. Dalten as Kolarian. As per linguistic division, the Juangs come under the group of Austric or Mundari language. Juang children fail to cope up with the pressure of learning Oriya language at school in the initial stage which results in high drop out at the primary level. To counter this problem, multilingual education has been implemented for Juangs of Banspal and Harichandanpur block. In the initial stage, the project has been launched on pilot basis in 10 schools having 100% Juang children in Class-I. 10 monolingual schools have been identified from two blocks namely Banspal and Harichandanpur (5 from each block) to introduce MLE.

Selection of Pilot Schools for MLE

The pilot schools have been identified basing on the following criteria:

- The school must have 100% ST children with monolingual situation i.e. all children must be speaking their mother tongue
- At least one teacher belongs to the tribal language group and can speak/teach in the language of the child and assigned to class-I
- The school should be identified in the GP with more than 70% to 100% ST population in which the identified language group is dominant
- Community interest in adopting their language as medium of instruction in the pilot school is one of the major considerations for selection. It should translate into strong SMC and parent interest in adopting MLE as medium of instruction

Based on the above criteria, 10 schools have been identified from Banspal such as Ghungi PS, Duarsuni PS, Toranipani PS, Jantari UGUPS, and Phulbadi PS and from Harichandnaur such as Somagiri PS, Alanga PS, Kahraba PS, Nalpanga PS, and Budhakhaman PS (5 from each block).
Findings

<table>
<thead>
<tr>
<th>MLE Schools</th>
<th>Non MLE Schools</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Student’s attendance is regular</td>
<td>• Irregularity is clearly noticed in the attendance register</td>
</tr>
<tr>
<td>• Culture-responsive classroom</td>
<td>• Hardly any link with the tribal culture</td>
</tr>
<tr>
<td>• Lot of curricular activities</td>
<td>• Learning by doing Over-emphasis on text book learning?</td>
</tr>
<tr>
<td>• Activity planning and use of local specific TLM is extensively used during the classroom transaction</td>
<td>• Entirely confined to text books and rote memorization of facts contained in them</td>
</tr>
<tr>
<td>• Curriculum, contents, materials and learning process compatible to local culture thus making learning meaningful and contextual</td>
<td>• Curriculum with competencies and content common to all categories of learners</td>
</tr>
<tr>
<td>• Textbook learning embedded with all curricular experience and reflection on cultural values</td>
<td>• Textbook considered as important means of learning</td>
</tr>
</tbody>
</table>

Transactional Process

<table>
<thead>
<tr>
<th>MLE Schools</th>
<th>Non MLE Schools</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Activity-based, learner-centered interactive approaches used in learning situation</td>
<td>• Emphasis on rote method</td>
</tr>
<tr>
<td>• Curricular concept linked to the real life outside the classroom</td>
<td>• Hardly any link with the real lives of tribal children</td>
</tr>
</tbody>
</table>

Children and Teacher Perspectives

MLE Schools

- The classroom set up meets the expectations of the children
- The teachers form the community which contributes to the cultural enrichment through education employing both the written and oral modes of communication
- Comprehensive framework for mother tongue education at the primary level
- Absence of mother tongue in classroom transaction causing dissatisfaction among children
Community members contribute to the cultural enrichment of education by establishing small cultural museum in the school

Sense of community ownership developed.

**Non MLE Schools**

- Hardly matches the expectations and imagination of children
- Teachers are not able to bring a convergence between mother tongue and language used at school
- Along with textbooks, there is scope for self learning and group learning through observation, experimentation and analysis
- Textbook considered as the store house of knowledge
- Community ownership is a distant dream

**Uniqueness of MLE Classroom**

- The curricular and the process of education are enriched by cultural contents of the Juangs.
- Resource persons from the community contribute to the cultural enrichment of education
- Classroom transaction is vibrant and effective because of two-way interaction instead of traditional teacher dominated one
- TLM and knowledge of cultural items are ensured in class-1 through collecting materials from environment. Teacher and student are both involved in using these materials.
- Multiple techniques of evaluation like observation and portfolio evaluation are used individually for continuous and close monitoring.

**Daily routine in MLE schools for Class I and II**

- Period 1- Initial Work and attendance taking - 15 minutes
- Period 2-Moral lessons - 15 minutes
- Period 3-Mother Tongue Complex/Combined Letter - 10 minutes
- Period 4-Left out L2 Letters—Alphabet Chart - 10 minutes
- Period 5-Word Webs- 2LA Lesson plan (TPR, Supporting Game, See Listen and Say, Oriya Rhyme, Picture Talk, Reading in L2) - 30 min
- Period 6-Activities supporting this - 10 minutes
Period 7 - Maths Primer/number chart - 30 minutes
Period 8 - Listening to Story
Period 9 - Shared Reading (B.B. + Exp Chart Story + Story Chart)
Period 10 - Silent Reading
Period 11 - Creative Writing
Period 12 - Cultural Maths (Maths Theme Web)
Period 13 - EVS (EVS Theme Web)
Period 14 - Activity Centers (Reading Corner, Science Table, Math Activity Center)
Period 15 - Cultural Songs and Dances
Period 16 - Cultural Crafts and Games

**Track One Material for Class II**

a. Combined/complex letters MT Chart
b. Combined/complex letters L2 Chart
c. Matra/Falas
d. Left out letters
e. Word Webs
f. Bridging Books (a,b,c,d)
g. Math Book
h. Number Chart

The instructional materials prepared for these two tracks are:

<table>
<thead>
<tr>
<th>Track I Contains</th>
<th>Track II Contains</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alphabet Chart</td>
<td>Big Book</td>
</tr>
<tr>
<td>Alphabet Book</td>
<td>Small Book</td>
</tr>
<tr>
<td>Number Chart</td>
<td>Story for Listening</td>
</tr>
<tr>
<td>Number Book</td>
<td>Experience story</td>
</tr>
<tr>
<td>Math Book</td>
<td>EVS (nature study)</td>
</tr>
</tbody>
</table>

Games and Sports, Moral Education, Songs, tales, riddle
Conclusion

‘Aspects of the MLE programme that were implemented as intended included developing curriculum that was culturally appropriate and included input from a variety of stakeholders. Many stakeholders also reported that members of the community actively contributed to various aspects of the MLE programme. Children got back their voice. Their enrollment and retention improved. Children started talking in their language and understood the content and connected the classroom knowledge with their experience. They started reading and writing and identifying letters from the sentence. Getting literate became easier and the result is visible. Students from other classes are also interested in learning (reading big and small books, listening stories, practicing maths). After six months of studying in Class I the children are able to read a sentence and identify the letters and words with meanings from the sentence when it is in their mother tongue. The children can think and create if given a context. The basic conclusion emerging from this study is that the MLE programme has been able to achieve its objectives.

References

CONTEXTUALIZING CLASSROOMS IN TRIBAL AREA SCHOOLS IN ORISSA: An Experiential Learning Mahendra K. Mishra


E B Tylor (1871)


Problems of Osteoporosis among post-menopausal women: A hospital based study in Bhubaneswar, Odisha

SWAGATIKA KANUNGO*

Abstract: The present paper attempt to study the causes and problem faced by the post menopausal osteoporosis patients in Odisha. It was conducted among the women patients suffering from osteoporosis at Capital Hospital Bhubaneswar from November 2011 to January 2012. The study group consists of 60 post menopausal women having osteoporosis in the age group of 40-90 with an average age of 57 years. It is found from present study that osteoporosis is a common problem among the postmenopausal women. It was also observed that it affects particularly those class of women who were not aware about the disease due to their poor educational and economic status and is also manifested by their body mass index and most of the patients were belongs to the lower middle class category and cases of maternal osteoporosis of the patients has also been observed. BMI of the patients undergone studies exhibits fall below normal or normal category, recently who were detected as osteoporotic patients shows very low BMI range.

Introduction

Osteoporosis is a major health and economic problem. An International consensus development conference has stated that osteoporosis is a systemic skeletal disease characterized by low bone mass and microarchitect deterioration of bone tissue, with a consequent increase in bone fragility and susceptibility to fracture. This silently progressing metabolic bone disease is widely prevalent in India, and osteoporotic fractures are a common cause of morbidity and mortality in adult Indian men and women. According to National Health and Nutrition Examination Survey (NHANES III), an estimated 14 million American women over age 50 years are affected by low bone density at the hip. The prevalence of osteoporosis increases with age for all sites, and by WHO definition up to over 70% of women of the age 80 years have osteoporosis. Metabolism of bone is a dynamic process occurring continuously throughout the life in order to maintain a balance between the resorption of old and injured bone by osteoclasts and the formation of new bone under the control of osteoblasts. This process is termed as bone remodeling or bone turnover. Bone turnover increases to

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high levels in women soon after menopause. After menopause, due to the cessation of ovarian function estrogen levels decrease and beside other effects on body one major effect of estrogen deficiency is osteoporosis. This is believed to be due principally to a diminution of a direct action of estrogen on bone cells. The two major causes of bone loss in women are deficiency of estrogen after the menopause and age related processes. With the onset of menopause, bone loss occurs rapidly and is believed to average approximately 2% to 3% over the following 5 to 10 years, being greatest in early postmenopausal years. It is important to think clearly about the 2 principle determinants in adult bone health (a) Maximum attainment of Peak bone mass (PBM) in young adulthood, and (b) the rate of bone loss with advancing age. With the onset of menopause, rapid bone loss occurs which is believed to average approximately 2% to 3% over the following 5 to 10 years, being greatest in the early post menopausal years. Life time losses may reach 30% to 40% of the peak bone mass in women and 20% to 30% in men. The pathogenesis of postmenopausal osteoporosis involves the interplay of many factors- Nutritional, Environmental, Genetic factors. The occurrence of Osteoporosis in postmenopausal women is very common problem especially in India who are exposed to many of the risk factors like Family history of osteoporosis, history of anorexia or bulimia, prolonged amenorrhea, low calcium diet, lack of exercise and Vitamin D deficiency.

**Review of Literature**

Milliken has investigated the effect of 1-year supervised weight training exercise on bone mineral density (BMD) in postmenopausal women. The result showed higher BMDs of trochanter and femoral neck in women with weight training exercise than in those lacking exercise. Chan has studied the effect of Tai-Chi exercise on bone quality in postmenopausal women. Postmenopausal women were randomly assigned to an exercise group or a control group. Subjects in the exercise group performed 5 sessions of 45 minutes Tai-Chi per week. After 1 year of Tai-Chi exercise, a greater percentage loss in bone density was observed in the control group when compared to the exercise group, suggesting that performing Tai-Chi exercise could decline bone loss in post menopausal women. Besides, Feskanich et al. have studied prospectively a cohort on the relationship between walking, leisure time activity, and the risk of hip fracture, showing that physical activity was inversely associated with the risk of hip fracture and that the effect was dose dependent. Ralston indicated that peak bone mass and strength could be determined by genetic factors which affect the level of BMD, biochemical markers of bone turnover, and mechanical properties of bone. Results of association studies have suggested that polymorphisms of components in the gene-
signaling pathway of genes such as COL1A1, ESR1, and LRP5 were associated with bone mass level and fracture risk. The influence of genetic factors on skeletal development is most pronounced in young people. The impact of genetic factors diminishes with age because of the increasing impact of environmental and nutritional factors. Although there are many effective treatments available for primary osteoporosis, there is a lack of effective treatments for disuse osteoporosis. This is because of the fact that the aetiology, pathophysiology, and resultant pathology of disuse osteoporosis differ from those of primary osteoporosis. S.Gaugris, R.P Heaney, S. Boonen and sen (2005) in their systematic review on Vitamin D inadequacies among post-menopausal women found that prevalence of inadequate vitamin D levels appears to be high in post-menopausal women, especially in those with osteoporosis and history of fracture. Vitamin-D supplementation in this group might offer scope for prevention of falls and fracture, especially in elderly and osteoporotic production. Kontulainen et al (20) conducted a follow-up on premenopausal women 3.5 years after they had conducted an 18-months exercise program. They found that the difference in the aeral BMD (a BMD) between the exercise and control group was maintained after 3.5 years. That is not to say that BMD did not decrease, but the training group still had a significantly greater BMD than the controls. In the year 1998, Liberman, Weiss, and Minne in their combined study “Effect of Oral Alendronate on bone mineral Density and the incidence of fractures in post-menopausal osteoporosis found that the women receiving alendronate had significantly progressive increase in bone mineral density at all skeletal sites, where as those receive placebo had decreases bone mineral density. So, it was found that daily treatment with alendronate progressively increases the bone mass in the spine, hip and total body and reduces the incidence of vertebral deformities and height loss in post-menopausal women. Neer, claude, jose in the year (1999) in their study on effect of parathyroid hormone (1`-34) on fractures and bone mineral density in post-menopausal women with osteoporosis they found that osteoporosis with parathyroid hormone (1-34) decreases the risk of vertebral and non-vertebral fractures, increases vertebral, femoral and total body bone mineral density, and is well tolerated. J.meunier, Roux, seeman (2004), in a their study on “the effects of strontium Ranelate on the risk of vertebral fractures in women with post-menopausal osteoporosis conducted among 1649 post-menopausal women with osteoporosis found that treatment of post-menopausal women with osteoporosis found that treatment of post-menopausal osteoporosis with strontium Ranelate leads to early and sustained reductions in the risk of vertebral fractures. Shobha S. Rao,M.Singh (2008) in their study ‘Health maintainance for menopausal women suggested that, Bone mineral density screening should be performed in all women older that 65 years, and should begin sooner in women with additional risk factors for osteoporotic fractures. Adequate
intake of calcium and vitamin D should be encouraged for all post menopausal women to reduce bone loses. Recommendation 800-1000 IU per day Serum 25(OH) D levels should be measured in women at high risk of vitamin D deficiency. M.Parihar (2001) in her studies of more than 7000 individuals in and around Mumbai over 2 years shows that the incidence of osteopenia is 37.1% and that of osteoporosis is 5.5% in males, whereas the incidence of osteopenia and osteoporosis in females 41.6% and 14.2% respectively.

**Materials and Methods**

The present study was carried out at Capital Hospital, Bhubaneswar during the period of November 2011 to January 2012. The study population comprises 60 post-menopausal women in the age group of 40 to 80 years. None of the participant was on hormone replacement therapy that might affect the bone turnover. Ethical measures were taken from women patients suffering from osteoporosis after menopause. A number of tools and techniques were employed for collection and analysis of data in accordance with objectives of present study. Both primary and secondary data are gathered from different sources such as hospital reports, published data and opinions of doctors. Whereas primary data are collected through in-depth interview of individuals administering a schedule containing questions on previous history of disease, problem faced due to osteoporosis and regarding the problem associated with the disease etc. Anthropometric measurements such as Height (H) and weight (w) of all women undergoing the study were noted and body mass index (BMI) was calculated by formula \[ \frac{W \, (kg)}{h^2 \, (m)} \] as per Weiner and Lourei (1969).

**Results and Discussion**

**Table-1 : Distribution of Osteoporosis patients according to their age groups**

<table>
<thead>
<tr>
<th>Age groups</th>
<th>Number of patients</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>40-50</td>
<td>21</td>
<td>35</td>
</tr>
<tr>
<td>50-60</td>
<td>19</td>
<td>31.66</td>
</tr>
<tr>
<td>60-70</td>
<td>12</td>
<td>20</td>
</tr>
<tr>
<td>70-80</td>
<td>5</td>
<td>8.33</td>
</tr>
<tr>
<td>Above</td>
<td>80</td>
<td>35</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>100</td>
</tr>
</tbody>
</table>
Observation made from the above (table-1) indicate that women suffering from osteoporosis is more in the age group 40-50, followed by 50-60 and so on. This clearly indicates that onset of early menopause is one of the reason of osteoporosis. Women who have a late menopause, when estrogen level drop significantly, they have a lower risk of developing osteoporosis, compared to those of early menopausal women.

**Table- 2 : Percentage Distribution of patients according to their income range**

<table>
<thead>
<tr>
<th>Income range</th>
<th>No. of patients</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;10,000</td>
<td>7</td>
<td>11.66</td>
</tr>
<tr>
<td>10-20,000</td>
<td>16</td>
<td>26.66</td>
</tr>
<tr>
<td>20-30,000</td>
<td>21</td>
<td>35</td>
</tr>
<tr>
<td>30-40,000</td>
<td>10</td>
<td>16.66</td>
</tr>
<tr>
<td>40-50,000</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>100</td>
</tr>
</tbody>
</table>

The economic status/ Income range of the patients and their house hold (table-1.2) reveals that more number of patients belong to lower Income range (35%) and a very low percentage (only 10%) of patients come from higher economic groups. It clearly indicates there is a strong correlation between Osteoporosis & economic status of the household. Lower economic status may be a attributable factors of developing Osteoporosis.

**Table-3 : Distribution of patients according to their educational status**

<table>
<thead>
<tr>
<th>Educational status</th>
<th>No. of Patients</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uneducated</td>
<td>14</td>
<td>23.33</td>
</tr>
<tr>
<td>Below 10&lt;sup&gt;th&lt;/sup&gt;</td>
<td>22</td>
<td>36.66</td>
</tr>
<tr>
<td>10&lt;sup&gt;th&lt;/sup&gt;</td>
<td>13</td>
<td>21.66</td>
</tr>
<tr>
<td>Above 10&lt;sup&gt;th&lt;/sup&gt;</td>
<td>7</td>
<td>11.66</td>
</tr>
<tr>
<td>Highly educated</td>
<td>4</td>
<td>6.66</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>100</td>
</tr>
</tbody>
</table>
Education is an important factor in the health awareness. Educated patients with Osteoporosis negotiating priorities, keeping treatment regimens as simple as possible, monitoring initial and subsequent adherence to drug therapy and lifestyle changes; important factors in and controlling the disease.

Inference made from the (Table-3), Occurrence of Osteoporosis is more among illiterate (23.33%) & under matriculate education group.(36.66%) i.e. uneducated and less educated group of women are more vulnerable to the osteoporosis than the highly educated groups.

**Table - 4 : Distribution of Patients according to their Dietary habits**

<table>
<thead>
<tr>
<th>Dietary patterns</th>
<th>No. of patients</th>
<th>Percentage(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vegetarian</td>
<td>21</td>
<td>35</td>
</tr>
<tr>
<td>Non-vegetarian</td>
<td>39</td>
<td>65</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>100</td>
</tr>
</tbody>
</table>

In the present study the incidence of vegetarian patients is less(35%) than non-vegetarians (65%). The tables do not indicate the general trend which could be due to low sample size.

**Table - 5 : Distribution of Patients according to their Occupation**

<table>
<thead>
<tr>
<th>Occupation</th>
<th>No. of patients</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>House wife</td>
<td>47</td>
<td>78.33</td>
</tr>
<tr>
<td>Service holder</td>
<td>8</td>
<td>13.33</td>
</tr>
<tr>
<td>Manual worker</td>
<td>5</td>
<td>8.33</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>100</td>
</tr>
</tbody>
</table>

Observation made from Occupation pattern (Table-5) indicates that more number of patients are house wife (78.33%) followed by Service holder (13.33%) and least number of patients belong to manual worker groups (8.33%). The primary reason of higher occurrence of osteoporosis among house wife may be attribute to their unconsciousness about nutrient content of the diet, Vegetarian food habits, prolonged ritual observance and fasting which compel them to have their individual decision on intake of diet.
Table - 6: Percentage Distribution of Patients according to intake of Calcium

<table>
<thead>
<tr>
<th>Intake habit</th>
<th>No. of patients</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regularly</td>
<td>39</td>
<td>65</td>
</tr>
<tr>
<td>Not regularly</td>
<td>21</td>
<td>35</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>100</td>
</tr>
</tbody>
</table>

Calcium is a major curative step towards Osteoporosis. In the present study there are 65% of total sample size are taking calcium regularly and 35% are not taking regularly. This is largely influenced by economic status and educational status of the patients.

Table - 7: Osteoporosis and age of menopause

<table>
<thead>
<tr>
<th>Age of attaining menopause</th>
<th>No. of patients</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>40-45</td>
<td>5</td>
<td>8.33</td>
</tr>
<tr>
<td>45-50</td>
<td>32</td>
<td>53.33</td>
</tr>
<tr>
<td>50-55</td>
<td>23</td>
<td>38.33</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>100</td>
</tr>
</tbody>
</table>

Sudden drop in estrogen production i.e. after experience of menopause is associated with osteoporosis. There is a gradual loss in bone mass that leads to osteoporosis. Similarly women who have attained early menopause are prone to higher risk of osteoporosis than other who have attained late menopause. The table no. 7 clearly indicates that in the present study the no. of patients attaining their menopause in the age group 45-50 comprises more in number than age group 50-55. And lastly women who are attained menopause due to ovary removal comprise 8.33% of total sample size.
Table - 8 : Distribution of patients according to family history of osteoporosis

<table>
<thead>
<tr>
<th>Affected members</th>
<th>No. of patients</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affected father</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Affected- Mother</td>
<td>8</td>
<td>13.33</td>
</tr>
<tr>
<td>Affected- Brother</td>
<td>1</td>
<td>1.66</td>
</tr>
<tr>
<td>Affected –Sister</td>
<td>2</td>
<td>3.33</td>
</tr>
<tr>
<td>Not any family history of osteoporosis</td>
<td>49</td>
<td>81.66</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>100</td>
</tr>
</tbody>
</table>

On the above mentioned data it is difficult to interpret any hypothesis because the sample size and data are very small. But from present study it was found that among all patients of menopausal osteoporosis only 18.33% of population are associated with family history of osteoporosis.

Table - 9 : Distribution of patients according to the previous history of fractures

<table>
<thead>
<tr>
<th>Fracture part</th>
<th>No. of patients</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wrist</td>
<td>5</td>
<td>8.33</td>
</tr>
<tr>
<td>Spine</td>
<td>11</td>
<td>18.32</td>
</tr>
<tr>
<td>Hip</td>
<td>8</td>
<td>13.33</td>
</tr>
<tr>
<td>Not any previous History of fractures</td>
<td>36</td>
<td>60</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>100</td>
</tr>
</tbody>
</table>

In the present study osteoporosis patients suffering from spine fractures and wrist fractures are more than hip fractures. As the sample size is very small the percentage of individuals/patients having previous history of fractures are very little i.e. only 39.9% (40%) of total sample.

**Secondary causes of osteoporosis**

Osteoporosis generally results from an imbalance between bone formation and malabsorption leading to bone loss and hence an increased risk of fractures,

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there are multitude secondary causes of osteoporosis that tends to present more frequently to specialist in secondary care specifically rheumatologists, gastroterologist, physians, urologists, and obstetricians etc.

**Table - 10 : Secondary causes of Osteoporosis**

<table>
<thead>
<tr>
<th>Secondary causes of osteoporosis</th>
<th>No. of patients</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rheumatoid arthritics</td>
<td>21</td>
<td>35</td>
</tr>
<tr>
<td>Hypo/hyper thyroidism</td>
<td>8</td>
<td>13.51</td>
</tr>
<tr>
<td>Hypo-gonadism</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Malabsorption</td>
<td>5</td>
<td>8.33</td>
</tr>
<tr>
<td>Glucocorticoid intake</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Not having any Secondary causes</td>
<td>23</td>
<td>38.33</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>100</td>
</tr>
</tbody>
</table>

The above mentioned data (table no.10) clearly indicates that patients suffering from osteoporosis also associated with secondary causes especially rheumatoid arthritis (35%). And other 43.25% of population suffering due to hypo/hyper thyroidism, hypo-gonadism, malabsorption and glucocorticoid intake.

**Other patho-physiological problems**

Osteoporosis develops very slowly over a period of many years. This condition may creep up on the patient without any obvious symptoms. Initially it can take several months even several years to become noticeable. On the present study the patients reporting for treatment are suffering from osteoporosis having different signs and symptoms. The early signs of osteoporosis includes: (I) joint pains (II) difficulty in standing(III) difficulty in sitting upright.
Table-11 : Distribution of Patients based on different Patho-physiological condition

<table>
<thead>
<tr>
<th>Problem faced</th>
<th>No. of patients</th>
<th>Percentage(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joint pain</td>
<td>28</td>
<td>46.66</td>
</tr>
<tr>
<td>Difficulty in standing</td>
<td>8</td>
<td>13.51</td>
</tr>
<tr>
<td>Difficulty in sitting</td>
<td>12</td>
<td>35</td>
</tr>
<tr>
<td>Not having any serious complain</td>
<td>12</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>100</td>
</tr>
</tbody>
</table>

Observation made from different patho-physiological conditions associated with Osteoporosis reveals that 46.66% patients are suffering from with joint pain, 35% have difficulty in sitting and 13.51% have difficulty in standing. However some of them are found suffering from all above postural problems.

Correlation of Anthropometric Indicators with Post-menopausal Osteoporosis

Body Mass Index is a good indicator of health condition and nutritional status of an individual. This index gives an format of classification ranging from severly malnourished to high obsess individuals. The classification of BMI is as follows-

(I) Under weight -<18.5 kg/m2
(II) Normal - 18.5-25 kg/m2
(III) Over weight - 25-30 kg/m2
(IV) Obese- >30kg/m2

In the present study correlation between BMI with socio-economic condition and dietary pattern etc of patient are correlated on the basis of their height of data.
Table -12 : B.M.I & Osteoporosis

The above table (table no. 13) shows an interesting result. Majority of patients having BMI 18.5-25 kg/m² (normal) are belonging to the age group 50-60, and then followed by 40-50 (22.66%) and then 60-70 (6.66%) and 70-80 (5%) accordingly. Only 6.66% of populations fall in to obese category and 8.33% of underweight and 16.66% over weight.

Table-13 : BMI and Occupation

The above table (table no-14) shows that most of the patients are house wife comprising 69.66% of total population. The occupational status of individual also influences their economic conditions which have an direct impact on health status. So highly educated or in service women are comprises only 6.66% and 19.69% of women are manual workers. So, it is seen that house wife are more prone to osteoporosis.
In the present study though number of individuals falling into vegetarian habits is less than non-vegetarians but their BMI indicates that those have non-vegetarian habits of dietary pattern having higher BMI than that of vegetarians.

### Table - 14 : BMI and Dietary patterns

<table>
<thead>
<tr>
<th>Dietary pattern</th>
<th>Body Mass Index(BMI)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt;18.5kg/m² No. (%)</td>
</tr>
<tr>
<td>Vegetarians</td>
<td>-</td>
</tr>
<tr>
<td>Non-Vegetarians</td>
<td>5(8.33%)</td>
</tr>
<tr>
<td>Total</td>
<td>5(8.33%)</td>
</tr>
</tbody>
</table>

### Table- 15 : BMI and year of Onset of Diseases

<table>
<thead>
<tr>
<th>Year of onset of disease</th>
<th>Body Mass Index(BMI)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt;18.5kg/m² No. (%)</td>
</tr>
<tr>
<td>&lt;6month</td>
<td>_</td>
</tr>
<tr>
<td>1-3 years</td>
<td>2(3.33)</td>
</tr>
<tr>
<td>3-5 years</td>
<td>_ _</td>
</tr>
<tr>
<td>5-7 years</td>
<td>1 (1.66)</td>
</tr>
<tr>
<td>7-10 years</td>
<td>2(3.33)</td>
</tr>
<tr>
<td>Total</td>
<td>5(8.33)</td>
</tr>
</tbody>
</table>

From the above table (Table-16) it is found that 8.33% of population having BMI <18.5 among them 3.33% are suffering from osteoporosis from 7-9 years or above. 66.66% are having BMI 18.5-25 kg/m² among them 21.66% are suffering the diseases from 3-5 years. Among 20% of patients having normal BMI 8.33% are detected as osteoporosis patients from 1-3 years and having more than 30kg/m² BMI patients mostly falling in to 7-9 years of their onset of diseases.
Summary and Conclusion

Osteoporosis is a global problem that affects at various stages of life including many who are actively working. Osteoporotic fractures are major cause of pain, disability lose of self esteem and quality of physical activities. The management of osteoporosis may require therapeutic interventions but should thorough evaluation of life style and risk factors. It is well recognized that an accelerated bone loss occurs in women at the time of menopause and that can be prevented by estrogen replacement. In the present study we found a strong relationship between years of attaining menopause with osteoporotic symptoms. So menopausal women suggested having good diet for their health like protein derived from vegetable sources and calcium containing diet that could act as a preventive measure for their bone as well as health. Low BMI is a well documented risk factor for future fracture. The risk is most marked for lean individuals with BMI 20kg/m². Above 20kg/m² incremental increase in weight has little proactive effect leanness appears to be risk factor rather than obesity proactive. The association of fracture risk with leanness is largely dependent on BMD. For hip fracture a modest risk persist after adjustment of BMD. In the present study from table no. 13 it has been observed that 8.33% percent of patients belong to CED category which implies a low BMI may one of probable cause of osteoporosis which decreases with the increase of the age and vegetarian diet and poor economic status. Similarly another important factors for menopausal osteoporosis found to be rheumatoid arthritis, from the table no.10 it is observed that 35% percent of women suffering from osteoporosis as their secondary causes of diseases for prolonged rheumatoid arthritics, fallowed by hypo or hyper thyroidism. Other clinical risk factors have identified are low dietary calcium Intake and it is observed from table no. 6 that 65% of patients are not taking calcium regularly

It is found that although osteoporosis can affect all excluding caste, class, age, sex and race but patient education is an essential factor in preventing the disease for which most people with osteoporosis find it helpful to learn about disease. Changing life style, dietary habits and lack of awareness may be measure cause of osteoporosis among the post menopausal women.

Limitation

The present study has identified the problems and causes of the disease osteoporosis among the post menopausal women patients of Bhubaneswar who were reported to capital hospital. Due to lack of time the sample size is low as only clinically
diagnosed women were taken for the study. The study suggest further investigation and research in the field of osteoporosis and its problems among post menopausal women.

References


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