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E D I T O R I A L

Greetings for the New Year 2019

ADIVASI is a bi-annual research journal published in June and December. The journal aims to publish original unpublished research papers on tribal centric issues to highlight those aspects hitherto unexplored. It also publishes articles on Scheduled Castes. The corpus of the journal though is largely anthropological in nature; its scope is broadened to make it multidisciplinary to cope with the changing times. It endeavours to provide a forum to eminent scholars as well as young researchers to exchange innovative ideas and speculations. Tribal literature- contents and forms, representation of tribal life and culture in different genres of literature, tribal art and crafts, dances, music, paintings, tribal culture, languages/dialects, polity, administration, geography, history, economy, sociology, anthropology, tourism, ethno botany, traditional knowledge system, leadership: dalit literature and development aspects etc. are the core issues; other relevant subjects are also incorporated in this journal.

Published since 1955 ADIVASI has earned the distinction of being the oldest anthropological research journal of Odisha. This is the 58th volume number one and two (combined). In this issue 10 articles based on empirical research contributed by twenty research scholars are presented.

At the beginning, the article titled **"Healthcare Management and Nutritional Status of the Lodha Tribe of Odisha"** has been presented. In this article the authors Prof. N. C. Dash, Suvendu Baral and Trilochan Mahanta have discussed the findings of an empirical study on some specific health management practices and nutritional status of the Lodha tribe of Odisha that has been identified as a Particularly Vulnerable Tribal Group (PVTG) in the State. The study reveals that 32% of Lodha avail health service by the traditional healers, 52% by the ASHA workers, 12%by ANM and only 4% Lodha avail health facilities in the Primary Health Centre (PHC). The analysis of Body Mass Index (BMI) and Adult Calorie Value (ACV) reveals that the Lodha tribe of Mayurbhanj district is very much malnourished. Several factors like insufficient food intake per day, work overload, less income, ignorance of food habits and illiteracy are responsible for such conditions. There is a need for special nutritional programme by the Government and Non-Government organizations for the uplifttment of the tribe.

Since time immemorial, tribal people have been living under varying geo-ecological settings of hills and forests. They are the people of the ecosystem who live in close harmony with the nature and maintain a close link between man and environment. Living a synchronized life and maintaining a constant interaction with nature has enabled them to meticulously observe, examine and exploit the rich plant resources around them. As a result, they have developed culturally important indigenous technologies of utilizing the vast available plant resources and the related bio-cultural knowledge. They depend on ethnomedicine, for primary health care and most of these are plant based. Observations of medicinal plant treatments by tribal peoples worldwide have contributed to the development of some of the most important and widely utilized

pharmaceutical agents in our medical system. On this background Kalpana Patra, Debabrata Panda and Prof. Sharat Kumar Palita have prepared their empirical research paper **"Ethnomedicinal Practices of the Kondh of Eastern Ghats"** in Koraput district of Odisha that comes next in this issue. The study revealed the use of 26 plant species distributed under 26 genera and 21 families for the treatment of 17 ailments by the traditional medicinal practitioners of the Kondh tribe. Ethno-medicinal information about these plants has been provided in detail with their scientific name, family, local name, plant parts used and medicinal uses.

The third article, **"Medical Traditions and Administration of Medicine by certain tribes of Odisha"** contributed by Sulbha S. Jadhav and Megha Kar is based upon the same background and theme of ethnomedicine. They say the tribal people in their traditional medical processes and practices, in study of signs and symptoms, in modes of administering treatment and medicine, a great deal of indigenous knowledge has been hidden. In the changing world scenario, when there is every search for alternative medicines and at a stage where the efficacy of traditional medicine has been scientifically validated and acknowledged there is relevance why the tribal medical systems, treatments and management of illness should be studied more thoroughly. The authors in this paper have presented the aspects of tribal medical system and administration of medicine and viewed that though the slow changing tide of medicinal practices is welcoming, it is also alarming the loss of huge indigenous knowledge about ethnomedicines. To address the issue, extensive research, survey and documentation should be conducted on tribal medical systems which will definitely add to the density of the vividness of tribal culture in the changing scenario.

The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 i.e., the Forest Rights Act (FRA) in short, aims to provide a framework for recognition and secure property rights over forest of individual households and communities who are forest dwellers. Under FRA the forest dwelling people are making their genuine claims of land under their occupation mainly for survival. The next paper **"The Forest Rights Act, 2006 and Rural Livelihoods: Experience from Odisha"** authored by Trilochan Sahoo and Sanghamitra Dubey explores the aftermath effect of the FRA in the state of Odisha and state-led initiatives for livelihood improvement of forest dwellers. Drawing case study from the state of Odisha, this paper develops three key points: (1) the FRA provides for community-based governance, while governmental schemes focus on individual benefits; (2) despite guidelines that direct state agencies to undertake bottom-up processes, development interventions continue to be top-down and undertake interventions that are different to strengthening local livelihoods and food security; and, (3) plantations on forest lands of commercial and agro-industrial species on forest lands which had diverse agro-forestry arrangements are especially problematic.

The fifth article "**An Analysis of Livelihood of PVTG-Lodha and scope for improvement"** contributed by Abhishek Mohanty makes an analysis of livelihood patterns conducted at various clusters of the Lodha habitats with the community members and attempted to make them see their existing situation and plan for the improvement in their household income within the framework of available asset mix, government policies, market and associated risk factors. The author has analysed the various livelihood earning options and sectors and on the basis of that he

has suggested a livelihood framework and a provocative livelihoods development intervention model towards making the Lodha livelihoods scenario better.

The "sacred grove" is an important and age-old traditional socio-religious institution of the Odishan tribes. Sacred grove in literal sense refers to a grove held sacred from religious point of view. For many tribal communities in India traditions linked to sacred groves have been seen as markers of culture. It is a form of nature worship conducted in relatively inviolate natural sites or typical groves. Sacred complexes in forests matter to all those communities who have been maintaining them as far as mythical, economic and ecological aspects and their role for preservation of biodiversity are concerned. The sacred groves are culturally important for various religious and cultural events connected with local deities. Given the vast potential of natural biodiversity and sacred traditions caring for the diversity in Odisha it deserves special attention from conservation point of view. Based on this point of view, the sixth article **"Sacred Groves in Tribal Traditions: Cases from Mayurbhanj and Koraput districts"** authored by Sukruti Sarangi, Sumita Das and Dr. Mihir Kumar Jena presents some empirical observations on management of sacred groves by the tribes in Mayurbhanj and Koraput districts, citing two case studies from each district. While drawing importance on conservation of the endemic biodiversity within the sacred groves the authors have sought government attentions in order to maintain the inextricable link between nature, culture and development.

The next empirical paper **"Marriages among the communities of Pedapulipaka and Inavolu villages in Andhra Pradesh"** contributed by Varnika Sagi accounts the changes that have taken place in the marriage system of both the villages inhabited by Christians and converted Christians and how religion and caste play a major role in this process of change. Primary information from people about marriage, beliefs, rituals, and opinions on love marriages, widow re-marriage and many other aspects of marriage are the highlights of this article. The impact of education on the mindset and how is some social evils like child marriage and dowry have declined in these days have also been noted. All these changes have impacted the economy of the people positively.

"**Maabhauni of Juang : A New Prospect as Change Agent**" authored by Dr. Niladari Bihari Mishra is presented as the eighth paper in this issue. Based upon an anthropological study this paper highlights the structure and functions of "**Maabhauni"** an age-old traditional non-kinship organization of the married Juang women through which the women folk plays a very crucial role in socio-cultural and village management affairs. It still exists today, however to a larger extent. The author has suggested that ensuring the association of the beneficial traditional organization of the Mabhauni of Juang community in decision making in social, cultural, religious matters at the village level can effect empowerment of Juang women. This democratic organization need to be strengthened so that it can be able to meet the women-centric challenges and situations.

Climate change is the major threat facing humanity. Understanding public perceptions of climate change is critical in order to develop effective coping and mitigation strategies, democratic policies, and socially robust technologies. The ninth paper **"Perceptions of Well-Being and Climate Change: Observations on a village in Koraput"** prepared by Padmini Pathi, Biswajit

Mohapatra and Dr. Mihir Kumar Jena provides an overview of research on the nature and dynamics of community perceptions of climate change in Kasuguda village in Koraput district of Odisha. Awareness about climate change has become widespread over the last few decades, although concern has been variable over time and internationally. In such a situation the study addresses to understand how do rural and tribal communities perceive changes in climate and its impact and how do the communities cope up with climate change in the livelihoods and development context. Attempts have also been made in this paper to explore and understand the indigenous knowledge of the communities as related to climate forecasting and towards that how do the communities gear up their adaptation strategies.

This issue ends with the article "**Sex Ratio of Scheduled Tribes in Odisha: A Critical Analysis from Census 1961 To 2011"** contributed by Dr. Bigyanananda Mohanty and Smruti Ranjan Patra**.** In this paper the authors have stated that sex composition is believed to be a gender based unequal treatment by the families and society**.** Sex ratio is a major parameter for the study of demographic, socio-cultural and economic status of any region. The regions, where sex ratio is low, have posed an unpleasant problem of gender discrimination, resulting in fall in the status of human resource. Odisha has experienced a positive trend in sex ratio of Scheduled Tribes during census 2001 and 2011 while the child sex ratio of Scheduled Tribes has declined. In this paper, an attempt has been made to analyse the variations of sex ratio of tribal population of districts of Odisha.

My sincere thanks are due to the paper contributors for their painstaking efforts in preparing and presenting their articles. I am extremely grateful to Shri Sarat Ch. Mohanty, Associate Editor of Adivasi and Consultant, SCSTRTI for giving a substantial time for a thorough reading and editing of all the articles and for his efforts not only for bringing out this issue but also for all the issues of ADIVASI published over last 12 years. I also thank Dr. Mihir Kumar Jena, Senior Tribal Domain Expert, SLAU, Special Development Council for rendering editorial support to enrich some contents of this journal.

It is hoped that the articles published in this issue of ADIVASI will be of much help to the researchers, development practitioners, academicians and general readers interested in conducting research and acquiring knowledge in tribal society, culture as well as their development. I invite the research scholars to enrich all our future volumes with their valuable suggestions and contribution of empirical research papers.

Dated, the 11th January, 2019 **A.B. Ota**

Bhubaneswar EDITOR

HEALTHCARE MANAGEMENT AND NUTRITIONAL STATUS OF THE LODHA TRIBE OF ODISHA

N. C. Dash [1]
Suvendu Baral [2]
Trilochan Mahanta [3]

Abstract

The present study was undertaken among one of the primitive tribes of Odisha, "The Lodha." They are mostly distributed in the Mayurbhanja district of Odisha adjacent to Medinpur of West Bengal. The survey was confined to one block having largest Lodha concentration. The Lodha are mostly pre-agriculturists. They live in subsistence level of economy. The main objective of the study was to find out the healthcare management and the nutritional status of the tribe. Both Body Mass Index (BMI) and Adult Calorie Value (ACV) methods were adopted to know the nutritional status of the Lodha Tribe. The study reveals that 32% of Lodha avail health service by the traditionql healers, 52% by the ASHA workers, 12%by ANM and only 4% Lodha avail health facilities in the Primary Health Centre (PHC). The health management of Lodha seems to be better due to the introduction of ASHA workers.

The BMI shows that severe malnourished among male is 16 % and female is 13.2 %. Obess distribution among male is 7.2 % and among female is 5.6 %. Thus the total malnourished among the Lodha male is 54.5% and among the female is 49.2%' It is observed that the Lodha males are more malnourished compared to the Lodha females.

Further, the Adult Calorie Value (ACV) shows that 18.5 % of Lodha households are in severely malnourished condition, 16.3 % are moderately malnourished, 45.8 % are mild malnourished, 17.2% of them are in normal nutritional range, 2.2 % are found over malnourished. This clearly shows that most of the Lodha households are under severe malnutrition.

Thus, the analysis of BMI and ACV reveals that the Lodha tribe of Mayurbhanj district are very much malnourished. Several factors like insufficient food intake per day, work overload, less income, ignorance of food habits and illiteracy are responsible for such conditions. There is a need for special nutritional programme by the Government and Non- Government organizations for the upliftment of the Lodha.

[1] Former Professor, P.G. Department of Population Studies, F. M. University, Nuapadhi, Balasore-756020, E-mail- ncdash53@gmail.com

[2] Research Scholar of Population Studies, F.M. University, Balasore, Odisha

[3] Research Scholar, Dept. of Anthropology and Tribal Studies, North Orissa University, Baripada, Odisha

Key words: Height, Weight, Body Mass Index, Adult Calorie Value

INTRODUCTION

The nutritional status of any population is the product of its cultural and ecological factors. Man has always been dependent, to a varying extent, on fluctuating ecological balance between people and basic resources and its surrounding ecological systems. The utility of recourses has constantly increased but in many cases natural resources do not increase at the same pace which results in change of techno-economic pursuits (Chandrasekhar, 1954). Carrying capacity is thus basically conditioned by a stratified relation between its food resources and its cultural realities as manifested in the form of available recourses. Kessing, 1957, Sahu1980, Wrising1985 and Sinha1986 have studied the impact of tribal culture on health and nutrition.

It is recognized that as a result of extreme poverty, the intake of various essential constituents of food may be inadequate among the tribal in India. The nature and extent of deficiency varies from tribe to tribe and also from place to place among the same tribe. There is a general view that primitive tribes are not nourished, but empirical data from India (Sengupta 1969 and Rao et al., 1985) show that the nutritional status of relatively less acculturated primitive tribes is mostly satisfactory. However, certain ecological stress increase the intensity of communicable diseases among the tribals (Sahu, 1980, Sinha, 1986) which in turn deteriorates the nutritional status because of the well-known interaction between health, nutrition and infection. Scrimshaw et al., 1986, Choudhary 1954, Gore at al. 1977, Dash 1997 and Sabat at al., 1997 have observed in their studies that tribals possess a low nutritional status as per Indian standard.

In remote tribal areas of India, severe shortfall in skilled health professionals manifests itself in the form of grave healthcare issues for children due to lack of immunization, health monitoring, and emergency care. These along with the seasonal recurrent epidemics like malaria, pose a severe threat to child survival, killing numerous children in India every year.

The National Health Policy of India (2002) acknowledges the acute shortage of healthcare professionals especially in rural and tribal areas. Strategies under current consideration to combat this issue include increasing the age of retirement of doctors enabling them to work longer, decentralizing recruitment of staff to state and sub-state levels, providing numerous financial and career development incentives and offering future educational benefits to children of such doctors who are in rural service.

At this juncture, it becomes important to pose the questions: What will increase the motivation of the health workforce to work in underserved areas? Why is the health workforce in India urban-centric? How do we deal with the absence and inadequacies of the health workforce in rural and tribal areas? Is the mere physical presence of healthcare personnel in rural areas adequate? Will health professionals, who go to serve in a rural area because of personal incentives, make a difference to healthcare access and child survival in these places? There is evidence from other developing countries and contexts that a whole range of factors - good income, training and appreciation (Vietnam), professional exchange and career development programmes, the need to

feel valued and supported in individual roles, and community level trust (Tanzania)- play important roles in motivating health workers to work in rural regions. A recent systematic review indicates that while financial incentives formed the "core" of motivation, other factors such as recognition and supportive infrastructure for functioning have a profound effect on the morale of the workforce. It has also been illustrated that managers and healthcare workers tend to view motivational factors through different lenses, and hence, there is danger of incentive systems being set up on the basis of inappropriate assumptions. Given the complexity of this issue, it is not surprising that many countries are still grappling with the local realities of evolving and implementing "best- fit" health workforce strategies that will work in their contexts.

ASHA will be a health activist in the community who will create awareness on health and its social determinants and mobilize the community towards local health planning and increased utilization and accountability of the existing health services. She will be a promoter of good health practices. She will also provide a minimum package of curative care as appropriate and feasible for that level and make timely referrals.

A total of 3700 ASHAs are in need to cover all the villages and hamlets in Mayurbhanj
(NRHM, Govt. Of India, Ministry of Health and Family Welfare, New Delhi, 2008- 09)

In the present study an attempt has been made to highlight some specific health management practices and nutritional status of the Lodha Tribe of Odisha.

The LODHA: The Lodha are one of the primitive tribes of Odisha. During British rule they were categorized as the de notified tribe. Latter they were declared as the criminal tribe, due to their involvement in theft, rubbery and such other antisocial activities. After the independence, they were included under the list (5th Schedule) of primitive tribes. Lodhas are mostly distributed in Suliapada and Morada blocks of Mayurbhanj District of Odisha. This part of Odisha is close to South of West Bengal and covered with forest. The economic condition of the tribe is very poor. They still live in subsistence level. Their population was 8,905 in 2001 Census. Hardly 20% of Lodhas are Literate. The present study was confined to the Suliapada Block where a large concentration of Lodha population is found.

Objectives: The following are the primary objectives of the study

i. To find out the health management practices of the Lodha Tribe
ii. To reveal the nutritional status of the Tribe

DESIGN OF STUDY

i. **Village Selection**: The design of study is an indispensable part of any scientific investigation. Starting from the selection of the villages to the completion of analysis the use of appropriate methods is desirable. The villages covered in the present study are situated in the Suliapada Block of Mayurbhanj District of Odisha. The villages are selected considering their accessibility and size.

ii. **Household Coverage**: As many as 319 households were selected for the study out of the total 398 households from the five identified villages.

iii. **Data Collection**: The study was designed to collect data on different household information, health complications, nutritional status and health care management. Thus an extensive schedule was prepared and was pre-tested in order to know the response and reliability prior to actual study.

Thus data on the household information, health conditions and certain other socio-cultural variables are collected on the pre-tested schedules. The head of the households are interviewed for the household data and the anthropometry measurements are collected from the adult men and women of 19-49 years of age (319 males and equal numbers of female). Mostly interview method has been adopted for data collection. Besides quantitative data on health conditions and access services, qualitative data are also collected through Focus Group Discussion (FGD). Data on nutritional anthropometry are collected from both men and women. Height and weight are measured following the standard procedures, using a stature meter for height and weighting machine for weight. The anthropometric data (Height and Weight) are collected only from those men and women who are willing to provide their measurements.

Table- 1: Total selected households by the distance from the District Headquarters

Sl. No	Name of the village	Distance (from the HQs)	Total households in village	Selected Household*
1	Patharanesa	46km	169	139
2	Dhobani	44km	62	48
3	Kantasahi	45km	92	76
4	Sansala	43km	43	32
5	Mankadaganja	42km	32	24
	Average Distance	44km	(398)	319 (80%)

* Households are selected purposively to find one male and one female of 19-49 yrs each.

iv. **Data Analysis**: The data (after collection) are processed and analyzed with SPSS in accordance with the outline laid down for the purpose. This is essential to ensure that all data are relevant for comparisons and analysis. The term 'Analysis' refers to the computation of certain measures, calculations of percentage and cross tabulation for finding the nutritional status with the existing health care practices.

v. **Nutritional Anthropometry**: The height and weight of the individuals are measured and are recorded to the nearest 0.1 cm and 0.5 kg respectively. Body Mass Index (BMI) is computed using the following standard equation. BMJ= Weight (kg) height (m2).

Nutritional status is evaluated using the internationally accepted BMI guideline (World Health Organization, 1995). The following cut- off points are used to know the degree of malnutrition, chronic energy deficiency (CED)
CED grade III: BMI<16.00(Severe)
CED grade II: BMI 16.00 to 16.99(Moderate)
CED grade I: BMI 17.00 to 18.49 (Mild)
Normal : BMI 18.50 to 24.99 (Normal)
Over weight : BMI 25.00 to 30.00 (Overweight)
Obsessive : BMI _>31 .00(Obese)

vi. **Calorific Value**: The actual calorie value of the food consumption of the family (in Kcl) are measured and recorded. The Adult Calorific Value was calculated to find out the nutritional status of the Tribe. The adult calorie intake requirement for an individual is 2880 Kcl. The ICMR standard equations are followed to calculate the Adult Calorific Unit (ACU) and Adult Calorific Value (ACV).

- ACU (of the household) = (Adults x 1) + (Teens x 0.8)+(Children x 0.5)+ (Aged x 0.6)
- ACV (of the household) = $\frac{\text{Total calorie consumption value of the household}}{\text{ACU of the household}}$

RESULTS AND DISCUSSION:

Before any scientific analysis it is important to know the basic demographic figures of the population under study.

Table- 2: Distribution of Lodha Population by Broad Age Category

Age	Male	Female	Total	Sex Ratio (F/M x 1000)
0-14	273	268	541	982
15-59	355	358	715	1003
60+	33	35	68	1060
Total	**663**	**661**	**1324**	**997**

The following demographic figures are obtained from the above table.

a) Size of the Household- 4.15
b) Sex Ratio 997 females per 1000 males
c) Dependency Ratio is 0.85

The study shows that the household (family) size is about four which is good for the Tribe. It is noticed that the total sex ratio is mostly balanced but the sex ratio of below 15 years is favouring to males. This is not a good sign for any population. However, it requires a comprehensive study ascertain the situation. Similarly dependency ratio is below one, which is also good for the Lodha community.

Table- 3: Distribution of Lodha households by Health care Management.

Sl. No.	System of Health care Management	No of Households	%
1	Traditional	101	31.7
2	ASHA	166	52.0
3	ANM	38	11.9
4	PHC	14	4.4
	Total	**319**	**100.0**

Above table reveals the health care management of the Lodha community by different systems. It is noticed that 31.7 % of Lodha avail health service by the traditional healers, 52.0 % by the ASHA workers, 11.9 % by ANMs and only 4.4 % Lodha avail health facilities at PHCs. It clearly shows that a majority of Lodha are availing service of the ASHA workers. ASHA is a village level worker, who directly meets the household member and motivates them for health care facilities and solves the health complications. Due to ASHAs involvement the immunization and institutional delivery rates are slightly high. ASHA provides information on health and nutrition on Mamata Diwas held on every Tuesday and Friday. Mamata Diwas is held for pregnant women, undernourished children and adolescent girls for their health check-up, where ASHA plays a vital role to motivate the target group. Health management of Lodha community is slightly better due to the introduction of ASHA workers.

Table- 4 shows the degree of nutrition of Lodha male by considering their Body Mass Index. It is found that 16.0 % of male come under severe malnutrition, 11.9 % under moderate malnutrition and 17.9 % under mild malnutrition. Total 45.5 % male are in the normal range of BMI. However, 4.7% are found to be overweight and 4.1 % of Lodha males are obess.

Table- 4: Distribution of Lodha Male by the Degree of Nutrition

Sl. No	Degree of Nutrition	No of males*	%
1.	Severe Malnourished	51	16.0
2.	Moderate Malnourished	38	11.9
3.	Mild Malnourished	57	17.9
4.	Normal	145	45.5
5.	Over weight	15	4.7
6.	Obsessive	13	4.1
	Total	**319**	**100.0**

* One male (19-49 yrs) from each selected household is measured.

Table- 5: Distributions of Lodha Female by the Degree of Nutrition.

Sl. No	Degree of Nutrition	No of Lodha Females*	%
1.	Severe Malnourished	42	13.2
2.	Moderate Malnourished	80	25.1
3.	Mild Malnourished	15	4.7

4.	Normal nutrition	162	50.8
5.	Over weight	12	3.8
6.	Obsessive	08	2.5
	Total	**319**	**100.0**

* One female from (19-49yrs) from each selected household is measured.

Table-5 reveals the BMI of female Lodha. It shows that 13.2 % of Lodha female comes under severe malnutrition, 25.1 % under moderate malnutrition, 4.7 % under mild malnutrition, 50.8 % Lodha are in the range. However, 3.8 % are overweight and interestingly 2.5% of Lodha females are found to be obess. This clearly shows that a sizable proportion of the Lodha female are below the normal level of BMI. The average calories intake of an adult Lodha is approximately 2099 kilocalorie per day. This has been calculated from the staple diet of the Lodhas. The total calorie requirement, for an adult moderate working male and hardworking female as per ICMR is 2880 Kc (ICMR 1989, 1994). This indicates that Lodhas are undernourished with respect to the calorific value of the food they consume. The study shows that severe malnourished among male is 16 % and female is 13.2 %. Obess distribution among male is 4.1 % and among female is 215 %. Thus the total malnourished among the Lodha male is 54% and among the female is 49.2%. It is observed that the Lodha males are More malnourished compared to the Lodha females.

Besides the Body Mass Index, the calorific values are also calculated by different households by adopting the standard procedure of Adult Calorific Value (ACV).

Table-6 shows the nutritional status of the Lodha by Adult Calorie Value.The table reveals that 18.5 %of Lodha households are severely malnourished 16.3 % are moderately malnourished, 45.8 % mild malnourished, 17.2 % are in normal nutritional range whereas 2.2 % are found over malnourished.

Table- 6: Distribution of Lodha household by Adult Caloric Value (ACV).

Sl. No	Degree of Nutrition	No of Households	%
1.	-30% (Severe Malnourish)	59	18.5
2.	20% - 30% (Moderate Malnourish)	52	16.3
3.	10%-20% (Mild Malnourish)	146	45.8
4.	0%-10% (Normal)	55	17.2
5.	10%+ (Over weight)	07	2.2
	Total	**319**	**100.0**

CONCLUSION

The present study has been undertaken to describe the Healthcare Management and Nutritional Status of the Lodha Tribe of Suliapada block of Mayurbhanj, Odisha. The Lodha manage their

health complications by the help of different local healers and institutions. It is noticed that about 32% of Lodha families avail health services by the traditional healers, 52% by the ASHA workers, 12%by ANMs and only 4% Lodha households avail health facilities from the Primary Health Centre (PHC). It clearly shows that a majority of Lodha are availing service of the ASHA workers. AHSA is a village level worker, who directly meets the household members and motivates them for health care facilities. She also solves the health complications of the people. Due to ASHA involvement, immunization and institutional delivery rates are gadually increasing. ASHA provides information on health and nutrition on 'Mamata Diwas' held on every Tuesday and Friday. Mamata Diwas is held for pregnant women, undernourished children and adolescent girls for their health check-up, where ASHA plays a vital role to motivate the target group. Health management of Lodha community seems to be better due to the introduction of ASHA workers.

The study shows that severe malnourished among male is 16 % and among female is 13.2 %. Obess and overweight distribution among the male is 8.8 % and among the female is 6.3 %. Thus the total malnourished among the Lodha male is 54.5% and among the female is 49.2%. It is observed that the Lodha males are more malnourished compared to the Lodha females.

Further, the Adult Calorie Value (ACV) shows 18.5 % of Lodha households are severely malnourished, 16.3 % of Lodha are moderately malnourished, 45.8 % mild malnourished, 17.2 % of are in normal nutritional range, 2.2 % of are found over malnourished. This clearly shows that most of the Lodha are under severe malnutrition.

Thus, both BMI and ACV reveal that the Lodha population of Mayurbhanj district are very much malnourished. Several factors like insufficient food intake per day, overload of work, less income, ignorant of food habits and illiteracy are responsible for such conditions. There is a need for special nutritional programme by the Government and Non- Government organizations for the uplifttment of the Lodha Tribe of Odisha.

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ETHNOMEDICINAL PRACTICES OF THE KONDH OF EASTERN GHATS

Kalpana Patra[1]
Debabrata Panda[2]
Sharat Kumar Palita[3]

Abstract

The present study documented the ethno-medicinal use of plants by Kondh tribe of Koraput district in Eastern Ghats of southern Odisha. The study was conducted 07 villages under Semiliguda Community Development Block of Koraput district. Information on ethno-medicinal use was collected with the help of a semi-structured questionnaire. The study revealed the use of 26 plant species distributed under 26 genera and 21 families for the treatment of 17 ailments by the traditional medicinal practitioners belonging to sections of Kondh tribe. Ethno-medicinal information about these plants has been provided in detail with their scientific name, family, local name, plant parts used and medicinal uses.

Key words: *Ethno-medicine, Kondh, Medicinal Plants, Koraput*

Introduction

Knowledge on plant use is the result of many years of man's interaction and selection on the most desirable, the most vigorous and the most successful plant present in the immediate environment at a given time (Rindos, 1984). The need for well-being of a society is an ultimate driver of millennia old interaction and selection of most successful medicinal plants and development of indigenous knowledge associated with utilization of curative plants. Traditional knowledge on plant use will be lost in the absence of continuous cultural interaction (Winter and Mc Clatchey, 2008). Demographic, economic, socio-political, ecological, religious and cultural entities existing in a community are key drivers of traditional knowledge in a given community (Cetinkaya, 2009).

Far away from modern convenience, ethnic/tribal people are living under varying geo-ecological setting of hills and forest areas since time immemorial. These tribal people are the ecosystem

[1] Research Scholar, Department of Biodiversity and Conservation of Natural Resources, Central University of Orissa, Koraput, Odisha, India
[2] Assistant Professor, School of Biodiversity, Central University of Orissa, Koraput, Odisha, India
[3] Professor and Dean, School of Biodiversity, Central University of Orissa, Koraput, Odisha, India. Corresponding Author e-mail : skpalita@gmail.com

people who live in harmony with the nature and maintain a close link between man and environment (Sharma *et al.*, 2011). Living a synchronized life and maintaining a constant interaction with nature has enabled them to meticulously observe, scrutinize and exploit the rich plant resources around them. As a result, they have developed culturally important indigenous technologies of utilizing the vast available plant resources and the related bio-cultural knowledge (Sonowal and Barua, 2012). They depend on ethnomedicine, for primary health care and most of these are plant based. Observations of medicinal plant treatments by tribal peoples worldwide have contributed to the development of some of the most important and widely utilized pharmaceutical agents in our medical system (Ballick and Cox, 1997).

Odisha is home to 62 Scheduled Tribes. Their culture and tradition are different from each other. Kondh is one of the numerically preponderant tribes and are indigenous to Odisha and are known for their cultural heritage and values which centre on respecting nature. The Kondh belong to two linguistic groups, Kui and Kuvi, both belonging to the Dravidian family (Banerjee, 1969; Grodon, 2005) and are believed to be from the Proto-Australoid ethnic group. The primitive sections of the Kondh are divided into two ethnic names, i.e. Dongria Kondh and Kutia Kondh. The Dongria Kondh is found in the Niyamgiri hill ranges of the Eastern Ghats and particularly in the Rayagada and Kalahandi districts. Dongria Kondh speaks a language called the Kuvi and their economies centre round the shifting cultivation on hill slopes along with farming of fruits and vegetables. The Kutia Kondhs reside in the highlands of Belghar in Kandhamal district and the adjoining Lanjigarh area of Kalahandi district. They speak Kui language and practice shifting cultivation. They put the plants into magico-religious use for treatment of various ailments and diseases (Sahu *et al.,* 2013).

Over the years, various scholars have attempted to document the ethnomedicinal knowledge of the Kondh tribe like Panda *et al.* (2005) and Behera *et al.* (2006). However, most of the reports are incomplete and inadequate. In view of this an ethno-medicinal exploration of sections of Kondh community was conducted by the authors during 2014-15. The objective of this study was to assess the traditional medicinal practices of the Kondh tribe and medicinal use of plants by them in Koraput district. The study areas in Koraput are rich in medicinal plant resources. It is high time to document the medicinal utility of less known plants available in remote areas of the country (Marini-Betollo, 1980, Zaidi and Crow, 2005).

Materials and Methods

For the purpose of study seven Kondh dominated villages of Semiliguda Community Development Block of Koraput district were selected on the basis of local information on prevalence of traditional healthcare systems and ethno-medicinal practices in the said villages. Ethno-medicinal data were collected by administering a semi-structured questionnaire along the interviews and discussions with the Traditional Healthcare Practitioners (THPs), locally known as Disari. During the study period, interview was conducted with nine THPs (age varying from 45 yrs to 60 yrs) presented in Table-1 with the help of local interpreters. Data were collected on plant parts used, preparation methods, mode of application, as well as identification, collection and utilization. All gathered information was cross-checked with practitioners in nearby villages and the patients who have received treatment. The data collected was cross-examined with available secondary literature. Efforts have been made to collect plant herbarea during flowering and fruiting condition and were identified following "Flora of Orissa" by Saxena and Brahmam (1996).

Results and Discussion

The present study enumerated the use of 26 species plants under 26 genera belonging to 21families by the Kondh traditional healers of Koraput for the treatment of 17 types of ailments. Out of 26 plant species, three species of plants belonged to Euphorbiaceae, (*Phyllanthus fraternus, Jatropha curcas, Croton oblongus*), two species of plants belonged to Asteraceae (*Eclipta prostrate, Blumea lacera*) and Solanaceae (*Datura metel, Solanum virginianum*). Rest 18 families are represented by one species each i.e. Amaranthaceae (*Achyranthes aspera*), Acoraceae (*Acorus calamus*), Arecaceae (*Caryota urens*), Asclepidaceae (*Calotropis giganteana*), Asparagaceae (*Asparagus racemosus),* Combretaceae (*Terminalia belerica),* Martyniaceae (*Martinia annuai*), Meliaceae (*Azadirachta indica*), Moraceae (*Ficus hipsida*), Musaceae (*Musa paradisiaca*), Papaveraceae (*Argemone mexicana*), Poaceae (*Cynodon dactylon*), Piperaceae (*Piper longum*), Primulaceae (*Ardisia solanaceae*), Pteridaceae (*Hemionitis arifolia*), Rosaceae (*Rubus ellipticus*), Rutaceae (*Citrus reticulate*) and Zingiberaceae (*Curcuma aromatic*) (Table-2). In terms of the habit of plants, it was found that 46% species are herbs, 31% species are trees, 19% are shrubs and 4% species are ferns.

The data has been prepared in the following pattern: Scientific name, Family, Common Name/Local Odia Name, Life form, Plant pats used, and ailment category/ ailment treated. Traditional healers of Kondh tribe used these plants to cure diseases related to safe delivery, indigestion, stomach disorder, fracture, nail problem, migraine, asthma, ring worms, hair fall, dysentery, vomiting, fever, scabies, nasal bleeding, stomach pain, labour pain and toothache (Table- 2).

Out of total 26 plant species used for preparation of medicine, maximum 23 numbers of individual species of plants were used for individual diseases. Only three species of plants (*Achyranthes aspera, Martinia diandra,* and *Cynodon dactylon)* were used for treatment of more than one disease (Table- 2).

The analysis of ethno-botanical data indicates that the Kondh tribe uses the plants available in their immediate vicinity for variety of uses among which medicinal use of plants is quite significant. For the purpose of preparation of medicine, the whole plant or parts of the plant is used. By analyzing the ethnobotanical data, it was observed that the Kondh are conservative in plant use, they usually do not over exploit important medicinal plants and as such they have demonstrated sustainable use of plants and plant parts in applications of medicine. Since roots are most frequently utilized for medicine as compared to other plant parts like leaves, barks, tuber, fruits, stem, latex and the whole plant sustainable harvesting methods matter a lot in consideration of preservation and conservation of the plant species in the immediate environment.

The method of preparation of ethno-medicine, as studied, fall into eight categories i.e. plant parts applied as paste (24 %), powder (3%), tablets (14%), fresh juice extracts (3%), direct plant parts (21 %), decoctions (7%), pestled plant parts (21%) and latex (7%). In majority of the treatments the medicines were ingested, followed by application of powder form of medicine externally on affected parts or on wounds for healings.

There is no specificity of plant use for treatment of ailments by Kondh tribe, as Kondh tribe inhabiting in other parts of the state, i.e. Kalahandi, Kandhmal were found to use different plants for treatment of ailment (Panda *et al.*, 2005; Behera *et al.*, 2006) than their counterparts in

Koraput. Kondh tribes in the study area take the medicines from the traditional healers with a strong spiritual belief and the spiritual and magical aspect of this practice cannot be ignored (Gelfand, 1970).

The depletion of biodiversity has been considered as one of the most conspicuous effects of ecosystem perturbation. Disappearance of species due to habitat alteration, over explotation, pollution, effects of climate change and proliferation of invasive species is so fast that many valuable taxa may vanish before they are identified and their scientific value is discovered (Mishra and Choudhury, 2012).

The tribal people in different parts of the world, over the years, have become the custodian of biodiversity and have enormous knowledge of plant based ethnomedicine. The documentation of the indigenous knowledge through ethnobotanical studies is important for the conservation and utilization of biological resources. Collection and analysis of the ethnomedicinal knowledge of the Kondh tribe of Kaput could be viewed as an important effort as the knowledge gained may help in undertaking steps are required for extraction of possible bioactive compounds from the plants, which can lead to drug designing from them.

Table 1 Details of Traditional Healthcare Practitioners (Disari) of sections of Kondh tribe who were key informants of the study

Sl. No.	Name of the Disari	Age	Gender	Village	Block
01	Jhudunga Disari	55 yrs	Male	Tankubeda	Semiliguda
02	Bisu Pujari	50 yrs	Male	Tankubeda	Semiliguda
03	Sukuru Sauta	45 yrs	Male	Tankubeda	Semiliguda
04	Ramaya Jani	55 yrs	Male	Hatimunda	Semiliguda
05	Rukumuni Jani	48 yrs	Female	Paligumandi	Semiliguda
06	Dhoni Jani	50 yrs	Male	Putisil	Semiliguda
07	Ichhu kasu	55 yrs	Male	Phulbandh	Semiliguda
08	Pulia Jani	55 yrs	Male	Barkudi	Semiliguda
09	Soda Disari	60 yrs	Male	Mondariguda	Semiliguda

Table 2 Plant Species used by sections of Kondh Tribe for Different types of Diseases

Sl. No.	Plant Species Used	Common Name (Local Name)	Life Forms	Plant parts used	Ailment Category (Ailment Treated)
1.	*Achyranthes aspera* L. (Amaranthaceae)	Prickly chaff flower (Apamaranga)	Herb	Rt	1. GUA (Safe delivery) 2. GIA (Indigestion)
2.	*Acorus calamus* L. * (Acoraceae)	Sweet flag (Bacha)	Herb	Rt	GIA (Stomach disorder)
3.	*Andrographis paniculata* (Burm. F.) Nees (Acanthaceae)	Green Chirayta (Bhuin Nimba)	Herb	WPl	FVR (Fever)
4.	*Ardisia solanaceae* Roxb. (Primulaceae)	Shoe button ardisia	Shrub	Rt	SMSD (Fracture)

5.	*Argemone mexicana* L. (Papaveraceae)	Prickly Poppy (Agara)	Herb	Rt	SD (Scabies)
6.	*Asparagus racemosus* Willd. (Asparagaceae)	Indian Asparagus (Satabari)	Herb	Tb	SMSD (Migraine)
7.	*Azadirachta indica A. Juss.* (Meliaceae)	Neem (Nimbo)	Tree	Sb	GIA (Dysentery)
8.	*Blumea lacera* L. (Asteraceae)	Blumea (Pokosungha)	Herb	Lf	SD (Ring worms)
9.	*Calotropis gigantea* (L.) W. T. Aiton (Asclepiadaceae)	Crown Flower (Arakha)	Shrub	Lf	Nail problem
10	*Caryota urens* L. (Arecaceae)	Wine Palm (Solopo)	Tree	Sb	GIA (Fracture)
11.	*Citrus reticulata* Blanco (Rutaceae)	Orange (Kamala)	Tree	Sb	SD (Scabies)
12.	*Croton oblongus* Roxb. (Euphorbiaceae)	Croton	Tree	Sb	SMSD (Fracture)
13.	*Curcuma aromatica* Salisb. (Zingiberaceae)	Wild Turmeric (Bana Haldi)	Herb	Tb	GIA (Dysentery)
14.	*Cynodon dactylon* (L.) Pers. (Poaceae)	Bermuda grass (Dubo ghasa)	Herb	Lf	1. ENT (Nasal bleeding) 2. GIA (Vomiting)
15.	*Datura metel* L. (Solanaceae)	Devil's trumpet (Kola dudura)	Herb	St	GUA (Labour pain)
16.	*Eclipta prostrate* (L.) L. (Asteraceae)	Bhringraj	Herb	Lf	RS (Asthma)
17.	*Ficus hipsida* L.f. (Moraceae)	Common Fig (Dimiri)	Tree	Rt	FVR (Fever)
18.	*Hemionitis arifolia* (Burm.f.) Moore (Pteridaceae)	Herat Fern/Tongue Fern	Fern	Rt	SMSD (Fracture)
19.	*Jatropha curcas* L. (Euphorbiaceae)	Barbados Nut (Dhala Baigaba)	Tree	Lx	GIA (Vomiting)
20.	*Martinia annuai* Glox. (Martyniaceae)	Tiger's claw (Baghnokhi)	Herb	Tb & Rt	1. SMSD (Fracture) 2. FVR (Fever)
21.	*Musa paradisiaca* L. (Musaceae)	Banana (Kadali)	Shrub	Rt	GIA (Dysentery)
22.	*Phyllanthus fraternus* G.L.Webster (Euphorbiaceae)	Leaf flower (Bhuine Amla)	Herb	Lf	GIA (Dysentery)
23.	*Piper longum* L. (Piperaceae)	Long pepper (Pipala)	Tree	Sb	SMSD (Fracture)
24.	*Rubus ellipticus* Smith (Rosaceae)	Yellow Himalayan Raspberry (Machhakoli)	Shrub	Rt	GIA (Stomach pain)

25.	*Solanum virginianum* Linn. (Solanaceae)	Febrifuge plant (Bhejibaigana)	Shrub	Fr	DC (Toothache)
26.	*Terminalia belerica* (Gaertn.) Roxb. (Combretaceae)	Bastard Myrobalan (Bahada)	Tree	Fr	HC (Hair fall)

Parts used: Lf- leaf, Sb-Stem Bark, Fr- fruit, Lx-Latex, Fl- flower, St- stem, Rt- root, Tb- tuber, Ailment Categories- DC- Dental Care, ENT- Ear- Nose -Threat Problems, FVR- Fever, GIA- Gastro-Intestinal ailments, GUA- Genito- urinary ailments, HC-Hare care, RS- Respiratory systems, SMSD-Skeleto-muscular system disorder

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MEDICAL TRADITIONS AND ADMINISTRATION OF MEDICINE BY CERTAIN TRIBES OF ODISHA

Sulbha S. Jadhav[1]
Megha Kar[2]

Abstract

Tribal medical traditions are unique in many aspects. The tribal people have been living in relative isolation from the mainstream for many decades. For their healthcare needs they depend on their traditional medical systems and their medicine man happens to be kind of primary referral for a treatment. In their traditional medical processes and practices, in study of signs and symptoms, in modes of administering treatment and medicine a great deal of indigenous knowledge has been hidden. In the changing world scenario, when there is every search for alternative medicines and at a stage where the efficacy of traditional medicine has been scientifically validated and acknowledged there is relevance why the tribal medical systems, treatment and management of illness should be studied more thoroughly. The authors in this paper have presented aspects of tribal medical system and administration of medicine based on desk reviews and discussions with scholars who have studied this subject intensively and extensively. The authors viewed that though the slow changing tide of medicinal practices is welcoming, its also alarming the loss of huge indigenous knowledge about medicines. To cater to this, extensive research, survey and documentation should be conducted on tribal medical systems which will definitely add immense volume to the density of the vividness of tribal culture in the changing scenario.

Key words: Tribal medicine, Tribes, Bondo, Didayi,

Introduction

The state of Odisha has the second highest percentage of tribal population of the Indian States. The State has a total of 62 Scheduled Tribe communities out of which 13 have been identified as Particularly Vulnerable Tribal Groups (PVTG). The Scheduled Area of Odisha comprise of 13 districts and 119 Tribal Sub-Plan (TSP) Blocks. About 55% of the total tribal populations live in the Scheduled area and the remaining 45 live outside the Scheduled Area. In the state context, the tribal population is predominantly rural, with about 95 per cent residing in villages.

[1] Research Consultant (Tribal Medicine Compendium Project) at SCSTRTI, Bhubaneswar (sulbhasachin@gmail.com) Corresponding author

[2] Development professional associated with Tribal Medicine Compendium Project at SCSTRTI, Bhubaneswar

Geographically the major tribal population in the State is distributed in the Northern Plateau and Eastern Ghats falling in North Western and South Western part of the State.

The tribal communities in the state are at different levels of development. Most of the tribal communities may still be considered as forest dwelling tribes who follow their traditional patterns in their pursuit of living and livelihoods earning. These tribal communities, staying away from modern infrastructures and facilities have developed coping mechanisms for sustenance and survival. They have traditional systems of healthcare which are unique as compared to the developed and authentic medical systems. The major distinction in their healthcare and treatment system and practices is that they are culturally rooted with prevalence of typical belief systems; the medical traditions are handled by specialists in their own community; magic and religion is used as tool for administration of medicine; and often, there are particular places like stream side, forest, shrines where particular treatments are given. For medicine they depend on local sources, mainly plant based medicines that are collected and administered fresh. Their tradition medical system and medicines are studied by scholars under several names like indigenous medicine, ethnomedicine, traditional medicine, tribal medicine, herbal medicine, phyto-medicine, natural medicine, folk medicine, alternative medicine and so on. Although each of the term used by specific scholars have contextual meanings, yet for the purpose of a general understanding we refer the tribal system of medicine as ethnomedicine or traditional medicine.

Traditional medicine is defined as 'that whole, which includes holistic knowledge and practices, oral and written, functioned in diagnosis, prevention and curative aspects of illness and disease to promote total well-being, confide explicitly or implicitly on practical experiences and observations or know-how techniques with or without regional cultures having overtone of religion or not (Reddy, 1986). Further, Dunn (1977) defined a medical system as 'the patterns of social institutions that evolve from deliberate behavior to enhance health, with regards to its traditional medical system is a collection of know how phenomena of diagnosis and cure'. In the past decade, there has been focussed attention and interest in the use and practice of traditional medicine globally. The WHO has pointed out that traditional medicines is an important contributor to its health goals. Today according to WHO, as many as 80% of the world's people depend on traditional medicine and in India, 65% of the population in the rural areas use Ayurveda and medicinal plants to help meet their primary health care needs. In tribal communities, the use of traditional medicines and medical practices are the only way to cater to primary health care requisites.

Relevance of traditional healthcare systems

Traditional healthcare systems are time tested, popular, effective, legitimate, acknowledged, authentic, comprehensive, cheap, affordable and universally accepted system of treatment. Though traditional healthcare systems principally depend on plant and animal material based medicines, yet they justify to be assured treatment methods in non-surgical mode and it cures ailments by roots and branches. The origin of several systems of traditional healthcare may be traced back to folk practices which are practiced and passed down from generation to generation. Above all, traditional systems are valuable human heritage up for universal human welfare,

particularly for major rural and tribal population. They are best suited to local conditions, economy, culture and social practice.

The traditional medicine has evolved in so many different cultures in different ways. It appears that the traditional medicine has evolved from the socio-cultural-perceptional interplay in different cultural set-ups. The phenomena related to the traditional medicine often describe the way people in different ages and different cultures accepted it. There has been number of attempts to define traditional medicine by taking into account the concepts and practices gathered, analysed and evaluated by several scientific disciplines but there is not much satisfactory or comprehensive type of definition, which can cover all the aspects of traditional medicine in its true logical spirit.

Ayurveda is understood better through folkloric and established descriptions on the various knowledge systems and treatise related to it. The Ayurveda with hundred thousand *slokas* is probably a myth, but the abridged Ayurveda with its eight divisions seems to have had a real existence. The major difference between Ayurveda and folk medicine is that, the former is well documented while the later is orally transmitted. Ayurveda stands on scientifically validated phenomena whereas folk medicine stands on belief systems and folk understanding. Ayurveda is properly quantified while folk medicine is not. Above all, there is a standard ideological variation between the two systems. The concepts and practices of folk medicine are based upon the humoral theories, cosmological speculations and magic in learned oral medicine and religion. The main practice field of this discipline is mid-wifery, bone setting, super natural curing practices, with main emphasis being on utilization of natural herbs, roots, plants and other natural things around them. In fact it is a popular medicine among rural Indians and the practitioners are from an illiterate village community to a sophisticated urban community. In a folk medicine system, a disease is often believed to be due to wrath of gods and effects of evil spirits and healing art was followed by prayers, several hymns and often aided by administration of herbal remedies. Other treatments as they cure are certain common diseases. However, with reasonable justification, the folk medicine observes the concept of medicine more as a means of preserving health rather than curing diseases. Grown as a medicine through trial and error methods in the folk medicine system, a preparation may get scientific validation to become part of a greater system of medicine; may be traditional may be modern. Folk medicine often follows the Ayurvedic methods and drugs but not in the Ayurvedic way. Yet there is reasonable linkage and relationship between the two systems.

Traditional medicine and Tribal medicine: Conceptual differences

In their traditional medicare system, the tribal communities in Odisha use products out of plants, animals and other naturally available materials. In tribal societies the treatment is often assisted by magic and mysticism. Through the evolutionary stages traditional medical systems have seen many propagation of myths and superstitions such as the *doctrine of signature,* advocated by

Parcelsus[3] (1493-1541) according to which all plants possessed certain signs given by God, which indicated their usefulness in treating diseases of similarly shaped organs in human body.

Traditional medicine and tribal medicine varies contextually but they have similarities in many respects. Pal, et.al (1986[4]) classified the traditional medicine into three heads:

1. Written traditional systems of medicine (Ayurveda, Unani, Sidha, etc)
2. Oral traditional system of medicine (tribal medicine, family medicine, household remedies, professional and semi-professional medicine)
3. Some components of western medicine

The oral and written traditional systems of medicine are based on transmission of knowledge, whether oral or written transmission. Empirical knowledge of tribals, in general, is transmitted through verbal means and folklore from generation to generation. Like other systems of medicine, tribal medicine has curative and preventive aspects with the application of herbs, animal products and minerals. Their use of medicine is sometimes rudimentary, sometimes very specialized, in certain cases they believe in astrological herbalism and in several cases they take to magic, mysticism, religious performances with or without execution of a sacrifice. The concept of disease and treatment in a tribal society is unique, sometimes simple to understand and sometimes too complex to interpret.

Traditional medicine is value based, no matter how diverse it is in differential social setting and cultural contexts. There are growth-positive, growth-negative and growth-neutral values in every society associated with traditional healthcare. Such knowledge systems would contribute immensely in the integration and synthesis with any other recognized system of medicine as well help preservation and conservation of a great diversity of important flora. As long as folk uses of the plants continue to be there, be it for medicine or food or for material and religious culture people would continue to care and conserve such species from extinction.

The survival of a culture requires integrity and creativity. The survival of traditional medicine and culture related to that requires that the dynamics that kept it alive over centuries be protected and cherished. Hence there is an urgent necessity for making comparative studies of various existing systems of folk medicine in traditional societies. What matters most in this context is the explicit future goal to attain a synthesis between modern medicine and traditional ones to open a space where two approaches can live together and be enriched by mutual exchange.

Health status and medical traditions of tribes in Odisha

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Health is a pre requisite for human development and is essential component for the well being of the mankind. The health problems of any community are influenced by various factors including social, economic and political ones. The common beliefs, customs, practices related to health and disease in turn influence the health seeking behaviour of the community.

There is a consensus agreement that the health status of the tribal population is poor and very poor among the PTGs because of their relative isolation, remoteness and being largely unaffected by developmental processes going on in tribal areas. The wide spread poverty, illiteracy, malnutrition, absence of safe drinking water and sanitary conditions, poor maternal and child health services, ineffective coverage of national health and nutritional services etc have been found to be possible contributing factors of dismal health conditions prevailing amongst the tribes.

Tribes like Bondo, Didayi, Juang designated as Particularly Vulnerable Tribal Groups (PVTG) have severe malnutrition rates. Most of them are malnourished and have chronic energy deficiency. Various studies have shown that the infant mortality rate and maternal mortality rates are alarmingly high in some tribes due to lack of medical knowledge and proper hygienic practices. The life expectancy at birth has been noted to be as low as 36.

Diseases like malaria, upper respiratory tract infection, gastro intestinal disorders, intestinal parasitism, micronutrients deficiency, skin diseases etc are very common amongst the tribal population. Various communicable diseases like tuberculosis, leprosy, yaws and veneral diseases, have been described as the significant health problems in several major tribal populations of the country. There has also been wide prevalence of hereditary haematological disorders like sickle cell anaemia in many tribal communities.

In such a context, the tribals use their medical system to provide preventive, curative and ameliorative healthcare. Their folk traditions of healing are not only rooted in the tribal community but also the communities stand in support of it. Despite remarkable worldwide progress in the field of diagnostics and curative and preventive health care, still tribal people live in isolation in natural surroundings far away from civilization with their traditional values, customs, beliefs and myth intact.

In the matter of handling medical practices there are specialized people in tribal communities who are known by different names and have been elevated to the status of medical practitioner by hereditary traditions, ascribed traditions and divine selections. The medicine men are known by various names in different tribes. Guru or Dissari in Bondo, Guru in Didayi, Dishari in Dongria Kandhas, Kutaka in Kutia Kandha, Roganmar in Lanjia Saora etc. Women rarely become the healers, however, when women practice medicine they are called Gurumai. These tribal medicine men are professionals of excellence for their community members because of their vital role in catering to healthcare needs. They are believed to possess an amazing range of healing skills and expertise ranging from treating emergencies like poisonous bites and safe delivery to curing different chronic ailments. They use some methods that have a support from religious beliefs to cure people suffering from various diseases and disabilities. In most cases these healing traditions are orally transmitted from generation to generation. The tribal medicine

men are the knowledge bearers who directly use the medicinal plants and plant parts, occasionally mixing with additional minerals and animal parts for healing and treatment.

In tribal societies, the knowledge of medicine is not the exclusive domain of the medical practitioners. Some preventive medicines are part of common knowledge, or at least, the elderly people know preventive folk remedies. For administration of preventive medicines, the local folks, do not always need the prescriptions from the designated medicine man. The women in particular, in tribal societies, know many aspects of healing practices as required in case of typical women and children related ailments and diseases. However when things go out of hands, they preferably take help of the tribal medicine man for treatment of diseases.

The tribal people commonly believe that diseases are caused due to both supernatural displeasure and natural factors and therefore the treatment and healing practices are influenced by provision of herbal medicines preceded by some offerings ritually made to specific supernatural powers. It has been observed that all traditional healers of various tribal communities do not perform the same functions, nor do they all fall into the same social category and status. Each of them has their own field of expertise. Even the techniques employed differ considerably. They have their own methods of diagnosis and their own particular medicine.

Indigenous medicines: preparation and administration

The indigenous medicines used by the tribal groups are almost identical, both in the preparation and administration. Some variations are however noticed from one geographical zone to another. However, in the context of traditional medicine, the socio-ecological zone is more important than the geographical zone. The ethnic groups living in areas with no succulent undergrowth depend heavily on hard trees for medicine like Bonda. In semi-arid zones the indigenous medicines are prepared out of animals their bone, skin, blood, flesh, teeth, nail and even milk. This is found in tribes like Juang. In sub tropic deciduous forests, the tribes like Didayi find a lot of plant species ranging from hard trees creepers, highly sensitive succulent under growths to parasites and fungus.

Before proper treatment is undertaken, correct diagnosis of the disease is essential. Whenever a shaman is called upon to attend a patient, his first duty is to diagnose the source of the trouble or disease and treat accordingly. This is done in various ways in various tribes from checking of pulse to magico-religious rituals of examining rice and reeds. Irrespective of the tribe, the medicines are never prepared and stored. It is always freshly prepared and prescribed. Administration of medicines is almost similar in tribes. They transmit invisible medicines by uttering words addressed to unseen forces or by body gyration or by administering physical medicines.

Physical medicine is either administered orally, or via topical application on the affected site. But the medicine that is to be orally administered for a headache in one tribe, may not have the same use in the other tribe. Headache might be treated with some kind of paste application or root inhalation as well. The treatment of a specific disease depends on the medicine man. Sometimes they also use psychotherapy to treat the patients as well.

Taboos and restrictions

Being simple and unstratified the tribes have few taboos. These taboos are bi-faceted i.e. dietetic and behavioural and are strictly adhered to by elders and the community as a whole, the reflection of which is seen with the dietary restrictions that the tribal medicine men often prescribed. The medicine men prescribe consumption of certain food items and prohibition of some others. Generally fibrous and hot foods are not given to patients with stomach ache. Similarly sago palm juice, stale rice water is not given to patients suffering from fever, cold etc. It is strange to note that stale meat, dry fish and the likes are not restricted to the patients suffering from intestinal disorders and the old people with poor digestive power. The medicine men use 'faith healing' for diseases like cholera, jaundice, small pox etc. An interesting peculiarity seen in the Bondo medicine men is that they consider it a taboo to administer medicines before spiritual submission. Similarly a Didayi medicine man hardly prescribes his patient with preventive as well as 'after care' medicines.

Conclusion

Though there has been some influence of modernisation in the current scenario in some aspects, the tribal community is quite divided on the acceptance of modern medical facilities. The elderly ones and those living in remote villages have strong faith on indigenous medicines. Certain compulsions, like belief in age old customs and practices, non-availability of alternative medicines in and around the villages and excessive reliance on medicine men of the locality have made people to desist from modern medicine facilities. Even now majority of the tribal population when fell ill prefers to take treatment under their traditional systems but some are slowly switching over to modern medicines when the later fails to yield results. It is still the case that the tribal medicine man is the first referral for his community members.

It is thus worthwhile to study and document the traditional medicine along with all the medicinal ingredients used in the treatment and analyze the drugs giving due respect and importance to the indigenous knowledge of the traditional medicine men. Though the slow changing tide of medicinal practices is welcoming, it's also alarming the loss of huge indigenous knowledge about medicines. To cater to this, extensive research and survey should be conducted and it should be tried to document as much as information as possible. This will definitely add immense volume to the density of the vividness of tribal culture in the changing scenario.

THE FOREST RIGHTS ACT, 2006 AND RURAL LIVELIHOODS: EXPERIENCE FROM ODISHA

Trilochan Sahoo [1]
Sanghamitra Dubey [2]

Abstract

India's Forest Rights Act (FRA)[3]*, 2006 is planned to provide a framework for recognition and secure property rights over forest of individual households and communities. Under FRA the forest dwelling people are making their genuine claims of land under their occupation mainly for survival. This paper explores the aftermath effect of the FRA in the state of Odisha and state-led initiatives for livelihood improvement of forest dwellers. Since its adoption in 2006, many state-led development interventions have aimed at converting these rights into gainful livelihoods for forest dwellers of Odisha. Government of Odisha has extended support to more than 200,000 individual households having forest land titles, through various development interventions related to housing, land development, water harvesting, irrigation, horticulture, plantation and forest protection. There is, thus, phenomenal potential to extend livelihoods and food security to millions of forest dependent households and their communities in Odisha. There is evidence to suggest that the implementation of the Act has been challenged by bureaucratic interests. However, implementation of convergence programmes have raised challenges, with instances of unintended consequences resulting in distress and increased food insecurity. Drawing case study from the state of Odisha, this paper develops three key points: (1) the FRA provides for community-based governance, while governmental schemes focus on individual benefits; (2) despite guidelines that direct state agencies to undertake bottom-up processes, development interventions continue to be top-down and undertake interventions that are different to strengthening local livelihoods and food security; and, (3) plantations on forest lands of commercial and agro-industrial species on lands which had diverse agro-forestry arrangements are especially problematic. Ironically, state employment programs are also eroding local livelihoods options. Instead of respecting communities' needs and facilitating community-led process, state agencies continue with a plan of top down interventions. There is evidence to suggest that the implementation of the Act has been undermined by bureaucratic interests. Thus, our policy makers,*

[1] Former Joint Director, & presently a Consultant in a Research Study in SCSTRTI, Bhubaneswar

[2] Programme Officer at Vasundhara, Bhubaneswar & currently associated with SCSTRTI in a Research Study

[3] *The full name is Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006. The Act, Rules and relevant guidelines are available at the website of the Ministry of Tribal Affairs of the Government of India. See: http://tribal.nic.in/Content/ForestRightActOtherLinks.aspx*

bureaucrats and Government should not ignore the importance of tribals and forest dwellers and their rights should be given by proper implementation of the law.

Key word: Forest rights, livelihoods, food security, forest dependent communities

Introduction

India's Forest Rights Act, 2006 is planned to provide a framework for recognition and secure property rights over forest of individual households and communities. Under FRA the forest dwelling people are making their genuine claims of land under their occupation mainly for survival. In India there are about 300 million people depending directly and indirectly on forests for their livelihoods. Preliminary assessment of the potential of the Forest Rights Act (FRA, 2006) to secure livelihoods reveals that the law can be applied in about 170,000 villages; supporting Community Forest Resources (CFR) rights over 40 million hectares of forestland, about 50% of the total forest in India. Forests are recognized as food producing habitats that sustain the livelihoods of forest dwelling communities, particularly indigenous communities (commonly known in India as Adivasis and officially recognized as Scheduled Tribes or STs). Forest dwelling communities are, however, affected by denial of access to forest lands traditionally used. Indeed, government enclosure of forest land through legal categories such as reserve forests, protected forests and protected areas under the forest and wildlife conservation laws—without following due process for the settlement of rights for lands already used by STs—has curtailed access to forests, and increased insecurity of tenure and livelihoods. Yet, there is now greater recognition of the fact that security of tenure and access rights is an enabling means to ensure food security [1].

In the Indian context, the Forest Rights Act is a landmark social[4] legislation which ushers in important reforms related to forest tenure and governance for about 300 million forest dwellers that depend directly on forest resources for their livelihoods [2]. As stated in the preamble, the FRA seeks to ensure livelihoods and food security of Scheduled Tribes and Other Traditional Forest Dwellers (OTFDs) by recognizing their forest rights. The law provides for an integrated institutional framework that includes: a) of a package of forest rights; b) protection of rights; c) legal authority to village councils for the governance and management of forestland and community forest resources; d) provisions to convert rights into gainful livelihoods and employment.

Specifically, the package of rights recognized under the FRA includes: a) rights to occupy forest land for habitation and subsistence agriculture; b) ownership rights over minor forest products; c) community rights for use of water bodies, fishing; d) grazing rights; e) traditional seasonal access rights of nomadic and pastoralist communities; f) rights over habitats or customary territories of particularly vulnerable tribal groups; g) community rights for access to biodiversity and traditional

[4] *'Social' because it addresses to the most marginalized sections of the Indian society which are the tribals and the forest dwellers.*

knowledge; h) and, various other customary and traditional rights. Special provisions have been made to secure rights of women to titles in the name of both spouses, and in the name of single women, and to ensure the representation and participation of women in the process of determination of rights in the village councils.

Recognition and vesting of rights empowers and enables forest rights holders and village councils to govern and manage Community Forest Resources (CFRs), a new legal category of forests in India. Village councils and forest rights holders can thus prepare community-based plans for management of the community forest resources, including by specifying livelihoods interventions. Specific rules require the government to provide post-claim support through the government departments of tribal welfare, forest, revenue, rural development, the *Panchayati Raj* Institutions [5] All government schemes, including those related to land improvement, land productivity, basic amenities and other livelihood measures, are provided to right holders by following the plan proposed by the village councils. Apprising primarily from field experience and learning, the following section explores how the FRA has been used on the ground and how it has impacted livelihoods in the state of Odisha.

Odisha Case study

Odisha, located in the eastern part of India, is home to 62 tribal communities out of the 705 recognized in the country. According to the Census of India (2011), STs constitute 22.84% of the state's population and 9.2% of the total scheduled tribe population of the country, thus occupying a special position in the demographic map of India. Thirteen of the 62 communities have been declared Particularly Vulnerable Tribal Groups (PVTGs). Scheduled areas constitute 44% of the total geographical area of the state. More than 30,000 villages in the state include forest land within the village boundaries. About 40% of the total population of the state depends on forests for their livelihoods. Dependence on forest resources is greater for women, who mostly rely on non-timber forest products for their livelihoods. Tribal and forest areas in the state have the highest incidence of poverty with 75.6% of the ST population living below the official poverty line in rural areas [8].

Odisha has more than 15,000 self-initiated Community Forest Management (CFM) groups traditionally protecting and conserving forests and biodiversity. In the state, CFM exhibits a diversity of institutional and management systems that support a wide range of forest based livelihoods. Lack of legal recognition of community forest management institutions and practices has affected the livelihoods of forest based communities. Studies show that notification of forests as reserve and protected forests under the Indian Forest Acts has been carried out by the government without ensuring settlement of rights. This has resulted in the exclusion of traditional and customary rights of tribal and forest dwellers, as well as a perpetual state of insecurity of tenure, loss of livelihoods and poverty[6] Indeed, poverty in tribal and forest areas are directly

[5] *Local governments set up at the village, block and district level.*

[6] *Dispossessed and displaced: https://www.researchgate.net/profile/Kundan_Kumar14/publication/232062513_Dispossessed_and_displaced_A_brief_p*

correlated with unsecure tenure and lack of access to forest resources. The context of implementation of the Forest Rights Act becomes important as the tenure security and the access rights provided under the act empowers communities to strengthen the governance and management of forests, and to address livelihoods and food security.

In this context GO and NGO interventions are boosting. MoTA, GOI, New Delhi with support from UNDP instituted a National Resource Center (NRC) for FRA related research and training activities at SCSTRTI Campus, Bhubaneswar. Under the aegis of MoTA & UNDP the NRC, first of its kind in the country, initiated FRA related activities in 2012-13 for preparation of FRA compendium, self-learning interactive CDs and booklets and organization of workshops and sensitization programmes on Forest rights, forest conservation and forest based livelihood of the forest dwellers across the country. Some NGOs of repute (like Vasundhara & FES) voluntarily came up with their agenda to extend their support to NRC as well as to the local community for their empowerment and forest conservation activities. The principle is, "let us help the forest dwelling community to help themselves for asserting their rights over forest and conserve the forest and environment".

As for example, Vasundhara has been part of a collective and participatory process of learning and action to facilitate assertion of forest rights by forest communities. Initially formed to support and strengthen community-based initiatives to protect and conserve forests in the state of Odisha, over the years Vasundhara with research inputs from SCSTRTI and NRC has developed a more explicit focus on the sustainable livelihood of the marginalized sections. This process has involved facilitation of community based governance of community forest resources and bottom up process for livelihoods planning.

At present the SCSTRTI, Bhubaneswar with support from 17 Micro Projects and resource persons from state and local based NGOs has initiated a specially designed plan to extend training and facilitate implementation of FRA (Individual rights, Community rights, CFR rights and Habitat rights) process among 13 Particularly Vulnerable Groups in the 17 Micro Project locations so that it would be complete in all forms within a time frame of March, 2019.

Livelihood interventions under the Forest Rights Act in Odisha: Opportunities and learning

In Odisha there are currently 6 *lakh*[7] individual forest rights claims of which 349,100 titles have been issued over an area of 550,406.22 acres. About 6,572 community forest rights claims have been made, of which 1,881 titles are issued over an area of 98,368.28 acres. The Government of Odisha has implemented programmes to support the livelihoods of forest right holders. These livelihood programmes were initiated soon after the FRA was introduced, and have been up-

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aper_on_tribal_issues_in_Orissa/links/0912f50b959b490ab1000000.pdf,
http://siteresources.worldbank.org/INTINDIA/Resources/Kumar1.pdf

[7] *Lakhs means One hundred thousand*

scaled since 2012, after specific provisions were included in the Amendment Rules. Specifically, Rule 16 requires the state government to support forest rights holders through various programmes and schemes. Key programmes implemented so far include: a) a housing scheme (*Indira Awas Yojana*), b) a land development program under the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGA, right to work programme, c) plantations and forest development and, d) horticulture.

The government of Odisha report indicates that out of 3.49 *lakh* individual right holders, 63% of them are serviced by rural housing and 24% by land development agricultural scheme. As demonstrated in the following example, the potential for livelihoods generated through these programmes is optimized when the *Gramsabha* (Village council as specified by the FRA) supports implementation of community-based planning with the involvement of forest rights holders, women and the village councils.

Livelihood planning under the FRA by Gramsabha[8] in Madikhol village, Odisha

The Madikhol village is situated in Jamjhari Gram Panchayat, Kandhamal district. The village is surrounded by forest, and its 34 families depend primarily on forest, non-timber forest products and agriculture for their livelihood. Both individual and community forest tenure rights are recognized over an area of 216.15 ha. Rule 16 from 2012 demands that all government schemes including those related to land improvement, land productivity, basic services and other livelihood measures are provided to claimants and communities whose rights are recognized and vested under the Act.

Recognition of rights over forestland has enabled the Madikhol community to access development programmes. On the one hand, the community has raised concerns over the top-down approach in which development interventions are being implemented, without due consideration for the local livelihood needs and requirements. On the other hand, growing consciousness and awareness has enabled the community to assert its legal rights and authority under the FRA, and to propose a community-based development plan. The completed plan shows a clear picture about the needs and priorities of the community. The six different plans proposed by the *Gramsabha* include irrigation facilities, land development, a non-timber forest products harvesting and processing unit, bamboo plantation, and training for forest fire protection. They do not mention, let alone include, housing or plantations. The village council has shared the plan with the district administration. The district administration has approved it and issued a request to all relevant department officials to operationalize the development programmes and coordinate the intervention effort.

By being considered a legal right, there has been a visible transformation in livelihoods planning which significantly departs from traditional top-down, imposed and non-participatory beneficiary-oriented government interventions. The community-based plan stresses the use of community land and forest resources rather than individual land and individual-oriented government

[8] *Gramsabha is the village council and ultimate decision making authority under Section 5 of The Forest Rights Act*

interventions. Because of the focus on forest-based livelihoods, women's participation has been significant in the planning process. Women have taken leadership roles to facilitate the planning process, including through an extensive process of mapping both social and natural resources. The village council has, thus, demonstrated that by involving concerned user groups, village elders, and women, it is possible to identify livelihood interventions that are appropriate and respectful of local needs. Importantly, this has happened in a context where government programmes are mostly imposed on voiceless tribals, resulting in distress and negative outcomes. Similar examples and initiatives have been reported from other parts of Odisha and other states in India.

Challenges in the implementation of the livelihoods programs under the Forest Rights Act

While the FRA has created opportunities to secure livelihoods (as revealed above), implementation of the livelihoods programmes has faced the following several challenges.

i. Lack of proper processes for demarcation, mapping and recording of individual and community forest resources:

A major limitation in both planning and implementation of livelihood support programmes is the absence of proper institutional mechanisms to ensure demarcation and mapping of the claimed lands and inclusion in government records of rights to forest land and community forest resources. As of now, a number of claims are pending, thus limiting scoping for livelihoods opportunities.

ii. Imposed interventions:

The governance regime set up under the FRA vests village councils with legal authority to govern and manage their resources and livelihoods as a legal right. This emerging governance framework is largely ignored by state agencies. As a result, various government programmes, often conflicting with local livelihood context and needs, have been imposed. For example, rural housing schemes are now a top priority for the government. While the government assumes tribals must live in a concrete house to enhance their standards of living, demands from the ground mostly concern development of land and natural resources, seen as key to strengthening livelihoods.

iii. Conflicting legal regimes:

Changes in the governance regime favoring local communities and village councils, has met with strong resistance from the forest administration whose policies and programmes are often in conflict with provisions of the FRA. There is visible lack of acceptance, and disregard for the democratic framework established under the FRA. The continuation of interventions which conflict with the new forest rights is proof. Massive plantation programmes continue to be undertaken in lands and community forests tribals occupy and use for their livelihoods. In the Kandhamal district, commercial plantations of teak, rubber and eucalyptus are carried out on lands used for shifting cultivation by the *Kutia Kondhs*, a

PVTG. As a result of plantations, the PVTG communities are losing their traditional millet varieties and pulses. In a conversation with a Kutia Kondh woman, she state, "*amajaga re ame agaru bahut jinisha khaiba pain chasa kariparuthilu, ama jaga re forest department officer asi ala gachha lagauchhanti, ai gachha amara kamare asuni, aihi gachha pain ame amara puruna sasya gudika haraideluni, kichi sasya aauu pujunahi*" (English translation: "Earlier we used to do different crops in our land for our food, but now-a-days forest department officials have planted trees like teak over this land which is of no use for our food or livelihood. Rather, because of this plantation, there are quite a few indigenous species that are getting becoming extinct now.)"

In the neighboring state of Telengana, a plantation programme is similarly being proposed in forest lands granted under the FRA, as the state sponsored Harit Haram project. Plantation programmes are mostly reported to be undertaken without consent from local communities and village councils, leading to widespread conflicts. The promotion of such plantation programmes by the forest and conservation agencies has raised concerns because it counters the assertion of rights under the FRA and threatens local livelihoods. Some of the key programmes include the Green India Mission, the Compensatory Afforestation Fund Management and Planning Authority, externally aided projects such as the Japan International Cooperation Agency and a myriad of projects implemented by the forest department under the directives of the Ministry of Environment, Forest and Climate Change.

For example, as part of the intended nationally determined contributions to the UNFCCC, the Government of India has proposed a host of climate change mitigation and adaptation measures, including GIM, strengthening of JFM, REDD+, which already have a record of conflicting with the FRA and the rights of tribals and forest dwellers.

Perceptively, a woman from the Kutia Kandha further said in her colloquial language, *"saguan gachha ra brukhya ropana haba dwara ämе ama paramparika sasya abe harai basiluni. Ame ama jungle re ahigachha lagai baku jungle bibhaga ku mana Madhya karichu kintu jorjabardastahi gachha lagajaichhi . Jungle bibhaga amaku jungle dwansha kari bhabuchi kintu ame ahi jungle ku puja karu"* (English translation; **"**We are losing our traditional millets now-a-days because of the teak plantation in our areas. We are denied to plant this in our forest but the department people threatened us and forcibly planted this for afforestation. They think we are destroying the forest but we always worship our forest our land").

It is also a matter of concern that the structure and resources of another equally emancipator and empowering programme, the MGNREGA, have been used to disempowered and dispossess forest dwellers of their rights. Resources available under the MGNREGA have been substantially diverted to the forest department, which uses them for plantations on land cultivated and used by forest dwellers. The Ministry of Environment, Forest and Climate Change has recently issued guidelines to converge the Green India Mission with the MGNREGA, and proposed massive plantation programmes over forestland that is being used by tribals for cultivation and livelihoods. Ironically, all interventions would be carried out by the forest department's own structures such as the Joint Forest Management committees, which are already in conflict with

the institutional framework set up by the FRA for the governance and management of Community Forest Resources' groups.

Opinions& Suggestions

We agree with, and reproduce below 10-Point arguments {findings of the studies of SCSTRTI and others (7)} which suggest successful implementation of FRA on rights and livelihood issues through a convergence mode.

1. *Up-scaling the FRA and livelihoods initiatives*

As seen in the cases from Odisha, transformative changes in livelihoods and economic conditions in many villages support efforts to upscale livelihood initiatives in India. Preliminary assessment of the potential of the FRA reveals that the law can be extended to about 170,000 villages; supporting CFR rights over 40 million hectares of forestland, or 50% of the total forest in India. There is now evidence that the successful implementation of FRA has not only addressed tenure and livelihood security but has mitigated conflicts in the tribal and forested areas arising out of socio-economic inequality and abject poverty.

2. *Need for dedicated institutional support for proper demarcation, mapping and record of rights of forest land*

The demarcation and mapping of individual forestland and community forest resources over which rights have been recognized, has not been done properly. This is limiting the scope of development activities in forest lands. Government support to facilitate demarcation and mapping of rights, as well as the creation of a clear record of forest rights is needed. Further, the knowledge and expertise generated by mapping forest lands and community forest resources by civil society organizations needs to be harnessed.

3. *Democratic governance, decision making and planning by village councils*

Village councils are demanding greater adoption of the legal and democratic structures of governance and management of lands and community forest resources. For example, official guidelines require funding to be directly dispensed to the village councils for management and development of community forest resources. Government programmes and schemes need to integrate and operationalise these democratic structures in the governance and planning of lands, forests and natural resources. This will enable local communities and village councils to have greater autonomy when taking appropriate livelihood and economic choices. For example, in states like Maharashtra, progressive interventions have devolved resources under the tribal sub-plan directly to the village councils. This measure will provide ample opportunities to the local communities to plan for livelihood and economic development.

4. *Emphasis on community forest land rather than individual lands*

Community forest resources are the main source of livelihood for forest dwellers. Yet, current development programmes are mostly designed to benefit individual forest lands. By designing programmes for community forest lands, the whole community can reap benefit.

5. *Securing forest and food habitats by increasing the focus on agro-forestry*

The legal space created by the FRA has also reflected a remarkable shift in forest management. On the one hand, local priorities for forest food and non-timber forest products inherent in the traditional land and forest management systems of the communities have gradually been replaced by the 'legacy of revenue and timber orientation' of the forest administration. On the other hand, evidence from the ground suggests that there is a revival of traditional agro-ecological practices such as hill cultivation, agro-forestry and multi-cropping, practices which sustain the diversity of forests and food crops. Indeed, local communities and village councils have used their legal rights and authority to restrain forest department from felling natural forests, and protect forest food sources and minor forest products. Civil society organisations have also played an important role in promoting conservation of the forest and food habitats, by prioritizing community-based planning.

6. *Adopting a right based approach to climate change*

As shown above, climate change action plans and the intended nationally determined contributions (INDCs) presented by the Indian government propose interventions which conflict with the Forest Rights Act and the rights and livelihoods of the forest dwelling communities. Climate change mitigation and adaptation approaches along with the host of programmes, missions and schemes proposed under the national climate change action plans need to be reviewed to comply with the framework of rights and governance set up under the FRA.

7. *Institutional framework & Coordination between line departments*

ITDA offices should be upgraded and made functional at the district level. The project Administrator of ITDA should be made members of all development related bodies along with Project Director DRDAs to ensure proper coordination of convergence activities. Convergence plan needs to be steered and regulated through proper institutional framework placed at different levels. It is utmost important to have convergence and coordination among the line departments in order to ensure proper identification of individuals for allotment of schemes. District level meetings need to be held at fixed intervals with participation of all line departments to review the programmes and schemes to be converged with the FRA right holders. Roles and responsibility of the line departments must be clear and instructions should come from the state to bridge the gap between departments and to avoid duplications.

8. *Gram Sabha Plan should be the basis of convergence*

Plan prepared by the Gram Sabha should form the basis of district and block level planning. The plan prepared by the Gram Sabha need to be submitted and approved at the Panchayat level and subsequently need to be integrated in the District Planning Process. Plans prepared by the Gram Sabha along with copies of the resolutions must be with ITDA office so that the PAITDA can appraise about the village level needs and priorities during the district planning meetings.

9. *Need to maintain updated database for tracking the coverage of the right holders*

Disaggregated database of village wise list of FRA right holders, area of land recognized under FRA and no. of right holders and area of land covered different programmes/schemes by

different line departments need to be maintained and updated on a regular basis at the ITDA office in TSP areas and DWO office in non TSP areas.

10. Priority/need based mapping of FRA right holders for coverage under different programmes

Selection of individuals for coverage different schemes should be based on the needs of the individual and should not be done arbitrarily just to achieve the departmental targets.

Conclusions

The Forest Rights Act, 2006 was legislated to support the survival of tribal and other communities living in areas where dependence on 'forest lands' is more. The act recognizes the individual as well as community uses of forest land dependent communities. The forest dependent people are making genuine claims of land under their occupation mainly for their survival.

This paper shows how the implementation of convergence and livelihood programmes enabled by the Forest Rights Act has raised challenges. These include, (1) the continuation of top-down planning and interventions that are contrary to the new paradigm of Gram Sabha (village council) based planning established by FRA and thereby contrary to local livelihoods and food security; (2) the promotion of government schemes which focus on individual benefits rather than community oriented; and, (3) development measures such as plantations that erode local livelihoods options. However, the implementation of the FRA also provides examples on the potential to extend livelihoods and food security to millions of forest dependent households and their communities Odisha and other parts of India also. As an instrument that tries to give voice to forest dependent communities, the FRA holds potential for the creation of a new social compact, but the paths seem bumpy, not easy to march ahead.

Thus the National Commission on Agriculture, 1976 had rightly recommended strengthening the forest legislation by changing the forest policy and bringing an uniform forest laws so that incompatibility in forest laws among the states is removed and there is no multiplicity of legally sanctioned authorities concerned with forestry matters (18). Amidst the aforementioned challenges, uncomfortable path, it is high time; we all stakeholders should work together to enable the forest dependent people to take care of forest with their indigenous knowledge and also for achievement of FRA objectives of ensuring their forest rights and sustainable livelihood.

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AN ANALYSIS OF LIVELIHOOD OF PVTG-LODHA AND SCOPE FOR IMPROVEMENT

Abhishek Mohanty[1]

Abstract

The Dhebar Commission (1960-1961) stated that within Scheduled Tribes there existed an inequality in the rate of development. During the Fifth Five Year Plan (FYP) a sub-category was created within Scheduled Tribes to identify groups that are considered to be at a lower level of development. This special category was named "Primitive Tribal Group" (PTGs) that has been redesignated as Particularly Vulnerable Tribal Groups (PVTGs). Lodha is one of the PVTG communities having major concentration in Morada & Suliapada blocks of Mayurbhanj district of Odisha and have been in focus of anthropologists and social activists. Lodhas are becoming increasingly vulnerable due to loss of their customary habitats and livelihood resources. In this context, a livelihood analysis was conducted at various clusters of the Lodha habitats with the community members by the author following participatory approaches and methods. It has been attempted to make them see their existing situation and plan for the improvement in their household income within the framework of available asset mix, government policies, market and associated risk factors. The author has analysed the various livelihood earning options and sectors and on the basis of that has suggested a livelihood framework and a provocative livelihoods development intervention model towards making the Lodha livelihoods scenario better.

The Dhebar Commission (1960-1961) stated that within Scheduled Tribes there existed an inequality in the rate of development. During the Fifth Five Year Plan (FYP) a sub-category was created within Scheduled Tribes to identify groups that are considered to be at a lower level of development. This special category was named "Primitive Tribal Group" (PTGs). The features of such a group include a pre-agricultural system of existence, i.e. practice of hunting and gathering, zero or negative population growth, extremely low level of literacy in comparison with other tribal groups. The groups of aboriginals who continue to pursue an archaic way of life and absorb the changes slowly are distinguished as PTGs. PTGs are identified on agreed cultural traits such as homogeneity; small population; relative physical isolation; social institutions those are cast in a simple mould; absence of a written language; relatively simple techno-economy; and a slower rate of change in the present context. By the end of the 8th Five-Year Plan, total 75 ethnic groups were identified as PTGs all over India. They were identified on the basis of recommendations made by the respective state governments. In 2009, Government of India (GoI) decided to re-designate "Primitive Tribal Group" (PTG) as "Particularly Vulnerable Tribal Group (PVTG)"

[1] Development Consultant, Kalinga Vihar, Bhubaneswar (abhishek.rural@gmail.com)

considering the complaints that the term 'primitive' is value loaded.[2] It may be mentioned here that in Odisha there are 62 Scheduled Tribes among whom 13 are considered PVTGs.

Lodha is one of the PVTG communities having a major concentration in Morada & Suliapada blocks of Mayurbhanj. 'The Lodha are an ex-criminal Scheduled Tribe of Orissa. They are famous for their aggressiveness and criminal activities for which their neighbours have always held them in contempt. The jungle-clad hilly terrains of the Chotanagpur plateau running across the Bengal-Orissa-Bihar border including Mayurbhanj District in Orissa, Singhbhum District in Bihar, and Midnapur District in West Bengal form the homeland of the Lodha. Midnapur and Singhbum have large concentrations of the tribe' (Mohanty, 2004). They have a small population of 8905 as per the census, 2011. 'They claim that they are the descendants of Zara Sabara who are the only worshipers of Lord Jagannath and till today they have been performing important role in the religio-cultural norms of Jagannath temple. Based on these beliefs the Lodha regard themselves superior in social status than any other tribes in Odisha. It is therefore that they identify themselves as Lodha Sabara. The Lodhas belong to the North Munda group speaking Mundari language as their mother tongue. By virtue of their long association and contact with the Hindi neighbours, they have forgotten their Mundari speech. Now they are speaking a dialect which is mixture of Bengali, Odia and Mundari'.[3]

Lodhas have been in the focus of anthropologists and social activists. Lodhas are also known for their contribution in revolts against British in Odisha. They were ruthlessly suppressed by the British and branded by them as criminals. It is sad to note that the Government of India, even after independence continues to brand them as criminal tribe instead of honouring them for the revolt they had pioneered against the foreign invaders. In India Lodhas are known as criminal tribe until the revocation of the Criminal Tribal Act 1962. Such attempt of the Government left the Lodhas having no alternatives to earn their bread as they have no landed property. So the Lodhas are forced to become petty thieves and earn their bread by stealing. As a result they face challenges to be accepted in the society to live with dignity.

Like other PVTGs, Lodhas are becoming increasingly vulnerable due to loss of their customary habitats and livelihood resources. This is leading to hunger/ starvation, malnutrition and ill-health and erosion of traditional occupation, which is threatening their very survival. In addition, lack of access to proper healthcare, poor communication, superstitious traditional beliefs and customs further aggravate their life and livelihoods. The Lodhas, in past, were levelled as a de-notified tribe, which has put them under additional social stress and they are still struggling to achieve the social amalgamation with rest of the society. They have not taken significant benefit of any development initiatives which were specially aimed at them.

Lodha Livelihoods

The Lodha are economically backward. Most of them are at the pre-agricultural stage of the economy. Their occupational pattern varies according to the local environment. The Lodha who live in the forest areas stick to their age-old pursuits like hunting, food-gathering, the collection of minor forest produces, *tussar* cultivation, etc. These days, they also work for the forest department and forest contractors in plantation programmes and timber operations. Apart from

[2] SCSTRTI report on Determination of PTG Status & feasibility of Micro Projects for the Koya and Gadaba tribe

[3] http://yournib.com/socio-economic-life-of-the-lodhas-a-primitive-tribal-group-of-odisha

the collection of edible fruits, roots and tubers for their own consumption, they collect *kendu* leaves to roll *bidi*, *sal* and *siali* leaves to make leaf cups and plates, *sabai* grass to make ropes and also *tussar* cocoons, honey, *lac,* resin, *sal* seeds, *mohua*, firewood, etc., all of which they sell in the neighbourhood to earn their livelihood. They hunt with the traditional bow and arrow and use different kinds of traps and snares to catch animals. With the arrival of rapid deforestation and the prohibitory forest laws they have been deprived of their forest-based subsistence. Some Lodha have therefore resorted to unfair means and clandestine activities to keep body and soul together (Mohanty, 2004).

The Lodha living in the plains mainly thrive on wage-earning as agricultural labourers and construction workers. Very few own cultivable lands, the produce of which is insufficient to meet their household consumption needs. Most of the Lodhas are landless or marginal farmers. Some Lodha have taken up share-cropping.

Methodology of livelihoods analysis

A livelihood analysis was conducted at various clusters of the Lodha habitats with the community members by the author using participatory methods and approaches like Participatory Rural Appraisal (PRA) and Focus Group Discussions (FGDs). Implementing the participatory methods the effort has been to make them see their existing situation and plan for the improvement in their household income within the framework of available asset mix, government policies, market and associated risk factors.

Livelihoods thinking dates back to the work of Robert Chambers in the mid-1980s and further developed by Chambers, Conway and others in the early 1990s. Since that time a number of development agencies have adopted livelihoods concepts and made efforts to implement the concepts in varied circumstances. Over the years, many new concepts have emerged and livelihood improvement based strategies have been adopted by development agencies in varied socio-cultural and ecological contexts and situations. This livelihood analysis has taken the following definition of sustainable livelihood as the guiding lines. The livelihood analysis has been made in accordance to the definition of livelihoods as provided by Chamber and Conway as "A livelihood comprises the capabilities, assets (stores, resources, claims and access) and activities required for a means of living; a livelihood is sustainable which can cope with and recover from stress and shocks, maintain or enhance its capabilities and assets, and provide sustainable livelihood opportunities for the next generation; and which contributes to net benefits to other livelihoods at the local and global levels and in the short and long term". (Robert and Conway, 1991)

The coverage for livelihoods analysis

The Lodhas are distributed as major community in certain villages and in some villages they are a minor community. This observation has been made from the following villages where Lodhas are living as a majority population coming under Suliapada and Morada blocks. It is noteworthy that the following villages come under the micro project named Lodha Development Agency (LDA).

Name of Village/ Hamlet	Name of the GP	Name of the Block	Total No. of Families	Total Population		
				Male	Female	Total
Chikitamatia	Chikitamatia	Morada	75	134	118	252
Ghodabandha	Chikitamatia	Morada	30	41	46	87

Tiansi	Barakand	Morada	130	206	200	406
Godigaon Colony	Godigaon	Morada	108	174	164	338
Handibhanga	Godigaon	Morada	99	161	165	326
Purnachandrapur	Jualibhaga	Morada	165	266	260	526
Bhadrasole	Jualibhaga	Morada	42	70	77	147
Samaidihi (FV)	Haladipal	Morada	67	110	101	211
Patharnesa	Kantisahi	Suliapada	206	361	308	669
Dhobani	Baghada	Suliapada	86	154	127	281
Sansasole	Ufalgodia	Suliapadda	54	82	79	161
Nekedagunja	Baghada	Suliapada	41	64	73	137
			1103	**1823**	**1718**	**3541**

Source: CCD Plan, 2015-16, Lodha Development Agency

Lodha tribe have been under a prolonged poverty trap due to landlessness, social stigma, malnourishment and lack of education. They peruse the livelihood options using very primitive skill and knowledge, as a result are very less remunerating and unsustainable. The Lodhas were provided with land long back, which is either at a distance from their village or less fertile. However at present they are finding their land insufficient to sustain their livelihood for the whole year. The average land holding status is given in the table here.

Name of Village(s) / Hamlets(s)	Revenue Land (in Ac.)	FRA Land (in Ac.)	Irrigation facility (in Ac.)
Chikitamatia	50	5.2	40
Ghodabandha	31.46	0.86	10
Tiansi	118	4.2	30
Godigaon	85	26.25	0
Handibhanga	79	44.36	5
Purnachandrapur	148	77.3	60
Bhadrasole	83	21.1	20
Samaidihi	40	6.49	0
Patharnesa	105	141.85	54
Dhobani	45	65.82	35
Sansasole	35	55.95	26
Nekdagunja	29	15.31	25
TOTAL	**848.46**	**465.19**	**305**

Source: Lodha Development Agency

As per the above table the Lodha are either land-less or marginal land owners with less than one acre of land. Only few of them possess two to four acres of land. Most of them have received land (less than one acre) recently under Forest Right Act. In total they have 383 acres of *patta* land in their possession. But still they are reluctant to pursue agriculture, which requires continuous hard labour to grow crop.

Analysis of major sources of livelihoods

Their livelihoods by and large depend on marginal subsistence agriculture, rearing and collecting silk cocoons, gathering forest produces, making rope out of *sabai* grass and selling in market, and selling firewood.

Primarily they depend on forest and NTFP collection. They collect *sal* leaf from the forest and stitch it for commercial purpose. They also earn their livelihood by *sabai* rope which is available abundantly in this area. Some of the families collect fuel wood and tooth brush sticks and sell it

in the local market. In most cases they are cheated and exploited by the traders. Apart from it they depend on the Government schemes and Lodha Development Agency for beneficiary oriented development schemes. An average family income of a sample village with 86 household is provided below. The situations in other villages are more or less same.

Sl. No.	Occupation	Households Involved	Average Income (In Rs.) per household
1.	Agriculture	20	5000/-
2.	Livestock rearing	03	10,000 yearly
4.	Small vending small business & trading	0	
5.	Govt. Service	0	
6.	Private Service	0	
7.	Self-Employment (enterprising)	3	3000 Monthly
8.	Vocational trade based business	86	2000 (Sabai) yearly
9.	Collections & sale of forest produces	86	8000 Yearly
10.	wage employment (Skill & non skill)	86	3000 yearly
11.	Migrant Labourers {One from each family goes to WB in Rainy Season/ Harvesting time-2 months)}	60	8000(wage-170/-) (two Months)
	Monthly income per household per month (AVG)		Rs 6000.00

The above figure was triangulated by another PRA exercise conducted in 5 villages during the month of October 2018. It was found that a family earns a maximum of Rupees 200.00 per day from any of the sources such as wage earning, non-timber forest products collection, *sal* leaf collection and stitching, and firewood collection and selling.

Capital analysis

A capital analysis or the resource base was conducted in villages Handibhanga, Samaidhi, Chiktamatia and Dhobani villages. The findings were as follows:

Financial Resources	**Very low**	They have no savings, low credibility for getting loan and the SHGs have defaulted in repayment in past. However, occasional support from LDA is acknowledged by the community.
Social Resource	**Very low**	The social cohesion in Lodha society is very low unlike other poor and tribal society. They usually don't trust others. This is due to prolonged suppression by the state during British period. As a result there are no social institutions like caste based groups, village club, associations, labour cooperatives or even self help groups (SHGs) available in the Lodha habitats. As a result bargaining power of the society is low. The buyers or the middlemans pay much less than the market value for the produces thay collect from the village.
Physical Resources	Moderate	In 21st century the villages are getting connected by road, subsidised electricity and other government provisions as entitled for them. LDA interventions had created some assets like lift irrigation points, hand pump based tube wells, community halls. Most of the assets created by LDA are not functional.
Human	Moderate	Lodha are physically well built, can labour hard. However, alcoholism

Resources	to High	has reduced their working efficiency drastically. They have good knowledge of various medicinal plants and non-timber forest products available in their locality. This knowledge of the resource base is one of their important assets.
Natural Resources	High	Even though Lodha own very less land, they have access to forest, which is close to their habitats. Similarly they have access to commons like water bodies and pasture land

Amidst this situation, the grant based support of Lodha Development Agency (LDA) in kind and cash for last two decades have made them physically and mentally grant dependent and they are hardly interested in doing something on their own for their sustainable income. The above resource analysis shows that the only potential asset is their human labour and access to commons like forest. Any planning should be done around these aspect.

Factors affecting the resource base of Lodha

The present resource base of Lodha tribe is in a fragile condition due to the following factors:

1. Depleting forest: the forest cover in the area is depleting fast. And due to abusive harvesting and over exploitation of various non-timber forest produces, their resource base is fast degrading questioning the availability of such materials in forests to the extent to manage their livelihood requirements. This in turn would obviously ruin the present livelihoods earning resources and allied knowledge resources of the community.
2. The productivity of their farm land is reducing. The fragmentation of land as consequences of family fission is reducing the extent of per capita share of land.
3. The scope for wage emplyment is reducing as the machine is taking over the major labour intensive agriculture work i.e. harvesting. Similarly now a days most of the road and other construction activities are deploying big earth movers, which is limiting the employment opportunity of these unskilled tribe.

Development initiatives by the government

Government of India has been implementing a special project called Lodha Development Agency for the development of Lodha tribe since 1985. The agency was instituted to implement the development projects for holistic development of the community. Over last 33 odd years the agency has worked for mainstreaming of the people with standard development in their human development index. The microproject has built houses for all families, provided land and farm land, built irrigation sustem and worked for their children's education. But the mode of delivery has done some collateral damage to the tribe. Today people are so dependent on the government grant that they are not ready to do anything by themselves. It appears that no development project has been able to build on the sustainability aspects as regards to holistic development of Lodhas.

The Self Help Groups formed by various facilitating agencies; both GO and NGO are just functioning as a saving institution and grant recieving body. There are no entreprenurial activities by the SHGs so far. Time to time they have been provided with inputs like pump sets, poultry chicks etc, but without propoer planning, training and follow up, non of the inputs are sustaining today.

A suggested livelihood framework

Taking the situations as stated above a livelihoods sustaining framework may be developed and suggested as below.

Landholding and land use pattern: The actual landholding pattern of the Lodha households in following 10 villages have been presented to draw an impression on the meagre landholding which poses challenges for sustainable land based livelihoods..

Village name	Landholding by households				Households dependent on forest
	more than 1 acre	1/2 acre to 1 acre	less than 1/2 acre	landless	
Godigan	20	10	15	2	75
Bhadrasol	5	4	6	8	40
Purnachndrapur	5	6	no	2	50
Samaidhi	10	20	30	10	50
Patharnesa	3	7	15	30	280
Nekatagunja	10	30	0	1	47
Sansasol	14	10	7	no	50
Dhabani	13	9	10	no	30
Handibhanga	7	10	no	10	50
Ghodabandha	1	5	20	3	29
Total	88	111	103	66	801

It may be interpreted from the above table that a majority of households possess about half a acre of land per household. And most of this land is left uncultivated. In some villages LDA has been facilitating cultivation of maize, sabai grass, lemon grass etc, but not much attention has been laid on farming sector development. What is evident is that required training and handholding has not been done in order to change peoples'mindset and land use pattern, although, many of the crop demonstration activities have been conducted. As such no significant effort for developing backward and forward linkages with farming has been made. In the absence of these Lodhas are clueless about the use of the harvest of the exotic crops, which were never part of their food or culture.

Hence a potential area of intervention that may sound feasible lays emphasis on the following:

- Farming in farm land with harvesting time market price oriented crop planning.
- Supportive income generation from homestead land.
- Sustainable harvesting of minor forest produces.
- Selling of MFPs atleast at the minimum support price fixed by the Government.
- Fesible crafts development for landless families which has utility functions.
- Reducing Risk
- Reducing household unproductive expenditure.

A provocative livelihoods development intervention model

The livelihood promotion interventions can be done in three stages. The activities that can be taken up in various stages are as follows

Stage-1:

- improving the productivity of the activities they are persuing at present.

Lodhas have a special knowledge of identifying the rare medicinal plants and other non-timber forest produces. As reveled in earlier table most of the households are engaged in gathering non-timber forest produces from the nearby forests. But they are harvesting the produces unsustainably. Hence training on sustainable harvesting of the non-timber forest produces need to be considered as a priority agenda. Similarly they are selling them without further processing or value addition. The produces can fetch good price if they are given atleast primary level processing like cleaning, drying, grading. Potential income from this non-timber forest produce collection per household is Rs 9000.00 (Rupees nine thousand) per month itself. The following table presents their season wise forest produce collections and the average market price at which they are sold.

Season	**Produces**	**Market selling price**
Rainy	Char	Rs 200 per kg
	Dadhilata	Rs 60 per kg
Autumn	Gungia Root	Rs 150 per kg
	Harida	Rs 150 per kg
Winter	Kujuri	Rs 200 per kg
	Harida	Rs 150 per kg
Spring	Sal seed	Rs 50 per kg
	Kujuri	Rs 200 per kg
Summer	Mahua flower	Rs 50 per kg

Apart from the above the collection and sale of sal leaves round the year contributes substantially to their household economy. Since last few years, Government of India has introduced the Minimum Sales Price for many commonly procured Non-Timber Forest Produces. However during the discussion, the community revealed to the author that without immediate procurement and instant payment facility, the minimum sale price does not make much sense for the Lodhas. The local business men buy various forest produces from the doorstep of Lodha households and pay them instantly. Similar system or at least availability of procurement center within the reach of the community by Government can help them.

Stage -2

1. Harvest time market price based agriculture: This means the sowing or planting of any crop should be decided on the basis of the usual market price during the harvest of the same crop. For example if the market price of couliflower is very low during late winter, then it should be taken as an off season crop that would fetch better price.
2. Cultivation of those crops which can be sold in local market: Since most of the households are having very low landholding, they can not go for distant markets with their meagre harvests. Hence, such crops that have good market demand and good market price as well should be prioritized for maximizing their cash earning from market.
3. Cultivation of high value crops: Since Lodhas have very marginal land holding, they should target produces that fetch better price from market. For example a half acre upland cannot

produce enough paddy matching to the family's consumption requirements for even half a year. But the land will give them better income if they go for some vegetales like tomato or brinjal. They can use the surplus income to buy additional rice after meeting the subsidized quota of rice under public distribution system (PDS).

4. In a nutshell, early season or off season vegetable cultivation is better than grain cultivation. This was agreed by the community after intensive interaction. A comparative calculation of vegetable cultivation cost and profitability in comparison to the traditional subsistence based agriculture may open up their eyes and drag them to profit orientation in agriculture. .
5. Swap expenditure on vegetable buying with kitchen garden: Along with interventions in farm land, the kitchen garden with a crop pattern that will meet the need of their own kitchen was discussed and planned. All households had shown interest to plant papaya, drum stick, bottle guard, pumpkin, leafy vegetables, chilli and such other vegetables and spices round the year along with certain seasonal vegetables which they usually cultivate.
6. A cost and profit calculation of various vegetables that has high marketibility in local market was worked out with the community. In some community interaction live telephone call was done with the Kishan Call Center, where their input was taken into planning. Accordingly a sesonal crop calendar was prepared by the community for half acre land owners.

Various calculations done with the community by the author have shown that even with a land of half acre, one can earn Rs 60,000.00 in a season.

But the problem with vegetable farming has been irrigation. Even though LDA had provided lift irrigation facilities in all villages, majority of them are not funtional. This is because either the equipments are of low quality or the community has not yet owned the assets. Since the social belongingness is weak, management of any common property has been ineffective. Hence just installing the system is not enough; they should be properly counselled and handholding support should be provided for at least five cropping cycles. Alternatives like low cost non-electric pumpsets such as Krushak Bandhu (KB) pumps should be promoted.

Stage-3

- Maximise the homestead land utilisation: Maximum household have at least five decimal of land, which is enough to add to household income if utilised for backyard poultry, goatery or mushroom cultivation.
- Increase skill based income: Lodha were skilled in collection of tasar cocoons, which is no more wildly available. Hence tasar silk worms cultivation in lands aquired under FRA would boost their income.
- Similarly they are skilled in making ropes out of sabai grass. Hence sabai *rope* based items of urban utility like chairs, sofas needs to be promoted to enable them for making better income. income.

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SACRED GROVES IN TRIBAL TRADITIONS: CASES FROM MAYURBHANJ AND KORAPUT DISTRICTS

Sukruti Sarangi[1]
Sumita Das[2]
Mihir Kumar Jena[3]

Abstract

The institutions for sacred grove management in Odisha have a glorious history. Ecologists believe that these groves are repository of gene pools and act as reservoir of biological diversity because these are protected since ancient times, and in many places appear as 'climax forests' which harbor varieties of flora and fauna. Sacred complexes in forests matter to all those communities who have been maintaining them as far as mythical, economic and ecological aspects and their role for preservation of biodiversity are concerned. The sacred groves are culturally important for various religious and cultural events connected with local deities. Given the vast potential of natural biodiversity and sacred traditions caring for the diversity in Odisha it deserves special attention from conservation point of view. Sacred groves are thus important from point of view of conservation of tribal culture, social capital formation, biodiversity and environment. The authors have made some empirical observations on sacred groves in Mayurbhanj and Koraput, citing two case studies from each district. While drawing importance on conservation of the endemic biodiversity within the sacred groves the authors have sought government attentions in order to maintain the inextricable link between nature, culture and development.

Introduction

The institutions for sacred grove management in Odisha have a glorious history. Ecologists believe that these groves are repository of gene pools and act as reservoir of biological diversity because these are protected since ancient times, and in many places appear as 'climax forests'

[1] Primary Investigator, SCSTRTI, Bhubaneswar (sukrutipramanik@gmail.com) Corresponding author

[2] Secretary, State Level Advisory Unit, Special Development Council (sumita.das8938@gmail.com)

[3] Senior Tribal Domain Expert, State Level Advisory Unit, Special Development Council (drmihirkumar@gmail.com)

which harbor varieties of flora and fauna. In the sacred groves the endemic vegetation is well stocked and diversity is maintained. Apart from the preservation of rare species the sacred groves may be serving the function of preservation of biological diversity even in the case of a more common species of trees (Gadgil & Vartak, 1975:314). Forests are hardly much exploited when religious restrictions on certain beliefs prevail among tribals (Patnaik & Jena, 1995). These sacred forests or sacred groves help in the preservation of plant species which are of great economic and ecological significance (Jena, 2000:288). Sacred complexes in forests matter to all those communities who have been maintaining them as far as mythical, economic and ecological aspects and their role for preservation of biodiversity are concerned (Seeland, 2000:7).

Tradition of maintaining sacred groves is common in India. For many tribal communities in India traditions linked to sacred groves have been seen as markers of culture. It is a form of nature worship conducted in relatively inviolate natural sites or typical groves. Sacred grove, although in literal sense refers to a grove held sacred from religious point of view yet one may not find groves or association of trees in many places recognized as sacred groves. Hence an expanded usage of the term may include sacred groves, sacred sites, shrines, sacred space, and sacred landscapes in different contexts.

The concept of saran Dharma originates from the common traditional religious institutions of sacred grove found in the tribal villages, which is regarded as the seat of one or more than one important village level deities including the village tutelary designated differently among various Mundari speaking and Dravidian tribes of Chhotanagpur and surrounding regions, comprising a large contiguous tribal belt covering parts of the states of west Bengal, Jharkhand, Orissa, and Madhya Pradesh. Literally, the term saran is a Mundari word meaning sacred grove and the term dharma is an Indo-Aryan linguistic term, ordinarily meaning religion. A tree in a sarna may not be damaged or felled without the sanction of the religious head, who however, would first offer a sacrifice or other offerings, as the case may be.

The Sacred Groves are culturally important for various religious and cultural events connected with local deities. These community managed sacred groves or sacred forests are under tremendous pressure and threat from encroachments for agriculture, grazing and developmental activities. Given the vast potential of natural biodiversity and sacred traditions caring for the diversity in Odisha it deserves special attention from conservation point of view.

Sacred Groves in Odisha

In Odisha the tradition of sacred grove maintenance is prominently seen in many tribal cultures especially in, but not confined to, Mayurbhanj, Kendujhar, Sundargarh, Kandhamal and undivided Koraput districts. A patch of forest or a natural grove of trees is held sacred where the tribal communities perform their religious rites and rituals for their overall well-being. Many social events are conducted at the sacred groves during rituals and festivals, expressing intra-community and inter-community solidarity. Many sacred groves have very old trees and their typical natural associations and are rich in endemic biodiversity. Sacred groves are thus important from point of view of conservation of tribal culture, social capital formation, biodiversity and environment. Such islands of climax vegetation amidst a degraded landscape can be seen in many parts of tribal

dominated districts of Odisha. At one point of time the maximum number, 322 sacred groves, were recorded from Semiliguda block of Koraput district (Pathak, 2009: 473). The sacred grove institutions in the state is recognized by various names like Jaheera, Debasthali, Kudi, Gudi, and many shrines have been denominated after the name of Gods and Goddesses and other deified objects.

Noted ethnographer S.C. Roy observed that every Oraon (a tribe) village has the supernatural institution of sarna or grove of sal trees dedicated to their might tutelary deity Chhala Pacchho (or the old lady of the grove) who is also known by many other names such as Sarna Burhia and Jhakra Burhia. The Munda, an important Kolarian speaking major tribe of Orissa, who are also the immediate neighbours of Oraons, share the common institution of sarna with the latter, though there are differences in their nature of religious beliefs, rituals as well as orientations. The Munda pantheon is composed of their supreme deity, Sing Bonga (Sun God) at the apex, followed by the nature gods, ancestral spirits, village deities, etc. These deities or gods save the village from diseases and calamities and bring prosperity. The concept of practice of sarna extends to another major and important Mundari-speaking tribe the Santal, living in the same habitat and eco-cultural region as those of the Oraon and Munda. This holy institution in a Santal village is called Jaherthan, or Jaheera in short (holy grove). The Santals believe that the deities residing in the holy grove do welfare for the Santhal village.

Sacred Groves in Mayurbhanj

Mayurbhanj district is home to many ethnic communities who have traditions of maintaining sacred groves. The Santal, Munda, Bhumij, Ho, Kolha, Bathudi, Bhuyan are the major communities well known for their sacred grove linked traditions. The sacred groves are variously known such as Jaheera, Barham Sal, Saar pat, etc. While the Santal, Munda, Bhumij, Ho, Kolha culture is associated with Jaheera, the Bathudi and Bhuyan traditions are associated with Barham Sal. Jaheera is usually natural grove of trees, in most cases they are natural groves of Sal and its associate trees located beyond the village boundary. On an average the area of Jaheeras ranges between .5 to 1 acre. The Barham Sal is associated with culture of Bathudi and Bhuyan, located inside the village, the deity being established under a very old tree especially Sal or Asan tree. The Barham Sal is worshipped with associate deities called Pat enshrined on boundary of the village. The area of Barham Sal varies subject to availability of land. Usually it is an altar under a tree, the size of altar being about 100 sft only on an average. The Pat deities established on the boundary of village also have acquired a smaller space like the Barham Sal.

All the tribal communities said above also have some larger sacred spaces where some annual festival or religious performances are conducted. They may also be called sacred pilgrimages. It is at these sacred pilgrimages particular tribal communities congregate in huge numbers on specific festivals and religious activities. Some examples are: the Bathudi community conducts some annual performances during March-April at Manav Deula of Athara Deuli in the vicinity of Similipal. Similarly Pakhanapat in Jamda block and Pautibeda near Bisoi are places where the Santals, Munda and Bhumij communities perform annual religious activity during Rakhi Purnima that gathers the communities in huge numbers at the site. Duarsuni is a sacred shrine that stands

as a good example of caste-tribe continuum. It is at Duarsuni that periodical religious activities are conducted wherein the caste communities and tribal communities invariably gather. Thus these are important areas where the community solidarity is well exhibited. Also there are sacred pilgrimages beyond the state boundary where the Santals visit in huge numbers. One such site is Lalpania in Lububuru hill ranges of Bokaro district in Jharkhand where the Santal leaders from Mayurbhanj visit in huge numbers during Magha Purnima.

Case Study -I: Gandiadiha Jaheera

The sacred grove is located in the outskirt of Gandiadiha village under Ufalgadia GP of Suliapada block in Mayurbhanj district. It is a small patch of less than half an acre wherein there are very old Sal trees and associate species like Sissoo and Asan. The god of Jaheera is seated under the oldest sal tree almost at the center of the site. Two horses and one elephant of terracotta make are placed by the side of the deity. While the horses represent vehicle of the deity, the elephant is considered the representation of the deity. The elephant is worshipped twice in a year, once during February-March when Mahua flowers are gathered, and once in November-December during the paddy harvesting.

The religious performances inside the jaheera are conducted by the Naek (priest). The Naek is selected by Dashi in a traditional process. The Dashi could be any common folk who comes to a trance when gets possessed by the deity. On a scheduled day, all the male members of the community sit at Jaheera. Any of them may get possessed by the god and thus become Dashi. In the state of trance the Dashi talks to the god and conveys the god the problems that the people faced and the irregularities happened in properly worshipping the deity because of non-availability of priest. After that by direction of the god the Dashi selects a priest from among the community members.

During the important rituals and worships the Santhal community use to hang bell shaped straw tufts from a straw made rope tied to the trees on the boundary of the Jaheera. Normally the pendent straw tufts appear as if they have been made for beautification of the site during festivals. However, there is a legend stating why such arrangements are made. As per the legend, the pendent bell shaped straw tufts represent pig heads which the Santals used to hang during the Mughal period in Odisha. To keep the Mughals away from polluting and destroying sacred sites, which the Mughals were usually doing then, the Santhals used to hang the pig heads at their Jaheeras. The practices of the past are memorized with hanging of the straw tufts which the girls in the community normally does during routine festivals and important rituals. This tradition in the Jaheera has old history spanning over two centuries.

During the ceremonial occasions at Jaheera the girls chaining their hands together form a human chain and dance. In similar fashion boys also form a chain and encircle the girls and dance. This is very symbolic. As stated by Nabin Soren, the Naek (priest) of the community, the cordons by boys and girls indicate two layer protections to the deity in Jaheera. In the same understanding it is to be noted that the girls are protected by the boys.

Certain traditional restrains are observed by the community to maintain the religious importance of the Jaheera as summarized below

- People avoid doing any harm to the vegetation inside the Jaheera. The community usually doesn't allow silvicultural practices to be done there. No under growth is usually exploited except for medicinal plants.
- The Jaheera is kept clean always. No garbage is dumped or left behind inside the Jaheera.
- Menstruating women are restricted from entering the Jaheera.
- Usually in rituals and festivals chicken sacrifice is made. The heads of the chickens are cooked and served as Prasad. Any male person having had conjugal relation with any woman on that day should not be given the Prasad. Before serving Prasad the priest ensures about it.
- A scheduled worship is postponed on the occasion of any birth or death in the village. The worship is conducted after the related pollution period is over.
- On the occasion of wish granting worships, each family must cook the sacrificial meat separately digging hearth at the site. No common feast is allowed in case of wish granting worships.
- Sometimes snakes shelter inside the hearths dug out on the occasion of wish granting worships. Snakes if found in the hearth should not be harmed in any manner.
- On the occasion of marriage in any household, three chickens are to be offered to the Jaheera deity lest that any mishap occurs. If the person is not having the capacity to offer the chickens then he must vow before the deity to provide the same when his financial situation becomes better.
- Any new settler in the village must offer chickens to the deity seeking his good will as well as to be accepted by the village community.
- Tortoise from the nearby water body sometimes comes in the Jaheera site. On spotting them one must smear bit of soil representing vermillion on the head of tortoise and safely rescue it and leave it in the water body. The belief is that the Santhal world originated from the turtle back[4].
- One must enter into *jaheera* in naked feet.

Case Study II: Jaheera of Bathudi Community

The Jaheera at San Junabani (Kamardiha) under Gargaraj GP of Kuliana Block in Mayurbhanj depicts the tradition of worshipping Barham Sal and Pat Devta by the Bathudi community.

[4] According to their origin myth, before they took birth the world was full of water. The god created two swans from dirt of his body. The she swan could not lay eggs for there was no land and hence requested god to create earth. The god directed fishes, crabs and earthworms to create earth but everything was in vain. Then the god ordered them to get some soil from bed of water body and keep it on the back of turtle. Done so, the swan could lay eggs on the turtle back and the Santals took birth from the eggs. After they took birth, the god asked them to sow seeds on the earth loaded on the turtle back and thus came the agriculture.

Although, as a sacred grove all communities in the neighbourhood show reverence to the god established in the Jaheera, yet the Bathudi priests perform all religious activities there.

According to Krushna Chandra Naik of the village there are two shrines of their deities. While the Barham Sal is established inside the village, the Pat Devta is seated in the Jaheera located outside the village boundary. The Barham Sal literally means a deified Sal tree. Usually, Barham Sal should be found in the Jaheera and should be a Sal tree. In this village it is an exception that the Barham Sal is represented by a huge tamarind tree and the god is seated under the tree inside a small hut like structure. The other contrast is that the Barham Sal is established inside the village. The god is offered regular worships. According to the villagers the priest called Dehuri does all religious activities round the year.

The Pat Devta is established outside the village in a small grove of mixed vegetation with dominance of Sal. The Pat Devta is believed to be kind of guardian deity who safeguards the well-being of the community. Twice in a year major festivals of the Bathudi community are conducted at the site of Pat Devta.

The Bathudi community observes restrictions related to management of the sacred grove outside the village. According to the villagers, they have always high priority on maintaining the biodiversity of the sacred groves. This notion of conservation has been translated into practice by ratifying the restriction that nobody should cause any harm to vegetation inside the grove. Nobody is allowed to pluck leaves or cut wood inside the grove. The honey bees should not be disturbed in any manner. People observing the pollution period after birth or death in family and menstruating women are not allowed to enter inside. The neighboring communities also abide by the restrictions and behave responsibly in maintaining the sacred grove.

Sacred grove maintenance by tribal communities in Koraput

Case Study III: Kuchpar sacred grove

Kuchpar sacred grove is approachable from Kusumguda on Koraput to Rayagada route. The site has assumed importance as a religious place for the inhabitants in the Kuchpar and adjoining villages. A temple where lord *Bada Devta* and goddess *Budhi Mahadei* are worshipped is established at the center of the Site amidst deep dense vegetation. There are about 65 households in the village who have high reverence to the god and goddess as they have a strong belief that the deities preserve the well-being of the community and of those who rever them piously and religiously.

The site has deep and dense vegetation around. Huge trees of *Schleichera oleosa* and *mangifera indica* have almost formed the canopy of the sacred grove. Almost at the middle of the grove the temple of *Bada Devta* and *Budhi Mahadei* is established. The deities are worshipped regularly. Major festivals are conducted during the Pusa parav and Chaita Parav. The rites are conducted in a way akin to the Hindu worships.

There are several instances described by the villagers that created the tradition of maintaining the sacred grove on the site. The maintenance of the grove dates back to more than 50 years

according to the villagers. As stated by the community members, in early times there was lot of causalities happening to the villagers and their livestock due to the prowling tigers who were often visiting areas around the village. The tigers had claimed numerous lives of cattle and bovine population. In particular, most of such casualties were happening at the site where the present sacred grove stands. Earlier, that area was sort of isolated from the village and the cattle were being taken to graze there and the nearby hills. This made the people believe that may be some God and/or Goddess wants to live there and wants to stay undisturbed and so is causing harm to the humans and livestock by sending tigers. This belief triggered the establishment of the god and goddess there and in course of time a temple was built there.

The belief systems got stronger with some more incidences and eventualities. With reference to an event, a man named Malinga was living with grief because he was issueless even after twenty years of his marriage. He started worshipping the deities in the temple with devotion and deep reverence. The deities showered mercy on him and he became a father soon. This instance has built around the belief that those who are issueless would, for sure, get their wishes fulfilled if they take submit themselves before the deities with profound devotion. Many issueless couples are visiting the temple for keeping a wish or after the wish is granted.

The villagers well-being is looked after by the deities. According to some villagers the deities saved a buffalo from being killed by a tiger. The case goes that, once upon a time a thief tried to escape after thieving a buffalo from the village. The goddess converted herself to a tiger and appeared before the thief from nowhere. The thief, out of fear, ran far to save his life. The buffalo also got scared seeing a tiger in front so he also ran far in a different direction. The goddess in the tiger again appeared before the buffalo to turn it to the direction of the village. The buffalo reached the village. So the deities not only look after the well being of the humans but also secure their belongings.

- Cutting of trees and or plucking leaves, flowers, breaking twigs are strictly restricted in the grove. It is believed that those who would dare to cut trees from the grove would be killed by tiger. Hence, hardly anybody dare to do a crime like tree cutting.

- Those collecting medicinal plants from the grove must first of all take permission of the deities presiding in the grove.

Case Study IV: Minapai sacred grove

The Minapai sacred grove is located in the outskirts of village Minapai at the foothills of Daska Horu (hill) under Kutinga GP of Laxmipur block in Koraput district. The shrine at the grove is called Sita Gudi where worships are conducted by the Kandha, Paraja and Jhodia communities residing in the village and in the neighbourhood. It is believed that the deity named Sunkudi (Sita Devi) is very benevolent and is famous for wish granting. There is a prevailing belief that peoples' wishes are granted by the goddess if they offer worships to her with pious feelings. After granting of wishes people worship the deity with offerings and sacrifice of chicken or goat. Major worships and festivals conducted at the site includes Pausa Purnima (Sunkudi) in December,

Guma Puja (buffalo sacrifice in early days now substituted by sheep sacrifice) in February, Chait Parab (mango new eating) in April and Kuling Parbu (paddy harvesting) in October are the major occasions when grand worship is conducted at the site. Amongst all these festivals, the Pausa Purnima is celebrated with flying colours. In the said occasion the priest is possessed by the goddess and in the state of trance the priest communicates between the god and the people. The boys and girls dance to the rhythm of local dance called Dhemsa. Many animals including chicken, goat, pig, pigeon and eggs are sacrificed. The villagers offer a sheep for sacrifice to please the ancestral spirits. As Raghu Miniaka, the priest of the village stated, the Sunkudi and Jhankar are there in every village since settlement of the village. Again, in almost all types of religious performances, the Jani, Disari and Bejuni altogether conduct the activities.

It is said by the community members that in every village in Koraput there are usually two shrines – Kudi and Jhankar. The Sunkudi and Jhankar should remain in close proximity but in certain villages due to reasons of convenience the Kudi and Jhankar are located distantly. In the Sunkudi, which is otherwise referred as Jhankar, one would find two small huts, one meant for the female deity and the other for her male counterpart located under any huge tree. In front of the huts is installed a wooden post called Kambi Munda which is believed to be representation of the deities. Each Kudi has a buffer space around called Dudi. Restriction prevails that nobody should harm the trees under which the Kudi is constructed and the vegetation immediately around Kudi. However, vegetation and non-timber forest products can be exploited from the surrounding Dudi.

Discussion

Local initiatives for conservation of bio-resources through varieties of institutional means and mechanisms have always been counted vital to conservation of biological diversity. Over the years traditions have been maintained and institutions have evolved meaningfully contributing to the regional, national and global mandate of biodiversity conservation. Small patches of forests accorded protection by traditional communities through formal and informal institutions have helped creating repository of gene pools and reservoir of biological diversity.

The local conservation initiatives in many places have cultural roots. Cultural elements often have overtone in the management practices of sacred groves and forests with sacred elements. Apart from the preservation of endemic and rare species the sacred groves have been serving the function of preservation of biological diversity even in the case of a more common species of trees. Sacred complexes in forests matter to all those communities who have been maintaining them as far as mythical, economic and ecological aspects and their role for preservation of biodiversity are concerned.

Despite carrying a great tradition behind them sacred groves today are facing various threats. Change in the values, change in the living styles and certain economic forces have greatly contributed to the decline in the status of sacred groves, particularly in tribal areas of Orissa. Most critically, while there are many forest based sacred groves, there are also several ones that are in grasslands, montane, coastal and freshwater ecosystems. The sacred groves have long been a neglected lot in consideration to the various development initiatives taken towards conservation

of local culture and biodiversity. However, time has come to lay focus on the sacred groves to conserve the local cultures and through that attempt to conserve endemism of species in localities before they are lost forever. Thus sacred groves must be integrated in development agenda of both government and non-government agencies towards maintaining the inextricable link between nature, culture and development.

Some suggestions for improvement of sacred groves

1. In consideration to the physical attributes of sacred groves, scope for development interventions in the micro/mini and small sacred groves is very limited. However, in the sacred groves categorized as small (Jaheera), the development interventions will have to be site specific. It may require aided natural regeneration, soil conservation activities, boundary fencing, drinking water sources, renovate nearest water bodies along with platform for seat of deities. In some sacred groves some interventions have been made by forest department and others relevant departments. In larger spaces like parts of forests many kinds of development interventions including infrastructure development, drinking water, and forestry would be required. Complete action plan need to be prepared and interventions may be taken up in convergence mode for conservation and management of sacred groves.

2. Inventories of flora and fauna and the food chains operating in the sacred groves must be done with emphasis on inventorying the plus trees. Such inventories would be useful while planning the gap filling plantations in order to bring back the lost diversity in the sacred groves.

3. Initiatives must be taken to give recognition to the traditional institutions, tribal customs and traditions that have preserved and conserved the traditions and the biodiversity through generations. Promotional initiatives would further gear up the communities to look back to their sacred groves that would facilitate conservation of biodiversity.

4. Each sacred grove has some legend associated with it. The legends vary from site to site. Such legends directly and indirectly describe the purpose and relevance, in their own context, of maintaining the sacred groves by the community. They express a great part of the tribal culture for which priority should be given to document such oral lores before they are forgotten.

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MARRIAGES AMONG THE COMMUNITIES OF PEDAPULIPAKA AND INAVOLU VILLAGES IN ANDHRA PRADESH

Varnika Sagi [1]

Abstract

Marriage in India is believed to be the most sacred social institution. This union is webbed with social and economic aspects. There are various rules followed by various communities while getting married. With time there are many changes that have taken place in how marriages are done. This research was done in two places situated in Andhra Pradesh and in close proximity to its most happening city, Amravati. Pedapulipaka and Inavolu both have more Christian population when compared to Hindus and we can say that the presence of any third religion is not there. The ethnographic fieldwork in both the places was conducted in the month of October, 2018. This article accounts the changes that have taken place in the marriage system and how religion and caste play a major role. Primary information from people about marriage beliefs, rituals, and opinions on love marriages, widow re-marriage and many other aspects of marriage are the highlights of this article. The impact of education on the mindset and how is some social evils like child marriage and dowry have declined have also been noted. All these changes have impacted the economy of the people positively.

Keywords *- Marriage, social and economic aspects, religion,*

AN INSIGHT INTO THE TOPIC:

India is a country with unity in diversity and so a home for different religions and communities. In Andhra Pradesh marriage is known as "pelli". Marriage is believed to happen only once in a lifetime. In a country like ours marriage is also considered to be the union of two families. In India, marriage practices vary by region, religion, ethnicity, and over time. However, for much of the country, arranged marriages in which parents and other family members choose their children's spouses are customary. Couples are not expected, nor encouraged, to form relationships before they are married, although such attachments are expected to develop

[1] Research Scholar at Vellore Institute of Technology, School of Business, Amravati, Andhra Pradesh, Email- varnikasagi@gmail.com.

afterwards. Arranged marriages support the caste system by ensuring that spouses are of the same caste and the kinship system by prioritizing the older generation and broader kinship ties over that of the marital couple. Arranged marriage is a kind of marriage where the parents or the head of the family decides whom to get married to not necessarily with the consent of the bride and bride groom. Love marriages on the other hand are increasing in number these days. This is due to Westernization and Modernization. Love marriage is a type of marriage where the man and the woman willingly marry each other. This can take place with or without the consent of the family. In this people are given choice to choose their partner. The caste system and the place are not necessarily given importance.

PEOPLE AND CULTURES IN PEDAPULIPAKA AND INAVOLU VILLAGES:

Pedapulipaka is 7kms away from Vijayawada (the most happening city in Andhra Pradesh). It is located in Krishna district. The people of Pedapulipaka are engaged in agriculture, rearing animals, painting and women are engaged in domestic activities. Some of them are owners of petty shops. The village is highly populated with Christians. There are a few numbers of Hindus and Muslims also. People getting converted into Christianity are also high.

Inavolu is located near Amravati in Thullur district. In Inavolu the existence of both Hindu and the Christian religion can be found. To one side, it is highly Hindu populated and to the other side it is highly Christian populated. The people in Inavolu earn their living by working as daily laborers and also VIT, AP University has provided them employment. Some of them work as security guards and some as helpers in the University.

This study was based on the Christians and converted Christians in both of these villages. It was very interesting to know how the converted Christians have amalgamated culture of Hindus and Christians.

METHODS OF DATA COLLECTION:

- **Survey**

A survey was conducted among people in both the villages to find out whether there is an inclination in the rate of love marriages or not. So, a sample of 15 married couples in each village was surveyed. The study from the sample says that love marriages being committed has relatively increased in number. This survey also brings out results that majority of people from both the communities are against dowry *"katnam"* and child marriage *"balya vivaham"*

Only difference in thoughts was about widow *"vidhvaralu"* re-marriage between both the villages. In Pedapulipaka people did not support re- marriage at all whereas in Inavolu people had mixed feelings about it. This question was a contingency question. They gave an answer saying that they if the marriage is willingly done by the widow then its good.

- **Focus Group Discussion (FGD)**

FGD played a major role in confirming the answers with a larger group people. This also enabled to listen and jot down many views. This was very time saving. In both the places we have conducted total two FGDs and we found out the changes that have occurred in the marriage system. Relatively, the information collected was similar.

In Pedapulipaka, FGD was conducted with 2 men and 6 women making a total of 8 people. This was a random sample and cannot be subjected to any bias. Their marriage rituals start with confirming the bride *"pelli koduku"* and the bride groom *"pelli kuturu"* and directly their marriage takes place at their home itself. People of Pedapulipaka told that the bride groom knots the *"mangalsutra"* and the bride's maternal aunt will give her *"mettelu"* to wear. "*Matti gajulu"* can be worn by anyone except widows.

In Inavolu, FGD was conducted with 2 men and 8 women. This was also a large sample but the number of women was higher as the men had went to work as it was Monday. The union starts with an engagement where the exchange of rings takes place. Then their marriage takes place at the Church by doing "prarthanalu". Reception is hosted after marriage. People showed us their place for hosting their Reception. It was alongside the Church.

- **Interview**

Topic	Pedapulipaka	Inavolu
Age of marriage-	"Our marriage took place when I was 18 and he was 24, now things have changed", says a middle aged women	"My marriage took place 9 years ago, when I was 20 years old", says a "*baddi kottu"* [2]owner.
Place of marriage and rules of marriage followed-	A painter says, "most of marriages in the village take at home and also people select their partner mostly from the same village". They follow endogamy.	A 24 year old women told that their marriage takes place in the church and the partner can be from a different village also but of the same religion.
Views on re-marriage-	An old woman told that marriage is an institution which can be made only once and that the participants should not change no matter what. Multiple marriages are not allowed.	A 24 year old woman, who was a school dropout, told us during our focused group discussion that marriage is once in a lifetime decision. However, she and her village people believe that widow remarriage can be done if the woman is young or willing to marry again.
Signs of a married person-	Women wear the "*mangalsutra",* [3]*"mettelu*" [4]and bangles made of glass.	Women wear *"mettelu"* and bangles made of glass. They also explained that as they were Christians they don't wear the "mangalsutra".

[2] Local term used for road side shop.

[3] Local term used for Nuptial chain

[4] Local term used for toe rings.

SIMILARITIES:

Both the communities on which the research was done told that dowry and child marriage are social evils and that they should not have been practiced. They say that the system of dowry was not stringently practiced during their generation also. However, they told that exchange of gifts in cash and kind from both the parties during marriages hasn't stopped. This change of mindsets of the productive population shows a great progress. They say that being educated, people should not do illogical things and they also backed up their notion by providing some legal facts like legal age of marriage, etc. The legal age of marriage for girls is 18 and boys it is 21. Marriages are now done with the consent of both the bride and the bride groom. In both the communities cross cousin marriage is very much prevalent. There is liberty given to the women also to choose their life partner. There are no superstitious beliefs followed by people in both the communities. Divorce rates both these villages are null. This is so because people in these villages succumb to the societal pressure. All the people believe in those villages believe that marriage is once in a life time commitment. There has also been a significant change in the form of marriage from polygyny to monogamous marriage.

CONCLUSION:

People are getting educated. There is a shift in the aim and purpose of getting married. Women are also given importance is choosing their life partner. Various economic practices of marriage are not stringently followed. This study suggests, that local cultural contexts, conflicting attitudes about caste and religion, and concerns about inter-generational relationships affect the practice and acceptance of self-choice marriage. This also shows that Christians in the both villages almost have the same ideologies except a few differences in the way the marriage rituals are taken place. People are also not following "katnam" [5]and "balya vivaham" [6] these days.

[5] Local term used for dowry.

[6] Local term used for child marriage.

MAABHAUNI OF JUANG:
A NEW PROSPECT AS CHANGE AGENT

Niladri Bihari Mishra [1]

Abstract

Maabhauni organization is a distinct institutional arrangement in Juanga community in Keonjhar. The Maabhauni is a traditional non-kinship organization of the married Juang women through which the women folk plays a very crucial role in socio-cultural and village management affairs. It has evolved traditionally and still exists, however to a larger extent. Necessary support is required to reinforce its' institutional capacity in the present day situation.

Introduction

Juang is one of the backward and vulnerable tribes of Odisha. From their place origin in Gonasika, Keonjhar they have migrated to the neighbouring Anugul and Dhenkanal districts. They are famous for their social and cultural traditions which have attracted the attentions of many Sociologists, Anthropologists and Ethnologists. There are different village level institutions exiting in Juang village where Maabhauni institution plays a very crucial role in management of village affairs.

Organization

The term Maabhauni means all mothers living in a Juang village. After marriage both husband and wife live together in a separate new house, but after delivering a child the wife is eligible to become a member of Maabhauni group. Ideally in Juang village women folk consist of different group- Uali-Girl (child), Selan-(adolescent and unmarried girl), Gurta Selan- (married girl) and

[1] Research Scholar, New Colony, Mining Road, Keonjhar Garh, Dist:- Keonjhar, Pin:- 758001. +91-9437437310, *nbmkjr1@gmail.com*

Budhi-Old Woman. Any female member in the groups of Gurta Selan and Budhi can be a member Maabhauni group.

Origin

The journey of the Juang community from semi-migratory life to settled one is embedded with various factors such as food gathering, child care, ill health, natural calamity, stress or separation etc. which gradually led to a strong belongingness among women folk and later took the shape of MAABHAUNI with socio-cultural characteristics.

Objectives

a) Learn about traditional Maabhauni system in Juang society with social cultural values.
b) Understand the challenges and opportunities for empowerment of women in Juang society.
c) Justify the importance of Maabhauni and provide adequate space towards their empowerment to be groomed as a strengthened institution for realization of various developmental goals.

Hypothesis

Ensuring the association of the beneficial traditional organization Maabhauni of Juang community in decision making in social, cultural, religious matters at the village level can effect empowerment of Juang women. It is necessary to empower the tribal women to easily face the current problems and challenges emerging in contemporary society.

Methodology

Literature study, field visit, group discussion and analysis. Personal interaction with Nagams, Ardans Barabhai, Maabhauni, Ritual elders, Family heads and Pirha[2] Sardar.

Study Villages

The Juang villages- Guptaganga, Talachampei, Kanheiguda and Kuajharana were covered under the study.

Psychology

Juangs are independent in spirit; they express their view according to their own choice. Especially the voice of Juang women are considered to be a determining factor. The Juang Maabhauni as group has a more powerful presence in village affairs.

Traditional system of Maabhauni

Juang village are governed by corporate body of elders including traditional leaders called Barabhai but Maabhauni are consulted by them in social and cultural affairs of the village before taking any decision. During the period of kingship in review meetings of king, visit of queen and

[2] The maximal territorial unit composed of several contiguous Juang villages headed by a traditional chief called Sardar

state administrative high officials they were questioning about the problems of Maabhauni group. Even Maabhauni were allowed to discuss freely about their problems with king or queen of ex-Kendujhar state.

Present day functioning of Maabhauni

Cultural Aspects :-

When the representatives of a village are returning after attending the meetings held outside on behalf of the village for example, *pirh* council meeting, inter-village council meeting, the Maabhauni group greet and welcome them with washing their feet with turmeric water, throwing turmeric mixed rice on their heads followed by loud *hulhuli*[3]. If a *pirh* council meeting is to be held at any village, all the delegates attending the meeting are welcomed and greeted in same manner. When a new Sardar is selected or appointed he stands on a new date palm-leaf mat and the Maabhauni welcome and greets him in the same manner. When new Nagam or New Ardan (traditional village secular headman) is coronated he is also greeted and blessed by Maabhauni group in the same manner.

In case of death of a male family head, the widow of the deceased person who is a member of Maabhauni group acts as family head who is responsible for all the economic, social and cultural management of the family. When the Nagam-the sacerdotal head of a Juang village dies his widow discharges the Nagam's social and religious duties and responsibilities till a new Nagam is appointed. At the time of coronation of a new Nagam in the Majang – the village community center, the deceased Nagam's widow is invited to greet and bless the former. In case if the new Nagam is not accepted by forefathers or gods or goddess, the Nagamdae continues as before until a new Nagam is found.

The water level of water holes (*chua*) lying in the bank of stream goes down in summer in most places and dry leafs, dust etc. are deposited at the edge. After the first rain Maabhauni go there and clean the *chua*. The Nagamdae (Nagam's wife) of the group throws turmeric water into it uttering Bandano (welcome) verses amidst loud *hulhuli* of other women present there. Then they start using the water of that *chua* for domestic consumption.

In rainy season when it is late for raining Juangs call the rain, which they termed as "Gima Nadaena". On the fixed day Maabhauni go to water sources near the village. The Kangers (unmarried boys) collect a little water from each source in a small earthen vessel with loud *hulhuli* made by the Selankis (unmarried girls). The collected water is poured on the roof of Majang in presence of Maabhauni.

In a Juang family if child dies repeatedly, there is a socio-cultural tradition to prevent the mishap. They handover the child to Maabhauni and Barabhai of that village. On a fixed day mother sits on a date-palm leaf mat in front door of her house holding the child on her lap. The members of

[3] A typical sweet sound created by women by moving their tongues in a peculiar way. It is sound of greetings made during auspicious, ritual and ceremonial occasions.

Maabhauni come and bath the child with turmeric water and dress the child with a new dress. They bless the child wishing his/her a long life with prosperity and give him/her a new name.

A Case Study

About fifty six years ago when Srimant Juang was 3 or 4 years old, his father Suratha and mother Kati handed over him in traditional process to Maabhauni of the village- Guptaganga. The Maabhauni renamed him as Puria and till today that name is used by the villagers. He is leading a healthy life and is performing as Nagam famous for ritual performances.

Social Aspects

In the third day of marriage ceremony the bride is guided by Maabhauni of the concerned village to nearby stream or river. In the bathing *ghat*, the bride is smeared with turmeric paste mixed with oil and takes bath. The Nagamdae takes oath and fills a small pitcher with water (Subha Kalasa) which she places on the brides head. While they are returning towards village they are blocked by few villagers dressed up comically and they refuse to allow the women to pass. The Maabhauni who accompanied the bride bribe them tobacco, liquor, cigarette, tuber etc. and go ahead.

After several days of hunting when no animal could be hunted by the hunting party, in that case all Maabhauni take bath and assemble in front of Majang. The hunting party hands over their bows and arrows to them which are returned to them later. One woman falls on the ground pretending to be dead. Some men of the hunting party beat her with tree branches saying "see this is a *sambar*, we will have a successful hunt today".

A widow normally remains in her deceased husband's house with her unmarried son and daughter and manages her husband's family and proprty. She becomes the guardian of her unmarried children. She is always supported by the Maabhauni of the village while in difficulties and stress. We can take the case of Suru Juang of Talachampei village as an example.

A Case Study

Suru Juang is a widow living in Talachampei village. She was born and brought up in Kundhei and married to late Upendra Juang, son of Mania Juanga at the age of 14. Twenty three years ago her husband died leaving three sons and a daughter. At that time she owned two oxen, two cows, five goats, a single roomed hut and the landed property was undivided.

Within last 14 years two of her sons have been married and separated. Now she is living with an unmarried son and daughter. Her financial problems for health, fooding, agriculture, education, marriage of children, are being managed with the help Maabhauni. She received help in shape of rice, money and seeds etc. from Maabhauni at the time of need. The members of Maabhauni group have always supported her during the period of hardship.

For their guests the Juangs use the term "Kunia" who are of two kinds- Ghar Kunia- the guest of individual family and Gaon Kunia- the guest of village. While entertaining Ghar Kunia is the

responsibility of the concerned family, looking after the Gaon Kunia is the collective responsibility of the villagers. There is a tradition in Juang society called- "Tiurae ninimki jajanana" which is acted once in a year. It is a kind of exchange visit programme between the Bandhu[4] villagers. The aim of the visit is to have social intercourse with Bandhus. The Maabhuni visit their Bandhu village where their daughters married and they stay in their respective daughters houses as Ghar Kunia. This was observed in Kuajharan village recently.

Case Study :-

The Maabhauni of Kanheiguda village visited the Bandhu village Kuajharan in a four day programme, fixed and intimated before. They came with sweets, cakes, rice beer, cigarettes etc. On reaching the village they went to Majang and handed over the gifts to their counterparts and then have visited their respective daughter's families. Also they visited the houses of other daughters of their village married in the same village.

During their stay the Maabhauni danced with the Barabhai of that village whenever they liked and even throughout the night in front of Majang. They also sang and joked with their Bandhus for pleasure. They enjoyed delicacies of meat, rice, cake and rice beer, Mahua liquor with their Bandhus. On the last day before their departure the host villagers entertained them with a feast of rice and chicken curry which Maabhauni of both the villages enjoyed together and a meat pack was presented to them to carry home.

Mithakhiai a pre-delivery social event performed by the Maabhauni and parents of a pregnant woman, when she is pregnant for eight months. The Maabhauni and parents go to the woman's house on a day fixed earlier and present her sweets, rice, cakes, chicken /goat, spices, split pulse, edible oil, new brass plate, new clothes and other necessaries The parent on reaching their daughter's village go round the village to invite the villagers for a feast. In the house, the pregnant daughter sits on the lap of her mother who feeds her sweets kept on a new brass plate in presence of Maabhauni. The Maabhauni also feed the pregnant daughter one by one All the villagers eat the feast with Maabhauni. Actually, it is a recent tradition in Juang community, borrowed from the neighbouring caste Hindus.

Decision making

In the institutional frame of Juanga community Maabhauni plays an important role in decision making aspect that includes coronation of new Nagam or Ardan. fixing the date and time for any special function or festivals. If Maabhauni does not give their consent for holding the events the proposal is dropped and again after some time fresh proposal comes. Likewise in another social event-normally a mother brings her new born baby from her living room to the front open space, for the first time for the elder's blessings and for this event also the Maabhauni play a crucial role in finalizing the date and time in consideration of the baby's safety.

[4] A Juang village maintains its relationship with certain other Juang villages which are grouped as Bandhu villages and Bhaiali villages. While marital relationship can be forged with Bandhu villages, for Bhaiali villages it is strictly prohibited

Changing situation

In Juang areas of Keonjhar the traditional system of Governance is replaced by the three tier Panchayatraj system, after independence, where power lies with Gram Panchayt, Panchayat Samiti and Zilla Parisad. There is Scheduled Tribe women quota for representation in this system.

In the context of development in present times, several committees, groups in the name of Self Help Group SHG), etc have been promoted, where women members are the key actors. The tribal women Self Help Groups have mostly limited themselves to thrift and credit activities, whereas other social and cultural issues are untouched. Hence the capacities of traditional Maabhauni group needs to be built on various emerging areas so that their representation and participation in several institutional platforms can further be realized.

Excluding village level committees there are seven types of standing committees in Panchayatraj system where women are represented and in these committee all members are women as per the provision.

Village level committees

1. Forest Right Committee –Forest dept.
2. Gan Kalayan Committee- Health dept.
3. School Management Committee- Education dept.
4. Vigilance Committee –I.C.D. Scheme
5. Water and Sanitation Committee -Water Resource
6. Mothers Committee –I.C.D. Scheme

Standing committees

1. Planning, finance, anti-poverty programmes and co-ordination
2. Agriculture, Animal Husbandry, Soil Conservation, Horticulture, Watershed Development and Fisheries.
3. Works, Irrigation, Electricity, Dirking Water Supply and Rural Sanitation.
4. Health, social welfare including women and child development.
5. Public Distribution System, welfare of weaker sections.
6. Handicrafts, cottage industry and village industries and rural housing.
7. Education, Sports and Culture.

Conclusion

In most of the Juang villages the function of Maabhauni is praise worthy, which follows common value of their society. This democratic organization need to be strengthened so that it can be able to meet the women-centric challenges and situations.

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PERCEPTIONS OF WELL-BEING AND CLIMATE CHANGE: OBSERVATIONS ON A VILLAGE IN KORAPUT

Padmini Pathi[1]
Biswajit Mohapatra[2]
Mihir Kumar Jena[3]

Abstract

Climate change is the major threat facing humanity. Understanding public perceptions of climate change is critical in order to develop effective coping and mitigation strategies, democratic policies, and socially robust technologies. This paper provides an overview of research on the nature and dynamics of community perceptions of climate change in Kasuguda village in Koraput district of Odisha. Awareness about climate change has become widespread over the last few decades, although concern has been variable over time and internationally. In such a situation the study addressed to understand how do rural and tribal communities perceive changes in climate and its impact and how do the communities cope up with climate change in the livelihoods and development context. Attempts have also been made to explore and understand the indigenous knowledge of the communities as related to climate forecasting and towards that how do the communities gear up their adaptation strategies.

Key words: Climate change, coping, adaptation, livelihoods, forecasting

Introduction

Climate change is the major threat facing humanity. Human interactions with climate occur at all levels but so far research has focused on governments, industries and on the technological, demographic and economic trends that drive climate change. Factors that influence decisions and behaviour at the individual level have received less attention. Climate change will affect well-being in ways that are often overlooked. Awareness of these impacts encourages public engagement and encourages effective adaptations that minimize negative effects and capitalize on possibilities for more positive changes.

Community preparedness can be improved by considering these processes in the design of education and messaging; for example, by accompanying risk information with information about the specific personal implications of the risk and about specific actions to address the risk. To successfully communicate about risk, change behaviours that contribute to climate change and facilitate adaptation, it is necessary to consider individual capabilities, cognitive processes, biases, values, beliefs, norms, identities and social relationships, and to integrate this understanding into broader understanding of human interactions with a changing climate.

Understanding public perceptions of climate change is critical in order to develop effective coping and mitigation strategies, democratic policies, and socially robust technologies. Factors influencing public perceptions include weather and weather events, economic factors,

[1] District Coordinator, MTELP, Koraput. (ppathi.ssa@gmail.com)

[2] Assistant Professor, Botany, N C Autonomous College, Jajpur (biswajitmohapatra4847@gmail.com)

[3] Senior Tribal Domain Expert, SLAU, Special Development Council, Bhubaneswar (drmihirkumar@gmail.com)

sociopolitical events and media coverage, and individual-level factors, particularly a person's worldviews and ideology. There has been a reliance on survey research in this field, and future work should expand the role for other methods and allied disciplines like ethnography (Whitmarsh & Capstick, 2018).

This paper provides an overview of research on the nature and dynamics of community perceptions of climate change in a small village in Koraput district of Odisha. Awareness about climate change has become widespread over the last few decades, although concern has varied over time and internationally. In such a situation the study addressed to understand how do rural and tribal communities perceive changes in climate and its impact and how do the communities cope up with climate change in the livelihoods and development context. Attempts have also been made to explore and understand the indigenous knowledge of the communities as related to climate forecasting and towards that how do the communities gear up their adaptation strategies.

Materials and methods

For purpose of the paper an exploratory study was conducted involving the village communities in Kasuguda village. Participatory methodologies were used to obtain relevant information. Group discussion, focus group discussion, participatory rural appraisal, ranking and prioritization were used as tools to elicit required information. The community members were appraised about the research questions and they were encouraged to decide the members to participate in group discussions and focus group discussions. The community members were facilitated in a manner as if they were studying and analyzing their own situation in the context of livelihoods scenario, livelihoods crisis, changes in land based productions and ecology due to climate change, the coping mechanisms and adaptation strategies of the community to sustain their livelihoods against climate change impacts, environment forecasting, and on the basis of that to decide the development priorities in their context. Results of the exercise, more in qualitative terms, have been the basis of the paper. The exercise was conducted in June 2018.

Profile of the study village

Kasuguda is a small revenue village located at the foot hills of Deomali mountains range coming under Sorispadar GP of Semiliguda Block in Koraput District. The village is approachable from Kunduli market place, about 40 km from Koraput, on the Highway connecting Koraput to Vizianagaram. The hills facing the village are well known cattle grazing ground of the area. In past days many herdsmen from the nearby areas used to gather their cattle in the area for grazing, used to camp there for a complete season especially during summer and winter.

The total household in the village is 48 which include ST, SC and OBC social categories. The sex ratio of the village is 1070. The average family size is 4. The average household landholding is very marginal. The landholding of the households come under *Patta* land and encroached land. Of the total *patta* land in the village, the OBCs own 61% and the STs own 30.48%. The extent of government land around Kasuguda village is relatively less. The government land in the village include Rakhita land to the extent of 10.470 Ac (Gochar: 6.260 Ac, Gramya Jungle: 3.380 Ac, Basti: 0.830 Ac), and Sarvasadharana land to the extent of 1.840 Ac only.

Well-being of the People in the village

In the group discussion with the community members it was tried to understand their notion of well-being. Their notion of well-being as stated by them is paraphrased as: "Life has certain necessities. Fulfillment of the bare and basic necessities is what makes life worth living. Certain things god has provided, certain things our fore fathers created and left for us to use, some things our government is taking care of", said Damodar Hantal. Further, as he added, what matters us is food for survival of the family, food for the livestock who are inseparable from our families, some surplus to help relatives at time of need, and by god's grace the physical ability to work and earn for those (family members) whose life depend on us.

The basic and fundamental necessities for living a life, according to the communities, are possession of land, presence of adequate labour force in family to cultivate the lands, having cattle to provide dung for manure, some money to meet bare necessaries. One who possesses all these comparatively remains free from worries. One who does not have these things remains loaded with worries always.

The entire work schedule of the communities is concentrating around food production. There have been changes in food production and consumption pattern over the years. During the era of grandfathers it was mostly forest produces, especially the wild edibles like tubers, leafy vegetables, fruits, nuts, etc. The wild edibles supplemented the food production from shifting cultivation in those days that shaped their food habit. The food habits reflected the kind of food resources that was available or produced. A difference in the life style between then and now mainly focuses on food security as a development attribute. In current situation, there is a complete shift in food habit that shows a blending between traditional and modern. Farm produces complemented with vegetable farming, small livestock units and subsidized rice provided by the government are the main factors through which their food security has been addressed. Dependency on forests for wild edibles has decreased but tubers are exploited sustainably. However, what the community has been missing is the multiple cropping system as podu cultivation has been almost abandoned.

Through the group discussion followed by PRA it was tried to understand how the community members identify and classify rich and poor families in their community. Since people mostly have land based occupations, availability of land and legal access to land largely weighs over the economic assessment of families. From discussions it emerged that in the village 17 households are landless and only four households like Benu Hantal have land considered 'enough' by the villagers. The rest of the families are marginal land holders. In matter of fact the households identified as landless are said so because they do not have legal entitlement. Further, having land but not having the provisions to irrigate the land also means marginalization in land holding, as without irrigation facility such lands are cultivated only once during the Kharif season.

People considered availability of labour force in the family as an important indicator of well-being. Improper land to labour ratio makes the big land holder ranked equal with the marginal land holders. Having more labour force in family creates space for share cropping in others' land. That also does not always promise good return in cash or kind for the share cropper. Over the years the interest for share cropping is also reducing because cultivation without irrigation facilities and under erratic rainfall conditions is gradually proving to be uneconomic option.

What if one is having land but no man power to cultivate it? - underlines the importance attached to human resource in production systems. Earlier the land to man ratio was favourable. People were taking up a patch for cultivation based on availability of family labour, which is not the case today. The lack of interest of younger generation to take cultivation for living complements progressive inclination towards cash crops compared to subsistence crops.

Livestock is discussed as one of the prime necessities in order with land and man power. Those having bullocks are able to cultivate their lands properly. During the onset of monsoon the owner utilizes the animals for cultivation he would not hire the bullock till his work is over. So, those intending to hire have to wait till the owner finish with the bullocks. The borrowers many times, as has happened over the years, lose the monsoon by the time the bullocks are available adding to the drudgery of the borrower. The number of cattle domesticated today is very few compared to what they used to possess. Large scale death due to diseases, depletion of grazing grounds created situations for people to reduce the number of cattle population.

Precisely, their notions of a good life is to have land, man power to cultivate, possession of livestock, productivity of the land, traditional position, enough to eat and enough cash. They believe that having the above makes a person less vulnerable. On the basis of the above the groups identified four categories (well off, medium, poor, ultra poor) of people in the village and ranked them in order of poor assigning specific attributes. It also came up from the discussion that even households with same quantity of land may not be of same category i.e. inadequate man power, no livestock (work animals) and productivity of the land also matters a lot in categorizing a household in wellbeing ranking.

Villagers' attributes for classification of families/households under categories

Bhala (Well off)	**Besi Garib ki besi dhani nuhan (Transition between well off and poor)**	**Gariba (Poor)**	**Besi Talaku (Ultra poor)**
• Adequate fertile and irrigated patta land along with hill slopes and anabadi land. Possession of 4 to 5 acres of land. Early settlers. • Land located near perennial water sources • Take up both subsistence and cash crops, vegetables	• Patta land of one to two acres, with or without irrigation facility. May or may not have possessed Anabadi and Dongar land • Food availability up to 9 months normally • Contingent dependency on wild edibles,	• Least/Marginal/No patta land holding, least/marginal possession over Anabadi and Dongar land • Food availability up to 6 months normally • Not many able man power in family to work for wages • Dependency on	• Absolutely no land holding, at best a patch for cultivation on Dongar or Anabadi land • Less man power in family for wage earning • Wage earning is mainstay of life • Subservient to village communities

• Respectable Social position (inherited/ascribed), or political position (elected) • Buffer food stock to go beyond year, manage lean seasons, and sell for cash needs • Least or marginal dependency on tubers and wild edibles • Ability to employ laborers for cultivation/share cropping and pay in cash or kind • Have cash to manage emergency • Good number of livestock (work animal, food, cash) • Not interested in wage earning • Not worried for PDS • Having fruit growing trees • Having some education • Relatively free from worries	tubers • Two square meals managed • Fewer livestock compared to the well-off families. Small ruminants and country bird reared for cash • Dependency on wages to bridge the lean season or manage with limited food available • Petty trading for cash income • Having ability to repay a small loan • Full family labour force utilized in production pursuits • Partial dependency on Dongar land • Depends on PDS • Not able to afford for a costly treatment	share cropping • Ability to repay a loan doubted, least opportunity to get a loan • Less number of livestock, mainly country birds and at best couple of goats/sheeps • Dependency on wild edibles, tubers, fuel wood for selling • Looks for share cropping • Larger dependency on wage earning options • Low assets, not even able to mortgage anything for a loan to attend medical emergency • Larger dependency on PDS • Inadequate attention for education	– work as Barika (messenger), Gauda (Herdsman) • Family subsists on daily and annual collection from each household in lieu of services provided • Larger dependency on forests; edibles, tubers, NTFPs, fuel wood for selling • Virtually no household assets, nothing to mortgage and nothing to sell for meeting emergency cash needs • No livestock in possession • Live for the day kind • No tree crops under possession • Larger dependency on PDS • Food insecure

Risk involved with agriculture based livelihoods and well-being

Agriculture is always involved with risks; climate, timeliness, diseases and several other reasons affecting productivity. There are certain crops the villagers regularly cultivate. They include ragi, paddy, little millet and other kinds of millets for subsistence; mustard, niger, vegetables for cash income. While the risks are many; both internal and external, the discussion concentrated around identifying the main risks observed. The people identified the following risks to agriculture.

Land type and productions

According to people, the agriculture pattern is very dependent on the land type: undulating terrain, slope and plains; rain dependent or having irrigation facility; suitable for selective

cropping or multi-cropping. They perceive that, over last thirty years decrease in the production of field crops has been realized. Only certain crops produced to the average standards, for example, ragi, millets, niger etc if cropping was done on time. The vegetables and other crops like *Kandula, Biri, Kaudaka, Jhudunga, etc* showed decreased yield. Earlier there was hardly any pest infestation in the field crops as compared to the present.

Those having plain lands along the streams have the opportunity to crop round the year. Paddy varieties like *Balu, Karandi, Chipti, Bata* are the kind of varieties that were being grown on the slopes as well as on the plains. *Lasoi dhan* – the most cultivated variety of paddy is being cultivated since time immemorial and is also continuing till today. However, the low production of these endemic varieties has become cause for concern.

Land Degradation

Several factors have contributed to the changes in production. Many lands have become unproductive, dry and soil less. When Damanjodi plant was coming up, to cater to the fire wood requirement of the market, some people started to earn livelihood by cutting trees. The forests reduced like anything. When the trees on the upper portions of the lands were felled, during the rains, water ran faster down and washed away the *sara* (nutrient) from the fields. As is seen today there is no forest on upper reaches.

Timeliness

Timeliness in agriculture is the most important factor. The people believe that if agriculture work is carried on considering timeliness and seasonality then a standard harvest can be expected. In earlier times climate factor was conducive and the timeliness in agricultural operations was maintained. In the month of Chaitra, the ritual game hunting in forest called Benta marked the beginning of agricultural calendar. Now, *Benta* is not observed at the right time. The *Disari* is also not very serious about fixing date for *Benta.* So, now-a-days, people take up agriculture work at different times, in most cases delaying the processes, mainly because of fluctuations in climate.

Seeds

People in village used to keep a section of the agriculture produce for seeds for next cropping season. But now except the *Lasoi dhan* all other seeds are bought from market. By the time the seeds are available at Block or LAMPS half of the agriculture season would have been over. The local shops sell vegetable seeds but not such seeds that the people need in bulk quantities like paddy. Dependency on market for seeds is the biggest risk. Further, the quality of seeds supplied by government sources is not dependable.

Manpower

The man power and skill has been proving to be an important internal risk. Now the young boys are not taking larger interest in agriculture and the older and the ageing are getting physically weak. Larger load of agriculture is on women. Therefore, with the reducing interest of the younger generation on agriculture and other land based activities the risk in agriculture is increasing day by day. The cooperative labour use was also there in Kasuguda that gradually faded away. The breaking down of the cooperative labour system and the labour barter and increase in

wage rate are increasingly perceived as risks to agriculture. Further, the villagers think, there has been erosion in the skill base that is required for agriculture. The women are engaging themselves more in vegetable cultivation and gradually forgetting paddy cultivation.

Multiple cropping vrs selective cropping

In early times multiple crops were being cultivated on the slopes that have reduced to some selected and specific varieties at present. When it was multiple cropping, the risk of food security was less compared to the present situation. But as the slopes lost fertility and lands degraded the cropping remained confined to *madia, suan, alsi (niger), sorisa (mustard),* etc and on the plains paddy remained the main crop. With the shift from multiple cropping to selective cropping people are taking more interest in growing ginger, french beans, carrot, turmeric, niger, etc that fetches good cash income. Food production is decreasing, and the market demand for cash crops is increasing.

Money Lending

It is natural for the poor people in the village to borrow money from the well-off families at the time of need, especially during emergency requirements. The system has been continuing with changes in values – cash or kind. Opportunities and access to institutional money lending is very less. The money lending for agricultural inputs has been considered high risk now a days because of impacts of climate change and untimely natural disasters.

Work animals

Work animals, or the cattle and bovine group are always considered precious assets for agriculture. Starting from the dung used for manure, the bullocks are used to plough up the lands. However, maintaining and managing the work animals is a difficult task considering the veterinary care, the fodder availability, etc.

Input intensiveness

The agriculture is gradually becoming input intensive. Labour is the main input in agriculture. It consumes lot of labour in different phases of agricultural interventions, starting from land leveling through land preparation, sowing, weeding, till harvesting and storing. That apart to ensure a good harvest one needs to add enough fertilizer and also spend on pesticides. Pesticide use was abysmally low in past. However, now it needs lot of pesticide application on standing crops. It also requires manually combing out the insects and pest colonies. The supply of natural *khat, kalapani* (nutrient) from forests have reduced, the supply of cow dung has decreased for which the lands require plenty of fertilizer application. Starting from seeds to fertilizers and labourers dependency on market has increased. The things that was available at home in past are to be collected from market for which agriculture is not becoming profitable. The hybrid seeds also need lot of chemical fertilizers, at least need to be applied twice for a crop. With the increasing demand of vegetables in Kunduli haat the villagers adopted vegetable cultivation which was never practiced before twenty years. This has introduced and accelerated the use of chemical fertilizers in the field as a result of which the quality of land is declining.

Invasives and weeds

'Lot of *latabuta (*invasive species) has devoured the fertility of soil and they are also eating up the food the crop plants should be getting. So they are growing well and crops are struggling to survive and produce'. For example *Jalendri* (?) grows very fast in the *Alsi* (Niger) fields. They are hard to be controlled. The only way of saving *alsi* from *Jalendri* is to uproot the plant before flowering and throw them away or burn them so that its seeds do not disperse. But it is hard to control because they spread like wild fire.' Invasive species lowers the productivity of the crops. People are of opinion that when such invasive species grow in vegetable growing areas they manually weed them, for vegetable areas are small compared to area under *alsi* crop. These invasive species normally do not grow in *mandia* and *dhan* fields. Fields with abundant growth of weeds are thus fallowed.

Animal disease

Animal diseases occur frequently that claim many lives every year. The cattle are prone to viral diseases and they come in epidemic form claiming many lives together. The cattle diseases have appeared in epidemic form over last 10-20 years. Due to frequent diseases the livestock (cattle) wealth has gone down by half. The small ruminants like goats and sheep are also equally prone to viral diseases like the cattle are affected. The small animals are like ready cash. In case of an urgency the smaller livestock and country birds are sold to manage the expenses. However, their mass death ruins the families who reared them.

Health risk

The community perceives that health risk as one of the major issue of economic vulnerability. Malaria, fever, diarrhea and gastro intestinal diseases are the most prevalent cases in the village. Every now and then there is the possibility of fever and related sickness. This happens mainly due to the insanitary conditions within the village. There are water logging areas, cattle shed, cattle shed outlet holes filled in with cattle urine, goat pens, bird coops are there closer to houses that happen to be the breeding ground for mosquitoes. That apart, the quantity and quality of food also matters for their ill health. Immediately after recovering from sickness people go to work without giving the body sufficient rest also matters in increasing the health vulnerability of the community members.

Crop depredation

Although the forests have been degraded a lot, yet there are good number of wild boars and bears who are a constant threat to the crops at the time of harvesting. For providing sufficient watch and ward there is shortage of manpower at household level.

Dependency on market for agriculture inputs

As has been described earlier, the villagers have adopted high yield varieties of crops both for subsistence and market. They depend on hybrid seeds provided by block or the local market. But,

sometimes the blocks receive seeds very late and distribute the same by middle of the agriculture season. Therefore the farmers depend upon the local market to be timely with agriculture.

Coping mechanism

Wage earning

There is few coping mechanism as compared to the magnitude of risks and vulnerabilities of the people in the village. Having said that, it is also worth noticing different ways and means by which people have been trying to cope with stress and food insecurity. The most important coping mechanism of the village is going for daily labour work to various areas like Kunduli, Pottangi etc. Although the opportunities under MGNREGA are vast, yet many prefer to work under the contractors in non-MGNREGA work. The motivation is that the contractors sometime pay in advance to labourers whenever the later approaches them or is confronted with an emergency.

Public Distribution System (PDS)

PDS is a life line for many people who were going to sleep in empty stomach. The registered families get the best of benefit from the scheme. The rice and kerosene are the most important commodities people avail through the PDS. The families who do not have lands survive on the rice provided to them at a very subsidized rate. The APL families also avail PDS at subsidized rate. PDS thus touches all and people see PDS as insurance.

Non Timber Forest Produces (NTFP)

The forests around the village have degraded a lot. But the productivity of the forest has not ceased. There are still a lot of NTFP available in the nearby forests. To tide over the lean seasons or to supplement food sourced from agriculture the people depend on the wild edibles available in forest. Leaving apart the fuel wood that is regularly extracted from the forests, a wide range of tubers and leafy vegetables are also collected in different seasons. The tuber types that are available include *Pit Kanda, Targa Kanda* as the widely available ones; the easy to be got *Joba sag, kanchan Phool* for leafy vegetables; *Charkoli, Jamukoli* for sale in market; bamboo shoots in the rainy season for a delicate dish are mainly extracted from the forests. There is hardly any substantial marketable NTFPs that could fetch them some cash income. It is mainly the wild edibles that make the bulk of the list of NTFPs the people gather. It thus appears as a big coping mechanism to get out of hunger and or sleeping in empty stomach.

Lifesaving irrigation facility

Drinking water, water for irrigation and water for vegetables is very scarce in the village. After the *Kharif* season the provision of water for irrigating the crops is a big problem. Although there are few patches of plain land around the village that could have been cultivated round the year, the lands were lying fallow after the *Kharif* season because of want of water. Water remains as the biggest of worries for the people.

Resource control

By and large men control most of the resources in the family. For, since early days land *patta* are recorded on the name of the male household head. Similarly, the encroachment cases are filed by the name of male house head. In rare cases land documents are prepared on the name of women, especially it is so done when she becomes widow. Properties by inheritance also go on the name of male members. Hence the male member in the family has larger control over resources. In case of divorce in the tribal families, divorced woman's claim over her husband's property is denied in the traditional justice system. The divorced woman then goes back to her parents and depends on their resources if not get married to any other. Land happens to be the biggest resource and that remains in hands of men.

In the changing scenario, under development programs there are schemes providing land to landless. In such cases it has become mandatory to register the land on the name of husband and wife thereby giving joint ownership. In such cases the husband cannot sell or mortgage the land without the knowledge of wife. Such is the situation with land claimed under Forest Rights Act. There also entitlement is provided under joint ownership. This way the women are getting rights and control over resources.

Community resources are controlled by rule systems ratified by the village institutions and applicable to all. For example, the village institution has resolved that members of a family can collect fuel wood from the forests only twice a week. If any family wanted more then they must first seek permission of the village institution for the same otherwise it would be considered a violation of rules and fines may be levied. Similarly, every family in the village is given equal access and control over most important necessities collected from community resources like fuel wood, tubers, leaves, mushroom, NTFP, etc irrespective of any discrimination like gender, age, rich, poor, etc.

Problems causing livelihoods vulnerability

Through an extensive discussion with both male and female folk of the village a list of problems causing livelihood vulnerability were identified. They are: lack of irrigation facility to crop fields, soil erosion, siltation and bund breaking on the downstream croplands, reduction in forest coverage, landlessness, frequent diseases in livestock, water logging during rainy seasons due to absence of nalas, frequency of diseases like malaria, low bargain in sale of vegetables, and land quality degradation.

Some of the problems identified have got causes and effect relation such as soil erosion on the upstream area leading to siltation and bund breaking in the downstream croplands and absence of nala leading to water logging inside the village causing growth in mosquito population (the vector of Malaria).

Climate change and its typical impact

Earlier a short span of rain in the month of April (*Baisakha)* called as Venseng *Barsam* was very useful in preparing the field for cultivation. This was a kind of regular phenomenon which has been irregular now.

Earlier two kinds of paddy were grown one on the upland (pada dhan) and the other is grown on low land (beda dhan). – *Pada dhan* harvested in Dasehara whereas Beda dhan in Diwali. Now

pada dhan like Mati mami, era gosam paddy seeds are not encouraged because they don't yield in the present context. Virtually they are extinct from the area.

Bio indicators on climate change

Bio-indicators	Reference period		Status	Remark
	3 decades ago	June 2018		
Light rain/drizzling in Jan-Feb	It was not seen	Occuring now	Occasionally occurring	This change is new to people
Jiji maina (dragon fly)	Seen in Oct-Nov	Seen in Sept-Oct	The insects come early	Jiji maina indicates the end of rainy season.
Appearance of new invasive species - Jiloti	Not found	Gregariously spread	Abundantly spread over	The plant irritates skin and eyes, making human trespassing difficult.
Indra buta (Pogostomon) – invasive species	Not found	Spread over	Abundant in forest fringe and nalla side	Competing with crops resulting low yield
Palkam flower	December	Not found	Threatened species	Beautifying the forest with glowing flowers
Tatke &, Khangal birds (vulture), Ravana pakhi	Round the year	Very rare	Not sighted now	These are the birds feeding on carcasses
Garla sag	July-Aug	Very rare	Decline in availability	Earlier found near the cultivation area inside the forest
Targa kanda, pita kanda (tubers)	July-Aug	July-Aug	Decline in availability	Tubers become small due to hardening of soil.

Changes in production by certain species in forest

- The availability of *Char koli, Bar koli, Kantei koli, Harida, Malli* and *Bali* flower is also observed to be reduced.
- Earlier there were plenty fruit availability of bangara fruit with which the children used to play but now this is almost perished and no longer found. Even the today generation does not know how to play with that.
- *Kisan kanda*: The tuber is cultivated on the farm bond and harvested during the month of *Magha.* Earlier it used to be a subsistence crop but with the demand from market the tuber is being grown at a scale. The tuber sold in the market fetches a price around Rs. 20/- per kilo.
- Jafra (*Bixa orientalis)* has a good population around. It is planted as hedgerow, also planted under watershed, soil conservation and afforestation programs. The seeds of the pod bear a red colour dust on it. The colour is collected and sold in the market. The colour is used as a coloring agent on snacks, sweet meats, fried items etc. It is an approved food colour. In the market, the colour powder is sold at a price ranging from Rs. 20/- to Rs. 25/- per kilo.

Rain forecasting indicators

- Heavy rain is predicted seeing ant carrying its eggs to a safer place
- Heavy rain is predicted if crow calls sitting on green tree. Sitting on dried up tree and calling would mean least rain
- If *tatkel (*bird's name) fly in sky in flocks – forecasts heavy rain
- Rats seen carrying the young ones to a higher place (tree top or terrace) forecasts heavy rain
- *Jiji maina* in flocks coming out and flying in sky predicts scanty rain
- Dimples on any part of cattle body indicate early damage of the body part

Conclusion:

Communities have been perceiving climate change from the changes in ecological services, agricultural production and other natural primary productions in forests by comparing their observations on occurrences of natural cycles in past. The change in climate has not only impacted the production systems but also has impacted the production patterns in remote tribal pockets. The communities have been trying to cope up with the phenomenal climate change effects through local arrangements, innovations at their level, by modifying traditional practices, and above all by adaptive behaviours towards climate resilience. The climate factor has become incidental to community well-being in remote locations where people depend on natural production systems and ecological services dependent traditional agriculture. The coping mechanism and adaptive behaviors have been largely determining the crop selection which is diversifying but with questions of sustainability. What is more important is that employing their indigenous knowledge traditional forest dwelling communities are able to predict and forecast their production potential from agriculture and forest. However, such indigenous knowledge systems have been grossly ignored by the scientific community.

Community level perceptions on climate change may be considered important indicators which may be referred to while designing development interventions for livelihood improvement in tribal areas. It needs no elaboration that unless the indigenous knowledge of the local communities is integrated with modern scientific practices, efforts for sustaining climate resilient livelihoods would face more and more challenges. It is worthwhile that more and more studies be conducted to understand community perceptions on climate change that would prove vital for designing ecological measures to combat climate crisis.

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SEX RATIO OF SCHEDULED TRIBES IN ODISHA: A CRITICAL ANALYSIS FROM CENSUS 1961 TO 2011

Dr. Bigyanananda Mohanty[1]
Smruti Ranjan Patra[2]

Abstract

Sex composition is believed to be a gender based unequal treatment by the families and society. Sex ratio is a major parameter for the study of demographic, socio-cultural and economic status of any region. The regions, where sex ratio is low, have posed an unpleasant problem of gender discrimination, resulting in the fall in the status of human resource. Odisha has experienced a positive trend in sex ratio of Scheduled Tribes during census 2001 and 2011 while the child sex ratio of Scheduled Tribes has declined. In the present study, an attempt has been made to analyse the variations of sex ratio of tribal population of districts of Odisha.

Keywords: Sex Ratio, PVTGs, Gender, CSR

Introduction

Odisha is the tenth largest State in the Indian union located on the east coast of the country with geographical area of 155707 Sq. Km. The State constitutes 4.74% of India's landmass and has 3.47% of the country's population (as per census 2011). About 85% populations live in rural areas of Odisha and depend mostly on agriculture for their livelihood. Odisha occupies a unique position in the tribal map of India for having the largest variety of tribal communities in the country. So, Odisha is popularly known as the homeland of the tribals where 62 tribal communities inhabit. Presently, the State has 30 districts out of which thirteen districts are considered as Tribal Sub Plan (TSP) Area where the tribal population is more than 50% of the total population. Odisha has the distinction of having the largest number of Particularly Vulnerable Tribal Groups (PVTGS) among all the States and Union Territories of India with 13 tribal groups designated as PVTG. As per census 2011, the tribal population of the state is 95, 90, 756 out of which 47, 27,732 are males and 48,63,024 are females which is 22.85% of total population of the State and 9.17% to the total tribal population of the country.

The measurement of sex ratio is one of the vital demographic indicators for any country. It has always been a matter of concern for India as well as Odisha. It is an important social indicator to

[1] Deputy Director, SLAU, Special Development Council, Bhubaneswar

[2] Statistical Assistant, SCSTRTI, Bhubaneswar

measure the range of prevailing equity between males and females in a society at a given point of time. Development of any society can be measured by taking demographic and social indicators like sex ratio, age at marriage, fertility, female mortality and female literacy etc. Among all indicators, sex ratio is an important demographic indicator. It is a tool to determine gender equity of the population. As per Indian Census, the sex ratio means number of females per 1000 males. The welfare of women in any society has become a subject of paramount importance in recent years.

According to Census 2011, the sex ratio of total population in Odisha is 979 whereas in India it is 943 (8th position in India).The Scheduled Tribe (ST) sex ratio of Odisha is 1029 whereas in India it is 990 (4th position in India). In case of child sex ratio, it is in very poor position i.e. in 14th position (CSR of Odisha 941 and India 918). In Odisha out of total tribal population, 93.8% are living in rural areas. The overall literacy rate of the Scheduled Tribe in the State is 52.24%. The ST literacy rate for male is 63.7% and for female is 41.2%. ST female literacy rate of the State is 39.9% in rural area and 60.5% in urban areas which shows a very low literacy in rural areas as compared to urban areas. But over the period of last 50 years the tribal literacy rate and sex ratio increased significantly.

Keeping the above facts in view, an attempt has been made to understand the trend and some of the possible factors governing tribal sex ratio and tribal child sex ratio of Odisha across the districts from the census 1961 to 2011.

The present study has focused on the objectives of identifying the major districts of Odisha with the variation in the sex ratio and the child sex ratio of Scheduled Tribe; to compare the sex ratio of tribal population to total population; and to analyze the variation of sex ratio in the State.

Methods and Materials

The study has been accomplished through secondary data which is collected from Census of India and National Family Health Survey 2015-16 (NFHS-4). Apart from these a number of articles published in various national and international journals have also been consolidated for the purpose. Formula used for the study is as follows:

$$\text{ST sex ratio} = \frac{\text{Total ST female population}}{\text{Total ST male population}} \times 1000$$

$$\text{ST child (0-6 yrs.) sex ratio} = \frac{\text{Total ST female child (0-6 Yrs.) population}}{\text{Total ST male child (0-6 Yrs.) population}} \times 1000$$

Results and Discussions

Sex Ratio by Social Groups (Census 1961-2011)

In India Scheduled Castes (SC) and Scheduled Tribes (ST) are considered as the socially, economically and educationally backward communities. The study of sex ratio among SC and ST vis-à-vis others is important to infer the impact of socio-economic condition on the sex ratio. It is observed from the Table 1, the sex ratio of STs in Odisha and India is always higher than SCs and other population of the State as well as the country during the Census 1961 to 2011.

Table 1: Trend of Sex Ratio by Social Groups

Census Year	Odisha			India		
	ST	SC	Total	ST	SC	Total
1961	1016	1015	1001	987	957	941
1971	1007	993	988	982	935	930
1981	1012	998	981	983	932	934
1991	1002	975	971	972	922	927
2001	1003	979	972	978	936	933
2011	1029	987	979	990	945	943

Source: Primary Census Abstract, Census of India 1961- 2011

Scheduled Tribe Sex Ratio of Odisha Vs India (1981 to 2011)

The ST sex ratio of Odisha and India for the period from 1981 to 2011 is presented in table 2. During the entire periods Scheduled Tribes of Odisha maintained highest level of sex ratio in comparison to that of India.

Table 2: Scheduled Tribes Sex Ratio of Odisha and India

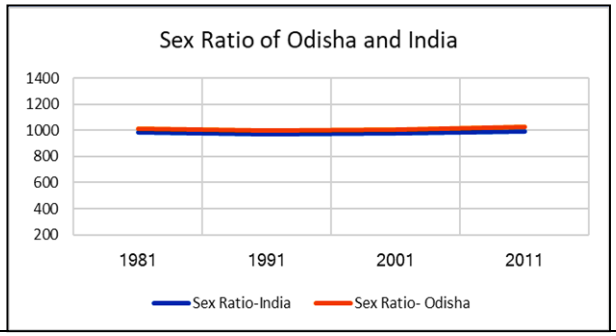


Figure 1

Census	Sex Ratio	
	India	Odisha
1981	983	1012
1991	972	1002
2001	978	1003
2011	990	1029

Source: Census of India 1981-2001

It is revealed from Table 2 and Figure 1 that the sex ratio of Odisha has increased by 27 points from 1991 to 2011. During Census 2011, STs sex ratio of Odisha was 1029 as against 990 in India. In Census 2011, it has experienced a rapid increasing in sex ratio in Odisha as compared to India. During the census 1991, the sex ratio of STs in both Odisha and India declined by 10 and 11 points respectively but after the next census i.e. from census 1991 it shows an increasing trend. As per the recent census the sex ratio of the State is at 1029 which is an increase by 17 points over four decades from 1981 to 2011.

District wise Sex Ratio of STs in Odisha (1961 to 2011)

Odisha had 13 districts namely Puri, Cuttack, Ganjam, Balasore, Dhenkanal, Mayurbhanj, Keonjhar, Sundargarh, Sambalpur, Bolangir, Kalahandi, Koraput and Phulbani till 1993. So, the district wise variations in tribal sex ratio of Odisha had been analyzed for 13 districts during the decades 1961 to 1991 (table 3).

Table 3: Districtwise Variations in Sex Ratio of Scheduled Tribe in Odisha (1961-1991)

Range	1961	1971	1981	1991
950-1000	Balasore, Mayurbhanj and Sundargarh	Bolangir, Balasore, Cuttack, Dhenkanal, Kandhamal, Keonjhar, Koraput, Mayurbhanj, Puri, Sambalpur and Sundargarh	Balasore, Cuttack, Dhenkanal, Puri and Sundargarh	Balasore, Cuttack, Dhenkanal, Keonjhar, Mayurbhanj, Puri, Sambalpur and Sundargarh
More than 1000	Bolangir, Cuttack, Dhenkanal, Ganjam, Kalahandi, Koraput, Kandhamal, Kendujhar, Puri and Samabalpur	Ganjam and Kalahandi	Balangir, Ganjam, Kalahandi, Kandhamal, Keonjhar, Koraput, Mayurbhanj and Sambalpur	Bolangir, Ganjam, Kalahandi, Kandhamal and Koraput

Source: Census 1961-1991

Table 3 shows that the sex ratio of Odisha was always more than 950 females per 1000 males. As per Census 1961 only 3 districts had the sex ratio 950 to 1000 and the rest 10 districts had a sex ratio of Scheduled Tribes more than 1000. In Census 1971, only 2 districts had the sex ratio more than 1000 and 11 districts had sex ratio between 950 to 1000. In Census 1981, the ST sex ratio of 5 districts is between 950 to 1000 and 8 districts had more than 1000. 5 districts had the sex ratio more than 1000 and 8 districts had a sex ratio in between 900 to 950 during census 1991. Balasore is the only district that has the sex ratio within the range of 950-1000 since 1961 till 1991 although. Moreover, the same thing is witnessed in Mayurbhanj district except the year 1981. Two districts i.e. Kalahandi and Ganjam had sex ratio always more than 1000 from the Census 1961 to 1991. The thirteen districts of Odisha have been reorganized to 30 districts since 1993. So, the analysis of district variation in tribal sex ratio has been made for 30 districts for the census year 2001 to 2011 (Table 4).

Table 4: District wise Variations in Sex Ratio of Scheduled Tribe in Odisha (2001-2011)

Range	2001	2011
850-900	Jagatsinghpur	Jagatsinghpur and Puri
901-950	Kendrapara, Khorda and Puri	Khurda,
951-1000	Angul, Balasore, Bargarh, Bhadrak, Boudh, Sonpur, Keonjhar, Cuttack, Dhenkanal, Mayurbhanj, Ganjam, Jajpur, Jharsuguda, Nayagarh,, Nabarangpur and Sambalpur	Angul, Bhadrak, Cuttack, Jajpur, Kendrapara, Sonepur and Bargarh
More than 1000	Bolangir, Deogarh, Gajpati, Kalahandi, Kandhamal, Koraput, Malkangiri, Nuapada, Raygada and Sundargarh	Bolangir, Balasore,, Boudh, Deogarh, Dhenkanal, Gajpati, Ganjam, Nabarangpur, Jharsuguda, Kalahandi, Kandhamal, Keonjhar, Koraput, Malkangiri, Mayurbhanj, Nayagarh, Nuapada, Raygada, Sambalpur and Sundargarh

Source: Census 2001-2011

As per Census 2001 and 2011 the sex ratio declined to below 950 in some districts in comparison to Census 1961-1991. Table 4 shows that the sex ratio of STs in Jagatsinghpur district is very low during 2001 and 2011. Puri district is added as the lowest ST sex ratio in Census 2011. As per Census 2001, 3 districts had ST sex ratio between 901 to 950. Khurda is the only district whose sex ratio is between 901 to 950 during the same census period. As per Census 2001, the ST sex ratio of 16 districts was between 951 to 1000 and 10 districts were featured with Scheduled Tribes sex ratio of more than 1000. As per Census 2011, two districts are more vulnerable (i.e. Jagatsinghpur and Puri) with reference to tribal sex ratio. As such, 7 districts have a Scheduled Tribes sex ratio between 951 to 1000 and the rest 20 districts had sex ratio of more than 1000.
It is revealed from Table 4 that all districts that recorded sex ratio of more than 1000 during 2001 also records the same in 2011 except Gajapati and as such the sex ratio of almost all districts of western and southern Odisha shows an increasing trend, whereas the sex ratio of eastern districts is declining. The pattern is uniform so the factors underlying the variation in the sex ratio are required to be studied. As per Census 2011, out of 30 districts, 20 districts (66.7%) having ST sex ratio of more than 1000 while as per Census 2001, the tribal sex ratio was more than 1000 in 10 districts only. It implies that there is an improvement in the sex ratio of tribal in the districts of Odisha during Census 2011.

Scheduled Tribe Sex Ratio of Odisha by Sectors (1991 to 2011)

Sex ratio of Scheduled Tribes population of Odisha by the place of living from Census 1991 to 2011 has been presented in table 5.

Table 5: Sectorwise ST Sex Ratio of Odisha (1991-2011)

Sector	Sex Ratio		
	1991	2001	2011
Rural	1006	1006	1031
Urban	930	948	991

Source: Census of India 1991-2011

The Table 5 revels that the Scheduled Tribe sex ratio in Census 2011 is more compared to that of Census 1991 in both rural and urban areas. The improvement in tribal sex ratio is more in urban areas i.e. 61 points as compared to rural areas. As per Census 1991 and Census 2001, the rural sex ratio remains unchanged whereas the urban sex ratio increased by 18 points. During the census period of 2001 and 2011, the sex ratio of tribal communities increased by 25 points in rural areas and 43 points in urban areas. Overall, the ST sex ratio in urban areas shows increasing trend in every census period as compared to rural areas. The reason behind the increasing trend in ST sex ratio in Odisha is the migration of ST from rural to urban areas in search of their livelihood, good educations and such.

Out of the total tribal population most of them are living in rural areas including remote pockets and hilly areas. This rural-urban difference in tribal sex ratio is associated with their differences in (i) social attitude, (ii) living condition (iii) priority of education to the female (iv) involved in work or job by the female etc. (Chandana R. C 2006).

Scheduled Tribe Sex Ratio of Odisha by Different Communities (1961-2011)

The variation in sex ratio of different tribal communities from census 1961 to 2011 has been presented in Table 6.

Table 6: Variation of STs Sex Ratio by Different communities (Census 1961 to 2011)

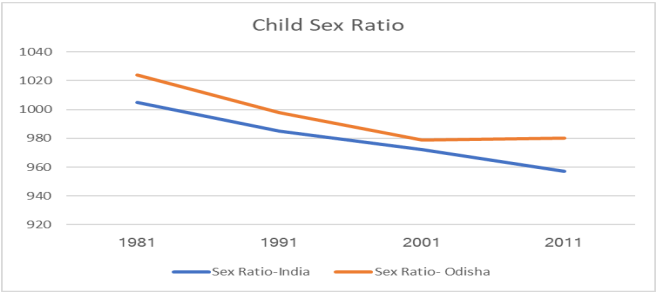
Census Year	Sex Ratio	
	Maximum	Minimum
1961	Chenchu (1476)	Birhor (717)
1971	Chenchu (3000)	Birhor (719)
1981	Bondo Paroja (1113)	Chenchu (696)
1991	Ghara (1339)	Chenchu (599)
2001	Desua Bhumij (1185)	Chenchu (647)
2011	Mankidi (1583)	Mankirdia (942

Source: Census of India 1961-2011

From the table 6 it is observed that Chenchu and Birhor communities had the maximum and minimum sex ratio during the Census 1961 and 1971 respectively which reversed during Census 1981 to 2001 where Chenchu tribe was found minimum in sex ratio. The tribes like Bondo Paroja, Ghara and Desua Bhumij had the maximum sex ratio during the said period. The Census 2011 puts Mankidi and Mankirdia as the communities with the maximum and minimum sex ratio respectively.

Child Sex Ratio of Scheduled Tribes

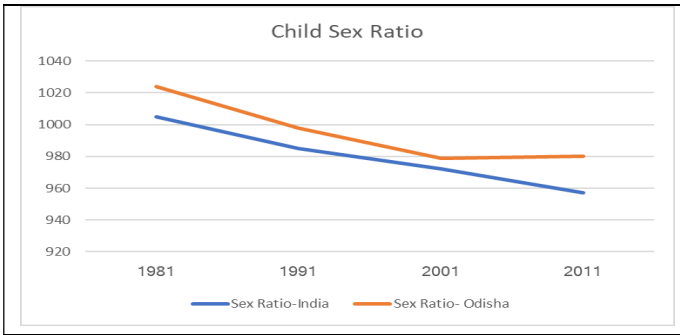
The sex ratio of children in the age group of 0-6 years is an important point in the demographic indicators. Generally, females are more resistant to diseases than male and are more likely to survive infancy. In spite of this, the higher child mortality for girls than boys clearly indicate the existence of odds against the girls in the society.



ST Child Sex Ratio of Odisha and India (Census 1981-2011)

The ST Child sex ratio of Odisha and India from the Census 1981 to 2011 shown in Table 7 & Figure 2

Table 7 ST Child Sex Ratio of Odisha and India (Census 1981-2011)



Census	Child (0-6Yrs) Sex Ratio	
	India	Odisha
1981	1005	1024
1991	985	998
2001	972	979
2011	957	980

Figure2

Source: Census of India 1991-2011

It is revealed that the trend of child (0-6yrs) sex ratio of STs was declining steadily in the previous census periods though a meagre rise has been observed during 2011. The child sex ratio of Odisha doesn't follow the pattern of overall sex ratio. The same pattern also persists in the case of national data. Tribal child sex ratio (0-6 years) of Odisha, of course, remains higher than the national ratio and which persists since 1981. From 2001-2011 there has been a sharp decline in child sex ratio (CSR). The above facts corroborated from the female feticide were cited as the main reason for the decline in child sex ratio. The other reasons included the neglect of the girl child resulting in higher female mortality, maternal death, dowry death, female infanticide and male migration (Ghosh, Goel and Balda, 2005). The decline in the child sex ratio can happen due to reasons other than sex-selective abortion of the female fetus. It is evident that more boys are born than girls. Although the sex ratio at birth is within the normal range, yet proportionately more girls than boys die during childhood contributing to decline in juvenile sex ratio. The other factors such as higher male migration and higher female mortality in specific age groups also contribute to lowering of the sex ratio. This brings us to the third indicator, the sex ratio at birth. Biologically more male fetal losses are likely through miscarriage or still birth. Advances in health care which bring about a decline of these rates will contribute to a slight increase in the proportion of male births.

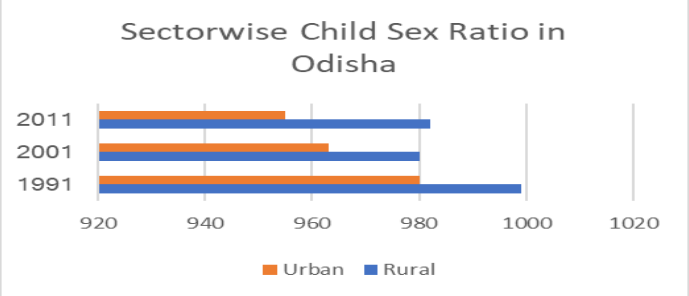
Child Sex Ratio of Scheduled Tribe by Sector (Census 1991 to 2011)

Child sex ratio (0-6 yrs.) provides better insight because it is not affected by sex selective migration and indicates the recent trend of sex ratio in the population. Due to the constraint in the availability of child population figures in the 0-6yrs age by social groups could only be computed for 1991 to 2011. Child sex ratio for Odisha and India by the place of residence has been presented in Table 8 and Figure 3.

Table 8 Sectorwise Child Sex Ratio of STs in Odisha (1991-2011)

Sector	Child Sex Ratio (0-6 Yrs)		
	1991	2001	2011
Rural	999	980	982
Urban	980	963	955

Figure3



The Scheduled Tribe child sex ratio of Odisha in both rural and urban areas is a point for concern as it keeps on declining across different census periods. Specifically, the tribal sex ratio in urban area is worse than that in rural areas.

It is revealed from Table 8 that the ST child sex ratio, in rural area was 999, 980 and 982 in census 1991, 2001 and 2011 respectively which shows a decline by 19 points from Census 1991 to 2001 and a rise by 2 points from Census 2001 to 2011. So, there is a decline of 17 points in ST child sex ratio from the census 1991 to Census 2011. The same situation is also found in urban areas. The urban ST child sex ratio was 980, 963 and 955 in 1991, 2001 and 2011

respectively which records a decline of 25 points from 1991 to 2011. If we analyse both sectors of the tribal child sex ratio it becomes evident that the sex ratio in urban areas decreases gradually in every census as compared to rural areas. The tribal child sex ratio has declined by 17 points in rural areas whereas in urban areas it has declined by 25points.

District-wise Child Sex Ratio of STs in Odisha (Census 2001-2011)

The classification of districts according to the ranges of child sex ratio of STs in Odisha for the year 2001 and 2011 is presented in Table 9.

Table 9: Classification of districts in Child Sex Ratio of STs in Odisha

Range	2001	2011
Below 850	Jagatsinghpur	Nil
850-900	Nil	Jagatsinghpur
901-950	Jajpur,	Cuttack
951-1000	Bhadrak, Baleswar, Bargarh, Khorda, Boudh, Mayurbhanj, Kendujhar, Gajapati, Dhenkanal, Angul, Ganjam, Nuapada, Sambalpur, Kandhamal, Jharsuguda, Bolangir, Deogarh, Nayagarh, Koraput, Malakngiri, Sundargarh, Kendrapara, Rayagada, Cuttack	Sambalpur, Nayagarh, Rayagada, Jajpur, Angul, Ganjam, Subarnpur, Bolangir, Khorda, Sundargarh, Bargarh, Bhadrak, Kandhamal, Mayurbhanj, Deogarh, Balesore, Kalahandi, Gajpati, Keonjhar, Dhenkanal, Jharsuguda and Koraput.
More than 1000	Nabarangpur, Subarnpur, Kalahandi and Puri	Boudh, Nuapada, Nabarangpur, Malkangiri, Kendrapara and Puri

During 2001 and 2011 Census the CSR of STs was the lowest in Jagatsinghpur district and the highest in Puri district. It is observed that the CSR of STs was more than 1000 in Nabarangpur, Subarnpur, Kalahandi and Puri during Census 2001 and Boudh, Nuapada, Nabarangpur, Malkangiri, Kendrapara and Puri during Census 2011.

Factors Responsible for Declining of Scheduled Tribe Sex Ratio

The preference of son is more than daughter which plays a major role for declined sex ratio which is reflected in Table 9. Several reasons are cited to explain the constantly low levels of sex ratio and their further decline in the state. Some of the important reasons commonly put forward are listed below:

- Neglect of the girl child resulting in their higher mortality at younger ages
- High maternal mortality
- Sex selective female abortions
- Female infanticide
- Change in sex ratio at birth

Table 10: Indicator of Sex Preference among Scheduled Tribe (In the age group of 15-49)

Gender	% who wants more sons than daughter	% who wants daughter than son	% who wants at least one son	% who wants at least one daughter
Male	22.4	4.7	88.0	82.7
Female	21.3	3.1	85.9	80.7

Source: -National Health Family Survey (NFHS-4), Odisha, 2015-16

The percentage of men and women in the age group of 15-49 who have a gender preference for sons than daughters are given in table 6. It is indicated that 21.3% of women prefer son than

daughter and only 3.1% of women prefer daughter than son. Among the men 22.4% of men prefer son than daughter whereas only 4.7% of men prefer daughters than sons. When we compare both women and men we see percentage of women is less in consideration of preference for daughter than men. As good as 80.7% of women wants at least one daughter, and in sharp contrast, 85.9% women wants at least one son, when they are given a choice for giving birth to more than one child. Similarly, 82.7% of men wants at least one daughter as against 88% of men wishing for at least one son. Even though more (4.7%) men are interested in daughter than son, yet the trend shows that both male and female are interested to have son. While comparing the option of having at least one son the ratio is also more in case of male (88%) and in case of female (85.9%) as in the case of opting /willing to have at least one girl child.

Conclusion

As a trend it is seen that neglect of female child especially in age-groups, 0-4 and 5-9 has increased over the years. Social customs of gender preference in favour of son and preferential treatment for male babies in terms of food, medical treatment may be accounted for widening the gap between son and daughter despite of several measures taken to prevent discrimination towards female babies. High male-female ratio at birth is prevalent mainly due to female foeticide in spite of the Governmental enforcement of Pre Natal-Diagnostic Technique (Regulation and Prevention of Misuse) Act (PNDT) in 1994. The government has amended this PNDT act in 2003 to remove its loopholes.

There are variations in sex ratio not only at spatial and temporal scales but also along different socio-cultural variables, as observed or validated by scholars through research and studies. This variation prevails not only because of socio-economic factors but also choice factors and biological factors. However, this variation in sex ratio at birth is further balanced by higher mortality rate among males. Main causes for declining child sex ratio are female foeticide, preference for male child (son) and gender inequality. The sharp decline in child sex ratio is a cause for concern and this requires in-depth studies considering various attributes and factors in order to decide further strategies to alter the trend.

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OUR CONTRIBUTORS

Name	Address
Abhishek Mohanty	Development Consultant, Kalinga Vihar, Bhubaneswar (abhishek.rural@gmail.com)
Debabrata Panda	Assistant Professor, School of Biodiversity, Central University of Orissa, Koraput, Odisha, India
Dr. B. N. Mohanty	Deputy Director, SLAU, Special Dev. Council, Bhubaneswar
Dr. Mihir Kumar Jena	Senior Tribal Domain Expert, State Level Advisory Unit, Special Development Council (drmihirkumar@gmail.com)
Biswajit Mohapatra	Assistant Professor, Botany, N C Autonomous College, Jajpur (biswajitmohapatra4847@gmail.com)
Kalpana Patra	Research Scholar, Department of Biodiversity and Conservation of Natural Resources, Central University of Orissa, Koraput, Odisha
Megha Kar	Development professional associated with Tribal Medicine Compendium Project at SCSTRTI, Bhubaneswar
Dr. Niladari Bihari Mishra	Research Scholar, New Colony, Mining Road, Keonjhar, Dist:- Keonjhar, Pin:- 758001. +91-9437437310, *nbmkjr1@gmail.com*
Padmini Pathi	District Coordinator, MTELP, Koraput. (ppathi.ssa@gmail.com)
Prof. N. C. Dash	Former Professor, P.G. Department of Population Studies, F. M. University, Balasore-756020, E-mail- ncdash53@gmail.com
Prof. Sharat K. Palita	Professor and Dean, School of Biodiversity, Central University of Orissa, Koraput, Odisha, India. Corresponding Author. e-mail : skpalita@gmail.com
Smruti Ranjan Patra	Statistical Assistant, SCSTRTI, Bhubaneswar
Sanghamitra Dubey	Programme Officer at Vasundhara, Bhubaneswar & currently associated with SCSTRTI in a Research Study
Sukruti Sarangi,	Primary Investigator, SCSTRTI, (sukrutipramanik@gmail.com)
Sulbha S. Jadhav	Research Consultant (Tribal Medicine Compendium Project) at SCSTRTI, Bhubaneswar (sulbhasachin@gmail.com)
Sumita Das	Secretary, State Level Advisory Unit, Special Development Council (sumita.das8938@gmail.com)
Suvendu Baral	Research Scholar of Population Studies, F.M. University, Balasore,
Trilochan Mahanta	Research Scholar, Dept. of Anthropology and Tribal Studies, North Orissa University, Baripada, Odisha
Trilochan Sahoo	Former Joint Director, & presently a Consultant in a Research Study in SCSTRTI, Bhubaneswar
Varnika Sagi	Research Scholar, Vellore Institute of Technology, School of Business, Amravati, Andhra Pradesh, (varnikasagi@gmail.com.)

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