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Editorial Board

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Dedicated to
Professor Adwait Mohanty

March 14, 1945 - October 13, 2018

Professor Adwait Mohanty, a prodigy in economics with an amiable and enchanting personality, an outstanding teacher with unremitting proclivity to research, ever futurist and the editor of Orissa Economic Journal preciously passed away on October 13, 2018 creating a deep void in the hearts of members of Orissa Economics Association. He was unanimously elected as the editor of Orissa Economic Journal in the Annual General Body meeting of Orissa Economics Association held on the occasion of its Golden Jubilee Celebration at Nabakrushna Choudhury Centre for Development Studies (NCDS), Bhubaneswar on February 11, 2018. He meticulously edited the papers presented in the Goldenn Jubilee Conference 2018 of the Association not knowing that he may not be there to see the printed version of the Journal. This issue of Orissa Economic Journal is dedicated to the great soul.

Editorial

Employment Generation and Tribal Development for Inclusive Growth

Two important prerequisites of inclusive growth are healthy growth of employment & wages and development of socially weaker sections of the population. The fast growing vast man power in India will enable rapid acceleration of economic growth if they are provided with gainful employment and economic growth will make sense only ifit reaches the poorest and the weakest man (woman). Therefore, employment generation should grow with the national output and both increasing employment and expanding output should benefit all sections of the society. Keeping these in mind, the Golden Jubilee Conference of Orissa Economics Association deliberated on two broad themes: (1) Labour and Employment in India and (2) Economic Development and Tribal Communities of Odisha.

Labour and Employment in India

The world continues to experience diverse trends in employment outcomes. Developed countries are expected to enter their sixth consecutive year of decreasing unemployment rates, falling to 5.5 % in 2018, the lowest since 2007. Yet many countries continue to report high rates of labour underutilization, with large shares of discouraged workers and growing incidence of involuntary part-time employment. By contrast, emerging countries have experienced a significant increase in unemployment rates between 2014 and 2017, driven by major economic downturns, in part due to the commodity price slump in many large economies, such as Brazil and the Russian Federation. The year 2018 marks a turning point, as the unemployment rate is expected to fall to 5.5 % (from 5.6 % in 2017), which would translate into an increase in the number of unemployed in emerging countries of around 0.4 million in 2018 and 1.2 million in 2019. Unemployment in developing countries is expected to increase by half a million per year in both 2018 and 2019, with the unemployment rate remaining at around 5.3 %. For many developing and emerging countries, however,

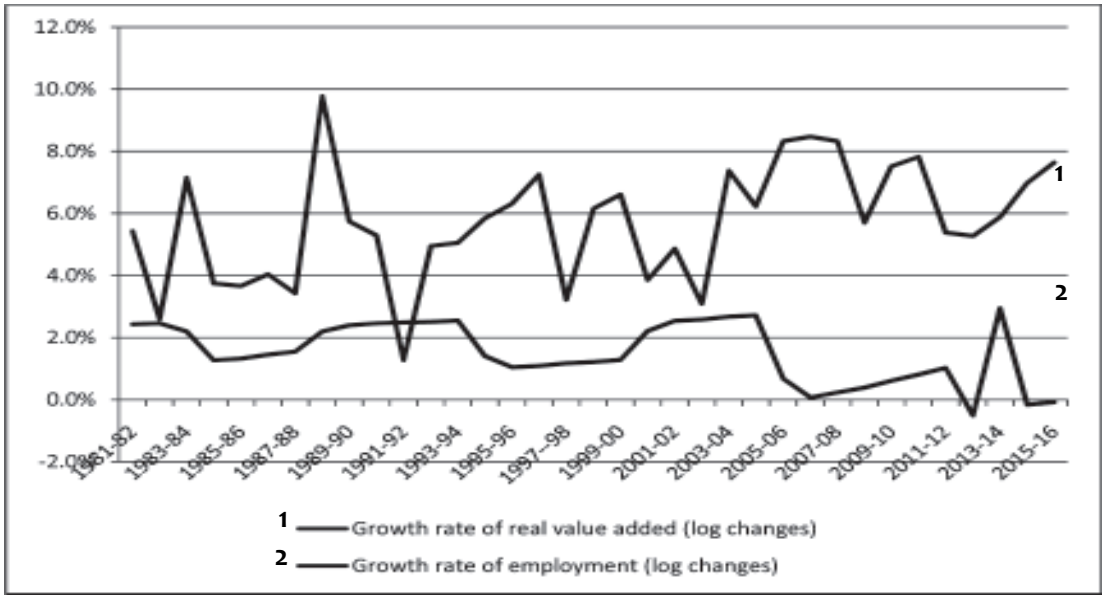
[1] *ILO (2018): World Employment Social Outlook, International Labour Office, Geneva.*

persistent poor-quality employment and working poverty pose the main challenges (ILO, 2018[1]).

India, in the recent years, has been witnessing jobless growth. Although the Gross Domestic Product or Gross Value Addition has been recording more than 7% annual growth, employment is either growing much slower than the output or indicating an overall fall. Keeping in view this trend, Paul Krugman, the American economist who won a Nobel Prize in 2008, has warned that India could end up with huge mass unemployment if it does not grow its manufacturing sector. In the words of Krugman "There is this concept called artificial intelligence that you should be wary of. In future, while diagnosis may be outsourced to a doctor in India, it could also go to a firm based on artificial intelligence. Things like this could be a cause for worry for Indian services sector,"

Figure-1 plots the growth rate of real value added and employment and clearly indicates that in spite of the fluctuations gross value addition is showing an increasing trend. Growth rates, especially after 2003-04, have varied between 6 and 8%. However, during this period employment growth has steadily declined and hit negative axes in a few years. Employment growth has been negative in 2012-13, 2014-15 and 2015-16. This rings the warning bell for India to rethink on the model of development and choice of techniques.

Figure-1: Growth of Value Added and Employment in India during 1981-82 to 2015-16



Source: The India KLEMS Database

Economic Development and Tribal Communities of Odisha

As per Census 2011, 22.8 % or around one crore of the total 4.19 crore population of the state is tribal. The state has the third highest share (9.2 %) in tribal population of the country after Madhya Pradesh (14.7 %) and Maharashtra (10.1 %) and the diversity among the tribals of Odisha is the highest among the Indian states. In total 62 different tribes live in Odisha, of which 13 are considered Particulalry Vulnerable Tribal Groups (PVTGs). Although in recent years the state government boasts to have achieved higher GSDP growth compared to the national average, the light of economic development has not yet touched the tribal communities to a desirable extent.

In all human development indicators like literacy rate, enrolment in secondary and higher secondary schools, maternal mortality, infant mortality and poverty, tribal communities are lagging far behind the state and national averages. There is almost 14 percentage point gap between the literacy rates of adivasis and others in India based on 2011 Census. Nearly 50% of children from this social group drop out while transitioning from primary to secondary grades (Census, 2011). About 80% of them stop education when they are in grade 10 which means that only 20% appear for the high school examination. In terms of other development indicators too, the situation of adivasis is worse. For example, the poverty ratio among them is 52% in Odisha in comparison with 29% for the state as a whole. Although government claims to have taken various policy measures for the development of tribals, these have not been accepted by the tribal communities. Therefore, the present model of tribal development needs to be relooked.

Adwait Mohanty

Presidential Address

Ethical Judgements Regarding Institutions[1]

Professor Prasanta K. Pattanaik[2]

On behalf of the Orissa Economics Association, I welcome everybody here to this conference which marks the Golden Jubilee of the Association. I would first like to thank all our esteemed guests who have kindly accepted our invitation to participate in the conference. It is also my pleasant duty to thank the members of the Association's Executive Committee for the vast amount of time and effort which they have put in to organise this conference. Finally, on behalf of the Association, I would like to express gratitude to Nabakrushna Choudhury Centre for Development Studies for kindly hosting the conference.

I regret that, because of unavoidable circumstances, I am unable to attend this Conference. Some of my colleagues in the Association suggested that I should prepare a brief note based on the paper which I intended to present, so that it could be read out in my absence. The following note is the result of that suggestion. It is based on a paper, "Institutions and their ethical evaluation", by Yongsheng Xu and me. The paper explores the formal structure of ethical judgements regarding institutions. In what follows, I present a few basic ideas in that paper; I leave out all the formal details which do not easily lend themselves to being read out in the authors' absence.

I would like to highlight two intuitive claims which are fairly straightforward and plausible but which seem to have been often overlooked in the literature on welfare economics and the theory of social choice. The first of these claims is that, in assessing the ethical desirability of institutions, not only do people take into account the ethical desirability of the social states or outcomes which finally emerge from institutions, but they also take into account

[1] *Presidential Address of Professor Prasanta K. Pattanaik (Presented in absentia)*

[2] *Emeritus Professor, Department of Economics, University of California, Riverside, CA 92521, U.S.A.*

the intrinsic value that they often attach to certain institutions. The second claim is that, depending on the preferences of the individuals in the society, a physically feasible social state may not be realizable through a specific institutional set up. I shall comment on these claims and their implications. But, before I do that, it will be helpful to state more precisely how I visualize institutions and how the social outcome is determined, given a specific institution.

A physical environment is defined as a specification of : (i) the set of all physically feasible social states or outcomes; and (ii) the set of all feasible strategies for every individual in the society. For simplicity, assume that the physical environment is fixed. Then an institution is characterized by: (i) the set of all physically feasible social states; (ii) the set of all feasible strategies for every individual in the society; and (iii) an outcome function which specifies exactly one physically feasible social state for every profile of feasible strategies of the individuals in the society. It is possible to refine and generalize this notion of an institution by introducing explicitly further details such as the distinction between permissible and impermissible strategies for every individual and the concept of penalty for the adoption of an impermissible strategy by an individual. But the simple concept of an institution introduced above is sufficient for my purpose here. As defined here, an institution is a game form that embodies the collection of legal and social rules, regulations, and norms prevailing in the society.

Consider the game form G characterizing an institution. Next consider the preferences over social states of the individuals constituting our society, an individual's preferences over social states being interpreted as reflecting whatever combination of self interest and values the individual considers to be relevant. Once the preferences of the individuals over the social states are given, those preferences, together with G, define a game; call this game H. Now introduce whatever game-theoretic notion of equilibrium is considered to be appropriate and make the heroic assumption that there exists a unique equilibrium outcome x of the game H. Then we can say that, if the society adopts the institution characterized by the game form G, then, given the preferences of the individuals in the society, x will be the social state that will materialize. While other social states may be physically feasible, they cannot be achieved through the institution under consideration given the individuals' preferences. In light of this, it is easy to see that when one attaches greater intrinsic ethical value to some institutions as compared to some other institutions,

there may be two distinct conflicting considerations in ranking institutions in terms of their overall ethical desirability. I may attach a greater intrinsic ethical value to institution G as compared to institution G^* but, given the individuals' preferences. I may find social state x ethically less desirable than the social state x where x is the equilibrium outcome of the game H defined by G and the given preferences of individuals and x^* is the equilibrium outcome of the game H^* defined by G^* together with the given preferences of individuals.

Let me now come back to the two intuitive claims that I stated at the beginning. Consider the claim that certain types of institutions often have an intrinsic ethical appeal for many people. In that case, a person may not be ethically indifferent between two different institutions even if, given the individuals' preferences, both institutions lead to the same social outcome. In general, this seems to be true. When John Stuart Mill, a self-avowed utilitarian, put forth his celebrated defence of an individual's right to liberty in private affairs, his arguments had very little to do with social outcomes as conventionally visualized in welfare economics. Similarly, when Milton Friedman famously declared that "capitalist bread" was sweeter to him than "socialist bread", he was essentially expressing his ethical preference over two different institutions with identical outcomes. The second intuitive claim that, given the individuals' preferences over the social states, a physically feasible social state may be realizable through one institution but not through another institution (realizability being interpreted in the sense explained above) also seems to be fairly obvious. In the paper on which this note is based, Yongsheng Xu and I explore the implications of the two claims, taken together, for the structure of an ethical evaluator's assessment of institutions.

Finally, let me give just one example to illustrate how this somewhat abstract exercise may be helpful in thinking about certain issues of practical importance. Elementary economic theory tells us that, unless some exceptionally stringent conditions are satisfied, the free market mechanism, as an institution, may run into serious problems even in the case of the very limited goal of efficiency in the sense of Pareto optimality; of course, the free market mechanism, by itself, cannot deal with any concern about equity in the society. Since market failures are often widespread, especially in developing countries, and equity is often a major concern, it is tempting to advocate state intervention in more and more areas of the society's economic life. Such state intervention, however, is not carried out by a disembodied state; it comes about through the actions of individuals who happen to be

agents of the state and who, like other individuals, have their own personal objectives. An expansion of the scope of state intervention creates a new game form which gives these agents greater regulatory control and power. There does not seem to be any compelling reason to expect that, in the case of many developing countries with seriously flawed political systems and inefficient or corrupt administrative structures, the new game after the expansion of the scope of state intervention will necessarily lead to an equilibrium outcome that is ethically more desirable than the equilibrium outcome of the game before such expansion. It is not my purpose to extol the virtues of the free market mechanism the shortcomings of which are often only too obvious. All that I am suggesting is that advocacy of state intervention without careful consideration of the limitations of the institutional framework through which such intervention is to take place may be no less problematic than uncritical faith in the efficacy of the free market mechanism as an institution.

Growth of Industries and Employment Perspectives

Jagannath Lenka*

Abstract

On the basis of the shift-share analysis, it is observed that despite faster rate of growth in GSDP, Odisha is lagging behind in employment generation in many of its manufacturing industries compared to the national economy. The local factor supply is inadequate for rapid industrial growth in the state and policy declaration is not enough. There is urgent need for steps to ensure 'ease of doing businesses' in the state so as to increase employment. With plentiful resources, the state offers vast opportunities for industrialisation and employment generation for its aspiring youth.

Key Words: *Growth of Industry, Shift-Share, National Share, Regional Share*

1. Introduction

Odisha is one of the fastest growing states of India. It was an agriculture dominated economy, but has tilted towards industry and service sectors in recent years. The relative contributions of agriculture, industry and service sector to the Gross State Domestic Product (GSDP) of the state are 15.4%, 33.6% and 51% respectively (Economic Survey of Odisha 2014-15). The GSDP is expected to grow at a rate of 8.1% during 2015-20 (Dun and Brandstreet, 2015). The state is also one of the top Foreign Direct Investment (FDI) destinations in the country. Despite several odds, the state is on a fast development trajectory. The rejuvenated industry sector of the state is gaining new grounds.

It is, therefore, imperative to identify and target the most competitive industries for rapid economic growth of the state. A competitive industry can be defined as one that outperforms its counterpart at the national level. The present paper is an attempt to identify the leading manufacturing industries of the state such that investment can be directed in

* *Professor of Economics, North Orissa University, Sriram Chandra Vihar, Takatpur, Baripada -757003, Odisha, India, E-mail: lenkanou@gmail.com*

these direction for optimal and efficient use of resources and maximum employment generation.

The paper is organised as follows. Section - II and III explain the data sources and methodology of analysis. Results and discussions are presented in Section-IV. Limitations of the study are mentioned in Section-V. Section-VI analyses the recent Industrial Policy of Odisha and its impact on employment generation. Suggestions and policy options have been presented in the concluding section.

2. Materials and Methods

The shift-share analysis is performed on a set of two-digit industries as defined in the National Industrial Classification-2008. Employment data in two-digit industries have been used as variables for analysis. Data relating to employment for industries in Odisha and India for the years 2009-10 and 2013-14 (Annual Survey of Industries) and total employment data of the country for 2013-14 (Ministry of Statistics and Programme Implementation, Government of India) constitute the base inputs of the present study.

3. Shift-share?

The shift-share analysis is based on the assumption that regional economic growth is explained by the combined effects of three components – National level share, Industry Mix and Regional shift. This technique is applied to identify the state's competitive industries by using the following model.

SS = NS + IM + RS

where SS = shift-share

NS = National share

RS = Regional share

The equation for each component is as follows:

NS = $S_i^{t-1} \times \frac{N^t}{N^{t-1}}$

IM = $\left(S_i^{t-1} \times \frac{{N_i}^t}{{N_i}^{t-1}} \right) - \mathrm{NS}$

RS = $S_i^{t-1}\left(\frac{{S_i}^t}{{S_i}^{t-1}} - \frac{{N_i}^t}{{N_i}^{t-1}} \right)$

Where S_i^{t-1} = Number of persons employed in an industry '*i*' in the state in the beginning of the study period 2009-10

S_i^t = Number of persons employed in an industry '*i*' in the state at the end of the study period 2013-14

N^{t-1} = Total number of persons employed in the country at the beginning of the study period 2009-10

N^t = Total number of persons employed in the country at the end of the study period 2013-14

N_i^{t-1} = Number of persons employed in industry '*i*' in the country at the beginning of the study period 2009-10

N_i^t = Number of persons employed in industry '*i*' in the country at the beginning of the study period 2013-14

All versions of shift-share analysis such as traditional model, dynamic model, Eastaben-Marquillas model, and Arcelus model identify national industry and regional factors influencing the change variables.

National Share (NS) measures how much total employment in a state increases because of national level growth during the period of analysis. For example, all else being equal, if employment in India grows by 10% during the period of analysis, then total employment in Odisha would grow at the same rate.

Industry Mix (IM) measure identifies the fast growing and slow growing industries in the state basing on the national growth rate of an industry. Thus a state with an above average share of country's high growth industries would grow faster than a state with a high share of low growth industries.

The Regional Shift (RS) or competitive effect is perhaps the most important component. It identifies the state's leading and lagging industries. Specifically, the competitive effect compares the growth rate of an industry in the state with that at the country level. An industry is leading sector where its state growth rate is higher than the country growth rate, otherwise a lagging sector.

From the practical point of view, shift-share analysis not only indentifies the leading and lagging industries, but also facilitates recruitment and investment decisions. Moreover, results of this analysis helps formulation of economic development polices.

4. Results and Discussions

The manufacturing sector employment data of Odisha and India for the years 2009-10 and 2013-14 are presented in Table-1. The total national employment for the years 2009-10 and 2013-14 are also shown in the Table. It is observed that the total employment in the country increased from 28.708 million in 2009-10 to 31.002 million in 2013-14, registering 7.99% growth. During the same five-year period, new manufacturing sector jobs created in Odisha and India were 22,148 and 14, 06,057 respectively. In the year 2009-10, nearly 2, 27,526 persons were employed in the manufacturing industries of Odisha and five years after, 2, 49,674 persons were employed in these industries, registering a growth rate of 9.73%. However, the corresponding growth rate in India was 11.92% during the same period which was higher than that of Odisha. It is further observed that employment growth in manufacturing industries both at the state and national level had outpaced the overall employment growth at the national level.

The disaggregated figures, however, tell a different story. Employment growth rate in some industries like manufacturing of beverages, tobacco products, coke and refined petroleum products, basic metals, fabricated metal products, repair of machinery and equipment were observed to be higher in Odisha compared to India. In other words, some manufacturing industries in the state performed better compared to their national counterparts.

Table -1: Employment in Manufacturing Industries

NIC code	Industry Name	Employment in Odisha			Employment in India		
		2009-10	2013-14	% change	2009-10	2013-14	% Change
01	Crop and Animal Production, hunting and related service activities	0	306	-	92, 437	97,567	5.55
08	Mining and quarrying	-	-	-	7,117	9,072	27.47
10	Manufacture of food products	24,794	23,204	- 06.41	14,73,989	15,82,527	07.36

NIC code	Industry Name	Employment in Odisha			Employment in India		
		2009-10	2013-14	% change	2009-10	2013-14	% Change
11	Manufacture of Beveragesa	3,249	3,967	22.20	1,31,965	1,58,507	20.11
12	Manufacture of Tobacco products	5,867	9,085	54.85	4,19,736	4,44,942	06.01
13	Manufacture of Textiles	2,816	2,948	04.69	13,84,88	14,96,194	08.04
14	Manufacture of wearing Apparel	-	205	-	8,65,062	9,78,709	13.14
15	Manufacture of Leather and related products	-	-	-	2,55,096	3,11,594	22.15
16	Manufacture of wood products except furniture	1,087	877	-19.32	75,615	78,981	04.45
17	Manufacture of paper and paper products	6,993	7,079	02.11	2,28,513	2,48,529	08.76
18	Printing and Reproduction of recorded Media	531	479	-09.79	1,33,901	1,56,988	17.24
19	Manufacture of Coke and refined petroleum products	1,804	2.231	23.67	1,22,455	1,09,964	-10.2
20	Manufacture of Chemical and Chemical products	7,974	9,247	15.96	5,88,669	7,08,401	20.34
21	Manufacture of Pharma-ceuticals, medical chemical and botanical products	351	325	-07.41	4,14,703	6,18,493	49.14
22	Manufacture of Rubber and Plastic products	4,672	3,471	-25.71	4,77,507	5,91,001	23.77
23	Manufacture of Non-metallic mineral products	23,758	24,235	02.01	7,99,669	9,70,367	21.35
24	Manufacture of Basic Metals	1,33,743	1,52,440	13.98	8,94,474	9,76,196	09.14

25	Manufacture of Fabricated Metal Products	2,218	4,336	9.55	5,59,544	2,49,019	-55.50
26	Manufacture of Computer Electronic and Optical products	-	-	-	4,11,466	2,22,987	-45.81
27	Manufacture of Electrical Equipment	1,651	1,489	-9.81	4,43,771	5,13,943	15.81
28	Manufacture of Machinery and Equipment	884	798	-9.73	5,62,167	6,47,199	15.13
29	Manufacture of motor vehicle Trailers	152	216	4.21	6,19,588	7,92,885	27.97
30	Manufacture of other Transport Equipment	-	75	-	2,22,138	2,83,498	27.62
31	Manufacture of Furniture	529	491	-7.18	50,565	63,068	24.73
32	Other manufacturing	-	-	-	2,03,808	2,74,129	34.50
33	Repair of Machinery Equipment	1,876	2,170	15.67	33,953	34,906	2.81
38	Waste collection and materials recovery	-	-	-	9035	14,202	57.19
58	Publishing Activities	49	-	-	26,437	24,243	-8.30
	Others	2,588	-	-	2,83,786	-	-
	Total	2,27,526	2,49,674	9.73	117,92,054	131,98,111	11.92
	Total National Employment	-	-	-	287,08,000	310,02,000	7.99

Now the question that needs to be answered is how much of the increase in employment of state manufacturing industries may be attributed to the growth of national economy. The shift-share equation has been calculated and the results have been presented in Table -2 to find answers to the above question.

i. National Share (NS): it is evident from Table-2 that had the state's manufacturing industries grown at the same rate as the national average, 18,180 more workers would have been employed in 2013-14, but actually the number of workers increased

by 22,148. What explains the additional increase of 3,968 jobs in the state's share of national employment? It is something unique about the industrial sector itself.

ii. Industry Mix (IM): Usually a particular industry's state growth rate differs from its national average growth rate. It may be noted that at the national level growth rate of employment in manufacturing sector (11.92%) was higher than the overall national employment growth rate (7.99%). Had the state manufacturing employment grown at the same rate as in the national manufacturing sector, the state would have gained 4,973 more jobs. Since it did not, it is fair to say that the state's manufacturing sector lagged behind the national manufacturing sector in creating jobs between 2008-09 and 2013-14.

iii. The difference between the National Share (NS) and Industry Mix (IM) is termed as Regional Shift (RS). Regional shift indicates the regional factors that are mainly responsible for the state's competitive position in manufacturing.

The RS column in Table-2 reveals that the following industries were the leading manufacturing industries in Odisha between 2009-10 and 2013-14.

- Manufacture of Basic Metal
- Manufacture of Fabricated Metal products except Machinery and Equipment
- Manufacture of Tobacco Products
- Manufacture of Coke and refined Petroleum Products
- Repair and Installations of Machinery and Equipment
- Manufacture of Beverages
- Manufacture of Motor Vehicle Trailors

The rest of the industries in the state were the lagging industries. The following are the bottom five lagging industries of the state during the period of analysis:

- Manufacture of Furniture
- Manufacture of Non-metallic mineral Products
- Manufacture of Food products
- Manufacture of Rubber and Plastic Products
- Manufacture of Paper and Paper Products

Table -2: Shift-Share Analysis

NIC code	Industry Name	NS	IM	RS
01	Crop and Animal Production, hunting and related service activities	-	-	-
08	Mining and quarrying	-	-	-
10	Manufacture of food products	22,959	3,660	-3416
11	Manufacture of Beverages	3,009	894	65
12	Manufacture of Tobacco products	5,433	786	2,866
13	Manufacture of Textiles	2,608	635	-94
14	Manufacture of wearing Apparel	-	-	-
15	Manufacture of Leather and related products	-	-	-
16	Manufacture of wood products except furniture	1,007	129	-258
17	Manufacture of paper and paper products	6,420	1,120	-461
18	Printing and Reproduction of recorded Media	492	131	-144
19	Manufacture of Coke and refined petroleum products	1,671	-51	611
20	Manufacture of Chemical and Chemical products	7,384	2,212	-349
21	Manufacture of Pharmaceuticals, medical chemical and botanical products	325	198	-198
22	Manufacture of Rubber and Plastic products	4,326	1,456	-2311
23	Manufacture of Non-metallic mineral products	22,000	6,829	-4,594
24	Manufacture of Basic Metals	1,23,847	22,116	6,478
25	Manufacture of Fabricated Metal Products	2,054	-1,067	3,349

NIC code	Industry Name	NS	IM	RS
26	Manufacture of Computer Electronic	-	-	-
	and Optical products			
27	Manufacture of Electrical Equipment	1,529	383	-423
28	Manufacture of Machinery and Equipment	819	199	-220
29	Manufacture of motor vehicle Trailers	141	54	21
30	Manufacture of other Transport Equipment	-	-	-
31	Manufacture of Furniture	490	170	-169
32	Other manufacturing	-	-	-
33	Repair of Machinery Equipment	1,737	191	241
38	Waste collection and materials recovery	-	-	-
58	Publishing Activities	45	0	-45
	Others	2,397	-2,397	0
	Total Manufacturing	2,10,690	43,966	-4,982

5. Limitation of the Study

The shift-share analysis is a snap-shot of the state's manufacturing industries at two points of time and the observations made here may not be true for other years with different levels of industrialisation. The results are sensitive to the time period chosen. However, it provides a simple and straight forward approach to separating out the impact of national, industrial and local growth on industrialisation of a region. The analysis is immensely helpful in targeting the industries that may offer significant growth potential.

6. Recent Industrial Policy of Odisha on employment generation

The recent Industrial Policy Resolution (IPR) of Odisha 2015 has been conceptualised with the aim of making Odisha a destination of choice for the investors worldwide. Special importance has been attached to promotion of direct employment intensive sectors, maximise employment generation and enhance employability through industry oriented skill development and promotion of sectors in the priority category, which offer strong linkages to employment generation and exports.

7. Conclusion

On the basis of the shift-share analysis, it is observed that Odisha, though growing at a faster rate in terms of GSDP is lagging behind in generating employment in many of its manufacturing industries compared to the national economy. The local factors are not very helpful and policy declaration is not enough for rapid industrial growth of the state. Steps need to be taken to ensure 'ease of doing businesses' in the state so as to increase employment. Odisha with plenty of resources offers vast opportunities for industrialisation and employment generation for many of its aspiring youth, thereby attaining the status of a developed state in the country.

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Woes of Women Workers in Urban Informal Sector: An Exposition

Saswati Swagatika[1] and Mitali Chinara[2]

Abstract

The developing countries of the world are experiencing a change in their labor market composition. India, no different from this, is witnessing a deviation from the traditional composition of labor, showing a predominance of informal employment in Indian labor market. But as a contrast to other economies like that of the BRICS countries or the European Union, India's informal economy is neither a minor nor a marginal component of the economy. It is a vibrant sector of our economy, producing up to two-thirds of the country's GDP, providing an estimated 92.5% of the livelihoods and growing from strength to strength without showing any signs of receding or being subsumed by the formal sector. Ranging from self-employment to wage employment, Indian labor market is crowded with informal workers. Even though informal employment has emerged as source of livelihood and income in the Indian labor market, the informal sector and the people employed therein continue to remain neglected by the State until very recently. Another typical feature of the informal sector world over is that women constitute a large proportion of the work force and a majority of the employed women are found working in this sector. Issues concerning the informal workers make an unending list in case of women workers. Against this backdrop, the present article makes an attempt to examine the challenges being faced by the women workers in the urban informal sector on the basis of a field survey at explore the presence of gender based wage discrimination in the sector. It tries to build up a case that in order to ensure that this sector contributes more meaningfully to nation building and the workers engaged therein have access to 'decent work' as defined by ILO, there is a strong need for the introduction of an informal sector employment policy.

Key words: *Informal sector, informal employment, women workers, wage discrimination.*

1. *Lecturer in Economics, Paradeep College*

2. *Professor, A & A Economics, Utkal University, Bhubaneswar.*

1. Introduction

Economic development of a country is indicated by the presence of an effective and well structured labour market. Production process depends on the efficiency of the organized labour. The Indian labour market presents a different scenario – increasing number of informal labour in the production process. While the lack of labour flexibility has reduced the formal employment, higher labour elasticity in the informal sector has generated more of informal employment. In some cases, informal sector acts as a stepping stone to acquire new knowledge and skill to enter into the formal sector; but in most of the cases, employment in the informal sector remains the last resort for the unskilled labour mass in the developing countries. This dualism in the employment structure is observed both in national and state level. In the second half of the 19th century, women workers participated actively in the informal labour market. They were found to have a considerable share in the informal labour market world over and India in particular. Studies by eminent researchers reveal that women still constitute a major share of the workforce in the informal sector, but they face multiple problems in the workplace. They bear the double burden of attending to domestic chores as well as wage work. In a patriarchal society they are considered secondary workers complementing family income (Kaur, 2001). The present article is a small step towards finding out the role and status of women workers in the informal labour market. The article is arranged in four sections. The introductory section-I is followed by a brief review of literature relevant to the study. Section-III deals with the objectives of the study, hypotheses to be tested and research methodology adopted. The survey findings have been presented in section-IV. Policy suggestions have been given in the last section.

2. Review of literature

The formal informal dichotomy of the economy owes its origin to the works of Keith Hart (1973) who for the first time introduced the concept of "informal sector" used to describe those activities in Ghana which are not registered with any Government authorities and in which workers lack protection. The new entrant in the urban labor market are particularly the migrants from rural origin who were forced to work in the informal sector due to lack of experience and skill required for formal sector employment.

The ILO definition (1972) incorporated the idea that informal sector had untapped development potential because of its flexibility and potential for creative response to economic change. The only specificity is the absence of worker's rights and social security in every other way, both from part of an integral whole.

CSO (1980) introduced informal sector as "unorganized sector" in the report on National Accounts Statistics. According to CSO, the unorganized sector refers to those operating

units whose activities are not regulated under any Statutory Act or legal provision and/or which do not maintain any regular accounts.

Papola (1980) in his study put light on various attributes of the urban informal sector. On the basis of relationship between size and nature of market on the one hand and the state on the other hand, he found that the sector is a highly competitive product market selling a variety of goods and services mainly to low income groups. Workers of the sector face difficulty to cross the barriers of entry to the organized sector. The sector lacks in access to capital, finance, modern technology and skills. One of the advantages of the sector is that it uses labor intensive mode of production by absorbing surplus labour in the economy and the sector suffers from the disadvantage of low productivity. Policy formulation for the sector faces a contradictory situation of preserving low-efficiency technology and losing the employment advantage through modernization.

National Sample Survey Organization (1991) distinguished between the unorganized and informal sector in following terms. Informal sector incorporates the unincorporated proprieties or partnership enterprises in Annual Survey of industries. In the unorganized sector, in addition to the unincorporated proprieties or partnership enterprises, enterprises run by cooperative societies, trust, private and limited companies are also included.

Kalpagam (1987) conducted an extensive study on the struggles of women workers in the informal sector. The issues concerning the women are categorized under 'general concentration of workers in the informal sector' including low wage, low capital intensiveness, low energy and use of crude tools etc and those of 'specific problems of women' engaged in home-based production and self-employed women workers engaged in retail trade and services. The specific problems range from the lack of recognition of home based work as work, deplorable working condition, and the non-applicability of labor legislations. The study pointed out that the women face several cultural constraints that affect their mobility restricting them to work as an unpaid labor in the home-based activities. The self-employed women workers as well as the wage employed women workers in retail trade services face the problems of access to credit, raw materials, infrastructure availability and accessibility etc.

Leach (1996) analyzed the contribution of education, both formal and non-formal, to women of the informal sector of the economy, for preparing them for self-employment. The study also discussed about the success and failure of education to assist women to obtain skilled, well paid and secured jobs. In informal sector most of the women are found in typical activities like petty-trading and street vending, paid domestic work, casual employment in unregulated small enterprises and on construction sites leaving them with low income

which barely guarantees survival. The researcher found that, the formal education and training provided relevant skills to women to prepare them for adult roles as housewives and mothers by providing them subjects like home economics, hair dressing, tailoring and so on whereas boys are prepared for jobs and careers. The same constraints affecting formal education for girls apply for non-formal education for female adolescents and adults.

Wilson (1998) conducted a survey in Mexico in which he took three informal sector occupations i.e. street vending, garbage picking and brick making to show the position and problems of women workers in informal sector. He found that women workers are usually accompanied by small children. His study found that the goods and services offered by these informal sector firms are often cheaper than those offered by formal sector enterprises because of the former uses family labour, who are not protected by minimum wage or overtime laws. They are treated as 'disguised proletariat' whose labour subsidizes capitalist enterprises and the capitalist as a whole, and women constitute an integral part of this segment of the proletariat. On the other hand, the women workers as a part of family labor force perform activities apart from subsidizing capitalist, first either directly or by working as unpaid labor with their male heads of the household. Thus, Wilson's study reflects on the unfortunate fact that women are subject to double exploitation both as 'disguised proletariats' and as 'subordinated sex'.

Kaur (2001) conducted a thorough study on the women workers in informal sector of Uttar Pradesh with an objective to find out the problems and relative position of women in the sector. Her study reveals the fact that on one hand the women bear a double burden of doing domestic work as well as waged work but on the other hand being a part of the patriarchal society she is considered as a secondary labor force whose income is simply complementary to the family income. Social security schemes are more or less non-existent or even when they exist, are insignificant, ill conceived, delayed or simply not implemented for the unorganized sector.

Eapen (2001) in his analysis of the problems and prospects of informal sector has attempted to re-examine the formal-informal dichotomy with special reference to women in the informal sector. By analyzing the secondary information drawn from various official sources he came to the conclusion that no doubt women's employment in Kerala's informal sector is rising over time, but this employment is more in the nature of casual and irregular contractual labor. Apart from this, the researcher also found that these workers are prone to sex discrimination in wages. Citing an example of the respondents he found that in small manufacturing units in the Palghat industrial belt, fresh female recruits were paid 350/- per month while their male counterparts with the same level of education gets 500/-, the argument being that women are only supplementary earners.

Kantor (2002) has used a sectoral approach for understanding gender constraints in the informal sector using the examples of self employed women in home based garment production in Ahmadabad, India. By sectoral approach he meant assessment of the work at the level of specific economic activities and it highlights the sector's economic and political constraints that limit women's economic opportunities. The study throws light on the various constraints, categorized under 'women-intensive constraints' and 'women-exclusive constraints'. The women-intensive constraints affect both men and women but women are affected more, such as access to productive resources, human capital etc. The women exclusive constraints are those which specifically affect women only due to their gender, such as occupational segregation, mobility and family responsibilities.

Khan and Khan (2009) conducted a study on Pakistan's informal women workers with an objective to analyze the contribution of the informally employed women (for the age group of 16-69 years) workers on their household budget. The findings of the survey suggest that, determinants like women as heads of household, women's education and ownership of assets by women have a positive effect on their contribution. The burden of large family, household poverty and loans availed by the household are shared by the informally employed women workers, as these variables positively affect their contribution. Age of the women workers has a non-linear effect on their contribution towards family budget. The contribution first increases and then decreases with an increase in the age of the workers. Married women and women living in nuclear families contribute more to the household budget. The household per capita income and the number of children in the household have shown a negative effect on the contribution of women to the household budget. The researcher found that, the women workers face severe problems so far as the accessing the formal financial institutions are concerned.

Das (2012) has studied different dimensions and structure of wage inequality as observed in the Indian labor market by using the Gini-inequality index. The major findings of the survey suggest that, a substantial wage gap exists between workers engaged in different sectors; informal workers being the most discriminated one. Workers in the informal sector are paid even less than one-third of the formal sector wage. By examining wages in public, private-formal and informal sector, the researcher came to the conclusion that, though wage inequality is highest in the private-formal sector, there exist a high degree of inequality in wage discrimination so far as the informal sector is concerned, especially among the women workers. It is observed that, women workers in the informal sector earn much lower wages than their male counterparts. The results of the wage regression model suggest that the effects of education, technical skill and experience at the workplace account for the presence of wage inequality across sectors as well as gender.

3. Objectives, Hypotheses and Methodology

3.1 Objectives

The present study has the following objectives:

- To study the socio-economic status of women workers in the urban informal labour market;
- To examine the problems and constraints faced by the women workers in the urban informal sector;
- To examine the presence of gender based wage discrimination in the urban informal sector.

3.2 Hypotheses to be tested

The study has examined the following two hypotheses:

- There is no gender based wage discrimination among the urban informal workers.
- The women workers do not face the problem of gender based occupational segregation in the urban informal labour market.

3.3 Methodology

The study has been conducted in one of the slums of Bhubaneswar, e.g., Saliasahi. Both primary and secondary data have been collected to examine the objectives of the study. Primary data were collected during the month of June, 2015 by administering a well structured interview schedule to the respondents. Secondary data have been gathered from various published sources like official websites, journals and unpublished Ph.D. theses. One hundred households have been selected by following purposive sampling technique depending on availability of informal women workers. Different categories of informal workers have been included in the sample. They were further divided into two categories: wage-employed and self-employed. The wage employed women workers are associated with a number of activities like street vending, badi making etc, whereas the other category includes workers having own small business. These women entrepreneurs work in their own enterprises and also hire paid workers. Data collected were entered in EXCEL sheet by using MS-EXCEL software. Descriptive statistics like averages and standard deviations have been used to analyze individual as well as family income. To test the presence or absence of gender based wage discrimination, statistical tests like t-test, paired t-test and F-test have been used.

4. Findings

The occupational profile of the male and female informal workers have been presented in Tables 1 and 2, which exhibit various categories of informal activities the workers are associated with.

Table -1: Occupational Profile of Male Workers

Occupation Category	No. of Individuals	Percentage
Casual construction worker	31	31.63
Domestic worker	5	5.10
Driver	3	3.06
Private Employee	20	20.41
Gardener	3	3.06
Leaf plate seller	2	2.04
Milk Supplier	3	3.06
Phenol seller	7	7.15
Private Tutor	5	5.10
Shop Owner	15	15.31
Street food seller	4	4.08
Total	98	100.00

Source- Field Survey, 2015

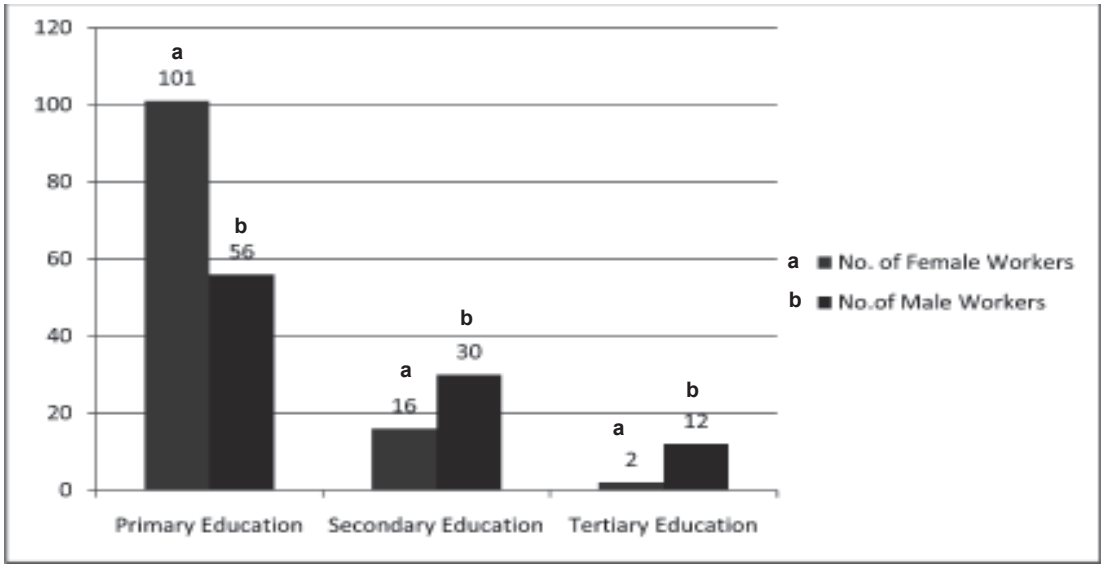
Table -2: Occupational Profile of Women Workers

Occupation category	No. of Individuals	Percentage
Casual construction worker	16	13.45
Domestic Worker	19	15.13
Bari Maker	5	4.20
Candle maker	3	2.52
Incense stick maker	3	2.52
Spice Maker	3	2.52
Phenol Maker	4	3.36
Leaf plate maker	5	4.20
Papad Maker	4	3.36
Unpaid family labour	11	10.08
Self-employed worker	46	38.66
Total	119	100.00

Source: Field Survey, 2015

Chart-1 shows that a major chunk of the sample is educated only up to primary level. It reaffirms the belief that the informal sector workers are mostly less educated and have no formal education. Only 21% (46 out of 217) of the sample had read up to secondary level while education while a meager

Chart -1: Sex-Composition and Education Profile of Workers



Source- Field Survey, 2015

6.45% (14 out of 217) had tertiary education. It may be noted that the number of women workers having secondary or tertiary education is much less compared to the number of men workers.

So far as the income level is concerned (Table 3), it is found that nearby 78% of the total women workers in the sample come from revised BPL households and 9.24% of the same do not have any income as they work as unpaid family labour. It is worth noting that 32% of the sample women workers lie below the destitute line, i.e., they earn less than Rs.47.00 per day (Destitute line as defined by Rangarajan Committee, 2014). Thus, income distribution among men and women workers is not similar; it is more unfavourable to the latter group.

Table -3: Income Distribution among Men and Women Workers (per Month)

Income category	Male	Cumulative Percentage	Female	Cumulative Percentage	Total	Cumulative Percentage
No Income	1 (1.02%)	1.02	11 (9.24%)	9.24	12 (5.53%)	5.53

1-1410 (Destitute Line)	0	1.02	27 (22.69%)	31.93	27 (12.49%)	17.97
1411-2700(Old International poverty line)	7 (7.14%)	8.16	37 (31.09%)	63.02	44 (20.28%)	38.25
2701-3600 (New International poverty line)	21 (21.43%)	29.59	18 (15.13%)	78.15	39 (17.97%)	56.22
3601& above	69 (70.41%)	100	26 (21.85%)	100	95 (43.78%)	100
Total	98 (100.00%)	—	119 (100.00%)	—	217 (100.00%)	—

Source- Field Survey,2015

The second objective of the survey was to throw light on various problems faced by the women workers at the workplace. Women wage earners and self-employed workers face distinctly different problems as reported by them and it has been summarized in Tables 4 and 5.

Table -4: Problems Faced by Women Wage Workers

Type of problems	No. of workers	Percentage
Wage discrimination	46	63.01
Occupational segregation	50	68.50
Household Management	54	73.97
Absence of training	46	63.01

Source- Field Survey, 2015

Table 4 reveals that 63% of the women wage workers face gender based wage discrimination and 68.5% face gender-based occupational segregation in the workplace. The sample workers also report that even in the same type of occupation, they are restricted to certain particular kinds of work which fetch lower salary than their male counterparts who are engaged in higher-paying works. They also said that males are paid higher wages compared to females performing the same kind of works. Apart from these, provision of training

facilities for women is a neglected area and they work in deplorable working condition. If we look at the problems faced by the self-employed women in the same sector, we get a different picture (Table 5). One of the major problems of these women relates to registration of their business. Not a single enterprise was found to have registered with any authority. This debars them from accessing the benefits provided by the government. About 52% of the total self-employed women surveyed stated that compliance of too many official requirements for registration was the reason for not registering their business ventures, while the rest were ignorant about the need and process of registration. Availability and accessibility of credit, the life-blood of any business remains a subject of concern for the self-employed women. Out of total 46 self-employed women entrepreneurs surveyed, 87% have availed credit from both formal and informal sources for their business purpose. Most of them (95%) have availed it from informal sources. They reported to have been discriminated on gender basis so far as formal credit is concerned and this remains the main reason for accessing informal credit. They reported that their male counterparts availed formal sector credit easily due to their good rapport with the authorities.

Availability of developed and proper infrastructure is a necessity for any successful business venture. The self-employed women face problems in this regard also. A sizeable proportion of them share of the entrepreneurs faces problems in accessing the market and not being able to sell their products at right place and right price.

The study found that, almost 69% of the women workers surveyed faced occupational segregation. The point to note is that 41 of the 50 women workers (82%) who face occupational segregation claim gender as the basis for the same. Even the informal women entrepreneurs face gender discrimination while setting up their business ventures.

Table -5: Problems Faced by the Self-Employed Women Entrepreneurs

Type of problem	No of workers	Percentage
Absence of Registration of company	46	100
Informal Credit	38	82.60
Unavailability of infrastructure	33	71.73
Wage discrimination	26	56.52

Source- Field Survey, 2015

One of the objectives of the study was to examine the presence or absence of gender based wage discrimination in the urban informal labour market. To analyze the wage

discrimination, student's t-test is used both for individual incomes and average income. To test the significance of difference of mean, student's t-test has been used with the null hypothesis that there is no significant difference between the average of actual income of the female worker and the income for a male worker performing the same work.

H_0: There is no difference in the wage of a female and male worker performing the same work.

H_1: The male worker gets a higher wage than a female worker for the same work.

Under the null hypothesis, calculated t came out to be 9.5 which is statistically significant at all levels of significance. Therefore we accept the alternative hypothesis that the income of a male worker is higher than that of the female worker for the same work indicating the presence of gender based wage discrimination in the urban informal labour market.

As such, the monthly average income of the male workers (at Rs 3849.83) is higher than the same for the female workers (at Rs 2215.35). Applying the F test to both the distributions gives us the result that the difference in variances is not statistically significant and hence we can apply the t-test to test the significance of difference in the two averages.

H_0: There is no difference in the average monthly wage of a female and that of a male worker.

H_1: The average monthly wage of a male worker is higher than the same for a male worker.

Under the null hypothesis, calculated t came out to be 7.92 which is statistically significant at all levels of significance. Therefore we accept the alternative hypothesis that the average monthly income of a male worker is higher than the same for a female worker, further strengthening the belief of the presence of gender based wage discrimination in the urban informal labour market.

4. Policy suggestions

The dualism in the labour market of the state has worsened the plight of women workers who carry dual responsibility of managing household, which is unpaid work and paid work at the same time. Whenever the women workers are venturing out of their houses in to the informal sector for earning their livelihood, they are hardly getting a fair treatment. Gender based wage discrimination, occupational segregation, poor access to finance etc are a few of the unending list of problems that these women face. There is no doubt that the Unorganized Workers Social Security Act, 2008 is not enough to secure the interests of informal workers. The Chief Minister of Odisha has announced some special welfare

schemes for unorganized workers, which is highly praiseworthy, but it should be put into practice at the earliest. State apathy and social constraints should not put a barrier in the path of women workers. The women informal workers should have access to decent work as defined by ILO. Against this backdrop the following policy options can be suggested:

- The business venture of the self-employed women workers should be registered so that they can avail the government benefits meant for these.
- "Invest Odisha", the newly launched mobile app should be promoted among the women entrepreneurs so that they can access all the business and investment related information easily.
- Odisha Skill Development authority should conduct specially designed training programmes for women informal workers keeping in view their needs.
- There should be a provision of specialized and separate female financial services for the women workers so that they can avail the services easily and at an affordable price
- The workers should be provided with good marketing skills so that they will not depend on their male counterparts for securing a good price for their produce.
- The governmental and nongovernmental organizations should arrange local exhibitions for the promotion and sell of goods prepared by the women workers at right price.

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Education of Adivasis in India: Relooking the Language Barrier

Amarendra Das[1] and V. Santhakumar[2]

Abstract

In this paper we try to assess why a large majority of the adivasi population in India is not able to get adequate level of education? Enhancing the level of their education is important for achieving schooling for all – a target reckoned important at the national and international deliberations. For example, the fourth Sustainable Development Goal is to provide inclusive and quality education to all. We find that language and the isolation of adivasis are acting as the major hurdles to their education. Though this barrier is noted by others there could be differences on the ways to handle the situation. There are efforts to educate the Adivasi students in their own language. For Example, Government of Odisha has introduced Mother Tongue Based Multi Lingual Education in 21 languages at primary school level. This has helped the retention of children in Primary schools. Though there are merits in using their language for education at certain stages, does this mitigate their language barrier in their further progress in schooling is an open question. The dropout rates start increasing from class VIII when they are taught in mainstream Odia languages and by the teacher who does not know their own language. We have also observed that residential schools help the adivasi students to overcome the language barrier faster and increases the retention rate. Based on these observation we argue that appointment of more teachers with the knowledge of the language of adivasis and establishment of more number of residential schools would help in providing quality education and increase the progression of adivasi children to higher education.

Key words: *Adivasi education, language barrier, isolation, MLE*

[1] *Assistant Professor, School of Humanities and Social Sciences, National Institute of Science Education and Research, Bhubaneswar, Email: amarendra@niser.ac.in*

[2] *Professor, Azim Premji University, Bengaluru.*

सा विद्या या विमुक्तये

sâ vidyâ yâ vimuktaye

That is education which liberates

1. Introduction

That is education which liberates. This has been prescribed in what may be called as religious texts of India since hundreds of years ago. Education should liberate us from ignorance, exploitation, poverty and misery and pave the path towards prosperity. The importance of education in improving the welfare of masses has also been well described in the Sustainable development Goals of the United Nations. The fourth Sustainable Development Goal prescribes to provide inclusive and quality education to all. It calls for ensuring that all girls and boys complete free primary and secondary schooling by 2030. It also aims to provide equal access to affordable vocational training to eliminate gender and wealth disparities and achieve universal access to a quality higher education.

In India the launch of Sarva Siksha Abhiyan since 2000-01 and the enactment of Right to Education Act (2009) have brought in tremendous improvement in the enrolment of children into schools. This is reflected from the nearly 100 per cent Gross Enrolment Ratio at primary level. However, the challenge to achieve universalisation of elementary education remains large. The major challenges seem to lie in tackling the problem of drop out from primary school and children at risk of dropping out. Available data indicate that the problem of drop out persists on a large scale. The problem of children who attend school but continue to remain marginalized in terms of their active participation and learning is also serious(Govinda, and Bandhopadhyay, 2007).

In India a wide disparity still exists between the educational achievement of adivasis (Scheduled Tribes[3]) and other social categories. Educational backwardness of the Scheduled Tribes has kept them backward in all other socio-economic indicators. Positive discrimination measures have been guaranteed by the Constitution, which recognizes the historical legacy that militates against their progress. Several special incentive schemes have been initiated to target children from these communities. Yet available data reveals that educational access and retention remain unsatisfactory.

[3] *The essential characteristics, first laid down by the Lokur Committee, for a community to be identified as Scheduled Tribes are – a) indications of primitive traits; b) distinctive culture; c) shyness of contact with the community at large; d) geographical isolation; and e) backwardness. While some tribal communities have adopted a mainstream way of life, at the other end of the spectrum, there are certain Scheduled Tribes, 75 in number known as Particularly Vulnerable Tribal Groups (PVTGs), who are characterised by:-a) pre-agriculture level of technology; b) stagnant or declining population; c) extremely low literacy; and d) subsistence level of economy (Government of India, 2013, Statistical Profile of Scheduled Tribes of India, 2013, MINISTRY OF TRIBAL AFFAIRS STATISTICS DIVISION, Government of India.*

In this paper we do a systematic analysis of the educational backwardness of adivasi children across Indian states and try to understand the hurdles faced by them in this regard. We go beyond the conventional demand and supply analysis and try to unravel some of the structural problems such as language and cultural barriers, physical isolation and infrastructural constraints faced by the adivasis to acquire education.

2. Insights from Other Studies

plethora of studies points out the supply and demand factors that play crucial role in providing education to the children. On supply side opening of schools, appointment teachers, provision of adequate infrastructure, positive environment etc are vital to increase the educational achievement On the demand side income of the household, education of mother, demonstration effect from the neighborhood etc influence the educational outcome. Santhakumar et al (2016) provide a list of socio-economic variables for slower pace of rise in the demand for education: favourable socio-economic conditions, social mobilization, role of state, the impact of patriarchial norms, traditional caste differences in occupation and education etc. These are the factors applicable to all communities in explaining the educational performance. There are also community specific hurdles to education especially in case of adivasis.

In spite of the special provisions in the constitution to meet the educational requirements of groups such as Scheduled Castes (SC) and Scheduled Tribes (ST), the situation has remained far from satisfactory. The likelihood of exclusion is compounded if the children live in rural areas and are female. Tribal girls in rural areas are in the most disadvantaged position, as only 51% of them are enrolled in schools, whereas around 80% of all girls in urban areas are enrolled (Sedwal and Kamat, 2008).

In order to encourage the education of girls another scheme was launched in 2004, named Kasturba Gandhi Balika Vidyalaya (KGBV). This involves providing residential schooling facilities for girls at the upper primary level, mainly in areas with predominantly under-privileged communities. Goyal (2016) based on the study of ashram shalas or tribal boarding schools in Maharashtra points out that there are much wanting in the way these schools are run and the conditions in which the tribal children are made to live and study. The periodic cases of abuse and corruption gain media attention for a few days but no long-term improvement or concrete action plans are forthcoming.

Reviewing recent research, Sedwal and Kamat (2008) highlighted a number of issues confronting the education of children from SC and ST communities. While SC children face the problem of 'untouchability,' tribal children face the problem of physical and cultural isolation, although the degree of their isolation varies considerably. For example, some tribal groups still live in dense forests, hilly or desert areas and are engaged in occupations

such as hunting and gathering etc., while others are settled agriculturalists. A large percentage of tribal communities also work in exploitative industries, for example, in tea gardens, mining and industrial areas. The educational needs of these children vary, and so does the nature of their deprivation and discrimination. Recognizing the discrimination these children face and their educational deprivation, an approach paper for the 11th Five Year Plan (GoI, 2006c: 64) noted:

Development and empowerment of socially disadvantaged groups is a commitment enshrined in the Constitution. And, education is the most effective instrument of social empowerment and change. Schemes for educational upliftment of SCs/STs and minorities have fallen far behind the national average in education. It would be necessary to go to the root of the problem and examine the reasons for the divisions so that remedial measures can be taken during the Eleventh Plan.

A number f researchers have also pointed out the cultural divergence of adivasi communities and argued for the inclusion of adivasi language and culture into the education curriculum. Making observation on the teaching to adivasi students Heredia (1995) states that it must be evident that they [adivasi children] bring a variety of experiences from varying cultural, or at least sub-cultural backgrounds. Not all of these will have the same pedagogic capacity for growth. Here the pedagogic prerequisite is to affirm, not negate, what is valuable and humanising, not by the criteria of the dominant culture, but by discerning the liberating potential hidden therein. This affirmation is particularly important for the disadvantaged and the disenfranchised .

Panda (2006)has pointed out that a major reason for tribal children doing less well in school mathematics seems to lie in the way the subject is taught in schools at the primary level. Though tribal communities have an extensive and rich knowledge of mathematics and everyday science, classroom teaching is completely divorced from their experiences. Among different subject areas, mathematics teaching suffered most in tribal area schools because the tribal children come to school with a very different number system (which is not often linked to written symbols). They use different heuristics and algorithms to solve day-to-day mathematical problems. In school, they are fed mercilessly, with a series of written symbols, notations and formulas without any effort at linking these to their past experiences

The Committee for Evolution of the New Education Policy (Subramanian committee report, 2016), chaired by T S R Subramanian point out that typically teacher vacancies are more in tribal areas and far off villages where teachers are reluctant to be posted due to inadequate facilities. The committee has also highlighted the language barriers faced by the adivasi children. The committee has pointed out that teachers from other areas are also not familiar

with local tribal languages and dialects and are not able to communicate effectively with tribal students, particularly in lower primary sections. Tribal students face difficulties in following prescribed text books which are not in their mother tongue, particularly when the content is not appropriately designed for them. In many states, text-books have been developed keeping in mind tribal dialects and their context. The committee recommends that the medium of instruction up to Class V must be the mother tongue or regional language. On three language formula (TLF) it recommends that as long as the states ensure that the mother tongue or the regional language forms the basis of primary education up to Class V (a fact underscored by the earlier two policies) the choice of the second (at primary level) and third language (at secondary level) should be left to individual states to decide.

Commenting on the recommendation of Subramanian committee Ayesha Kidwai (2016) states that introduction of a provision for instruction in the mother tongue up to Class 5 is to be welcomed, but its complete neglect of these languages in higher education will ensure that this cannot be implemented.

From all these studies we observe that adivasi students face serious language barrier in the current education system. However, no systematic has been carried out to establish the effect of language hurdle on the educational achievement of adivasi children. In this context the study draws immense significance.

3. Objectives

The primary objectives of this study are:

1. To analyse the enrolment and retention of adivasi children up to higher secondary level of education.
2. To examine the effect of language hurdle and its community isolation on the educational achievement of adivasi children.

4. Situation Assessment of Adivasi Education

Table-1: Literacy rates of All groups, SC and ST Population from 1961 to 2011

	All Social Groups			SC			ST		
Year	Male	Female	Total	Male	Female	Total	Male	Female	Total
1961	40.4	15.35	28.3	16.96	3.29	10.27	13.83	3.16	8.53
1971	45.96	21.97	34.45	22.36	6.44	14.67	17.63	4.85	11.3
1981	56.38	29.76	43.57	31.12	10.93	21.38	24.52	8.04	16.35
1991	64.13	39.29	52.21	49.91	23.76	37.41	40.65	18.19	29.6
2001	75.26	53.67	64.84	66.64	41.9	54.69	59.17	34.76	47.1
2011	80.89	64.64	72.99	75.17	56.46	66.07	68.53	49.35	58.96

Source: Registrar General of India

Table 1 shows the progress of literacy rates from 1961 to 2011. Adivasis population remains highly disadvantaged, compared to the all groups. There was almost 20 percentage point gap between the literacy rates of all category and adivasi people during 1961. The gap has declined marginally only in the recent decades. The literacy rate for all category has gone up to 73 percent, where as the literacy rate for adivasi population has gone up to 59 percent with a gap of 14 percentage points. Adivasis, women are more disadvantaged compared to the male population. More than half of the female adivasis are still remaining illiterate.

Although after the launch of SSA, some positive changes have taken place in the enrolment of children from all social categories; their retention up to higher secondary schools remains a serious challenge in India. From table 2 we observe that the share of adivasi students in the total enrolment gradually declines in Upper Primary and secondary level. The situation is even worse at higher secondary level and higher education level.

Table-2: Share of ST Enrolment in Total Enrolment

Year	Primary	Upper Primary	Secondary
1995-1996	8.8	6.1	4.9
1996-1997	9.2	6.3	4.9
1998-1999	9.6	6.7	5.1
1999-2000	9.4	6.9	5
2000-2001	9.7	7.2	5.4
2002-2003	9.7	6.9	5.4
2003-2004	9.8	7.5	5.6
2004-2005	10.5	8.1	5.6
2005-2006	10.6	8.5	5.7
2006-2007	10.8	8.5	6.1
2007-2008	10.8	8.2	6.3
2009-2010	11.2	8.6	6.3
2010-2011	11	8.7	6.4

Source: Census 2011

This should be noted that after the launch of SSA, there is no pass fail system till class 8th. Therefore, the enrolment of advasi children merely does not say anything about their retention and the real learning. Between 1995-96 and 2010-11 the share of adivasi children in the total enrolment in the country has gone up from 8.8% to 11%. At Upper Primary level the share of adivasi children has gone up from 6.1% to 8.7% and at secondary level this has gone up from 4.9% to 6.4%. The comparison of transition rates however shows matter of serious concern. Although adivasi children have 11 percent share in the total enrolment it goes down to 8.7 percent at Upper Primary level and to 6.4 per cent at secondary level. Table 3 shows the enrolment ratio at different class levels in 2014-15. We see that share of adivasis in the total enrolment drops to 4.8% at higher education level. Similarly when we compare the enrolment ratio of only adivasi children at primary level it is 109 per cent, it drops to 93 per cent at upper primary school level; this drops further to 71 per cent at secondary level and 39 per cent at higher secondary level. At higher education level it drops to as low as 13.7 percent. For all categories together, the enrollment ratio in higher secondary level remains 53 per cent and at higher education level this remains 24.3 percent. One should keep in mind the fact that all categories do not reflect the actual disparity between general and ST categories.

Table-3: Class-wise Enrolment in School and Higher Education 2014-15

Level	% of ST enrolment to all categories in corresponding group			% children in the corresponding age group	% of Children enrolment in the corresponding age going to school		
	Male	Female	Total	ST	All	SC	ST
Primary(I-V)	10.8	10.9	10.8	10	100	112	109
Upper Primary(VI-VIII)	9.8	9.7	9.8	10	90	100	93
Elementary(I-VIII)	10.5	10.5	10.5	10	96	107	103
Secondary (IX-X)	8.3	8.7	8.5	9	77	82	71
I-X	10.1	10.2	10.1	10			
Senior Secondary(XI-XII)	6.4	6.5	6.5	9	53	54	39
I-XII	9.8	9.9	9.8	10	45.0	95.5	89.2
Higher Education Total	4.8	4.8	4.8	8	24.3	19.1	13.7

For School Education: National University of Educational Planning & Administration, New Delhi (website: http://dise.in/).

After providing an aggregated picture of the educational achievement of adivasis children we now proceed to analyse the disparity across states for the total and male female students. Table 4 provides the enrolment of ST students as a percentage to the total enrollment. We observe that at all India level the share of adivasi students in the total enrolment drops from 12 per cent at class I to 6 per cent in class XII. When we compare this share with the share

of adivasi children between 5 and 18 in the total children in the corresponding group, it shows an interesting pattern. In class I enrolment share of adivasi children is higher compared to their demographic share. This could be explained by the higher fertility rate among adivasi population. However, this starts declining from class VIII and reaches to a very low of 6 percentage share at class XII level. We have also calculated the enrolment gap by deducting the share of adivasi students enrolment from the demographic share in the 5 to 18 age group. This has been calculated for class VII, X and XII. Maximum gap is observed for Manipur followed by Tripura, Odisha, Nagaland, and Madhya Pradesh. A few smaller states show surplus; which shows a favourable situation for the adivasis. Table 5 shows the enrolment ratio of adivasi students for boys and girls separately. This reflects the higher disadvantages for girls compared to the boys even among the adivasis.

Table-4: Enrolment of ST students as a Percentage to the Total Enrolment in 2011

States/Union Territories	Class I	Class V	Class VIII	Class X	Class XII	% of ST population in age group 5 to 18	Enrolment Gap = Share in population – Share in enrolment		
							Class VIII	Class X	Class XII
Andhra	13	10	7	7	6	8	1	1	2
Arunachal	79	74	73	73	75	73	0	0	-2
Assam	14	16	15	19	13	13	-2	-6	0
Bihar	2	2	1	1	1	1	0	0	0
Chhattisgarh	31	28	27	30	26	32	5	2	6
Goa	6	9	10	11	8	11	1	0	3
Gujarat	25	15	12	13	13	16	4	3	3
Haryana	0	0	0	0	0	0	0	0	0
Himachal	6	6	6	6	6	6	0	0	0
J&K	10	10	7	5	5	14	7	9	9
Jharkhand	33	29	26	23	19	27	1	4	8
Karnataka	8	8	7	6	5	8	1	2	3
Kerala	2	2	1	1	1	2	1	1	1

Madhya	28	24	18	14	12	24	6	10	12
Maharashtra	13	12	10	10	10	11	1	1	1
Manipur	45	47	39	35	20	45	6	10	25
Meghalaya	92	91	90	88	85	88	-2	0	3
Mizoram	99	99	99	98	99	96	-3	-2	-3
Nagaland	94	93	93	70	75	89	-4	19	14
Odisha	36	27	17	15	13	27	10	12	14
Punjab	0	0	0	0	0	0	0	0	0
Rajasthan	18	16	13	13	11	15	2	2	4
Sikkim	37	37	37	36	36	35	-2	-1	-1
Tamil	2	2	2	1	1	1	-1	0	0
Tripura	42	37	33	31	21	37	4	6	16
Uttar Pradesh	1	1	1	1	1	1	0	0	0
Uttarakhand	3	3	3	4	4	3	0	-1	-1
West	9	6	6	5	4	6	0	1	2
A&N	8	8	7	7	6	7	0	0	1
Chandigarh	0	0	0	0	0	0	0	0	0
D&N	60	71	69	66	59	62	-7	-4	3
Daman	8	12	11	12	11	8	-3	-4	-3
Delhi	0	0	0	0	0	0	0	0	0
Lakshadweep	100	100	100	100	100	97	-3	-3	-3
Puducherry	0	0	0	0	0	0	0	0	0
INDIA	12	10	8	7	6	10	2	3	4

Table-5 : Percentage Share of Scheduled Tribe students in Total Enrolment

	Class I Boys	Class V Boys	Class VIII Boys	Class X Boys	Class XII Boys	Class I Girls	Class V Girls	Class VIII Girls	Class X Girls	Class XII Girls
Andhra	12	10	8	7	7	13	9	7	6	5
Arunachal	78	73	72	71	75	80	76	73	76	74
Assam	14	16	14	20	13	14	15	15	19	13
Bihar	2	2	1	1	1	1	2	1	1	1
Chhattisgarh	32	29	27	30	27	31	28	26	30	26
Goa	6	9	10	10	7	7	9	10	12	8
Gujarat	24	14	11	12	12	26	15	13	14	14
Haryana	0	0	0	0	0	0	0	0	0	0
Himachal	5	6	6	6	6	6	6	6	6	6
Jammu	10	11	8	5	6	10	10	5	4	4
Jharkhand	33	30	26	22	20	33	29	25	23	19
Karnataka	8	8	7	7	6	8	8	7	6	5
Kerala	2	2	1	1	1	2	2	2	1	1
Madhya	29	23	18	14	12	28	24	18	13	13
Maharashtra	13	11	10	10	10	14	12	9	9	9
Manipur	46	47	39	35	19	45	46	39	35	22
Meghalaya	92	91	89	87	83	92	92	91	88	87
Mizoram	99	99	99	98	98	99	99	99	99	99
Nagaland	95	94	94	70	76	94	93	92	70	73
Odisha	35	27	17	16	13	36	27	16	15	13
Punjab	0	0	0	0	0	0	0	0	0	0
Rajasthan	17	16	13	12	11	18	16	13	13	10

	Class I Boys	Class V Boys	Class VIII Boys	Class X Boys	Class XII Boys	Class I Girls	Class V Girls	Class VIII Girls	Class X Girls	Class XII Girls
Sikkim	37	35	35	35	33	38	39	39	37	39
Tamil	2	2	2	1	1	2	2	2	1	1
Tripura	42	37	35	33	22	43	37	31	30	20
Uttar	1	1	1	1	1	1	1	1	1	1
Uttarakhand	3	3	3	4	4	3	3	3	4	4
West	9	7	6	5	4	9	6	5	4	4
A&N	9	8	8	7	6	8	7	7	8	7
Chandigarh	0	0	0	0	0	0	0	0	0	0
D&N	59	70	69	66	63	62	72	69	65	53
Daman	8	12	10	12	10	9	11	11	13	13
Delhi	0	0	0	0	0	0	0	0	0	0
Lakshadweep										
Puducherry	0	0	0	0	0	0	0	0	0	0
INDIA	12	10	8	7	6	12	10	8	7	6

5. Access to Tertiary Education

In order to check the entry of adivasis into institutions of higher learning we have taken the statistics of National Institute of Science Education and Research, (NISER) Bhubaneswar for the academic year 2016-17 and analysed the profile of all applicants from all over India. At all India level, only 3 per cent of the applicants were adivasis, 8.5 per cent were Scheduled Caste, 29.20 per cent OBC and 59.2 per cent were from general category. We are not using admission data because reservation policy is used for this purpose to ensure adequate representation. Similarly, when we compare the state wise application and the share of adivasi students the proportion is far less from the demographic share in the similar age group (presented in earlier tables).

Table-6: Applicant Profile for National Entrance and Screening Test

States/UTs	General		OBC		SC		ST		Total	
	No	Row %	No	Row %	No	Row %	No	Row %	No	Row %
Andhra P	813	48.00	617	36.40	199	11.80	64	3.80	1693	100.00
Arunachal P	7	38.90	1	5.60	0	0.00	10	55.60	18	100.00
Assam	305	60.60	120	23.90	39	7.80	39	7.80	503	100.00
Bihar	1311	46.20	1358	47.80	161	5.70	10	0.40	2840	100.00
Chhattisgarh	410	49.20	268	32.20	84	10.10	71	8.50	833	100.00
Goa	10	76.90	3	23.10	0	0.00	0	0.00	13	100.00
Gujarat	230	75.20	47	15.40	20	6.50	9	2.90	306	100.00
Haryana	1206	66.20	471	25.90	143	7.90	1	0.10	1821	100.00
Himachal P	713	73.10	79	8.10	129	13.20	54	5.50	975	100.00
J& K	115	75.70	3	2.00	8	5.30	26	17.10	152	100.00
Jharkhand	613	52.30	393	33.50	75	6.40	92	7.80	1173	100.00
Karnataka	363	65.90	150	27.20	22	4.00	16	2.90	551	100.00
Kerala	4305	52.30	3737	45.40	187	2.30	6	0.10	8235	100.00
Madhya P	988	62.00	402	25.20	146	9.20	57	3.60	1593	100.00
Maharashtra	1066	55.80	591	30.90	220	11.50	33	1.70	1910	100.00
Manipur	8	27.60	11	37.90	1	3.40	9	31.00	29	100.00
Meghalaya	13	38.20	0	0.00	1	2.90	20	58.80	34	100.00
Mizoram	0	0.00	0	0.00	0	0.00	2	100.00	2	100.00
Nagaland	2	50.00	0	0.00	0	0.00	2	50.00	4	100.00
Odisha	9438	63.10	3553	23.70	1273	8.50	702	4.70	14966	100.00
Punjab	577	78.30	75	10.20	84	11.40	1	0.10	737	100.00
Rajasthan	1245	49.80	747	29.90	313	12.50	195	7.80	2500	100.00

States/UTs	General		OBC		SC		ST		Total	
	No	Row %	No	Row %	No	Row %	No	Row %	No	Row %
Sikkim	5	71.40	1	14.30	0	0.00	1	14.30	7	100.00
Tamil Nadu	542	39.70	693	50.70	124	9.10	7	0.50	1366	100.00
Telangana	523	44.10	387	32.60	174	14.70	102	8.60	1186	100.00
Tripura	120	56.60	34	16.00	35	16.50	23	10.80	212	100.00
Uttar P	2995	58.60	1521	29.80	566	11.10	28	0.50	5110	100.00
Uttarakhand	537	83.10	53	8.20	35	5.40	21	3.30	646	100.00
West Bengal	2862	75.10	404	10.60	500	13.10	44	1.20	3810	100.00
Andan& N	8	72.70	3	27.30	0	0.00	0	0.00	11	100.00
Chandigarh	104	88.90	8	6.80	5	4.30	0	0.00	117	100.00
D &N H	3	60.00	1	20.00	1	20.00	0	0.00	5	100.00
Dam&Diu	0	0.00	1	100.00	0	0.00	0	0.00	1	100.00
Delhi NCR	816	77.50	137	13.00	94	8.90	6	0.60	1053	100.00
Lakshadweep	1	16.70	0	0.00	0	0.00	5	83.30	6	100.00
Puducherry	28	30.10	60	64.50	4	4.30	1	1.10	93	100.00
All India	32282	59.20	15929	29.20	4643	8.50	1657	3.00	54511	100.00

6. Hurdles to Education for Adivasis

6.1 Language Hurdle

A large body of literature shows that language could be a major barrier at the early level of schooling. Language is very critical in the retention of children in the school and their learning ability.Table 7 shows that there are 705 different Tribes living in different states and Union Territories. Most of the Tribes speak different languages. However, all the children in one state are taught in one mainstream language. In such a context the adivasi children feel alienated and drop out of school at an early age. Even if they continue for a few more classes they learning outcome remains very poor.

In India the lower literacy rates among the adivasi population could be linked very well to the language hurdle faced inside the class room. Even though after the launch of Sava Siksha Abhiyan the enrolment of adivasi children as per the official data has become almost 100 per cent, the reality is far from satisfactory. Due to abolition of pass fail system the name of all children are only rolled up to upper classes without the real presence of students in the class. We have observed that the retention rate starts falling sharply from class VIII. At higher secondary level the enrolment rate goes down drastically.

In order to test this hypothesis that language could be a barrier to the education of the adivasi children we have looked at the association between the number of notified tribes living in a state and the literacy rate and between the number of tribes and the share of adivasi children in the total enrolment of the state at class XII level. In both cases we find negative relationship. Figure 1 shows that the states with higher number of tribes have low rate of literacy rate and Figure 2 shows that the state with more number of tribes have less percentage share of adivasi share in the total enrolment at class XII. In both cases the Ordinary Least Square regression equation shows significant negative relationship between these two variables. Equation 1 shows that with rise of number of adivasis by one per cent the literacy rate falls by 0.38 per cent. Similarly, equation 2 shows that for every one unit rise in number of tribes there is a fall of 0.56 percentage of share of adivasis in the total enrollment at class XII.

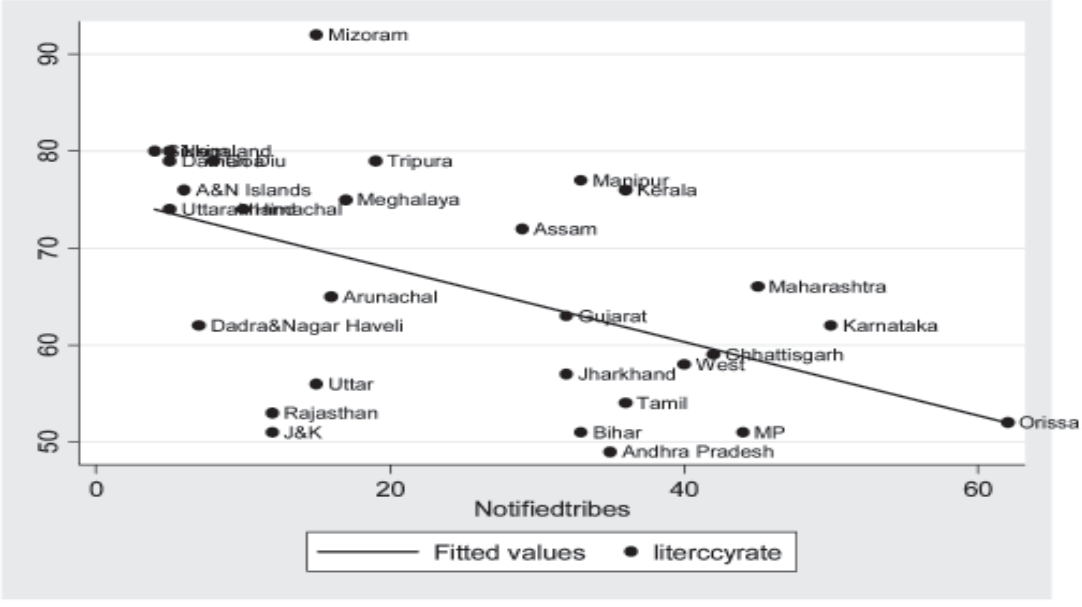

Figure 1Association between Number of Tribes and Literacy rate

ST Literacy =75.51 – 0.38 (No of ST Tribes) + ! ……..equation 1

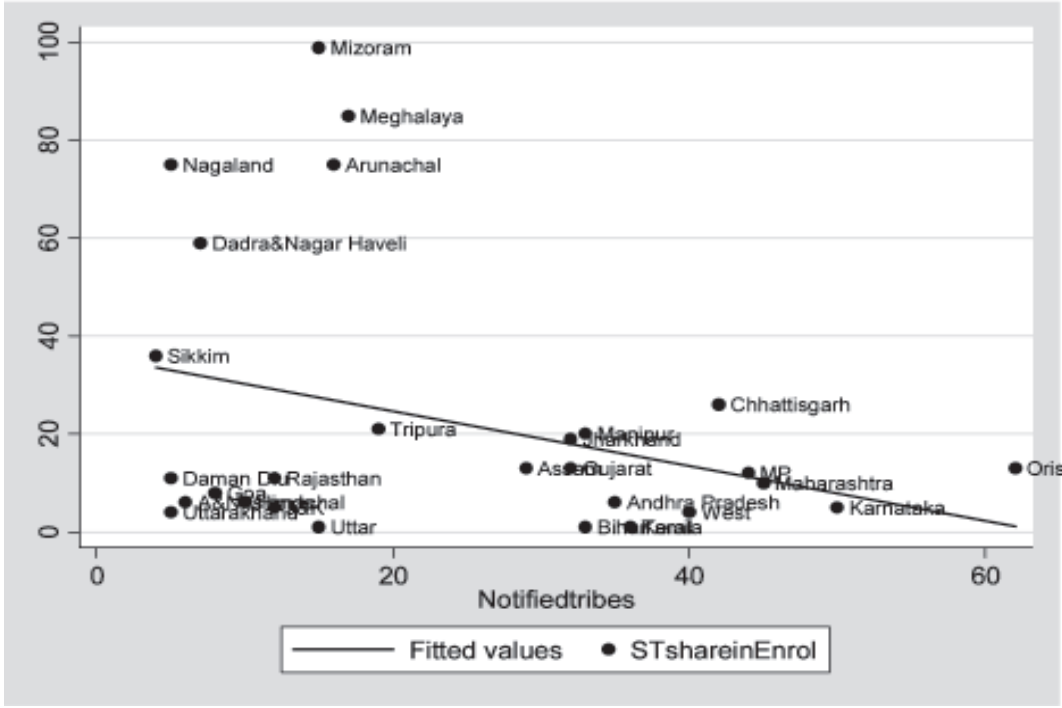

Figure 2: Association between Number of tribes and Share of Adivasi children in the total enrolment at Class XII level

ST Share in Total Enrolment =35.87 – 0.56 (No of ST tribes) +!…… equation 2

The scatter plots (figure 1 and 2) and the regression equation support our hypotheses. We interpret the number of tribes as language diversity among the adivasis which works as a major hurdle to the education. The states having less language diversity will remain closer to the mainstream language. Therefore, the children can overcome the language difficulty relatively easily compared to the states where language diversity is higher.

6.2 Isolation hurdle

Isolation of adivasis from other communities would also serve as another hurdle to their education. This is because when adivasis remain in isolation the exchange of information regarding education and language is reduced. This would strengthen the backwardness of adivasis. We also test this hypothesis through a scatter plot and regression equation 3. We find a negative relationship between the number of all tribal villages and literacy rate.

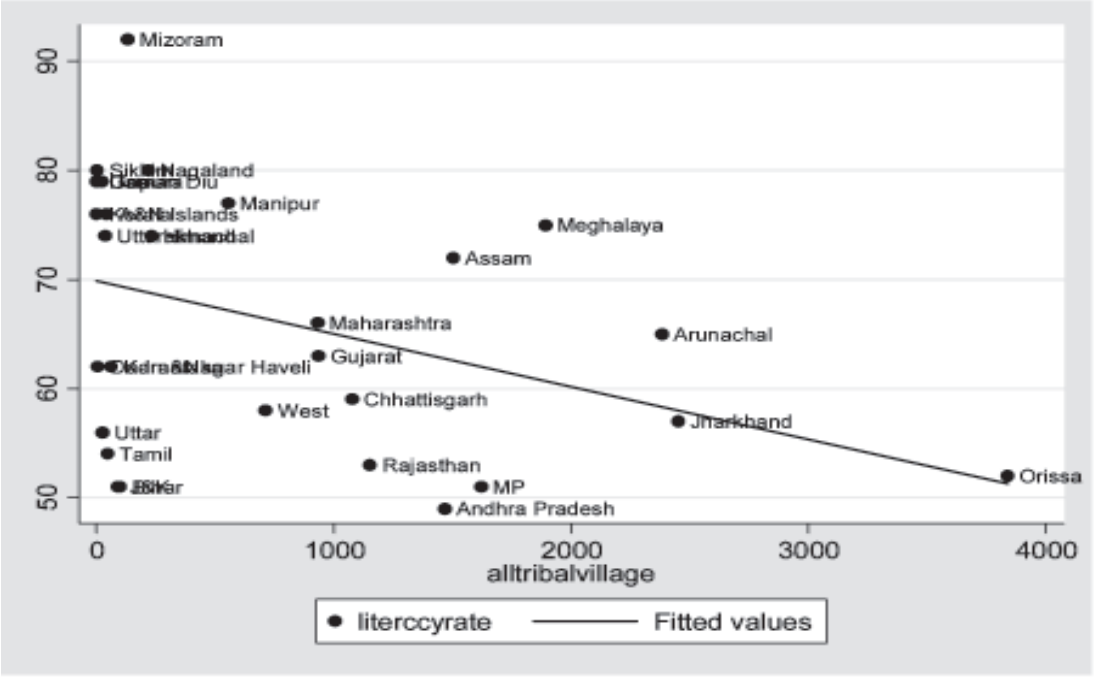

Figure 3: Association between ST literacy rate and number of only Adivasi village

ST Literacy = 69.86 – 0.005 (100% tribal villages) + !……..equation 3

Table-7: State-wise distribution of tribal villages by different concentration of groups in 2011

State	100% Tribals	>90 Tribals	>75 Tribals	>50 Tribals	>25 Tribals	No of Notified Tribes	No of PVTGs
Andhra	1466	3928	4515	5335	6748	35	12
Arunachal	2382	3929	4367	4667	4859	16	
Assam	1503	4562	5406	6626	8066	29	
Bihar	98	295	447	720	1155	33	9
Chhattishgarh	1076	3200	5926	9418	12298	42	
Goa	2	11	19	38	78	8	
Gujarat	935	3531	4089	4970	6085	32	5
Haryana	-	-	-	-	-	-	
Himachal	230	490	682	966	1411	10	

Jammu	89	369	488	766	1295	12	
Jharkhand	2451	6370	9008	12239	15171	32	8
Karnataka	61	224	447	1083	3000	50	2
Kerala	-	-	-	6	26	36	5
Madhya	1619	7338	10687	15022	20927	44	7
Maharashtra	930	3760	4836	6738	10257	45	3
Manipur	554	1741	1844	1887	1905	33	1
Meghalaya	1890	5867	6099	6205	6262	17	
Mizoram	130	651	684	699	700	15	
Nagaland	215	1136	1265	1351	1388	5	
Odisha	3839	8684	12396	17798	23208	62	12
Punjab	-	-	-	-	-	-	
Rajasthan	1152	4456	5701	7763	10654	12	1
Sikkim	2	17	51	138	285	4	
Tamilnadu	46	231	282	320	391	36	6
Tripura	22	301	385	466	564	19	1
Uttar Pradesh	23	124	197	340	623	15	2
Uttarakhand	35	85	174	419	640	5	2
West	711	1629	2357	3977	7454	40	3
A&N	41	77	84	89	93	6	5
Chandigarh	-	-	-	-	-	-	
Dadra	5	44	57	62	64	7	
Daman	-	2	3	5	9	5	
Delhi	-	-	-	-	-	-	
Lakshadweep	1	4	5	5	6	-	
Pondicherry	-	-	-	-	-	-	
All	21508	63056	82501	110118	145622	705	93

http://tribal.nic.in/WriteReadData/userfiles/file/Statistics/StatisticalProfileofSTs2013.pdf

PVTG: Particularly Vulnerable Tribal Group

7. Mother Tongue Based Multi-Lingual Education (MTB, MLE) in Odisha

Following the recommendation of the State Tribal Advisory Committee headed by Chief Minister Naveen Pattnaik the state government of Odisha introduced MT based MLE programme as a model for equitable quality education for the tribal children of the State in 2007-08. In the first phase of the programme government selected 10 adivasi languages namely Santhali, Munda, Koya, Kuvi, Kishan, Oram, Soura, Kui, Bonda and Juang for adoption as medium of instruction at the Primary level in the first. Further, this has been extended to 11 more tribal languages such as Gadaba, Ho, Gondi, Paroja, Kharia, Didayi, Bhinjhal, Bhuiyan, Bhumia, Bhatra and Bhunjia during 2012-13. Under this scheme adivasi children are taught completely (100%) in their mother tongue in class one, 80 per cent in class II and 60 per cent in class III, 50% in class IV. This way they are gradually taught the Odia language from class II onwards and in class V students are completely taught in Odia medium. Odisha Primary Education Planning Authority (OPEPA) was entrusted with the responsibility of initiating and developing the programme. This responsibilities of OPEPA involved constitution of State Resource Group for the development of Orthography, literature, transition plan, instruction manual and curriculum for selected tribal languages. The MLE programme was designed to cover the primary education of children from class I to class V. The language transition plan was developed to initiate learning in the mother tongue (L1) of the child and gradually introduce the second language (L2) Odia, and third language (L3) English. For implementing this programme schools were selected with more than 90% students from a particular tribal language. After that teachers and Tribal Language Instructors were deployed on the basis of language proficiency especially from the community for the selected schools. All the teachers and instructors were given special training to address the attitudinal aspects of MLE programme through training module "Rupantar". In order to strengthen organic linkages between communities and schools special programme "Srujan" was launched. For better coordination and supervision of the programme at district level Tribal Coordinators were deployed.

At present MLE programme is operational in 1,485 schools in 21 tribal languages in 17 tribal dominated districts namely, Anugul, Bargarh, Balasore, Dhenkanal, Ganjam, Gajapati, Kandhamal, Kalahandi, Koraput, Keonjhar, Malkangiri, Mayurbhanj, Nawarangpur, Nuapada, Rayagada, Sambalpur and Sundargarh.Curriculum framework and textbooks for the MLE programme developed is based on the NCF 2005 and SCF-2007 during 2006-13.The transaction materials and text books are in the tribal language but the script used is Odia. For Santhali language materials, the Ol-Chiki script has been used. These materials have strong integration of cultural context.The Pre-Primary Curriculum Material "Nua-Arunima" – a teachers' handbook has alsobeen adapted in 10 tribal languages for facilitating Mother Tongue Based Pre-primary education.

8. Residential Schooling for SC and ST in Odisha

At present there are 1683 educational institutions including 766 Ashram schools, 505 Sevashrams and residential sevashram schools, 337 high schools (173 for girls) 22 higher secondary schools, 24 residential and PTGs, two secondary training schools, one Bed training school, and 13 Ekalavya Middle Residential Schools) are functioning under the administrative control of ST and SC department. During 2014-15 4.34 lakh students including 2.5 lakh girls were enrolled in these schools.

9. Observations from the Field Visit

9.1 MTB MLE

In order to examine the effect of the MTB MLE and residential schooling on the enrolment, retention and learning of the adivasi students we did a case study two MLE schools in Gumma Block of Gajapati district (a adivasi dominated backward district) in Odisha and two residential (Ashram) schools in Khordha district of Odisha. In these two schools both Odia language teachers and MLE teachers are working and students up to class III are taught in the mother tongue and gradually oriented towards Odia medium of teaching and learning. This has increased the retention of children in the school. The teacher explained that earlier students in class I after enrolment used to come to school and observe the teaching in Odia medium for two to three days. They used to feel out of place when teachers taught in Odia medium. After a few days they used to stop coming to school. However after the introduction of MLE this has helped in increasing the retention of adivasi children in the school. However, the language barrier is not completely addressed. Even in class VIII students find difficulty in comprehending and communicating in Odia when they are taught in Odia language instead of mother tongue. The teachers suggested that although teaching after class V should go in Odia medium this should be taught by a teacher knowing the mother tongue. This will help students to clarify their doubts in case of any confusion.

9.2 Residential Schools

We visited two residential schools called Ashram Schools. One school was only for girls and other one was co-education school. One school is located near a Scheduled Caste hamlet and other one near an adivasi hamlet. Both schools are located in one of the least adivasi dominating (Khordha) and economically advanced districts but gets students from all over the state mostly from the backward districts dominated by adivasis. There are no specific criteria for the intake of students. The first batch of students was allotted by the SC/ST department of the state government. Next year onwards the students have been coming from the villages or nearby localities of the subsequent batch students. Students are taught

in Odia medium. Teachers say that initial few days students face some language problem. But once they mingle with students they become well conversant in Odia language. In one residential school, students are performing very well in extra-curricular activities. Students have brought accolades in dance competition at state level. From the other school some pass out students join good schools for higher education. In both schools teachers opine that most of the children after completing education from the residential schools go for further studies.

10. Summary and Conclusion

From the above analysis we observed that adivasi children still face two major hurdles in the process of acquiring education. We observed that states with more diversity of tribes, which is taken as an indicator of language diversity, have lower literacy rate and lower percentage share in the total enrolment in higher secondary schools. This implies that when one language is used as the medium of education in all schools of the state, it puts serious challenge for the adivasi students to comprehend. Resultantly the children drop out of the education system. Similarly we also found that state with more number of only tribal villages have lower literacy rate. From this we infer that only adivasi (100 per cent adivasis) villages restrict the exchange of information and assimilation of languages. This kind of geographical isolation strengthens the language barrier and widens the gap between adivasis and the mainstream society.

From the field study we observed that MTB MLE is helping to increase the retention rate. Similarly, residential schools are also helping the retention rate and progression to higher level of education. In the residential schooling the students overcome the language barrier faster than the MTB MLE system.

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Rough Set Applications for the Economic Development of Tribal Communities

Prasann Kumar Das*

Abstract

Rough set refers to a set of elements which lie between lower and upper approximations of a crisp set. This paper analyses a set of attributes which are general and essential for the economic growth of tribal communities. These several attributes taken by a random sampling and than applying a set of rough concept, that is a soft computing tool to get a minimum attribute set.

Kew words: *Rough Concept, Attributes, Cluster Sampling, Tribal Community, Economic Developmen*

1. Introduction

The concept of RST was proposed by ZdzislawPawlak in the early 1980[2] is a handy tool to deal with voluminous data analysis. Rough set theory can be extended to the fields like data analysis and data mining. Rough set theory isa handy tools for Artificial Intelligence(AI) and cognitive sciences, particularly in the fields of ML, KA, DA, and KD from database, DSS, IR, and PR[3,5,7].The RST concept deals with Lower and Upper approximation these two concepts are the backbone of RST in Rule derivation.

$\underline{P(x)}$= { $\forall x \in U; P(x) : P(x) \subset X$}

(Lower Approximation)

$\overline{P(\mathrm{X})}$ = {$\forall x \in U; P(x) : P(x) \cap X \neq \varphi$}.

(Upper Approximation)

* *Lecture in Economics at Kalinga Mahavidyalaya, G-udayagiri, Kandhamal*

Initially considered 1000 raw samples of tribal communities as major in this paper. Applying clustering techniques the 1000 samples size reduced to 6 different clusters then using rough set concept we are finding essential attributes responsible for the economic growth of the tribal communities in the form of above rules

(*ML-Machine Learning, KA-Knowledge Acquisition, DA-DecesionAnalysis, KD- Knowledge Discovery, DSS-Decesion Support System, IR-Inductive* Reasoning, PR-*Pattern Recognition, RST-Rough Set Theory*)

1.2 Basic Ideas

The basic idea was originated from the economic condition of the tribal communities of our state.Basic intention to find useful attributes for the economic growth of the tribal communities of our state .For this purpose I consider 6 conditional attributes as tribal communities work culture renamed as 1,Socio economic condition as 2, lack of heath care condition 3,lack of education 4,Knowledge of family planning 5,Housing design 6, values if the conditional attributes are essential and non essential renamed as c_1 and c_2 and the decision attributes as d it's values are phase-1(getting useful result.) phase-2(not getting any useful result.) renamed as a_2 and a_1.

The paper is organized in the following manner, section -1: about introduction, section-2: about basic ideas to find core and reduct by using quick reduct algorithm, section-3: finding reduct using strength and section-4: about Experiment and Conclusion.

1.3 Research Methodology

Rough set is used to determine essential attributes for the economic development of tribal communities.

1.4 Application of Cluster in Data Analysis

Cluster analysis or clustering is the technique of classifying a set of entire object space in such a way that in the same group elements are more similarity (with respect to each other). It is basically used in data mining and in statistical data analysis.

1.5 Types of Clustering Algorithms

1. **Partitioning-based clustering**.

- K-means clustering
- K-medoids clustering
- EM (expectation maximization) clustering

2. Hierarchical clustering**:**
   - Divisive clustering is a top down approach.
   - Agglomerative clustering is a bottom up approach.
3. Density-Based Methods.

Algorithmic steps for k-means clustering

Let $Y = \{y_1, y_2, y_3, \ldots\ldots, y_n\}$ be the set of data points and $W = \{w_1, w_2, \ldots\ldots, w_c\}$ be the set of centers.

1) Randomly select '*c*' cluster centers.
2) Calculate the distance between each data point and cluster centers.
3) Assign the data point to the cluster center whose distance from the cluster center is minimum of all the cluster centers..
4) Recalculate the new cluster center using:

$w_i = \sum_{i=1}^{c_i} y_i$ where, 'c_i' represents the number of data points in i^{th} cluster.

5) Recalculate the distance between each data point and new obtained cluster centers.
6) If no data point is reassigned then stop, otherwise repeat from step 3.

2. Data reduction using decision Table

To find the attributes significant for the economic growth found a set of reduct .

Information Table-1

E	1	2	3	4	5	6	d
R_1	c_1	c_2	c_2	c_1	c_1	c_2	a_2
R_2	c_1	c_2	c_1	c_1	c_2	c_2	a_2
R_3	c_2	c_1	c_2	c_1	c_1	c_2	a_1
R_4	c_2	c_1	c_1	c_2	c_2	c_1	a_1
R_5	c_2	c_1	c_1	c_2	c_1	c_2	a_1
R_6	c_2	c_1	c_1	c_2	c_2	c_2	a_1

From the above information tables we have the following sets of Reduct[5] that are as follows

1 (1,2,3,4)

2. (2,3,4,5)

3. (1,2,4,6)

4. (1,2,4,5)

5. (2,3,4,6)

From the above information table here are the 5 sets of reduct to calculate core by using these reducts. The result as follows: Core = $\bigcap$ Reduct i.e. . (2, 4) as core set to verify this. The concept of strength to find the reduct and core is given in the following sub sections.

3. Finding Reduct using strength of rough set

Same data set is being implemented by using strength (Rough set theory) and again 6 samples are considered for the application of strength of RST which is obtained by statistical correlation techniques taking 1000 samples, 6 conditional attributes and two decision attributes same as the information table-1 stated above and the Proposed Algorithm is as follows

1. begin

2. Initialize Reduct set as $k = \varphi$

3. do N (attribute sets) N and K $\neq \varphi$ for all attributes

(conditional attribute values with respect to decision attribute values)

4. Continue to find Equivalence classes by using

Strength=(conditional attribute)*value*/(Decision attribute)*value* = D-values/C-values,

where D-values: decision attribute values and C-values: conditional attribute values i.e. with respect to cardinality of both conditional attribute values and decision attribute values

5. If ratio count of conditional attribute values to decision

attribute values, falls in a group , Reduct++

else go to step 4

end{if}

end{for}

while no further classification is possible

Where N & K $\in$ E (Records).

Information Table-2

E	1	2	3	4	5	6	d
R_1	c_1	c_2	c_2	c_1	c_1	c_2	a_2
R_2	c_1	c_2	c_1	c_1	c_2	c_2	a_2
R_3	c_1	c_1	c_2	c_1	c_1	c_2	a_1
R_4	c_2	c_1	c_1	c_2	c_2	c_1	a_1
R_5	c_2	c_1	c_1	c_2	c_1	c_2	a_1
R_6	c_2	c_1	c_1	c_2	c_2	c_2	a_1

Meaning of (1 2 3 4 5 6), (c_1, c_2) and (a_1, a_2) are described in the above section.

Here in this case our target is to find the reduct using the strength Ra_2={ R_1, R_2 }

Ra_1 ={ R_3, R_4, R_5, R_6} now finding $Ra_2(1)\, c_1$=33%, $Ra_1(1)c_2$=Nil , similarly finding $R_{a2}(2)c_2$=100%, $R_{a1}(2)c_2$=100% , $R_{a2}(3)c_1$=75%, $R_{a1}(3)c_2$=50%, $R_{a2}(_4)c_1$=33%, $R_{a1}(4)c_2$=Nil, %, $R_{a2}(5)c_1$=66%, $R_{a1}(5)c_2$=33%, $R_{a2}(6)c_1$=100% $R_{a1}(6)\, c_2$=25%

From the above analysis it is clear that attribute 1, 6produces extreme result so we drop both attributes from the Information Table-2 leads to next Table-3

Reduct Table-3

E	2	3	4	5	d
R_1	c_2	c_2	c_1	c_1	a_2
R_2	c_2	c_1	c_1	c_2	a_2
R_3	c_1	c_2	c_1	c_1	a_1
R_4	c_1	c_1	c_2	c_2	a_1
R_5	c_1	c_1	c_2	c_1	a_1
R_6	c_1	c_1	c_2	c_2	a_1

Upon analyzing Table-3 we have the following result i.e. { R_4, R_6} produces same result so merge the two fields in to one field so new table found as follows.

Reduct Table-4

E	2	3	4	5	d
R_1	c_2	c_2	c_1	c_1	a_2
R_2	c_2	c_1	c_1	c_2	a_2
R_3	c_1	c_2	c_1	c_1	a_1
R_4	c_1	c_1	c_2	c_2	a_1
R_5	c_1	c_1	c_2	c_1	a_1

Information Table-4 cannot further classified. Rule generated from table-4 as follows

- 2(nonessential), 3(nonessential), 4(essential), 5(essential) $\longrightarrow$ phase1
- 2(nonessential), 3(essential), 4(essential), 5(nonessential) $\longrightarrow$ phase1
- 2(essential), 3(nonessential), 4(essential), 5(essential) $\longrightarrow$ phase2
- 2(essential), 3(essential), 4(nonessential), 5(nonessential) $\longrightarrow$ phase2
- 2(essential), 3(essential), 4(nonessential), 5(essential) $\longrightarrow$ phase2

4. Experimental Section

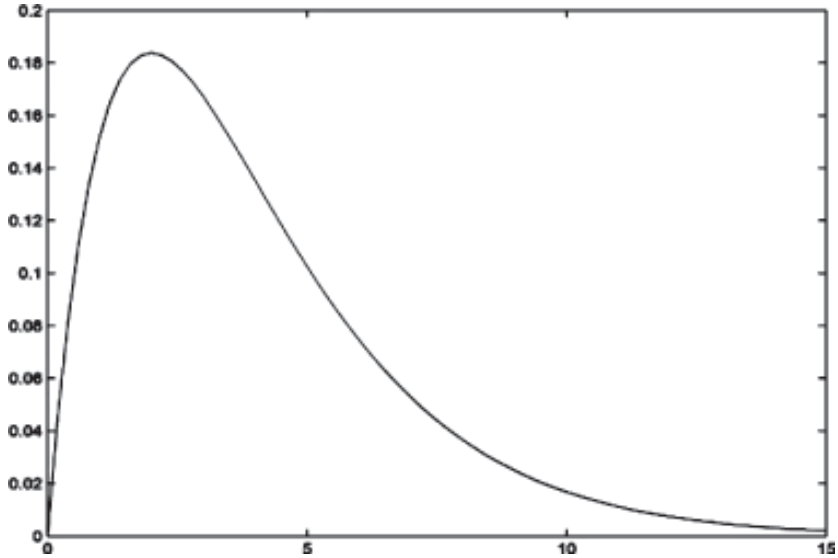

Figure-1

ANOVA Table

	A	*B*	*C*
	643	469	484
	655	427	456
	702	525	402
$\bar{X}$	666.67	473.67	447.33
S	31.18	49.17	41.68

Null Hypothesis :- $\mu_0 = \mu_1 = \mu_2$ there is no impact of attributes in increasing the productivity

Alternate Hypothesis :- $\mu_0 \neq \mu_1 \neq \mu_2$ there is a increase in productivity with satisfying attributes

We get a F = $\frac{MSTR}{MSE} = \frac{43024.78}{1709} = 25.17$ that is much larger than the critical values 5.14 so we reject the null hypothesis and accept the alternate one i.e. $\mu_0 \neq \mu_1 \neq \mu_2$ there is a increase in productivity with satisfying attributes the above table is an anova table .

4. Conclusion

In this paper we generalize the RST concept to find out two attributes namely socio economic condition and lack of education as the essential attributes for the economic development oftribal communities among the five attributes.

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Demographic Dividend and Problem of Unemployment: A Group Specific Approach

Aditya Kumar Patra*

Abstract

India is the second-most populous country in the world having a large chunk of working population with significant proportion of youth. The population of India is anticipated to be around 1.4 billion in 2016. The present trend of 'age structural transition' postulates the swelling of youth labour force in the working population in future. Consequently, the country will enter in to the demographic bonus phase by that time.

An attempt has been made in this write-up to examine the Labour Force Participation Rate and Worker Population Ratio & Unemployment Rate among youth in General Category vis-à-vis their Scheduled Counterparts.

Data from Various Rounds of National Sample Survey Organisation (NSSO) and Fifth Annual Employment and Unemployment Survey conducted by Labour Bureau has been used towards this end.

Empirical evidence shows that with respect to Labour Force Participation Rate (LFPR) and Worker Population Ratio (WPR) ST Population are ahead of SCs, OBCs and General Category youths, however, regarding Unemployment Rate General Category scored high value followed by SCs, OBCs & STs. The situation is not much difference whether youths are residing in rural or in urban area. But sex is an important determinant in each respect, male adult members are scored high value than their female counterparts with respect to LFPR & WPR, but the position is just opposite with respect to Unemployment Rate.

1. The Problem

The world is home to 1.8 billion young people in the age group of 10 to 24 years and the youth population is growing faster in the poorest nations. This is the direct outcome of the 'demographic transition' - a shift from high fertility and mortality to low fertility and mortality

* *Reader, Department of Economics, North Orissa University, Sriram Chandra Vihar, Takatpur, Baripada – 757003, E-Mail: akpatra2009@gmail.com*

stage. During the early stages of demographic transition, mortality rates among children and fertility rate of women fall, as a result of which children are more likely to survive into productive adulthood such that the share of working age populations increases. Fertility declines are potent drivers of economically consequential changes in the age structure of the population. (Bloom et al, 2014).

The crucial moment in the demographic transition is reached when the labour force grows more rapidly than the population dependent on it, thereby freeing up resources for investment and economic development. Thus increase in the working age ratio confers a 'demographic dividend'. The demographic dividend is the economic growth potential that results from shift in a population's age structure, mainly when the share of the working age population (15 to 64 years) is larger that of their non-working counterparts. When there are fewer people to support, a country has an opportunity for rapid economic growth provided the right socio-economic policies and investments are in place (Lee & Mason, 2006). Proper utilisation of the youth needs adequate investment in their education, health etc. so that new economic opportunities can be created for them (Gribble & Bremour, 2012).

As per the projection of National Commission on Population (NCP), the total population of India would be 1400 million in 2026, out of which the youth population would be 20% i.e., 280 million. The growth rate of youth population is faster compared to any other age group. Youth unemployment is an important aspect of 'national unemployment problem' (Visaria, 1998). Growth rate of labour force has been higher than that of the population and employment growth lags behind growth in Gross Domestic Product (GDP). While annual growth rate of labour force is 2.5%, that of employment is 2.3%. Unemployment in India is projected to increase from 17.7 million in 2016 to 17.8 million in 2017 and 18 million in 2018, and Unemployment rate will remain at 3.4% in 2017-18.

2. Objectives

Against this backdrop, an attempt has been made here to examine the Labour Force Participation Rate and Unemployment Rate among youths in General Castes vis-à-vis SCs and STs.

3. Methodology and Data

The study is based on secondary data. The National Sample Survey Organisation (NSSO), Census of India and Labour Bureau usually collect information on employment and unemployment. The procedure adopted for collecting information on employment and unemployment by the NSSO is scientific and systematic.

Annual employment and unemployment survey is another source of relevant data. This survey is conducted by the Labour Bureau. Five surveys have been conducted till date. The present analysis is based on data of the 68th Round of NSSO survey and 5th Annual Employment-Unemployment Survey. Principal usual status of unemployment has been considered for the purpose.

4. Findings

4.1 Labour Force Participation Rate (LFPR)

The labour force of an economy refers to its 'economically active' population. The labour force includes both the employed and unemployed persons.

$$\text{LFPR} = \frac{Number\ of\ Employed\ persons + Number\ of\ Unemployed\ persons}{Total\ Population} * 100$$

The estimates of LFPR at All-India level on the basis of usual status by social groups are presented in Table I.

Table -1: LFPR at All India level with Usual Status (As per 68th Round of NSSO, 2011-12)

	Rural	Urban	Total	Male	Female
Overall	40.6	36.7	39.5	55.6	22.5
ST	46.9	38.0	45.9	56.1	35.1
SC	41.1	37.7	40.4	55.3	24.7
OBC	39.8	36.7	38.9	55.1	22.1
Others	38.9	36.3	37.8	56.5	17.8

Source: NSSO, 68th Round

The Table reveals that at the all-India level, LFPR was 39.5% as per 68th round of NSSO survey. It was a bit higher in the rural areas (40.6%) as compared to the urban areas (36.7%). Further, it was 55.6% for males and 22.5% for females. So far as social groups are concerned, LFPR was the highest (45.9%) for STs, followed by SCs (40.4%), OBCs (38.9%) and for the group others (37.8%). Rural / urban or male / female differences remain the same irrespective of the social categories. However, male and female difference in LFPR is less pronounced among SCs & STs than their counterparts among OBCs and Others.

The LFPRs in usual status (ps) for different age groups of males and females and in both rural and urban areas are shown in Table II. In the age-group of 15-19 years, LFPR was 30.8%

for rural males and 11.3% for rural females, 24.3% for urban males and only 7.2 % for urban females. With increase in age of the labour, LFPR increases up to the age 39, but shows a declining trend thereafter. This fact is true for all caste categories of labour. LFPR was at its peak in the age bracket of 35-39 years, being 99.1% for rural males, 98.9% for urban males, 34.9% for rural females and 23.9% for urban females.

Table -2 : Age-Specific LFPR at All India Level (Usual Status)

	Rural		Urban	
Age Group	**Male**	**Female**	**Male**	**Female**
15-19	30.8	11.3	24.3	7.2
20-24	76.7	20.3	65.4	17.8
25-29	96.1	24.2	94.9	22.3
30-34	98.9	30.0	98.8	22.4
35-39	99.1	34.9	98.9	23.9
40-44	98.6	35.7	98.8	23.9
45-49	98.7	36.5	97.9	21.2
50-54	96.4	33.8	94.5	19.6
55-59	93.1	30.4	86.7	15.3

Source: NSSO, 68th Round

Table III presents LFPR (usual status) for males and females with respect to place of residence at all-India level for different rounds of NSSO survey. Compared to 55th round the 61st round survey depicts a upward trend of LFPR; however, there is a downswing in every count both in 66th and 68th rounds. Of course, the rate of decline in LFPR of rural males was marginal.

Table -3 : LFPR as per 55th - 68th Rounds of NSSO (Usual Status)

	Rural		Urban	
	Male	**Female**	**Male**	**Female**
55th (1999-2000)	540	302	542	147
61st (2004-2005)	555	333	570	178
66th (2009-2010)	556	265	559	146
68th (2011-2012)	553	253	503	155

4.2 Unemployment Rate

Unemployment rate is defined as the number of persons unemployed per 1000 persons in the labour force. It reflects the number of persons remaining unemployed for a long period during a reference period of 365 days. It provides information about the unutilised portion of the labour force. It is estimated as per the following:

$$UR = \frac{Number\ of\ Unemployed\ Persons}{Number\ of\ Employed\ Persons + Number\ of\ Unemployed\ Persons} * 100$$

The estimation of unemployment rate according to the usual status for different rounds of NSSO survey is presented in Table- IV, which shows that unemployment rate in the urban areas is higher than that in the rural areas. Likewise, the unemployment rate of females is more than that of males. Unemployment rate for other groups tops the list in every round of NSSO survey, followed by OBCs, SCs and STs in that order.

Table -4 : Unemployment Rate of Different Social Groups by Place of Residence (Usual Status)

NSSO Round		Male					Female				
		ST	SC	OBC	Other	Overall	ST	SC	OBC	Other	Overall
55th (1999-2000)	Rural	11	18	15	23	18	5	6	10	22	10
	Urban	44	51	40	48	46	28	31	54	77	54
61st (2004-2005)	Rural	11	17	15	20	16	4	14	19	29	18
	Urban	29	55	33	37	38	34	46	64	85	69
66th (2009-2010)	Rural	17	17	14	20	16	9	15	14	25	16
	Urban	44	31	28	27	28	43	42	62	62	57
68th (2011-2012)	Rural	13	20	17	18	17	11	14	17	24	17
	Urban	34	32	25	34	30	48	45	47	63	52
5th AS, 2015	Rural	21	28	32	31	29	24	40	52	66	47
	Urban	30	35	30	28	30	95	97	107	120	109

Source: NSSO 55th, 61st, 66th and 68th Rounds

5. Conclusion

The study shows that Labour Force Participation Rate (LFPR) is the highest among the ST, followed by SC, OBC and general category youth; expectedly unemployment rate is the

highest in the case of youth of the general category, followed by SCs, OBCs & STs. The situation is not much different whether youth are residing in rural or urban areas. But sex is an important determinant in each category. The corresponding figures for male adult members are higher than those for their female counterparts with respect to LFPR, but the opposte as regards unemployment rate.

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Table -5 : WPR at All-India level according to Usual Status for different Social Groups

	Rural	Urban	Total	Male	Female
Overall	399	355	386	544	219
ST	463	366	452	553	346
SC	404	364	395	540	242
OBC	391	356	382	540	216
Others	382	349	368	551	171

Table - 6 : Education level Specific Usual Status Worker Population Ratio for Persons of age 15 Year and above during 61st, 66th & 68th NSSO Rounds

	Rural						Urban					
	Male			Female			Male			Female		
	61st	66th	68th	61st	66th	68th	61st	66th	68th	61st	66th	68th
Not Literate	892	874	880	550	432	418	831	816	832	304	231	240
Illeterate & Upper Primary	895	900	892	449	384	361	855	844	847	234	206	223
Middle Level	802	784	770	371	294	276	760	780	765	161	154	158
Secondary Level	732	697	668	305	222	222	673	667	651	123	97	110
Higher Secondary	709	634	618	252	183	176	608	576	583	129	94	108
Diploma / Certificate	821	730	748	523	339	408	798	730	691	486	393	344
Graduate and above	851	793	781	345	297	297	795	788	790	290	259	279

Table -7: Number of Persons Unemployed per 1000 Persons According to Usual Status for Different Social Groups by Place of Residence during 2000-15

Rural

NSSO Round	Male					Female				
	ST	SC	OBC	Other	Overall	ST	SC	OBC	Other	Overall
55th (1999-2000)	6	10	8	12	10	2	2	3	5	3
61st (2004-2005)	6	9	8	11	9	2	5	6	8	6
66th (2009-2010)	10	10	7	11	9	3	4	4	5	4
68th (2011-2012)	7	11	9	10	10	4	4	4	5	4
5th AS, 2015	17	22	25	24	23	11	14	16	16	15

Urban

NSSO Round	Male					Female				
	ST	SC	OBC	Other	Overall	ST	SC	OBC	Other	Overall
55th (1999-2000)	22	27	22	26	25	6	6	9	9	8
61st (2004-2005)	16	31	19	21	22	9	10	13	13	12
66th (2009-2010)	24	17	15	15	16	9	8	10	7	8
68th (2011-2012)	18	18	14	19	17	10	8	7	9	8
5th AS, 2015	21	25	21	19	21	19	21	19	17	18

Forest Policy and Tribal Livelihood- with Special Reference to Koraput District

Anup Kumar Mohanty*

1. Background

The issue of forest dependent people, particularly the tribals is of crucial importance considering that forest covers over 23% of the country's geographical area. The forest dwelling tribals are the poorest among the poor. Their poverty reflects a history of systematic marginalisation with the state customarily expropriating forest land and resources overlooking their user rights. This process began in the late nineteenth century during the colonial rule and continued after independence under the democratically elected governments, which also did not take appropriate action to resolve the issues.

Forest occupies central position in the tribal culture and economy. The tribal way of life is very much associated with forest right from birth to death. The tribals live in harmony with nature and worship forest as 'Mother Goddess'. They are greatly dependent on forest for their food, livelihood, shelter, instruments, medicines and even clothing in some cases. Thus the tribals have a symbiotic relationship with the forest. These people are also known as 'Banyajati', 'Banabasi' because of their intimate relationship with forest.

The tribal held control over land, forest and other resources and governed themselves in terms of their own laws, traditions and customs. Colonial rule brought tribes and non-tribes under one single political and administrative structure through war, conquest and annexation. This was followed by introduction of new and uniform civil and criminal laws as well as setting up of an administrative structure that were alien to the tribal tradition and ethos. All these developments led to large scale alienation of land from tribes to non tribes through fraud, deceit, mortgage etc. (Virginius Xaxa, 2014)

There are 62 major and minor tribes including 13 Primitive Tribal Groups (PTGs) in Odisha. Scheduled Tribes (STs) constitute 22.80% of the total population of the state and schedule areas constitutes 44.70% of its total geographical area (Census 2011). Almost all the tribes

* *Senior Faculty, Department of Economics, Semiliguda College, Semiliguda, Email: anup1967@gmail.com*

of the state, irrespective of their place of habitation have some common identity like geographical and social isolation, dependence on forest, very low per capita income and illiteracy. Tribes (50.3% of district population) form an integral part of Koraput district and 84% of its population belong to BPL households. The main tribes found in the district are Kandha, Paraja, Gond, Koya, Bhatara and Gadaba.

The central as well as state government has been making budgetary provisions under various schemes for development of the tribes in the state. Various constitutional protection measures have also been pronounced to safeguard their interest. But, there has been a steady increase in BPL tribal population from 71.26% in 1993-1994 to 73.93% in 1999-2000 and 75.6% in 2004-05.

Over the years, there has been large scale deforestation in various parts of the country and Koraput district is no exception to it. During the last six decades, forest cover in Koraput district fell sharp and its forest coverage is estimated at about 21.34 % of its total geographical area, the lowest compared to other three districts of undivided Koraput. There are various reasons for decline in forest cover. The tribals adopt large scale shifting or *Podu* cultivation. Under this system of cultivation, the tribals clear the hills for cultivation by burning resulting in large scale destruction of forests. It is not always correct to blame the tribal people for destruction of forest. The timber mafias in connivance with the forest department officers people also loot the forest. The government also gives clearance to various mining projects, construction of dams, railway tracks, roads etc in the name of developmental activities for public purposes which also leads to indiscriminate felling of trees.

The benefits of the development projects did not accrue to the tribal people; rather tribal people were deprived of their livelihood without any alternative avenues of employment and food security. This has been so even though India pursued a socialistic pattern of development. (VirginiusXaxa, 2012)

The major part of the present Koraput district was isolated from the plains due to poor communication facilities. Outsiders never penetrated into it due to steep hills, fear of malaria and dense forest. The process of road construction started only after 1863 when Madras government took over administration of Jeypore estate. At the time of independence, about 70% of Koraput district (undivided) was covered by forests. The whole forest range at one point of time was under shifting cultivation. Since 1891, management of forest resources in the district was governed under the Madras Forest Act, which came to be known as Jeypore Forest Rules. A number of specific regulations were framed under the rule. With the abolition of Zamindari system in 1952, the Government of Odisha took over the management of forests and separate rules such as Waste Land Rules and Koraput Reserved Land Hunting and Shooting Rules were farmed. Under Koraput

Forest Rules, forest area was divided into three categories, namely, reserve forest protected and unreserved forest. Protected forest was conserved solely for the use of villagers in the vicinity of forest. Nevertheless, no right were given to the villagers with regard to forest management. (Amita Shah, 2010)

2. Forest Policies

History of the centralised control of forest can be traced back to the Forest Act, 1864 which empowered the colonial government to declare any forest land as government forest. The Forest Act, 1878 classified forest into protected forest, reserve forest and village forest. The National Forest Policy, 1894 regulated the rights and privileges of forest users. The Land Acquisition Act, 1894 also came into force which permitted compulsory acquisition of land for a public purpose. The Forest Act, 1927 framed laws to deprive forest dwellers of their user rights to forest resources.

In the post-colonial period, the government reinforced centralised control of forests with its National Forest Policy, 1952, which focussed on protecting forest resources while commercially exploiting Minor Forest Produces (MFPs). The Forest Conservation Act, 1980 placed all the forests under the central government. It also continued with all colonial land acquisition laws for public good in the name of development. The Wild Life Protection Act, 1972 (with an amendment in 1991) severely restricted the rights of forest dwellers in wildlife sanctuaries and curtailed their rights in National Parks. Under the banner of scientific management of forests, the intended objective of this policy formulation was to maximise profits, encourage conservation and discourage forest dwellers from exploiting forest resources. The formal and legal appropriation and enclosure of forests inevitably led to 'criminalisation' of normal livelihood activities of millions of forest dependent people, conferring on them the legal status of 'encroachers'.

Government resolution Participatory Forest Management, 1990 emphasized the need for people's participation in natural forest management. The policy document affirmed that local communities should be motivated to identify themselves with development and protection of forests. In the context of Odisha, the government has been implementing the scheme of Joint Forest Management since 1st August 1988. The scope of the scheme was further enlarged in 1990 to include protected forests along with reserve forests. In terms of the scheme, the villagers were made responsible for fire protection, prevention of illicit felling, theft of forest produces, encroachment of reserve and protected forest areas. In return, they were entitled to obtain their bonafide requirement of small timber, firewood and household consumption. As per the JFM scheme, Vana Samrakshana Samities (VSS) were formed in the forest villages.

Government of India introduced the Scheduled Tribe and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, commonly referred to as Forest Rights Act is considered a path breaking legislation that acknowledges the historical injustice meted out to India's forest dwellers, particularly tribals. The legislation was promulgated to recognise and vest forest rights and occupation of tribals and traditional forest dwellers on forest land. This Act also has provision for grant of community rights over the common property resources. The FRA designates the Gram Sabha as the authority to determine invidual and community rights within the limits of its jurisdictions. This Act also mention the provision of complete ownership rights of non-timber forest produces (NTFPs)/ minor forest produce (MFP), and management and protection rights over forest resources.

Implementation of the FRA in Odisha began without proper sensitisation of the implementing agencies and proper dissemination of its different aspects among stakeholders at the local level. This has led to confusion among the potential beneficiaries about the proper procedure for applying to get the benefits that they are entitled to and wrong or arbitrary interpretation of different provisions of the Act by the implementing agencies. It is likely to lead to the exclusion of many potential beneficiaries, given their low level of literacy, awareness, and ability to plead their case with all the supporting documents. There is also the likelihood of the implementing agencies rejecting many genuine claims on flimsy grounds. The forest bureaucracy has been controlling forests and forest products for a long time by restricting the rights of the forest dwellers. It could be tempting for the state to create obstacles in implementing different provisions of the Act, especially when it enjoys higher bargaining power vis-à-vis the poor tribals (Reddy et al, 2011)

As far as implementation of the FRA is concerned, 5,46,547 cases have been filed at the Gram Sabha by February 2014, out of which 5,35,546 are individual claims and 11,004 are community claims. The total number of claims so far settled are 3,29,380 out of which 3,26,250 are individual claims and the balance 3,131 are community claims. The extent of land so far distributed under FRA in the state is 6,67,567 acres, 5,16,403 acres as individual claims and 1,51,164acres as community claims. In Koraput district, 27,065 individual claims and 128 community claims were approved by the Gram Sabhas as on 31stDecember, 2013 and a total of 37,431 acres of land has been recorded in the name of the claimants. But the progress so far in the state as well as district is far from satisfactory. A large number of claim cases are either rejected on flimsy grounds like lack of evidence or not filed at all. It has been alleged that the forest and revenue officials are not very cooperative in the settlement of claims. The Gram Sabhas at the village level not function regularly due to lack of minimum required number of members (two third adult members of the village/ hamlet). The role of district administration and NGOs is important in facilitating the process of FRA claim settlement, given the socio-economic condition of the tribal and other forest dwellers.

All these policies and Acts are meant to protect the forest and wildlife at the cost of the forest dwellers, those who have been staying in these forests for generations together. It is also reported that many of the areas where no forest exists have also been declared as reserve forests or protected forests. All the hilly tracts of Odisha were declared as government forest and 40% as reserve forest without being surveyed. The role of the forest department cannot be accepted as a regulator, rather they should act as facilitator between the forest dwellers and government. Forest is not to be considered a source of revenue but a capital asset in which investment is to be made for the future generations.

The conflict of interest between the forest dwellers and forest department gave rise to large scale discontentment among the former dwellers and gave rise to formation of organisation like 'The Campaign for Survival and Dignity (CSD)' a federation of tribal and forest dwellers across 11 states in the country. The issue was also taken up by various social activists and NGOs, which forced the government to relook at the centralised forest policies. The Central Government set up a committee under the chairmanship of Prof B.K.Roy Burman to improve the relationship between the forest department and forest dwellers, particularly the tribals. The committee gave its report in the year 1982 which raised a vital issue on forest management system. It says "The crux of forest management lies in the need for integration of tribal and forest economies. The present atmosphere of confrontation between tribal and forester should be transferred into one of cooperation and partnership. The human factor has been neglected in forest management which has been oriented predominantly towards forest practices. There are three salient desiderata. In the first place, an identity–interest between the forest department and people (notably tribals) should be created. Secondly, the development programmes should aim at internalising its various components into the rural production system as a whole. Thirdly, the management should ensure a strong backward and forward linkages between forestry and other development sectors on the local, regional, state and national levels" (Roy Burman, 1982)

It is impossible to separate the tribals from the forest through various legislations. It is seen that where the tribal people are forcefully evicted and restricted from using the forest and forest produces, they have indiscriminately destroyed the forest. The government must also consider the alternative livelihood avenues for tribals. In Koraput district, the tribal people out migrate in search of livelihood. They need to be made partners in the process of conservation and protection of forests. They know better than the forest officials and non-tribals how to protect and preserve the forest out of their own experience. Formation of Vana Samrakshana Samiti (VSS) is a good step in this direction. There are 612 VSSs working in the district. But the forest department plays upper hand in the implementation of JFM (S.N.Tripathy, 2012).

3. Suggestions

To protect livelihoods of the forest dwellers, particularly tribals a few suggestions are in order. The traditional rights, concessions and privileges of tribals in respect of all forest produces, grazing and hunting should not be restricted. They should be allowed to freely visit their places of worship inside the forest. Forest laws and procedures need to be simplified so that tribals can comprehend them. Association of tribals should be ensured in large scale plantation programmes giving them right to usufruct. Value addition to forest products like broom making, leaf-plate making, tamarind processing, mat and rope making etc. should be encouraged in the household / cottage industries. Area based food processing industries should be established for value addition of the forest produces. Further,

1. The principle of least displacement should be mandatorily followed. An exhaustive social impact assessment study should be conducted before initiating a development project in the tribal areas.
2. Displacement of tribals should be made after mandatory consultation with the community as provided in the PESA act.
3. The definition of public purpose should be re-examined to assess how displacement of tribals would benefit that community.

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Trends and Determinants of Child Malnutrition in the Tribal Belt of Odisha

Barsha Mohanty*

Abstract

This paper analyses the status and trends in child malnutrition levels among the tribal dominated districts of Odisha on the basis of secondary data collected from National Family Health Survey Report IV (2015-16). A comparative analysis made between Tribal districts and the other districts brings out widespread differences in nutritional status in major indicators affecting malnutrition levels and reveals that tribal districts are under larger threat of malnutrition crisis. The study clearly finds that there are multiplicities of factors other than poverty levels that have strong impact in influencing child nourishment levels in the tribal dominated districts. The Sanitation and Hygiene coverage is found to be persistently low in the tribal districts as compared to the other districts. Also, the State needs to pay attention to reduce the current anaemia levels among pregnant women and children within these high burden districts. Rural regions are found to be under severe threats of malnutrition and remain backward in respect of most of the socio economic indicators likely to affect malnutrition.

Keywords: *Malnutrition, Improved sanitation, Anaemia.*

1. The Problem

About 32.6% of the state's population lie below poverty line (Planning Commission, 2011-12) as a consequence of which, ensuring food and nutrition security to all is a herculean task. Odisha is home to 34.1% stunted, 20.4% wasted and 34.4% underweight children below five years of age (National Family Health Survey Round IV, 2015-16). The infant mortality and under five mortality rates are respectively 40% & 49%. Only 54.9% of children between 6-8 months receive solid or semi-solid food and breast milk, while only 8.9% of 6-23 months old children receive adequate diet. Anaemia rates among women and children are on the

* *Researcher, Odisha Budget Accountability Centre, Centre for Youth and Social Development, Bhubaneswar.*

higher side indicating severity of iron and micro-nutrient deficiency in the state. About 51% of women in the age group of 15-49 years, 47.6% of pregnant women and 44.6% children between 6-59 months suffer from anaemia. The State has made considerable progress in reducing under nourishment, under five mortality, infant mortality and maternal mortality as well as improving immunization & other health indicators in the recent years, but the situation has not changed much in tribal dominated districts of Mayurbhanj, Malkangiri , Rayagada, Nawarangapur, Gajapati, Kandhamal, Sundargarh and Koraput. Malnutrition is very high amongst the socially disadvantaged groups, especially Scheduled Tribes (STs). The reported deaths of tribal children is a serious challenge to nutrition security in the state.

2. Review of Literature

"Good Nutrition is a vital requirement for both cognitive and physical development of children. It has economic benefits as well since a well nourished population is more productive" (World Health Organisation, 1995). Child malnutrition is not only associated with their increased mortality and morbidity, but also reduces development of cognitive skills, negatively affects productivity and increases the likelihood of developing chronic diseases (Menon et al, 2009).

In order to measure child malnutrition around the globe, WHO Growth Standard (2005-06) has adopted a prescriptive approach using anthropometric indices, describing criteria of child malnutrition. According to this, the three standard indices of physical growth capturing the nutritional status of children are: height-for-age (stunting), weight-for-height (wasting) and weight-for-age (underweight). Each of the three nutritional status indicators has been expressed in standard deviation units (Z-scores) from the median of the reference population.

According to the London School of Hygiene and Tropical Medicine (2009), malnutrition is defined as a group of conditions among children and women such as poor quality or insufficient quantity of nutrient intake, absorption or utilization. There are two major types of malnutrition: Protein-energy malnutrition resulting from deficiencies in any or all nutrients and micronutrient deficiency diseases resulting from a deficiency of specific micronutrients. The Composite Index of Anthropometric Failure (CIAF) was considerably higher (about 59.90percent) than any of these indicators (Nandy et al 2005).

Evers and McIntosh (1977, argued that 'malnutrition is associated with a cluster of related often coexistent factors that together constitute what may be termed the 'Poverty Syndrome'. The major attributes are: (1) income level that are inadequate to meet basic needs like food, clothing and shelter; (2) diets that are quantitatively and qualitatively

deficient; (3) poor access to safe drinking water and poor sanitation; (4) poor access to healthcare, and; (5) large family size and high level of female illiteracy

Sethuraman and Duvvury (2007), found that child under nutrition is due to lack of urbanization, female illiteracy, lack of access to healthcare, absence of safe drinking water and sanitation and low birth weight. They have examined the social determinants and consequences of malnutrition. Food insufficiency has been highlighted to be a major cause of food insecurity leading to chronic problems of malnutrition in adults as well as children

Radhakrishna and Ravi (2004) have analysed the trends in malnutrition in India and showed that improvement in nutritional status has not kept pace with reduction in poverty and current level of malnutrition was unacceptably high. They found that poorer states such as Madhya Pradesh, Bihar and Odisha showed the worst performance. These states were found to have higher proportions of disadvantaged groups like Scheduled Castes (SCs) and Scheduled Tribes (STs). Pathy (2003) in a study in the Khallikote block of Odisha found that more than 60% of children below 6 months of age and more than 65% above 6 months and below 12 months of age were malnourished. Studies conducted by the Regional Medical Research Centre (RMRC), Bhubaneswar on the tribals of Mayurbhanj and Sundargarh found that malnutrition among the primitive tribes was as high as 68%. In a study conducted by M.S. Swaminathan Foundation (2002), found that higher level of malnutrition is concentrated among the tribal dominated districts than the other districts in Odisha.

3. Objectives of the Study

The objectives of the study are to analyse:

- the status of child malnutrition level across tribal districts of Odisha.
- the present situation of some basic socio economic indicators likely to affect nutrition status of children below five years of age.
- the effect of some of the important nutrition security programmes implemented in the state and make suggestions for improvement in their working.

4. Methodology and Sources of Data

The entire analysis is based on secondary data. The sources of data are National Family Health Survey-Round III (2005-06) and IV (2015–16), International Institute for Population Sciences 2017 and Rapid Survey on Children (RSoC 2013–14) Ministry of Women and Child Development, 2015. NFHS is a large-scale, multi-round survey conducted in a representative sample of households throughout India. Four rounds of the survey have been conducted since the first survey in 1992-93. According to Census 2011, Mayurbhanj (58.72%), Malkangiri

(57.83%), Rayagada (55.99%), Nawarangapur (55.79%), Gajapati (54.29%), Kandhamal (53.58%) Sundargarh (50.75%) and Koraput (50.56%) are considered to be the eight most tribal dominated districts in Odisha.

5. Child Malnutrition in the Tribal Districts of Odisha

(a) Trend of Child Malnutrition Levels in Odisha (1992-2016)

Odisha has been showing considerable progress in health indicators and decline in undernourishment level during the last few years (Table 1). The percentage of stunted and underweight children declined respectively from 45% to 34.1% and from 40.7% to 34.4%. This is a welcome trend. But, child wasting, which is an indicator of long-run their malnutrition has remained stagnant over the period and is a matter of concern for the state. The percentage of wasted children has increased from 19.6% to 20.4% during the last decade.

Table -1: Trend of Child Malnutrition in Odisha(1992-2016)

(%)

Indicators	NFHS I (1992-93)	NFHS II (1998-99)	NFHS III (2005 -06)	NFHS IV (2015-16)
Children who are stunted (height-for-age) (%)	48.2 (0- 4 yrs)	49.1 (0-3 yrs)	45 (0-5yrs)	34.1 (0-5yrs)
Children who are wasted (weight-for-height) (%)	21.3 (0- 4 yrs)	29.7 (0-3 yrs)	19.6 (0-5yrs)	20.4 (0-5yrs)
Children under 5 years who are underweight (weight-for-age) (%)	53 (0- 4 yrs)	50.3 (0-3 yrs)	40.7 (0-5yrs)	34.4 (0-5yrs)

Source: NFHS rounds I, II, III, IV

(b) Inter-District Analysis of Child Malnutrition in Odisha

Table 2 gives a detail of nutritional status of children across all thirty districts of the state for the year 2015-16. The districts with high child malnutrition are Balangir, Kendujhar, Malkangiri, Nabarangpur, Rayagada, Sundargarh, Subarnapur, Sambalpur, Koraput and Mayurbhanj, mostly tribal dominated. The trend also triggers the need for getting into the real issues of large-scale undernourishment found mostly in western and southern Odisha ASHAs, Anganwadi Centres, maternity benefit schemes, nutrition sensitive schemes, nutrition specific schemes are currently being implemented by the state government.

The Table shows the following:

- The proportion of malnourished children is less in the coastal districts like Jagatsinghpur, Cuttack, Puri, Khordha, Ganjam and Kendrapada.
- The five highest burden districts with stunted children are Balangir, Kendujhar, Malkangiri, Subarnapur and Nabarangpur.
- Five districts having highest level of wasting are Malkangiri, Sundargarh, Koraput, Nabarangpur and Sambalpur.
- Sundargarh and Sambalpur districts have high percentages of underweight children.

It is evident that the tribal dominated districts are backward and threatened with high concentration of mal-nutrition.

Table -2: Child Malnutrition Across Districts of Odisha (2015-2016)

Nation/State/ District	Under 5 stunted children (%)	Under 5 wasted children (%)	Underweight wasted children (%)
India	38.40	21.00	35.70
Odisha	34.10	20.40	34.40
Anugul	31.80	21.80	35.30
Balangir	44.40*	26.10	44.70*
Balasore	33.20	18.00	33.70
Bargarh	39.10	24.20	39.00
Boudh	42.20*	22.50*	43.50*
Bhadrak	34.90	15.30	28.20
Cuttack	15.30	9.10	17.10
Deogarh	33.40	19.90	37.50
Dhenkanal	26.10	19.00	29.20
Gajapati	32.50	18.40	32.10
Ganjam	28.90	16.40	21.30
Jagatsinghpur	19.50	12.60	16.50

Jajapur	30.30	16.50	30.00
Jharsuguda	34.90	24.80	36.50
Kalahandi	36.60	24.80	39.70
Kandhamal	38.40	23.10	43.10
Kendrapada	26.90	12.30	24.10
Kendujhar	44.60*	19.00	44.30*
Khordha	24.70	13.80	20.30
Koraput	40.30*	28.50*	44.40*
Malkangiri	45.70*	32.50*	51.80*
Mayurbhanj	43.50*	17.20*	43.80*
Nabarangpur	45.80*	36.00*	51.00*
Nayagarh	28.00	17.50	25.40
Nuapada	37.60	26.40	40.00
Puri	16.10	12.10	17.20
Rayagada	43.50*	23.10	42.40
Sambalpur	40.20*	28.60*	45.30*
Subarnapur	47.50*	22.30*	43.00*
Sundargarh	37.20	31.40*	44.20*

*Source: National Family Health Survey Round IV (2015-16). The * marked figures depict highest burden districts.*

C) Trend Analysis of Child Mortality Rates across Castes

Child mortality has always been a matter of concern for the state, particularly after the Nagada case. Odisha has performed remarkably well in reducing IMR to 40 in 2015-16, but there variance in mortality rates among children of various caste categories. (Odisha Economic Survey, 2017-18). This is clearly depicted in Table-3. Higher burden of neonatal mortality, IMR, child mortality and under 5 mortality is seen among the STs.

Table -3 : Trend of Child Mortality Across Castes, Odisha (%)

Background	Neo natal mortality		IMR		Child Mortality		Under five mortality	
	2005-06	2015-16	2005-06	2015-16	2005-06	2015-16	2005-06	2015-16
SC	46.4	28.3	73.7	37.0	19.5	9.0	91.8	45.7
ST	54.0	35.5	78.7	51.8	62.5	14.6	136.3	65.6
OBC	52.5	26.2	66.0	36.7	18.8	6.4	83.5	42.9
Other	31.7	21.6	53.1	31.5	11.7	3.8	64.2	35.2

Source: NFHS 3rd and 4th Rounds

Table-4 presents the trend in nutritional status of children (aged 0-59 months) among different castes in Odisha. A similar pattern is observed over the years. Prevalence of stunting, wasting and underweight children is every high in case of the ST children compared to other children. Among the ST children, 45.5% are stunted, 27.8% wasted and 48.5% underweight which are higher than the corresponding figures for children of all other castes. It is worrying that exhibits increase over time the percentage of wasted children of all caste categories.

Table -4 Trend in Nutritional Status of Under-Five Children across castes, Odisha (%)

Category	Stunted		Wasted		Underweight	
	2005-06	**2015-16**	**2005-06**	**2015-16**	**2005-06**	**2015-16**
SC	49.7	37.3	19.7	20.1	44.4	35.3
ST	**57.2**	**45.5**	**27.6**	**27.8**	**54.4**	**48.5**
OBC	40.8	29.9	17.8	18.6	38.1	29.7
Others	33.6	21	12.8	12.8	26.4	20.6

Source: National Family Health Survey, 3rd and 4th rounds.

(D) Status of Basic Indicators Affecting Child Malnutrition

Other than poverty level, there are many factors that have direct bearing on nutrition level of children. A mother's education level, household size, ante-natal care, mothers anaemia level and employment status can also impact the health and nutrition of a new born baby (Radhakrishna and Ravi, 2004). Besides poverty, the nutritional status of a child depends on the age at which a mother bears her first child and how early a child is breast-fed (Nair,

2007). Therefore, these indicators are crucial determinants of the nutrition levels among children. The study attempts to examine district specific status of some of these determinants. For the purpose, five best performing and five worst performing districts with respect to all the indicators have been considered (Table 5).

A mother is the principal provider of primary care, adequate nutrition and health facility to a child up to the age of 6 years. The type of care that a mother will provide her child depends strongly on her level of understanding and knowledge of basic nutrition and health care services. Therefore, the literacy rate of women is considered important in influencing a child's malnourishment level.

A household can reduce morbidity in the family by using improved sanitation facilities. The Body Mass Index (BMI) or quetelet index is a value derived from the weight and height of an individual. The BMI is defined as the body mass divided by the square of the body height, and is universally expressed in units of kg/m^2, (body mass in kilograms and height in metres). BMI is a good indicator of women's health, important for child's health. BMI of women aged 19-49 years reflects their iron and haemoglobin deficiency in reproductive age, which is likely to affect child nutrition status.

Table -5: Socio Economic Indicators Affecting Malnutrition in Odisha

Indicators	Odisha	Top 5 best performing districts	Bottom 5 worst performing districts
Women literacy	67.40	Jagatsinghpur (85.8), Cuttack (83.6), Puri (82.9), Kendrapada(81.1) Khordha(80.4)	Malkangiri (34.8), Rayagada (35.3), Koraput (39.7), Nabarangpur (41.8), Gajapati (45)
Households using improved sanitation facility	29.4	Khordha(47), Ganjam (40.7), Jharsuguda (40.3), Puri (40.1), Cuttack (38.8)	Kalahandi (14.1), Nabarangpur (16.1), Kandhamal (16.5), Malkangiri (16.7), Mayurbhanj (18.1)
Exclusively breastfed children under the age of 6 months	65.6	Mayurbhanj (81.4), Kandhamal (81.4), Sambalpur (81.2), Rayagada (70.2), Koraput (70.2)	Boudh (47.2), Nuapada (49.2), Gajapati (52.2), Balangir (53.4), Jharsuguda (55.7)
All women aged 15-49 years who are anaemic	51	Jagatsinghpur (35.8), Cuttack (37.8), Dhenkanal (39.4), Nayagarh (39.8), Kendrapada(42.3)	Sambalpur (73), Nabarangpur (71.5), Sundargarh (71.4), Malkangiri (71.3), Koraput (65.3)

Pregnant women aged 15-49 years who are anaemic	47.6	Jajpur (11.1), Dhenkanal (25.8), Jagatsinghpur (27.5), Puri (32.1), Bhadrak(33.0)	Nabarangpur (73.8), Kalahandi (73.7), Malkangiri (71.9), Sambalpur (70.7), Koraput (70.3)
Children aged 6-59 months who are anaemic	44.6	Cuttack (18.9), Khordha (19.0), Bhadrak (22.7), Jagatsinghpur (23.4), Nayagarh (26.5)	Sundargarh (75.3), Malkangiri (72.2), Nabarangpur (71.9), Koraput (71.4), Sambalpur (70.5)
Women with BMI below normal	26.4	Khordha (15.4), Puri (15.5), Nayagarh (16.4), Jagatsinghpur (17.3), Cuttack (19.2)	Malkangiri (45.9), Nabarangpur (36.1), Koraput (34.5), Kalahandi (34.2), Rayagada (33.1)
Women who are overweight	16.5	Nuapada (5.8), Malkangiri (6.2), Nabarangpur (6.8), Kandhamal (8.2), Mayurbhanj (8.6)	Khordha (30.2), Cuttack (28.5), Jagatsinghpur (25.7), Puri (25.3), Nayagarh (22.8)

Source: National Family Health Survey-IV, 2015-16.

6. Constraints Faced At Implementation Level

Various schemes / programmes are being implemented by government to arrest child malnutrition. These schemes include ICDS, PDS, TPDS, supplementary nutrition programmes, Swachha Bharat Yojana etc. but there is much to be desired. These programmes face various constraints at planning and implementation stages. Not only budgetary provisions for these schemes are inadequate, but also a part of the budgetary allocation remains unspent by the year end. There is not adequate manpower to implement the schemes effectively. For example, despite policy decision, ICDS nutrition counseller-cum-additional workers have not been placed as yet in high burden districts. There is no strategic mechanism to converge nutrition specific and sensitive programmes of the state government.

Healthy sanitation facilities and sewerage systems play a pivotal role in achieving the target of open defecation free country by 2019 under Swachh Bharat Abhiyan. But it has been observed that sanitation gets priority over sewerage in the state budget. There is no distinct plan and programme to combat anaemia related issues within the state and across the high burden districts. The state has to acknowledge the fact that growing pace of anaemia level can have serious impact in widening the nutritional hazards.

7. Key Findings

- The trend of child malnutrition in Odisha during the last decade shows improvement from 45% stunted children to 34.1 % and, 40.7% underweight children to 34.4 %. But the percentage of children who are wasted remained almost unchanged.
- The neonatal, child, infant and under five mortality rates have declined substantially for all children, but still remain high among the ST children.
- Large concentration of child malnutrition is witnessed in districts like Malkangiri, Nabarangpur, Koraput, Kalahandi, Rayagada, Kendujhar, Balangir, Sundargarh, Sambalpur, Kandhamal, Gajapati which are mostly tribal dominated. Literacy rate among women is persistently low in these districts. The situation is much better in the coastal district of Odisha.
- A similar pattern is observed as regards sanitation. The five least Swachhya districts are tribal dominated.
- Child breast feeding practice data goes in favour of the tribal districts. More than 75% of the children are found to be exclusively breastfed.
- Anaemia level, be it of women, women in general, pregnant women or child, the concentration is too high (more than 70%) in the tribal dominated districts.

8. Conclusions

Even seven decades after planning, the country still struggles to attain food and nutrition security. Odisha too has a similar story. Tribals are most susceptible to acute malnutrition. Anaemia is still a serious problem in the state. Looking at the SDG goal 2 seeking zero hunger by 2030, the state needs to go a long way to eradicate all forms of hunger in line with SDG targets. The state needs to come up with a comprehensive state nutrition mission to address the emerging issues in health, food and nutrition, particularly of children, tribals and women. A nutrition agenda should mandatorily involve gram sabha and panchayats. Further, there is need for a "convergent strategy" of various nutrition specific and nutrition sensitive schemes operating in various departments.

Nutrition budgeting shall serve a broader perspective of tracking financial resource allocated for nutrition interventions and making the process transparent. There is need for a smart nutrition policy in the state along with a strong grievance redressal mechanism for effective implementation of nutrition specific and nutrition sensitive programmes currently being implemented by the state.

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Climate Change and Natural Resources Degradation Induced Livelihood Vulnerability in Koraput District

Jyoti Prakash Rath[1] and Damodar Jena[2]

1. Introduction

Climate change and natural resources degradation affect people's livelihoods, especially in rural areas. Moreover, changes in climate affect natural resources and biodiversity, though the opposite relationship cannot be discounted. In tribal dominated Koraput district, a significant share of population depend on natural resources and biodiversity though the nature and extent of their dependency has been changing over time. These changes are likely to put this section of population into vulnerable situation. The present paper establishes the above link with empirical support.

2. An Overview of Koraput District

Koraput is the 3rd largest district in terms of size and 15th in terms of population in the state of Odisha. Around 84% of its population live in rural areas. More than half (51%) of its population belong to Scheduled Tribe (ST) and 14% to Scheduled Caste (SC). The entire district comes under Scheduled-V area. The major tribes in the district include Desia Kondh, Paraja, Gadaba, Amantya, Bhatara, Koya and Dhurua. About one-fourth (23.72%) of the total area in the district is under tree cover (FSI 2017) around one % under very dense forest and more than 14% is open forest. It implies that the quality of forest in terms of its density of tree cover is not good.

The district is contiguous to the Eastern Ghats and characterised by scattered hill ranges with some plains and valleys lying in between along with elevation of plateaus ranging from 900 feet to 3000 feet. Main rivers flowing through Koraput are Kolab, Machkund, Indravati, Vansadhara and Nagabali. River Kolab alone provides around 50% of irrigation in the district.

[1] *Ph.D. Scholar, KIIT School of Rural Management (KSRM), KIIT Deemed to be University, Bhubaneswar. Email: 1481020@ksrm.ac.in*

[2] *KIIT School of Rural Management (KSRM), KIIT Deemed to be University, Bhubaneswar. Website: http://www.ksrm.ac.in; Email: damodarjena@ksrm.ac.in; Alt. Email: A damodarjena@gmail.com*

The net sown area of the district is about 31% of its total geographical area. About 4% the total geographical area of the district is under shifting cultivation (Government of Odisha, 2013-14). As agriculture in the district is mainly rainfed and meets the food requirement of the district population for about 4-6 months, people depend mostly on wage employment and forests for their livelihoods.

Floods, droughts, severe cyclone and price variations of agricultural products contributed significantly to the varying economic growth rates, mostly negative between 2004-05 and 2014-15 (Odisha Economic Survey 2014-15).

3. Climate Change and Natural Resources Degradation Scenario in Koraput

An erratic pattern in climatic factors such as rainfall, temperature and rainy days in the district is observed during the last six decades (Table 1).

Table -1: Trend of Climatic Factors in Koraput District, 1950- 2008

Period	Monthly Avg. Rainfall Trend Line R^2 value	Monthly Avg. Temp: Trend Line (R^2 value)	Monthly Avg. Rainy Days frequency Trend Line (R^2 value)
1950-59	0.113	0.024	0.196
1960-69	0.04	0.283	0.243
1970-79	0.176	0.111	0.077
1980-89	0.026	0.021	0.097
1990-99/2002	0.459	0.013	0.448
2000-08	0.481	NA	NA

Note: NA-Not Available.

Source: India Water Portal.

Soil erosion and land degradation in Kolab catchment area is a serious threat to agriculture based livelihoods. Koraput district in general and koraput sub-division in particular are highly vulnerable to soil erosion due to semiarid climate with high rainfall intensity during monsoon season and a sloping topography (Helmecke, 2009). Shifting cultivation has been a traditional practice in the district. Duration of shifting cultivation has significantly declined from 15–20 years cycle to 2-3 years cycle at present. In some areas shifting cultivation has changed into

settled cultivation. This has resulted in large-scale deforestation, soil and nutrient loss, and invasion by weeds and other species. The indigenous biodiversity has been affected to a large extent.

While certain areas are affected by shifting cultivation, forests in certain pockets are well-stocked, multi-storeyed and diverse. However, during the last few decades, there has been rapid increase in deforestation rate leading to large-scale deforestation of forests. The district had more than 65% of its total geographical area under forest cover in 1960, but it came down to less than 30% in 1990 and further to 23.72 % in 2017.

4. Literature Review

Intergovernmental Panel on Climate Change (IPCC, 2007) defines vulnerability to climate change as a composite of *exposure, sensitivity* and *adaptive capacity*. Globally vulnerability to climate change has been conceptualised through a range of disciplines. But in India, it is largely confined to disciplines like management of hazards, disasters and risks. A very few of the literature draw their concepts of vulnerability from the disciplines like poverty, sustainable livelihood, social protection, political economy and feminist studies *(Singh et al., 2016)*. *O'Brien et al. (2007)* view that a few studies consider vulnerability contextually. Vulnerability is inherent to the system (*Joakim et al. 2015*). Vulnerability to climate change should be seen through the lenses of the systems approach which recognises the role of multiple stressors that shape vulnerability. However, many studies in the Indian context ignore that perspective *(*O'Brien et al., 2004*;* Tschakert et al., 2013*;* Singh, 2014*)*.

The climate stresses and shocks fluctuate over space and time, and influence pattern of household vulnerability (Vogel and O'Brien, 2003). Climate change has been viewed as one of the most serious global issues and likely to cause sea-level rise, ocean acidification, and disturbance in ecosystems, *biodiversity and* water resources etc. (Gosling et al. 2011*)*.

Bosher et al. (2007) argues that there is differential vulnerability of different socio-economic groups to climate change in the same region and sector. Though some authors (Caxton et al. 2013; Basu, 2011; Banerjee, 2014) have considered and indexed community's perceptions on climate change, most of them have failed to qualify their findings.

Differential vulnerabilities of people in the same context have not been mapped out in many of the reviewed literatures. Impact of climate change on biodiversity dependent communities is an area which needs more attention empirically. Singh et al. (2016) noted that most of the vulnerability assessment studies were conducted in coastal areas and a very few in arid and semi-arid areas of India. There is a dearth of climate vulnerability assessment studies in non-coastal areas.

5. Objectives

In the context of the above, objectives of the study are as follows:

(1) to ascertain community's perception about climate change and natural resource degradation,

(2) to assess the impact of climate change and natural resource degradation on livelihoods of the community and

(3) to identify the most vulnerable groups to climate change and natural resource degradation.

6. Methodology and coverage of the study

The present paper is based on both secondary and primary information. Data relating to climate change such as rainfall, temperature and rainy days were collected from India Water Portal. Perceptions of community were captured from community members through Participatory Rural Appraisal (PRA), key informant discussion and Focus Group Discussion (FGD), interviews. The structured interview schedules were canvassed and verified with reliability test (Cronbach's alpha not less than 0.642).

The study was undertaken in four villages of Deomali at the highest peak of Odisha along *Kunduli Nala,* a major feeder channel of Kolab river. It is a mountainous area characterised by rainfed single crop, high soil erosion, sloppy land, high rainfall (1564 mm), high dependency on natural resources, predominantly tribal population, slash and burn (*podu)* cultivation and low literacy.

Purposive sampling method was followed to select 100 households (25 from each sample village), primarily dependent on agriculture and forest for their livelihoods.

7. Important findings

7.1 Major perceptions on climate change and natural resources degradation

Focus group discussion with farmers and women revealed that they perceived delayed monsoon, reduction in quantity of rainfall and number of rainy days, increased incidence of rain during harvest, increased temperature during kharif period, increased loss of top soil and declining flow of streams as the indicators of climate change and natural resources degradation over the last 30 years.

Table -2: Community Perception about Climate Change

(100 Respondents)

Climate Change & Natural Resources Degradation Perceptions of Community	Yes	No	Can't Say	Total
Delayed monsoon	89	3	8	100
Reduction in rainfall quantity	93	2	5	100
Reduction in no.of rainy days	94	2	4	100
Increased incidence of rain during harvest	97	1	2	100
Increased temperature during kharif	91	3	6	100
Increased loss of top soil	93	1	6	100
Declined streams' flow	94	1	5	100
Surface flow of streams gone down	97	1	2	100

Source: Interview.

More than 90% of respondents reported that rainfall during harvesting season had increased, surface flow of streams, rainfall quantity and rainy days went down in the last 5-10 years. They further pointed out that temperature and top soil loss during kharif season have increased.

7.2 Effects of climate change and natural resource degradation on farmers' livelihood

The impact of climate change on livelihoods of the farming community have been captured through FGDs in a ranking method. The related issues are : problem in farming decision, declining yield, crop wastage, increasing pest attack, declining land quality, immature fruiting, decrease in life saving irrigation, shrinking biodiversity and increasing fallowing.

Table-3: Impact of Climate Change on Agriculture and Biodiversity-based Livelihood.

Climatic & natural resources variability	Problem in farming decision	Declined yield	Crop wastage	Increased pest attack	Declined land quality	Immature fruiting	Decreased critical irrigation	Reduction in biodiversity services	Increased fallowing	Declined fodder availability
Delayed monsoon	***	*	NE	Can't say	Can't say	**	NE	Can't say	*	*
Reduction in rainfall quantity	NE	***	NE	Can't say	Can't say	**	*	**	NE	***
Reduction in no. of rainy days	NE	**	NE	Can't say	Can't say	**	*	*	NE	**
Increased incidence of rain during harvest	**	*	***	Can't say	Can't say	*	NE	Can't say	NE	Can't say
Increased temperature during kharif	NE	*	NE	***	Can't say	Can't say	*	Can't say	NE	Can't say
Increased loss of top soil	*	***		Can't say	***	Can't say	NE	***	***	***
Declined streams' flow	*	NE	NE	NE	NE	NE	***	**	**	*
Surface flow of streams gone down	*	NE	NE	NE	*	NE	***		**	NE

*Note: *** Significant effects, ** Moderate effects, * Less effects, NE- No effects*

Source: FGD

The most significant factors responsible for declining yield, as stated by the community members, were reduction in rainfall quantity, loss of top soil and decrease in number of rainy days affected crop yield moderately. Delayed monsoon and increased incidence of rain during harvest were reported to be affecting farming decisions. Due to increase in temperature during kharif and decrease in rainfall have caused increased pest attacks. More land have become fallow due to loss of top soil, decrease in flow of streams and fall in ground water level. The community attributed loss of top soil as the major factor behind loss of biodiversity.

7.3 Participatory vulnerability ranking

As mentioned earlier, vulnerability is a function of exposure, sensitivity and adaptive capability of the community. Exposure and sensitivity are directly proportional to vulnerability and adaptive capability of community is inversely proportional to it.

Vulnerability = f (Exposure, Sensitivity, Adaptive Capacity)

The villages were categorised into (i) most vulnerable group (ii) moderately vulnerable group and (iii) least vulnerable group to climate change and natural resource degradation on the basis of their exposure, sensitivity and adaptive capacity. There was no 'not vulnerable category' as all stated to be affected by natural resource degradation, of course, in varying degrees. The results of the field survey are presented in Table-4. It may be noted that being a sample study, the findings are qualified.

Table -4: Vulnerability Categories

Group Category	Households (No.)	%
Most Vulnerable Groups	23	23
Moderately Vulnerable Groups	62	62
Least Vulnerable Groups	15	15
Total	100	100

Source: PRA.

(i) Most vulnerable group: This group is characterised by higher livelihood dependency on surroundings and biodiversity, more land in hillocks, no access to formal credit, less than 2 acres of *patta* land, un-irrigated land account for more than 50% of landholding, inability to diversify cropping pattern, livestock rearing is a major occupation, and low participation in government programmes and nearby urban labour market. More members in the working age group reduces vulnerability of a family. None of the sample villages faced problem in accessing water for drinking and domestic purposes.

Due to degradation of natural resources, the surrounding biodiversity is severely affected and poses a threat to availability of fodder, thereby making the livestock dependent groups vulnerable to natural resources degradation.

***(ii)* Moderately vulnerable group :** The members in this group own relatively more land in plain areas have more than one livelihood option, access wage work under government programmes /nearby towns have more working members, are relatively less dependent on surrounding biodiversity, are capable of diversifying crops, have more irrigated land, and can access formal credit. Out of 100 sampled households, 62 families belong to this group.

***(iii)* Least vulnerable group:** Members of this groups are better placed than the other two groups in respect of each of the facilities described above. There are fifteen households in this group.

8. Conclusions

Climate change and natural resources degradation in a mountainous tribal setting, upset livelihoods of the natives and make them vulnerable. The range of exposure and sensitivity factors uniformly influences all. However, the adaptive capability varies across groups, thereby determining the extent of their vulnerability. It is observed from the study that more the dependency of livelihood on biodiversity and natural resources, more the vulnerability of people. Hence it is imperative to enhance adaptive capacity of communities by reducing their dependency on natural resources and biodiversity. It is also observed that access to irrigation, crop diversification and access to formal credit institutions are some of the measures to reduce livelihood vulnerability.

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Impact of MGNREGS on Employment Generation of Tribals in Odisha: A study in Patrapur Grampanchayat of Ganjam District

Dhanalaxmi Pattnaik[1] and Bhagabata Patro[2]

1. Introduction

Unemployment and poverty are rampant in India, particularly in rural areas. Odisha, occupies an important place among the states in the tribal map of the country. As per 2011 census, the State has 95.91 lakh (22.85% of its population) ST population. There are 62 tribal groups including 13 Particularly Vulnerable Tribal Groups (PVTGs). Most of the tribes in the State live in hilly forests of the Eastern Ghats at high attitude zones. The main sources of livelihood of the tribes are food gathering, hunting, shifting cultivation, basket weaving, collection of Non-Timber Forest Products (NTFPs), which include bamboo, timber, medicinal herbs like *Jhuna, Mahul, Lakha and Sal* leaves etc. In some districts, the tribal population is spread thinly and live along with non-tribal communities. Their traditional occupations vary from place to place depending on topography and availability of forests, land, water, etc. Some of the important tribes are Oran, Munda, Kharia, Kisan, Bhuyian and Gond.

In order to solve these problems and provide livelihood security to the rural unemployed, the National Rural Employment Guarantee Act (NREGA) was enacted in 2005-06. It is one of the biggest poverty alleviation and employment generation programme in the world. It was latter renamed as Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) w.e.f the 2nd October, 2009. The Act is a milestone in realising the right to work. It gives priority to creation of labor intensive assets for improvement of infrastructure in the village. The scheme is being implemented in Ganjam district of Odisha as in rest of the country. In the year 2012, a new set of guidelines was issued to expand scope of the work. Some of its major provisions relate to preparation of labor budget, strict time-schedules, improving social audits, reducing delay in payment of wages. The scheme entitles every adult member of rural households to 100 days of employment in a year locally provided they are willing to do unskilled manual work at the staturoy minimum wage. It is implemented through the Panchayati Raj Institutions (PRIs). Gram Panchyats issue job

1. *Senior Lecturer, K.M. Science College, Narendrapur(Ganjam)*

2. *Adjunct Professor, NULM, Mumbai*

cards and conduct social audit once in every six months. MGNREGS aims at helping the marginalised groups of the society like STs, SCs etc.

2. Need for the study

In the year 2013, a panel headed by the RBI Governor, Raghuram Rajan ranked Odisha as the most backward state in the country and the extent of poverty is not uniform across various social groups. Despite implementation of several policies and schemes by both the national and state governments, the tribal areas of Odisha have a higher incidence of poverty than the rest of the state. One of the main objectives of planning in the state is to enhance employment opportunities of the tribal people and raise their income level above the poverty line. Against this backdrop, it is imperative to study the extent to which MGNREGS has succeded in ensuring sutainable livelihoods of the tribals.

3. Review of Literature

Many studies have been carried out to assess gains of the tribals from MGNREGS programme by way of employment generation, wage distribution and asset creation at the village level . Some of these studies are mentioned below.

Didde and Muthaiyan (2013) have examined the extent to which NREGS has helped the tribals in terms of employment generation, asset creation and wage accruals in Budurvada village of Parvathipuram Mandal, Andhra Pradesh. The study concluded that not a single household in the village had worked for 100 days under the programme in the first three years of its inception. However, women employment constitutes more than 50% of NREGS workers. The authors have suggested that employment through NREGS should be provided regularly to check out-migration.

In a similar study Bebarta (2013) examined the provisions of MGNREGS and its impact on the lives of tribal people from the points of view of socio-economic conditions, livelihood security, asset creation, out migration and social empowerment. The study is based on primary survey of randomly sampled 50 tribal households in Rayagada block of Gajapati district. The study revealed that the respondents were not aware of most of the provisions under MGNREGA, but majority of them admitted that NREGS work have improved communication facilities in the locality.

Nayak (2013) has brought out the loopholes in MGNRES and its impact on tribal women of Rajgangpur block in Odisha. The author has pointed out that tribal women were not involved in the making of plans, lacked in awareness about the programme, non-availability of crèche facilities at work sites, harassment at the workplace, non-issue of job cards to women etc.

4. Objective of the Study

The specific objective of the study is to focus on employment generation for tribals under MGNREGS.

5. Methodology

The study is qualitative in nature and predominantly based on secondary data collected from the Lead Bank of Ganjam district, DRDA office, Chatrapur, journals, government reports, official website of MGNREGA etc. The reference period for the analysis is from 2012-13 to 30 November, 2017. Simple statistical tools like averages and percentages were used for analytical purpose.

Of course, personal interviews were conducted with tribal beneficiaries under MGNREGS in the study area to know their problems. Primary survey was conducted in Patrapur Grampanchayat of Patrapur block of Ganjam district. It is one of the large villages of the district, having more than 15000 population. The Soura tribe of the study area collect NTFPs from forest for sale to the local traders. Tamarind is one of the major produces in this block. It was covered in the first phase of NREGA. Out of 3080 works sanctioned by the Government till date, 3056 works (99%) have been completed.

6.Working of MGNREGS

6.1 In Ganjam District

The district had the privilege of being included under the scheme from its very inception in 2006. Year-wise employment scenario of the tribes under MGNREGS in Ganjam district is presented in the following table.

Table No -1: Employment of Tribals under MGNREGS in Ganjam District(2012-2017)

Financial Year	HHs demanded employment	HHs provided employment	Col.3 as a percentage of col.2
2012-13	127288	39937	31.38
2013-14	129600	40789	31.47
2014-15	131704	37547	28.50
2015-16	380247	49665	13.06
2016-17	134550	53665	39.88
2017-18	132386	44697	33.76

Source: www.http://nrega.orissa.gov.in

It is revealed from the table that tribal households were provided at the maximum 39.88% employment under the scheme in 2017-18. It indicates that tribal communities in Ganjam district are not motivated much towards the schemes.

6.2 In the Study Area

6.2.1 Caste Composition of MGNREGS Workers

Table 2 indicates the caste composition of the NREGS workers in the study area.

Table No -2: Caste Composition of MGNREGS Workers in Patrpur GP (2012-2017)

Financial Year	Total number of workers	SCs (No.)	STs (No.)	Other (No.)
2012-13	477 (100)	133 (27.88)	34 (7.13)	310 (64.99)
2013-14	298 (100)	83 (27.85)	1 (0.34)	214 (71.81)
2014-15	308 (100)	74 (24.03)	9 (2.92)	225 (73.05)
2015-16	507 (100)	138 (27.22)	16 (3.16)	353 (69.62)
2016-17	469 (100)	143 (30.49)	7 (1.49)	319 (68.02)
2017-18	320 (100)	126 (39.38)	3 (0.93)	191 (59.69)

Source: www.http://nrega.orissa.gov.in

The table shows that out of total 477 NREGS workers, 28 % were SCs, 7% were STs and the majority were from other castes during 2012-13. The scenario did not change much in the subsequent years. Most of the workers were from other castes, followed by SCs and STs. There were a few ST workers.

6.2.2 Person Days of Employment per Household under MGNREGS

Employment generation is one of the main objectives of NREGS programme. The success of the programme can be assessed by estimating the level of employment per rural household. The following table indicates the person days of employment in the study area.

Table No -3: Person Days of Employment per SC/ST Households in Patrapur GP (2012- 2017)

Financial Year	No of households employed	No of person days employed	Person days of per employment household
2012-13	167	5763	34.5
2013-14	84	2705	32.2
2014-15	83	1822	21.95
2015-16	154	4055	26.33
2016-17	150	3790	25.27
2017-18	129	4411	34.19

Source: www.http://nrega.orissa.gov.in

During the study period the average number of person days of employment provided per tribal household (29.07%) is unsatisfactory - it is much less than the guaranteed 100 days of the employment in a year. The vulnerable sections of the society have not been able to get full benefit from the scheme.

6.2.3 Employment Status of MGNREGS Workers

Under the scheme, demand for employment arises when a job card is applied for. GP is to provide employment to the applicant within 15 days of application. The following table highlights demand for and supply of employment of tribals in the Grampanchayat.

Table No -4: Year-wise Employment Status of SCs/STs in Patrapur G.P (2012-17).

Financial Year	Employment demanded by SC/ST HHs. (No.)	Employment provided to SC/ST HHs (No.)	SC/ST HHs with 100 days employment	Col. 3 as a percentage of col. 2
2012-13	417	167	5	40.04
2013-14	418	84	0	20.09
2014-15	420	83	3	19.70
2015-16	428	154	0	35.98
2016-17	430	150	1	34.88
2017-18	420	129	0	20.70

Source: www.http://nrega.orissa.gov.in

During 2012-13, 167 SC/ST households were provided employment under the scheme, but the demand gradually declined up to 2014-15, increased thereafter only to fall again in 2017-18. It is observed that there is fluctuation on the supply side. The percentage of households provided employment is not satisfactory and only five HHs had 100 days of employment in 2012-13. The reason is that daily wage labourers of the GP preferred to work in construction work where they were being paid Rs.300/- per day compared to Rs.141.72/- under MGNREGS.Thus the wage rate under NREG scheme is much less than market wage rate.

7. Summary & Conclusions

The study reveals that most of the MGNREGS works are bagged by other caste workers, to the neglect of ST workers. It speaks of ignorance of the latter about the provisions of the scheme. Further, job card holders neither get 100 days of guaranteed wage employment in a year, and nor they get unemployment allowance. Wage rate under MGNREGS is lower than the market wage rate. Women are not issued job cards in most of the cases.

In the light of these analyses, the following measures are suggested for consideration by the implementing agencies and policy makers to make the scheme effective : (1) Since localities have their unique problems and evaluation of the programme at the macro level may not help solve them. Micro level study and evaluation would go a long way to facilitate effective implementation of the scheme. Wage rate under the scheme need to be raised, (2) Organization of public awareness programs at the Gram Panchayat level is in order such that a large number of people will come forward to participate in the programme, (3) All works under MGNREGS should be implemented in time through proper monitoring by administrative officials at different levels.

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Casual Labourers in (Udhna Labour Market) Surat

Jagannath Biswal*

1. Introduction

The structure of the labour market, patterns of employment growth and labour-market institutions play an important role in shaping development patterns of a country. However, there is lack of adequate analytical documentation on these issues. Despite multiple stresses and strains such as rising fiscal deficit, high consumer inflation, collapse of the mining sector and logjam in infrastructure projects, India is one of the fastest-growing major economies in the world, although growing below its potential growth rate of more than 9% per year.

But employment conditions in the country still remain poor. The Indian labour market is characterised by predominance of informal sector employment (more than 90%) like self-employment and casual work. Overall, labour-force to population ratio (in the age group 15 years and above) at 56% is low compared to nearly 64% for the rest of the world. This low participation ratio is largely due to low (31%) female labour force participation rate, which is amongst the lowest in the world and the second lowest in South Asia after Pakistan. The chief features of the Indian labour market are as follows:

- It comprises 487 million workers in 2012-13, growing 2% annually.
- Lower level of female work participation.
- Low level of open unemployment (3.1%) and high level of disguised unemployment (or under-employment), mostly in rural areas and agriculture.

Casual labour refers to irregular employment or part-time labour including when workers perform a series of short term jobs. Casual labourers are usually hired for some hours or days for performance of specific tasks.

2. Review of Literature

A. Srija and Shrinivas V. Shirke in their wok "*An Analysis of the Informal Labour Market in*

* *Faculty , Economics Department, Khallikote Cluster University, Berhampur*

India" have highlighted the multi-faceted challenges of informalisation and pointed out that a single tool like labour reforms alone cannot address it completely. The need of the hour is to generate an enabling environment that will develop the urge for "formal" culture in the labour market.

Leibenstein & Galenson (1995) had tried to show that labour intensive techniques might generate immediate output, but a little surplus would be left for investment since the wage bill would be large. Further, according to them, use of capital intensive techniques in the process of production will increase the re-investable surplus by minimizing the wage bill.

3. Objective of the Study

Migrant casual labourers are marginalised from socio-economic point of view, even though they migrate in search of better livelihoods and the veracity of this statement is worth examining. The specific objectives of the study are:

- To understand the overall condition of the casual labourers in Udhana labour market of Surat; and
- To study the socio-economic conditions of the casual labourers and reasons behind their migration.

4. Methodology and Data

An attempt has been made in the present study to analyse the socio-economic conditions of the casual labourers of Udhana labour market of Surat City, Gujarat. Each year a large number of labourers migrate to this city from different parts of the country in order to earn their livelihoods and have better employment opportunities. The present study is based on primary data collected from 60 respondents through personal interview and field survey in Udhana Labour market of Surat City, Gujarat. The data thus collected were tabulated and processed. Simple statistical tools like tables, percentages, graphs etc. have been used for analytical purposes.

5. Data Analysis and Findings

Some parameters have been used in order to assess the socio-economic conditions of the casual labourers in the city. These parameters include their socio-economic profile, the states of their origin, reasons behind their migration, their community background, educational qualification, type of work performed, remuneration received and working conditions in the work place.

5.1 Socio-economic Profile of Casual Labourers in Surat

The following Table gives a macro picture of casual labourers in Udhana labour market of Surat City. It is evident that from the Table that these labourers are employed either directly or through contractors. Among the total casual labourers 72.76% (47.27% males and 25.49% females) are engaged through contractors and the balance 27.78% (16.38% male workers, 6.35% female workers and 4.05% child workers) are directly engaged. So it is obvious that most of the casual labourers in Udhana labour market depend on the contractors for their engagement.

Table -1: Socio-economic Profile of the Casual Labourers in Udhana

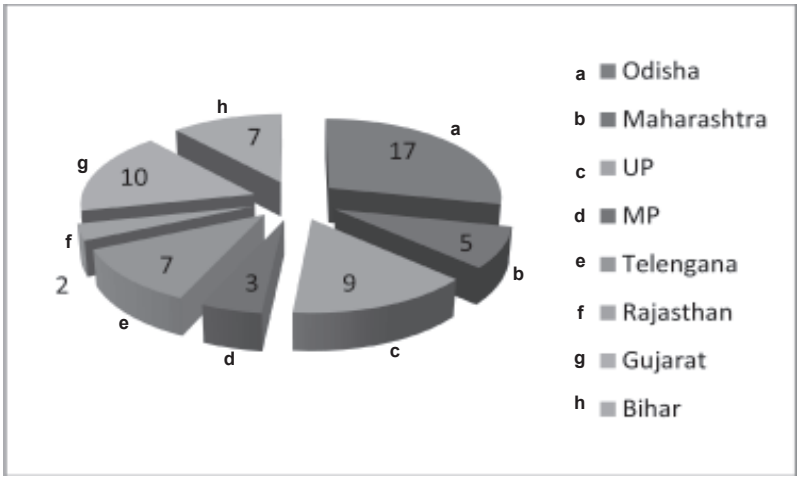
Sl. No.	Item	Value (%)
1. (A)	Directly Employed (%)	27.78
	i) Male	16.38
	ii) Female	6.35
	iii) Children	4.05
(B)	Through Contractor	72.76
	i) Male	36.42
	ii) Female	25.49
	iii) Children	10.31
2.	Average size of migrant families	3.6
3.	Average number of earners in migrant families	1.8
4.	Average monthly income of migrant families	Rs 22,400
5.	Literacy rate of migrants (%)	62.50

The average family size of the casual labourer is 3.6 persons. It may be noted that the casual labourers include both the native workers (26.66%) of the city and migrant labourers (73.33%) from different parts of the country, mostly from Odisha. The average number of earners per migrant family is 1.8 persons and average monthly family income of these families is Rs.22,400/-, which is comparatively higher than what they earned back home and that is why they migrated to Surat.

5.2 Migrant Labourers

The migrant labourers are from states like Odisha, Maharashtra, Telengana, Rajasthan, Madhya Pradesh, Uttar Pradesh etc. The pie chart (figure-I) depicts the migrant labourers from different states. Odias accounts for the highest percentage among these migrant labourers.

Figure -1: Migrant Labours from Different States



Migrant labourers from Odisha generally move with their families. The family members including wives are children also join the workforce. The migrant labourers put forth various reasons for their migration such as landlessness, unemployment and less job opportunities and low wage rates in their native places.

5.2.1 Educational Status

The following Table indicates the educational level of the sample casual labourers.

Table -2: Educational Profile of Sample Casual Labourers

Sl. No	Educational Qualification	Migrants	Non-Migrants	Total
A.	Illiterate	68 (31.48)	13 (6.01)	81 (37.50)
B.	Literate	54 (25.00)	81 (37.50)	135 (62.50)
1.	Primary	33 (15.28)	52 (24.07)	85 (39.35)
2.	Intermediate	18 (8.33)	21 (9.72)	39 (18.05)
3.	Graduation and above	3 (1.39)	8 (3.70)	11 (5.09)

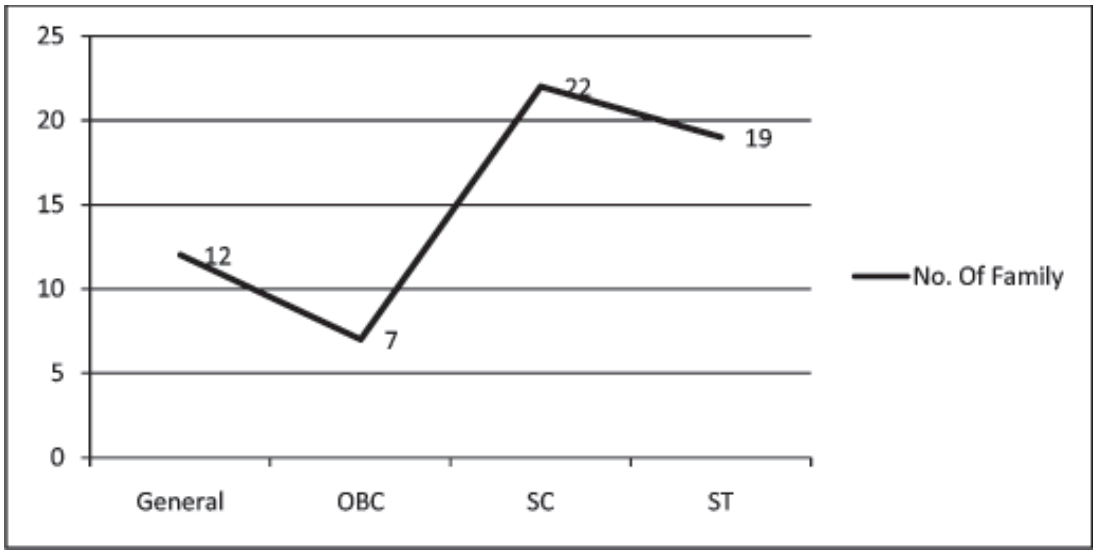
(Note: The figures in parentheses are percentages)

It is evident from the Table that illiterates among the migrants are 31.5% and 37.5% among the native labourers. Moreover it is evident that the educational level of the non-migrant labourers is better than that of their migrant counterparts so far as primary, intermediate and graduate & above education levels are concerned.

5.2.2 Caste Category

The casual labourers belong to different caste categories, namely, General Caste, Other Backward Caste, Scheduled Caste and Scheduled Tribe. A brief summary of their community background is given in Fig.-2. It is clear from the figure that share of the Scheduled Caste and Scheduled Tribe labourers is the highest. There are 12 general caste and 7 other backward caste casual labourers.

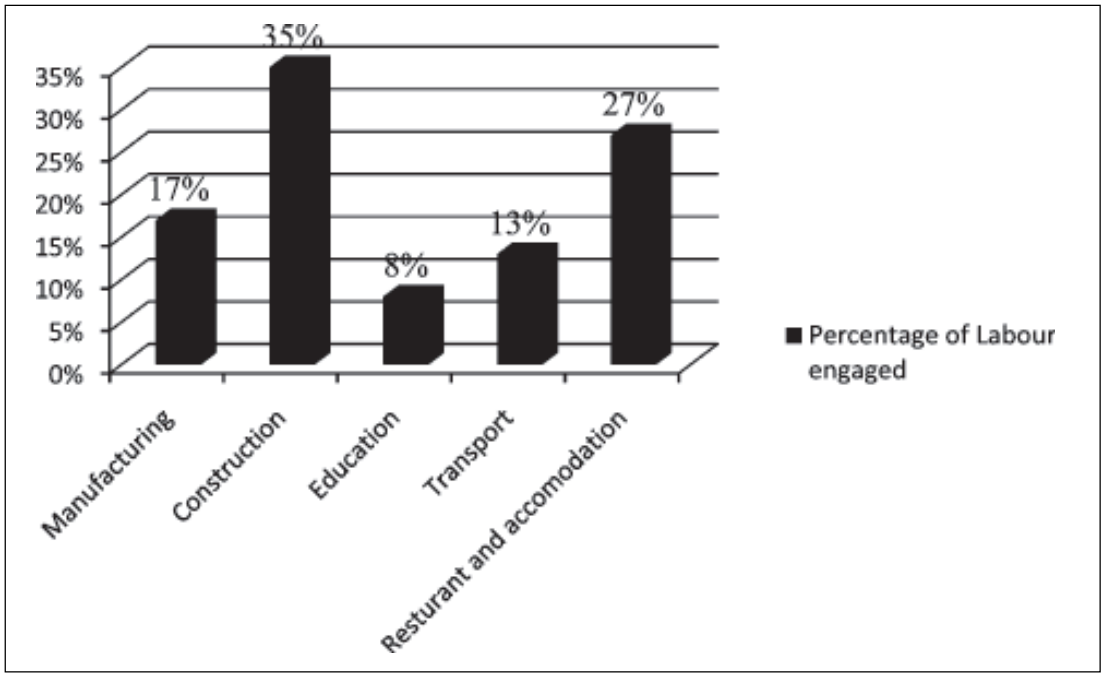
Figure -2: Community Background of Sample Casual Labourers



5.2.3 Nature of Work Done

These labourers are engaged in road and building construction, painting and other similar works. Different works performed by these labourers are presented in Fig. 3 The sector which absorbs most of the casual labourers is construction sector(35%), followed by restaurant and accommodation (27%), manufacturing (17%), transport (13%) and education (8%).

Figure :3-Type of Work Done



5.2.4 Working Hours and Remuneration

Some of the labourers live in the city and others commute everyday from different places by trains and public transports. They congregate in specified places in the morning and middlemen/contractors hire them after wage bargain.

The casual labourers work for fixed hours, generally eight (08) hours a day, which may extend at times. Most of the times, they get their remuneration at the end of the day/ work. Unskilled workers get Rs 300 - Rs 350, gavandis/mistrys get Rs. 600-Rs.700 and painters get Rs. 500 per day. There is no wage disparity between males and females. Some labourers, not all get work every day. However, there is no exploitation of labourers at the work place. The footpath dwellers among the casual labourers face harassment by the local public and policemen.

6. Conclusions and Policy Recommendations

The standard of living of the casual labourers of Udhana labour market is very poor. Despite various laws of the Government of India for abolisation of intermediaries, the casual labourers are very much dependant on middle men to find a job in the market.

Government should take necessary steps to formulate policies to provide assured

employment opportunities to the working class. Strengthening of various employment generations programmes like MGNREGA will go a long way to ameliorate the miseries of the casual labourers.

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An Assessment of Tribal Health in Odisha through Policy Analysis

Jyotirmayee Rout*

1. Introduction

Health is a major contributor to economic development. The health of a person depends upon various factors ranging from the quality and quantity of food intake as well as the surrounding environmental factors including type and quality of house he live in. According to WHO (1956), health has been defined as the "state of complete physical, mental and social well-being and not merely the absence of disease or infirmity".

In India, there are 645 tribes and 75 PVTGs, out of which 62 tribes and 13 PVTGs are found in Odisha. Tribals constitute a substantial proportion (more than 22%) of the state population. They are called *adivasi,* living from *adikaal* or centuries without giving up their cultural practices and tradition. They mostly dwell in inaccessible forest areas. In the post-independence era with the onset of development plans, they were not only exposed to modern way of life, but also became victims of the development process. Displacement has brought them nearer to the urban culture and lifestyle by passing their cultural practices. This has adversely affected their health status, particularly that of the PVTGs. Death due to malnutrition among tribals is a common phenomena. Tribals generally suffer from communicable diseases childhood ailments, pregnancy related sickness etc. They are also prone to vector-borne diseases like malaria, Japanese Encephalitis.

Social factors like education, cultural beliefs, economic conditions etc. play major roles in healthcare seeking behavior of the tribals. They mostly go for traditional healthcare system by using herbal medicines, plants, etc and following age-old cultural beliefs and practices. Traditional treatment is based on sum total of all past knowledge and practices, whether explicable or not, for diagnosis, prevention and treatments of physical and mental ailments. It relies exclusive on practical experiences and observations handed down from generation to generation. Besides, they also avail modern healthcare services. Various schemes and programmes are being implemented by both the central and state governments to provide

* *Research Scholar, ICSSR Doctoral Fellow, Nabakrushna Choudhury Centre for Development Studies, Chandrasekharpur, Odisha. E-mail: jyotir123456@gmail.com*

healthcare services in tribal areas; but these services are not adequate and remain in the outreach of the tribals. There is great for proper assessment of the existing system.

2. Review of literature

The healthcare system in Odisha has improved significantly over the years, but communicable and nutrition-related diseases still continue as major problems in the tribal and backward areas (Jana, et.al, 2014). According to Naidu (2015), the health status of the tribal people is very poor, particularly among the primitive tribes because of their isolation, remoteness and failure to access benefits of the developmental process. He further said that traditional medicines did exist and persisted even though the health consumers had access to western medicines. Naidu (2015) says, there is a need to scientifically study the traditional tribal medicines and to healing systems and to combine them with modern allopathic system so as to make it available and affordable for the poor tribals. Health status of the tribals remains poor due to various reasons such as wide-spread poverty, illiteracy, malnutrition, absence of safe drinking water and sanitations, poor maternal and child healthcare services, ineffective coverage of national health and nutritional programmes etc. (Basu, 1994 and Jain, et.al, 2015). So there is an urgent need to restructure and maintain sustainable targeted goals of "health for all", which is being implemented since Alma Ata declaration of 1978 with special attention to the rural poor. Improving rural healthcare delivery system requires cleanliness of the hospitals, safe drinking water, awareness of the masses etc. to improve healthcare service in tribal areas (Ray, et.al, 2011). He also suggested that this improvement could be possible through community participation with the involvement of PRIs. Shah (2010) and Kshatriya (2014) observed that STs in Odisha suffered from double disadvantage as they were both socially and economically marginalized for being forest-dwellers.

3. Justification for the study

The tribals live in remote and isolated forest areas without access to modern healthcare facilities. They mostly follow their traditional healing practices for different ailments. It is important to understand various aspects of tribal health system based on beliefs and cultural practices handed down to them over generations. This study tries to assess the health status of tribal people and effectiveness of government programmes implemented in the state.

4. Objectives of the Study

The specific objectives of the study are:

1. To analyze the status of tribal health,

2. To examine the effectiveness of various health schemes & policies to better tribal health and
3. To assess accessing healthcare services by tribals in Odisha.

5. Methodology

The study relies upon secondary data collected from various sources like Statistical Abstracts, Government of Odisha, Census of India, Statistical Profile of Scheduled Tribes, Rural Health Statistics etc.

6. Healthcare System in Schedule Areas of Odisha

According to 2011 census, STs constitute about 22.85% (9590756) of the state's total population (41974218). Among the STs, 49.30% (4727732) are males and 50.70% (4863024) are females. The decadal growth rate of population in 2001-11 was 17.7%. Table 1 shows distribution of the tribals in schedule areas of Odisha where they constitute 50% or more of district population. These districts are indicated in Table-1.

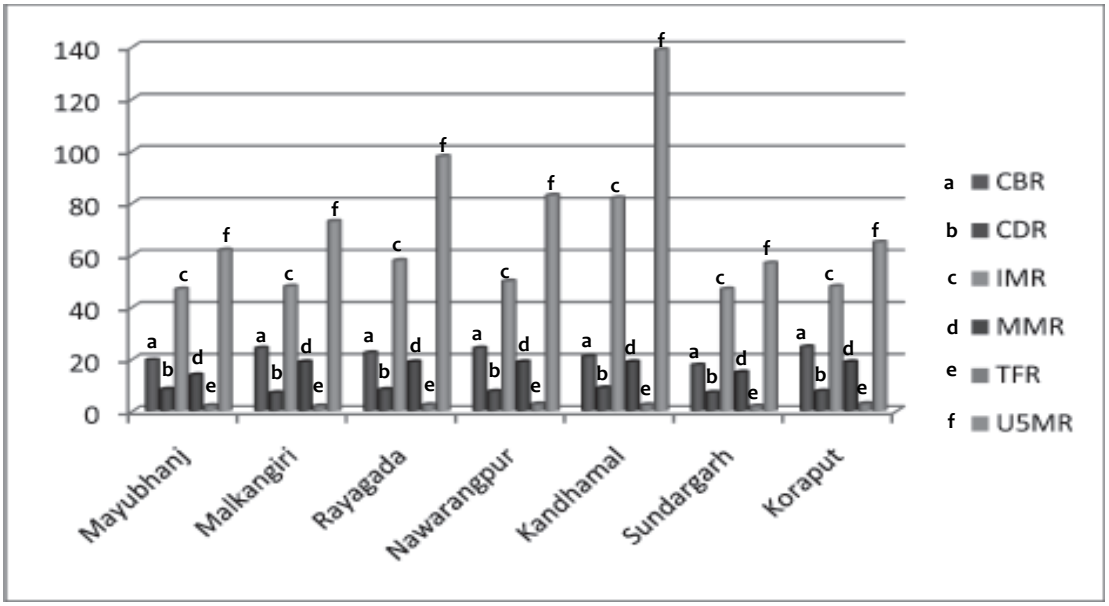
Table -1: Schedule Districts of Odisha (with > 50% tribal Population)

Districts	Tribal Population (%)	Major Tribes
Mayurbhanj	58.7	Santal, Munda, Ho, Kolha, Bhumij
Malkangiri	57.83	Koya, Paraja, Bhumia, Dharua
Rayagada	56.0	Saora, Kondh, Gauda, Bagata
Nawarangpur	55.79	Koya, Paraja, Bhumia, Dharua
Gajapati	54.3	Saora, Kulis, Mahali, Shabar, Lodha
Kandhamal	53.8	Kondh, Gond, Gauda
Sundargarh	50.7	Oraon, Kisan, Munda, Gond, Bhuyan
Koraput	50.6	Kondh, Paraja, Gond, Gadaba

Sources: District Profile of Odisha, 2014-15; The Status of Adivasis in Odisha, 2014

The health status of the tribal people is very poor on account of many factors like ignorance, illiteracy, lack of leadership, communication gap, failure to assert politically, cultural ethos and geographical isolation. As shown in Figure-1, the health indicator in tribal dominated schedule districts are very disappointing.

Figure -1: Health Indicators of Tribal in Schedule Areas



Sources: Annual Health survey, 2012-13; Statistical Abstract, 2012

Different health indicators of tribals in schedule areas (Table-2) depict their poor health condition. This is reinforced by the dismal situation obtained in these areas as regards availability of health centres, health work force and health assistants (Table-3).

Table -2: Other Health Indicators in Schedule Districts of Odisha

(%)

Districts	Mothers' antenatal check-up	Institutional delivery immunization	Child (12-23 months)	Stunted children	Under weight children
Mayurbhanj	72.5	85.6	72.7	43.5	43.8
Malkangiri	69.3	67.8	76.9	45.7	51.8
Rayagada	59.5	71.7	71.2	43.5	42.4
Nawarangpur	70.5	64.3	71.5	45.8	51.0
Kandhamal	64.8	72.7	73.5	38.4	43.1
Sundargarh	80.7	88.3	85.4	37.2	44.2
Koraput	58.4	68.4	67.1	40.3	44.4

Sources: NFHS-4, District Profiles, 2015-16

Table -3: Status of Healthcare Service Centres in Schedule Districts of Odisha, 2016)

Total population of Odisha	44346193 (2015)
Tribal Population in Rural Areas	8994967 (20.28%)
Sub centres (position)	2689
PHCs (position)	426
CHCs (position)	135
Health workers (F)/ ANMs at sub centres in tribal areas	2932
Health workers (F)/ ANM at sub centres & PHC	3192
Health workers (M) at sub centres	1204
Health assistants (F) / LHV at PHCs	181
Health assistants (M) at PHCs	0
Doctors at PHCs	297
Total specialists at CHCs (including Surgeons, Physicians, Pediatricians, Obstetricians and gynecologists)	65
Radiographers at CHCs	19
Pharmacist at PHCs & CHCs	574
Lab technicians at PHCs & CHCs	170
Nursing staff at PHCs & CHCs	462

Source: Rural Health Statistics, 2016

It may be read off Tables 4 & 5 that the number of health centres over the period from 2011 to 2015 has remained almost stagnant while, that of the health workers in position has declined. Doctors and Specialists are very reluctant to move to these inaccessible areas because this will not help promote their professional interest.

Table -4: Sub Centres, PHCs & CHCs Schedule Districts of Odisha in Schedule Districts of Odisha

Items \ Year	**2011**	**2014**	**2015**
Number of sub centres	2689	2689	2689
PHCs	403	426	426
CHCs	135	135	135

Source: compiled by authors from Rural Health Statistics of different years

Table -5: Health Workforce in Position in Schedule Districts of Odisha

Health Workers	2011	2014	2015
Health workers at Sub centre & PHCs	3738	4547	4396
Health assistants at PHCs	177	193	181
Doctors at PHCs	316	221	297
Total specialists at CHCs	168	79	65
Nursing staff at PHCs & CHCs	307	383	462
Other staff at PHCs & CHCs (Radiographers, Pharmacists & Lab technicians)	599	683	763

Source: Rural Health Statistics of Different Years.

7. Traditional Healthcare Practices of the Tribals

The Tribals are aboriginals and follow traditional practices for treatment of various ailments. Quacks, sorcer, shaman, *ojha and the like* are the practioners of these pre modern healing techniques. With exposure to the outside world, they have started using modern medicines,but many of them still rely on the indigenous medicines handed down by their ancestors. These traditional medicines are produced from animals and plants available in their surrounding environment.

Various schemes are being implemented by the Government of Odisha towards betterment of tribal health like improved access to priority health nutrition, water and sanitation services. These schemes include: (1) 'Mo Mashari' (my bed net): protecting women from malaria during pregnancy, (2) Enhancing quality of care of hospital maternity services in Odisha: a scoring and ranking exercise, (3) Hospital diet services: reforming an essential aspect of health care, (4) Odisha telemedicine network: specialist care for people in remote locations, (5) Odisha sickle cell project: addressing a major public health challenge , (6) Wheels for ASHAs: supporting services for women and children.

8. Conclusions

The study gives a picture of health status of people, particularly that of tribals in schedule districts of Odisha. Tribals constitute a majority of population in these districts. They believe in their traditional healing practices and hygiene system. Traditional medical practices survive

even in the midst of some of the most sophisticated and advanced medical therapy. Since man is a social and cultural being, every known human society has its own pharmacopocia and therapy, be it magico-religious or scientific. So the healthcare system of the tribals should be viewed as a combination of traditional and modern systems. Government should take steps to assess, strengthen and expand both the systems to provide affordable healthcare services in the tribal areas.

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Empowerment of Tribal Women Through Self Help Groups: A Case Study in Baliguda Block of Kandhamal District, Odisha

Kishor Hari Badatya[1] and Nispesita Manjari Jena[2]

I. Introduction

Empowerment means "to enable or permit". During 1990s, with stress on human development, it was argued that "development, if not engendered, is endangered" and women's empowerment was considered essential for the success of development programmes (Nagaraja, 2013). The International Conference on Population and Development (ICPD) of stressed on the empowerment and autonomy of women. The world conference on women in Beijing, 1995 laid emphasis on gender equality and stated that women's empowerment is a key strategy for this.

Social and economic empowerment of women creates a favorable environment for their participation in the development process and opportunities open up for them. Economic empowerment enables them to smoothen their cash flow throughout the year. Micro credit has been a source of women's economic empowerment. Out of the 66.61 million poorest who availed micro credit opportunities in the world, India accounts for a lion's share of 29.1% (Natrajan, 2009). In this regard, the role of Self-Help Groups (SHGs) is very important.

SHGs are based on the principle of 'by the women, of the women and for the women'. SHGs groups are voluntary associations of people with common interests and formed to achieve collective social and economic goals. Such groups are organised for mutual help and benefit. These groups are formed democratically without any political affiliation. They may comprise 15–20 women and/or men members. Generally, these groups (more than 90% in India) are exclusively formed by women. SHGs collect savings from all members and advance loans to the needy members. The total funds owned by the group are thus circulated in the form of loan among the members.

[1] *Associate Professor in Economics, Khallikote Autonomous College, Berhampur-760001,Odisha. E-mail:badatyakh@gmail.com.*

[2] *Ph.D. Research Scholar, Dept. of Economics, Utkal University, Bhubaneswar, Odisha*

Odisha is home to 62 distinct tribal groups, out of which 13 communities are primitive tribes. The state has the third highest tribal population in the country. The districts of Mayurbhanj, Sundargarh, Koraput, Rayagada, Nawarangpur, Malkanagiri and parts of Balasore, Keonjhar, Sambalpur, Gajapati, Ganjam, Kalahandi and Phulbani have been declared as Schedule Areas under Article 244 (Fifth Schedule) of the Constitution of India. As per 2011 Census, the ST population of the State is 9,590,756 (22.8% of the state population and 9.17% of the country's tribal population), of which 4863024 (50.7%) are women, thus yielding a favourable sex ratio of 1003. But this cannot be taken as indicator of better status of women in tribal communities. They are made to work hard. Besides household work, the tribal women perform a major part of agricultural operations like breaking clods of earth, weeding, transplanting, harvesting, thrashing and winnowing. In addition, they contribute a lot to family income through their participation in activities like collecting minor forest produce for sale in nearby urban centres. But they are discriminated against at both family and community levels. They have no income of their own and are not allowed to take part in decision making at any level. They are deprived and subjugated by the male folks. Because of disempowerment, their contribution to family income and participation in the development process go without recognition. However, they have started earning independently through SHGs.

II. Objective of the study

The present study has been undertaken to analyse empowerment of tribal women through SHGs in Baliguda Block of Kandhamal district. To be specific, the following are the objectives of the study:

1) To study the role of SHG in raising employment status of its members,
2) To examine the impact of SHGs on asset owned by the members,
3) To determine the impact of SHGs on the financial status of its members and
4) To study the impact of SHGs in exuding confidence among its members

III. Methodology

The study was based on primary data collected by canvassing questionnaires. Data collected were tabulated and simple statistical techniques were used for analysis. The study area is Baliguda block of Kandhamal district. Baliguda block is located in the southeastern part of the district at a distance of 83 km from the district headquarters. The block has a total population of 97,084 of which 47,634 are males while 49,450 are females. The three major communities in the Block are STs (52.3%), SCs (9.5%) and other general castes (38.2%). The total literacy rate of Baliguda block is 60.46%, male and female literacy rates respectively being 61.7% and 40.09%.

Two GPs, namely, Sendrigaon and Kutikia GPs in the block were selected for sampling of SHGs. In the next stage, one village in each G.P., e.g., Jindingipada of Kutikia GP and Nalipada of Sendigaon GP were sampled for canvassing of the questionnaires.

Finally, sixty four WSHG members of these villages were sampled for personal interview. The data regarding their family size, age structure, literacy status, housing condition, income, employment and asset position have been collected through personal interviews with the help of pre-tested questionnaires.

Data thus collected were tabulated and analyzed to study the impact of SHG membership on the economic empowerment of women members.

IV. Findings and Discussion

Table -1 shows the sample villages and SHGs with their tribal beneficiaries. The number of members selected from Bharatamata and Baraladevi SHGs were respectively 17 and 15, and 16 members were selected from each of Maa Mangala and Maa Durga SHGs.

Table -1 : Village and SHG-wise Distribution of Beneficiaries

Village	Cast	Name of SHG	No of Beneficiary
Jidingiapanga	ST	BHARATAMATA	17
	ST	BARALADEVI	15
Nelipada	ST	MAA MANGALA	16
	ST	MAA DURGA	16

The asset positions of the members before and after SHG formation has been indicated in Table -2. Assets of the beneficiary members have increased after formation of SHGs. The number of durable asset like bicycle increased from 28 to 62, watches from 24 to 38, mixer-cum-grinder from 0 to 10, sewing machine from 4 to 9 and mobile phones from 12 to 54.

Table.-2 : Durable Assets of Tribal Beneficiaries before and after SHG formation.

ITEMS	Before SHG Formation	After SHG Formation
Bicycle	28	62
TV	8	41
Mixer-cum-Grinder	Nil	10
Sewing Machine	4	9
Mobile Phone	12	54
Watch	24	38

Source : Field Survey

Table -3 indicates the financial status of the respondents. After SHG formation, all the sixty four (100%) respondents have been saving in SHG accounts. Prior to formation of SHG, only 46 respondents were found to be saving their surplus income with friends and relatives, but less in post-SHG period.

Table-3 : Modes of Saving of Respondents

Organisation	Before SHG formation	After SHG formation
SHGs	Nil	64
Bank	05	25
Post office	13	27
Friends	28	11

Source : Field Survey

Table-4 indicates the deposits of SHG members in pre-and post-SHG period. It is observed that more members have larger deposits and less members have small deposits after formation of SHGs. Members have been able to save more out of income gain through SHGs, which has helped their empowerment.

Table No.-4: Savings of Members in Pre and Post-SHG Period.

Amount of Deposits (Rs.)	Before SHG Formation	After SHG Formation
0 - 1000	08	02
1000- 2000	18	12
2000- 3000	24	30
3000- 4000	12	16
4000- 5000 and above	02	04

Source : Field Survey

Table-5 shows the annual employment status of the sample SHG member before and after SHG formation. Before SHG formation 30, (46.10%) of respondents had less than 0-100 mandays of employment per annum, but after SHG formation their number decreased to 10 (15.7%). On the other hand, the number of households with 100-150 mandays of employment increased from 25 (39%) to 40 (62.5%) and 14 (21.80%) had employment for 150-200 mandays per year.

Table No.- 5: Annual Employment Generation in Pre-and Post-SHG Period

Before SHG formation Percentage After

	Prior to SHG Formation		After SHG Formation	
Employment (Mandays)	**Mandays of Employment**	**Percentage**	**Mandays of Employment**	**Percentage**
0-100	30	46.10	10	15.70
100-150	25	39.00	40	62.50
150-200	09	14.00	14	21.80
Total	64	100	64	100

Source: Field Survey

Table-6 gives the information about confidence generation among tribal women after SHGs. Before group formation, 12.5% respondents had confidence in meeting financial crisis but after taking SHG membership, their proportion increased to 65.63%. Likewise a higher percentage (68.75%) dared interaction with the officials in panchayats, blocks, banks, post offices etc.

Table-6 : Confidence Generation among Respondents through SHG

Item	**Pre-SHG**	**(%)**	**Post- SHG**	**(%)**
Confidence in meeting financial crisis	08	12.5	42	65.63
No. of officials whom SHG members meet	03	4.69	44	68.75
Confidence in accessing to medical treatment	23	35.94	43	67.19
Confidence in marketing for family	26	40.63	45	70.31

Formation of SHGs has raised the confidence level of majority of its members to take up responsibilities like meeting the officials at the time of need, keeping up courage to overcome financial crisis and go to hospitals for treatment. It may be noted from the table that the sample SHG members have gained in confidence after joining SHG which opened up employment opportunities as well as higher income for them.

V. Conclusions

The SHGs are helpful in employment generation, asset creation and improvement of financial status along with raising the confidence level of tribal women. Therefore, it is

hoped that formation of SHGs can accelerate the process of economic as well as social empowerment of women. Government should take steps to encourage formation of SHGs with the help of officials and civil society.

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Health Infrastructure Development in Tribal Districts of Odisha: An Analysis

Himani Majhi[1] and Minati Mallick[2]

I. Introduction

The physical assets and networks used to provide essential basic services to a society. These tangible assets and the business set-up to manage them can be viewed as the backbone of an economy. Broadly speaking, infrastructure can be splited into two categories; economic such as transport, utilities and communications, which can be provided efficiently by private agents and social, which consists of assets and services like healthcare and education, having strong positive externalities and are either provided free by government or subsidised.

Health is a vital social infrastructure for any society, as it directly affects the well-being of people. World Health Organization (1948) states "Health is a state of complete physical, mental, and social wellbeing and not merely absence of disease or infirmity". In recent years, this statement has been amplified to include ability to lead a "socially and economically productive life". Therefore, adequate healthcare and easy access to health services is indispensable for overall human development.

Odisha government has been making sincere efforts to provide adequate health care services to people within a reasonable distance from human habitations. A number of schemes are being implemented to improve healthcare facilities in tribal and backward regions. The overall health status and healthcare delivery system above the national average and it has a wide network of health care institutions at primary, secondary and tertiary levels provide comprehensive healthcare services accessed mostly by the poor.

Odisha occupies a special position in the tribal map of India. It has the second highest tribal concentration among the states of India and ranks next to Madhya Pradesh. According to census 2011, out of a total population of 41974218, Scheduled Tribes number around 9590756 and account for more than 10 per cent of the country's total tribal population.

1 *Ph.D Research Scholar, P.G. Department of Economics, North Orissa University, Email-lucy.himani@gmail.com.*

2 *Assistant Professor, P.G. Department of Economics, North Orissa University, Email- minuminati@rediffmail.com*

Tribal constitute population in 13 districts, more than 30 per cent of total population of which, it exceeds 50% in 8 districts, namely, Gajapati (54.29), Kandhamal (53.58), Koraput(50.56), Malkangiri (57.83), Mayurbhanj (58.72), Nabarangpur (55.79), Rayagada (55.99), Sundargarh (50.75). Deogarh (35.33), Jharsuguda(30.50), Keonjhar (45.45), Nuapada (33.80) and Sambalpur (34.12) are the districts with above 30 per cent and below 50 per cent tribal population. These districts are chosen for the study.

II. Review of Literature

Joshi (1999) focused on study of the plan outlays for infrastructure at the all-India and UP state level. The growth of infrastructure in the country has been traced meticulously over the plan period. Inter-state disparities in development have been examined and correlated with disparities in the infrastructural facilities. The author then examined in detail the growth and regional imbalances in infrastructure in the state of U.P. A distinctive feature of the study is the presentation of the composite indices of economic development and infrastructure at the district level and relationship between the two. Lastly, the author emphasized on various issues in infrastructure planning, identified the deficiencies in this respect and presented a policy framework for infrastructure development.

Nanjunda (2011) intended to find how the primary health centers in the selected tribal districts of Karnataka-India are functioning, and their problems and prospects. He also examined the degree of accessibility of the healthcare services in selected tribal PHCs, and community perception about the working style of PHCs. The study found that non-availability of essential basic facilities, ill-manner of the staff, and absence of adequate manpower were some of the major reasons why tribals had negative perceptions about the PHCs. Further, this study showed for policy changes related to working style of PHCs were needed.

Wani's (2013) paper focuses on the current status of the Indian healthcare system, the challenges faced, it and comparison of a few selected states based on health indicators along with a comparison of India's health sector with both developed and developing countries there are large disparities amongst states as regards health outcomes. Before liberalization improvement in health sector moved at a snail's pace, but the whole picture changed after liberalization the key initiatives to improve the current healthcare standard became two prong strategy focusing on the infrastructure needs as well as technology solution.

SubhaLaxmi (2013) estimated the elasticity coefficients of health indicators with respect to health infrastructure of the state of Andhra Pradesh, during 1980-2010. A health infrastructure index was developed using health inputs like number of hospitals and

dispensaries, beds and doctors in government hospitals. Double log simple regression model was used to estimate elasticity coefficients. Values of R^2 confirmed that 70 percent of the variation in almost all health indicators is explained by health infrastructure. Thus, public health facilities are crucial for meeting the basic health requirements of masses in the state.

De (2014) attempted to highlight the existing healthcare infrastructure and inter-block disparities regarding healthcare facilities in Sundarban, backward region of West Bengal. To assess the regional pattern of healthcare infrastructure, three broad aspects have been identified i.e. availability of healthcare infrastructure, performance of public healthcare centres and accessibility to healthcare infrastructure. He has recommended the state government to adopt -viable policies and programmes and take some immediate steps to improve the healthcare infrastructure in Sundarban.

III. Objectives

An attempt has been made in this paper to construct a composite health infrastructure index for the state of Odisha.

The paper is organised in the following manner. Section-I is the introductory section followed by a review of literature, Section-III presents data and methodology of the study. Results and discussion are given in Section-IV. Section-V highlights the main findings of the study and suggestions and policy implications are contained in the concluding section.

IV. Methodology

The study makes use of secondary data collected from various issues of Directorate of Health and Family Welfare Reports, Odisha Economic Survey, Rural Health Statistics, and journals. The study covers all the tribal dominated 13 districts of Odisha is assesses health infrastructure development at four points of time i.e. 1999-2000, 2005-06, 2010-11 and 2015-16. Health Infrastructures considered include X_1-number of hospital, X_{2n}-number of mobile health unit, X_3-number of sub centre, X4-number of beds, X_5-number of primary health centre and X_6-number of community health centre. The trend of health infrastructure is found out by constructing composite index following the method of factor analysis. The districts are ranked accordingly. The formula used for constructing infrastructure index is as follows.

$$I_{it} = \sum W_{jt} X_{jit}$$

Where I_{it} is the health infrastructure index of the i-th district (13 districts) at t-th point of time W_{jt} measures of j-th component of health infrastructure for X and X_{jit} value of the j-th

component of infrastructure for the i-th state at t-th time period. W_{jt} is estimated with the help of principal component analysis in order to arrive at a common infrastructure index for health infrastructure.

After computing the composite index of health infrastructure development, the simple statistical variations tests i.e., computed values of Standard Deviation and Mean are applied to these composite indices, then by using these two values, all the districts of Odisha are classified into three groups i.e., developed, moderately developed and under developed. The groups are categories by using the following cut off points.

Developed	First Group $\geq$ Mean + S.D
Moderately Developed	Mean + S.D $\leq$ Second Group $\geq$ Mean – S.D
Underdeveloped	Third Group $\leq$ Mean – S.D

V. Result and Discussion

The composite indices of health sector development (different) years and different districts in different years are given in the table-I.

Table -1: District-wise Composite of Health Infrastructure Index with Rank

Sl. No	Districts	1999-00		2005-06		2010-11		2015-16	
		C.I	Rank	C.I	Rank	C.I	Rank	C.I	Rank
1	Deogarh	67.709	13	73.707	13	102.049	13	109.186	13
2	Gajapati	186.642	10	201.046	10	270.074	10	276.706	10
3	Jharsuguda	111.492	12	120.508	12	161.689	12	171.366	12
4	Kandhamal	302.146	6	319.848	6	436.101	6	463.766	6
5	Keonjhar	472.997	4	503.063	4	641.059	4	638.324	4
6	Koraput	355.062	5	379.998	5	509.01	5	488.833	5
7	Malkangiri	217.379	9	232.535	9	311.782	9	314.988	9
8	Mayurbhanj	747.896	1	798.324	1	1034.049	1	968.329	1
9	Nuapada	151.886	11	145.76	11	192.415	11	196.018	11
10	Nabarangpur	268.561	8	307.088	7	424.015	7	394.543	7
11	Rayagada	283.851	7	299.981	<	401.879	<	390.573	<

12	Sambalpur	571.482	2	632.154	2	694.788	3	937.047	2
13	Sundargarh	518.411	3	556.413	3	721.272	2	724.398	3
Mean		327.34		351.57		453.86		467.23	
S.D 191.67		207.45		254.13		267.12			

Source: Computed

A cursory glance at Table 1 reveals that in all the four time periods considered. Mayurbhanj is at the top with rank one even though the index value has decreased from 1034 to around 968 during 2010-11 and 15-16. In the first three points of time, the health infrastructure has improved in almost all the districts and there is not much change in their relative ranks except an interchange in rank between Sambalpur and Sundargarh in 2010-11 and in 2015-16. Districts like Gajapati, Nuapada, Jharsuguda and Deogarh show a poor performance throughout. This is clearly reflected in Fig-1.

Figure-1: Trends of Health Infrastructure Develoopment Index

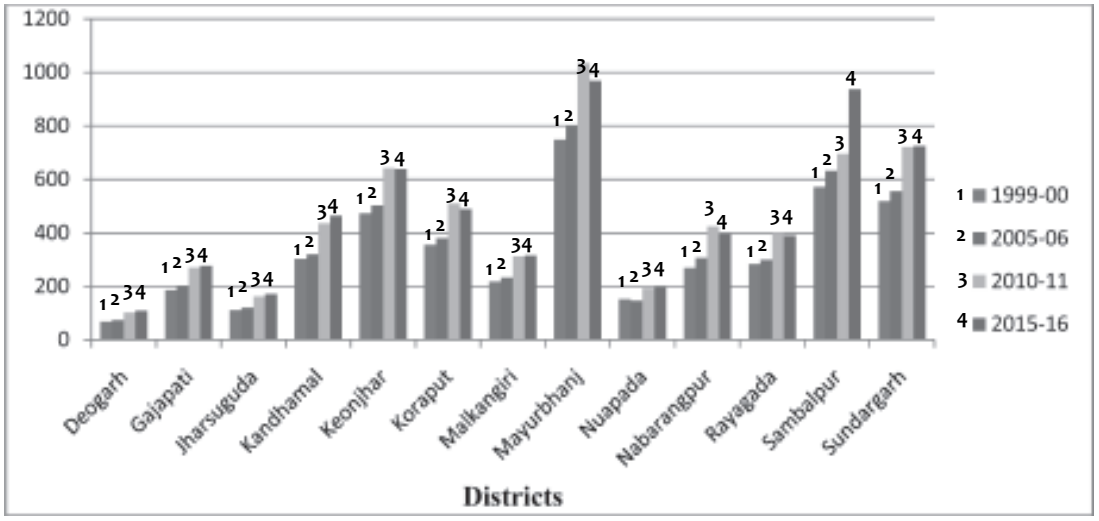

Table -2: Trends of Development of Health infrastructure of Tribal Dominated Districts, Odisha.

Category\Year	1999-00	2005-06	2010-11	2015-16
Developed	Mayurbhanj Sambalpur	Mayurbhanj Sambalpur	Mayurbhanj Sundargarh	Mayurbhanj Sambalpur

Moderately Developed	Sundargarh Keonjhar Koraput Kandhamal Rayagada Nabarangpur Malkangiri Gajapati Nuapada	Sundargarh Keonjhar Koraput Kandhamal Nabarangpur Rayagada Malkangiri Gajapati Nuapada	Sambalpur Keonjhar Koraput Kandhamal Nabarangpur Rayagada Malkangiri Gajapati	Sundargarh Keonjhar Koraput Kandhamal Nabarangpur Rayagada Malkangiri Gajapati
Under Developed	Jharsuguda Deogarh	Jharsuguda Deogarh	Nuapada Jharsuguda Deogarh	Nuapada Jharsuguda Deogarh

Source: Computed from the values given in table-2

Table-2 depicts the district-wise trend of health infrastructure development. It is clear that Mayurbhanj and Sambalpur have remained as developed districts in respect of their health infrastructure during the entire period considered. Of course Sambalpur improved from moderately developed to developed district and Sundargarh declining from developed to moderate developed district between 2010-11 and 2015-16. In most of the years considered, Sundargarh, Keonjhar, Koraput, Kandhamal, Rayagada, Malkangiri, Gajapati and Nuapada have maintained their position as moderately developed districts. Jharsuguda, Deogarh and Nuapada districts are in the underdeveloped group in most of these years. Nuapada is underdeveloped group. Nuapada's composite index value is increasing but very slowly.

VI. Conclusion

Strategy for development of productive sector should be well supported by the qualitative improvement in social sector. It is observed that all the 13 tribal dominated districts of Odisha have experienced improvement in their health infrastructure facilities. But this improvement is not satisfactory as majority of them are still backward so far as the provision of facilities is concerned. Removal of backwardness in this sector is a major responsibility of the state. Considerable expenditure has been incurred to develop health sector in the state right from the beginning of the planning era. This has certainly helped improve the health care status of the districts. However, a total of 8 districts have remained backward

as regards their health sector and regional disparities have also aggravated. The districts at peripheries are not getting adequate attention by the government and lack in proper implementation and monitoring.Good health is both a product and factor in the development process. Development of health infrastructure thus plays a vital role in economic development. Therefore, sincere efforts should be made by policy makers, executives and the service providers so as to improve this vital component of human development.

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Seasonsal Migration of Tribals: A Case Study in Raighar Block, Nabarangpur District

Pradipta Kumar Sarangi*

I. Background

Migration is a complex phenomenon and closely related to socio-economic factors as well as level of economic development. Seasonal or temporary labour migration usually occurs due to extreme poverty whereby workers are forced to become migrants for some days in a year to meet their subsistence needs. It differs in duration, origin, destination, purpose and characteristics of migrants. Internal migration takes place in almost all the rural areas of India, tribal areas in particular. Migration often involves longer working hours, poor living and working conditions, social isolation and poor access to basic amenities. Besides, it affects the family as well as socio-economic life, health and education of the children of the migrant workers. Migration, of course, has positive impact on income, expenditure and investment of the migrants.

In spite implementation of developmental plans and programmes, tribals face insuperable problems like poverty, unemployment, displacement, indebtedness and lack of accessibility to and awareness of the government programmes. Besides, implementation of mega mining, hydro electric and industrial projects in tribal areas adversely affects land ownership pattern of the tribals. This leads to large scale migration of rural tribals to urban areas, either temporarily or on permanent basis in search of livelihoods. A range of push and pull factors cause internal migration.

In the absence of proofs of residence, internal migrants are unable to claim social protection entitlements and are deprived of facilities and provisions of government sponsored schemes and programmes. But internal migration is being given very low priority by the government in policy formulation, partly due to lack of data and information about its nature and magnitude. Most of the tribals of KBK region of Odisha migrate to Chhattisgarh and the cities of south India like Chennai, Hyderabad and Bangalore.

* *Planning Coordinator, OPEPA, DPO, Nabarangpur, Email: pradiptasarangi09@gmail.com.*

II. Objectives of the Study

The main aim of this study is to analyse the basic issues associated with migration and challenges faced by the migrant households. The specific objectives of the study are as follows:

1. To study the socio-economic profile of migrant tribal households of the study area
2. To examine the issues and challenges of the tribal migrants; and
3. To analyse the impact of migration in the study area.

III. Methodology

The study relates to seasonal migration and its economic implications Raighar block of Nabarangpur district of Odisha has been chosen to study the issues and challenges relating to migration.

The block has been selected purposefully for the present study as tribals in the area are resorting to migration on massive scale. The major tribes of the block are: Gond, Bhatra & Paraja. The important sources of employment of the Scheduled Tribes living in Raighar block are cultivation, wage-earning, collection and sale of forest produces and petty trade. They also out-migrate as employment opportunities in the locality are not adequate. Purposive sampling technique was adopted to select the respondents and semi-structured interview schedules were canvassed for collection of data. The study was undertaken in Debagam, Parchipara and Turudhi Gram Panchayats of Raighar Block.

IV. Demographic and Socio-economic Profile of Sample Population

Knowledge about demographic and socio-economic profile of the people in the study area is essential for analysis and generalized observation. Table-1 describes the demographic profile of the sample Gram Panchayats. It may be observed from the table that STs constitute more than half of the population in all the GPs. Though females out number males in Debagam GP, they are almost equal in Parchipara GP but less in Turudhi GP. Sex ratio in the former two GPs is satisfactory, but not so in Turudhi.

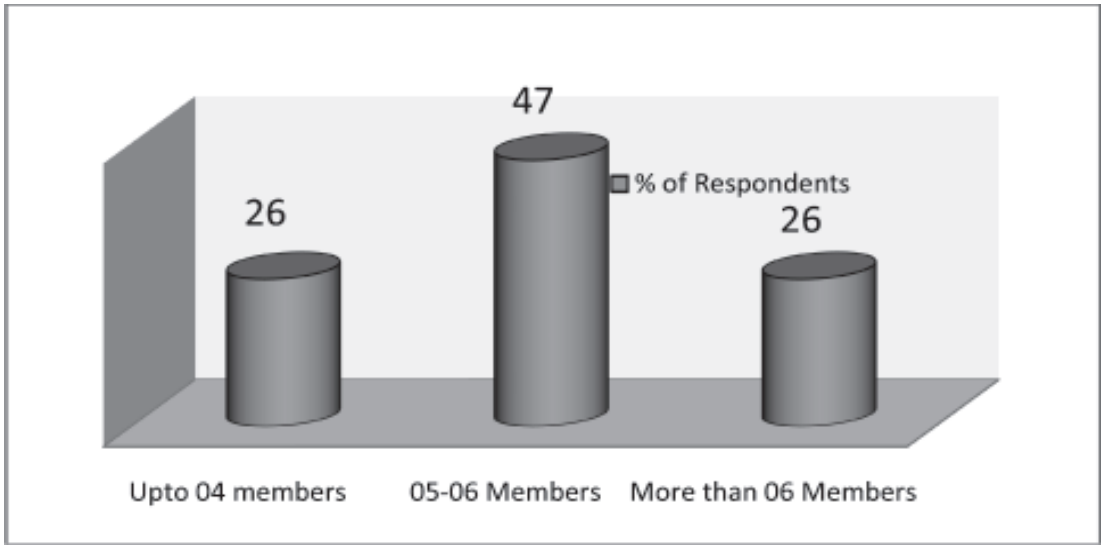
Table- 1 : Demographic Profile of the Sample GPs

GP	Population			SC (%)	ST (%)	Literacy Rate (%)	Sex Ratio
	Total	Male	Female				
Debagaon	7703	3838	3865	15.06	62.40	49.46	1007
Parchipada	8561	4287	4274	18.44	66.65	51.69	997
Turudihi	10083	5098	4985	34.04	48.00	58.73	978

Source: Census of India, 2011.

Information pertaining to family size of the households in the study area is presented in Chart-1. It shows that 26% of households have up to 4 family members, 46% have 5-6 members and 26% have families with more than 6 members.

Chart -1: Family size of Households in Sample GPs



Source : Primary Survey

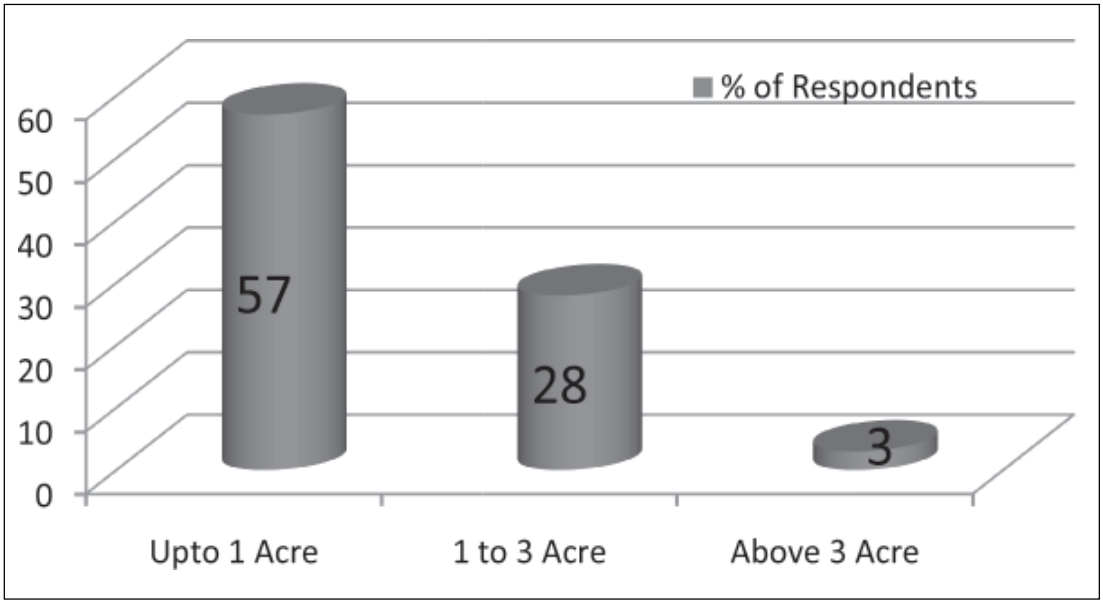
Chart-2 presents the information relating to the primary occupation of households in the study area. Around 23% of these households are engaged primarily in agriculture, 36% as agricultural labourers and remaining 41% as non- agricultural wage earners.

Chart -2: Primary Occupation of Respondents

Source : Primary Survey

Chart-3 depicts the land holding pattern of households in the study area. About 57% of households own agricultural land up to 1 acre, 28% own of households have 1-3 acres and only 3% own 4-5 acres of land. Most of these households are small and marginal farmers whose agricultural income is not sufficient for their subsistence.

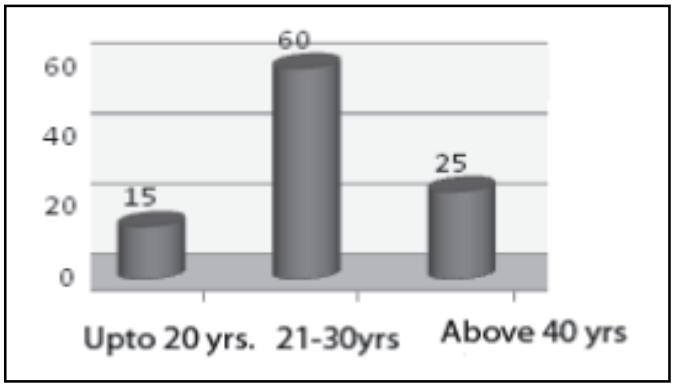
Chart -3: Land Holding Size of Respondents



Source : Primary Survey

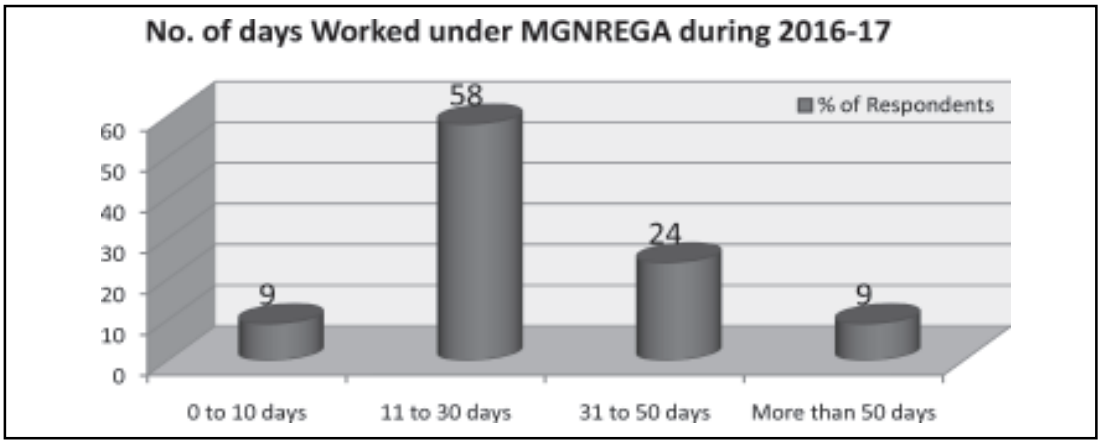
As shown in Chart-4, 60% of sample migrants belong to the age group of 21-30 years, the most productive age group, 25% are above 40 years old and only 15% are below 20 years. In other words, 3/4th of the migrants are aged below 30 years.

Chart -4: Age Group of Workers in the Study Area (%)



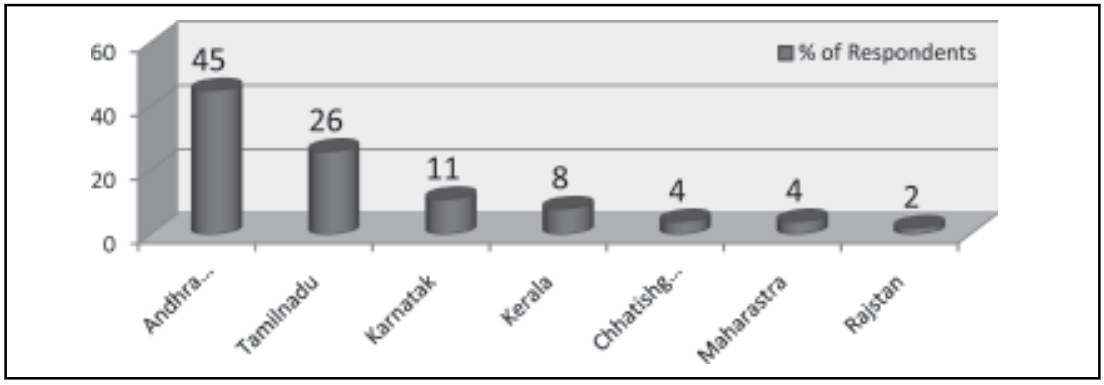
As indicated in Chart -5, only 9% of the workforce in the study area managed to have work for 50 days and 24% for 30-50 days under MGNREGA in the calendar year 2015-16. Speaking otherwise, 67% of workers had availed at the maximum 30 days of work in that year. This scenario indicates that non accessibility and non-availability of work at the local level might have forced the working age group people to move to different places in search of work.

Chart -5: Engagement in MGNREGA Work



In all the villages of the study area, one out of four households has a migrant labour. Most of the migration is directed to the nearby states, e.g., Andhra Pradesh (45%), Tamilnadu (26%), Karnatak (11%), Kerala (8%), Chhatishgarh (4%), Maharastra (4%) & Rajasthan (2%) (Chart-6).

Chart -6: Migration to Different States of India

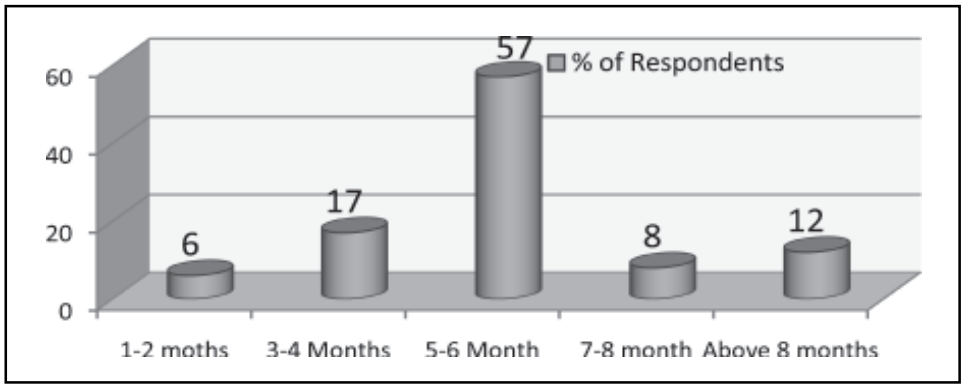


V. Issues and Challenges of Migration

At the place of destination, migration brings down wage rate, but raises it in the place of their origin. Migration often involves longer working hours, poor living and working conditions, social isolation and poor access to basic amenities of life.

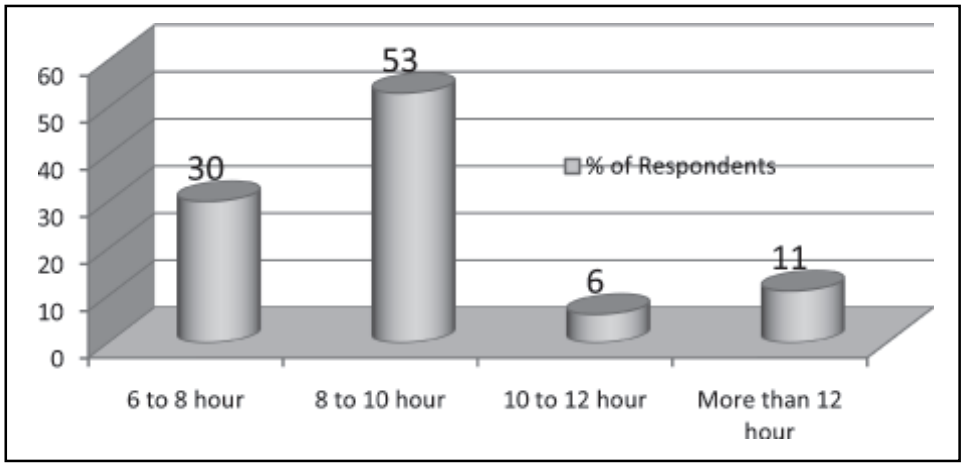
Chart-7 provides information about the period of migration of the respondents during a year. As high as 57% of the respondents out-migrate for 5-6 months, 17% for 3-4 months, 6% for only 1-2 months and 20% for more than six months in a year.

Chart -7: Duration of Migration in a year



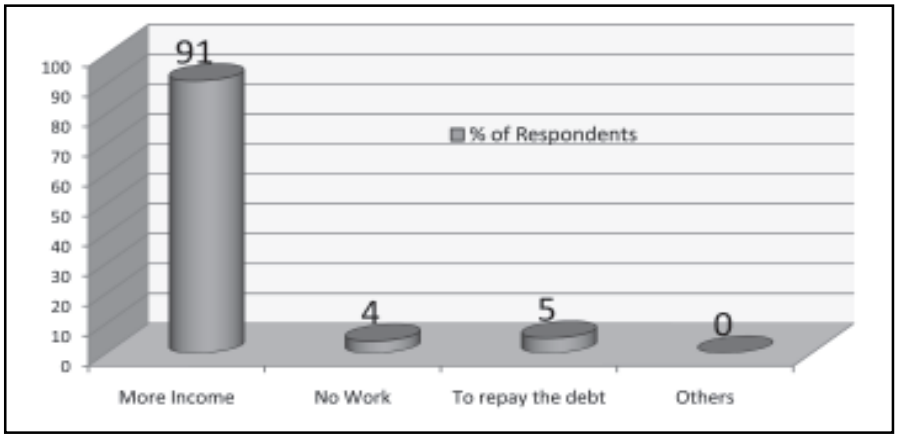
Relevant information about working hours of the migrants in their place of work has been presented in Chart-8. As high as 53% of them reported that they worked 8-10 hours, whereas 6% worked 10-12 hours and only 30% worked 6-8 hours a day at the workplace.

Chart -8: Hours of Work per Day



Views of the respondents about the causes behind their migration are presented in Chart-9. As high as 91% of the respondents opined that they migrated to earn more for their families, whereas 5% of them were forced to migrate to repay the old loans. Only 4% of them responded that they out-migrated for work as the same was not available in the neighbourhood.

Chart -9: Causes of out-Migration



VI. Conclusions

People out-migrate to the neighbouring states as they are not able to find job in the neighbouring locality. They usually migrate to the neighbouring states. Often the migrants work for longer hours, live and work under poor conditions and have poor access to the basic amenities. They are forced to work in unorganized sectors due to lack of skill and education. As a result, they have weak bargaining power, which compounds their vulnerability.

Due to lack of data, the problems relating to migration are ignored by the administration and policy makers. A mechanism for formulation and implementation of appropriate migration policy and creation of a migration data base to improve the conditions of the migrants is imperative. This can be achieved through creation of awareness among the migrants about labour laws and improvement of their employability through training and skill formation.

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Cow Dung, Social Responsibility and Economic Development of Tribal Women: A Case Study in Sundergarh District

Prafulla Kumar Padhi[1]

Subash Ch. Nath[2]

Vijaya Lakshmi Mohanty[3]

1. Introduction

The spirituality of tribal women prompts them to continue with their custom. They collect cow dung for present as well future use. Women require cow dung for the traditional kitchen system. Cow dung is one of the ancient and most important sources of energy for cooking. Tribal women use cow dung for flaming the hearth (Chulha). Without dry cow dung, fire wood cannot be used for fire in the kitchen. Cow dung is also used to prepare manure and organic fertilizer in the agricultural field. Tribal woman get some money in return for collection, preservation and sale of cow dung. Although cow dung related activities help them on a small amount of income, it creates large scale of employment in tribal communities. Generally, the tribal women involve themselves in rearing cows and collection, preservation and sale of cow dung. These activity help a tribal household with sustainable livelihood. This small income enable them to meet some kind of small household expenditures. This cow dung business with its resultant income has empowered tribal women at the family level. Earnings from cow dung suppliments income of tribal households.

Cow dung is also used as major raw material for agarbati making and cultivation of turmeric, garlic, coriander, red chilli, chinnamon, star anise, fennel seeds, cloves, black cardamom. Tribal women have started putting up small enterprises for agargati making.

1 *Doctoral Research Scholar, Sri Sri University, Sri Sri Vihar, Ward No - 3, Godi Sahi, Cuttack – 754006, Odisha, India, Email id: prafulla.p2014ds@srisriuniversity.edu.in; pkpadhi2009@gmail.com, Contact: +91 8763515549*

2 *Associate Prof. (Marketing & Strategy) & PhD Coordinator, Sri Sri University, Odisha, Email id: subashnath@gmail.com, Contact: +91 9437199255*

3 *Champion Faculty, Good Governance & Public Policy, Head (Public Relations & Social Outreach), Sri Sri University, Odisha, Email id: jgdvijaya@gmail.com; Contact: +91 9437965394*

2. Literature Review

Johan Graafland1 (2015) has highlighted that tribal women use cow dung daily for cleaning and pasting the floor, with its consider socially holy and responsible activity.Abhishek Raj, Manoj Kumar Jhariya and Pratap Toppo(2014) have explained that cow dung is used as a major source of renewable energy, cooking fire and organic fertilizer. The use of cow dung cake is increasing day by day due to increase in price sources of energy.

AKM Rafiqul Islam and Mohammad Shamim Hossein(2014), examining the perception and attitude towards bio-gas plant in Bangladesh found that there was bright future of bio-gas plant because of the huge availability of cow dung. They found that rural firm women face a lot of difficulties while handling the livestock. J. V. Ekale, C. M. Bellurkar and D.L Jadhav (2006) found that success of a dairy firm depends on the women entrepreneur's determination and devotion to the business.

M.S. Kabir, Xuexi Hou, Rahima Akther, Jing Wang & Lijia Wang (2012) have done an impact study of small entrepreneurship relating to livestock, poultry and fisheries etc. and found that these enterprises had favourable returns in rural areas.

3. Research Objective

The study aims at finding the influence of cow dung on economic development of tribal women.

4. Hypotheses

H_0- Cow dung is not influencing the economic development of tribal women.

H_1- Cow dung is significantly influencing the economic development of tribal women.

5. Methodology

Forty tribal women from four different blocks of Sundergarh district, Odisha were contacted. The primary data were collected from eight villages i.e Bisra, Jaraikela, Bondamunda, Bartoli, Lathikata, Jalda, Kuarmunda, Vedvyas of Bisra, Lathikata, Kuarmunda and Bondamunda blocks. The responses of sample households were taken by using dichotomous questions in the questionnaire. Correlation technique and Chi-Square test was used for analysis.

Two sets of questions relating to use of cow dung and economic development were put to respondents in order to find out the linkage between the two.

I. Questions relating to use of Cow Dung by tribal women: The responses to these questions provide information about the use and processing of cowdung by tribal women.

(a) Are you rearing cows?

(b) Are you using cow dung for flaming the hearh (Chulha)?

(c) Are you preparing cow dung cake (Ghasi)?

(d) Are you selling cow dung?

(e) Are you preparing manure?

II. Questions relating to economic development of tribal women: The responses to these questions provide the information about the linkage between self imcome and expenditure of tribal women. Whether the income from cow dung selling is allowing them to meet personal needs by doing the minimum expenditure? The probable answer is searched from the following questions.

(a) Are you purchasing onion, green chilly out of your own income?

(b) Are you purchasing cosmetics out of your own income?

(c) Does your purchase help your family expenditure?

(d) Are you using cow dung manure in your agricultural field?

(e) Are you going to the bank or post office every month?

6. Data Analysis

The responses of the sample tribal women were recorded and these responses were tabulated by using their respective numerical values in a dichotomous format, i.e., Yes(1) or No(2). The total number of positive responses (yes) and negative responses (No) were calculated. Only the positive responses were taken for further calculation and analysis. Those responses are tabulated in Table-1. Correlation and chi-square test have been sued to find out relationship between 'use of cow dung' and 'economic development'.

Table -1: Responses of Tribal Women

Sl. No.	Use of Cow Dung	Economic Development
1	40	40
2	30	40
3	30	20
4	20	**15**
5	15	**5**

The correlation between use of cow dung by tribal women and level of their economic development is plotted in Table-2.

Table-2: Correlation between use of Cow Dung and Economic Development

		Use of cow dung	Economic development
Use of cow dung	Pearson Correlation	1	.881(*)
	Sig. (2-tailed)		.048
	N	5	5
Economic development	Pearson Correlation	.881(*)	1
	Sig. (2-tailed)	.048	
	N	5	5

* Correlation is significant at 0.05 level (2-tailed).

The correlation value (0.881) shows a strong positive correlation between use of cow dung and economic development of tribal women. This implies that there is a reasonably positive relation between income from cow dung sell and expenditure incurred to meet personal needs of tribal women.

It is highly essential to know the degree of significance between the two groups of responses. Chi-Square test is used for the purpose. The interpretation of Chi-Square test is plotted in the following tables 3, 4,5 & 6.

Table-3: Response Table (Yes or No)

Use of Cow dung (C)		Economic development (D)	
Yes	No	Yes	No
40	0	40	0

Table -4: Average Frequency Table

	C	D	Total	E
Yes	27	24	51	25.50
No	13	16	29	14.50
Total	40	40	80	40

Table -5: Expected Frequency Table

	C	D	Total
Yes	25.50	25.50	51
No	14.50	14.50	29
Total	40	40	80

Table -6: Applying X^2 Test

O	E	$(O - E)^2$	$(O - E)^2/E$
27	25.5	2.25	0.088235
13	14.5	2.25	0.155172
24	25.5	2.25	0.088235
16	14.5	2.25	0.155172
X^2=			0.486815

Source : Primay survey

E = Expected Frequency (Yes) = 40×51/ 80 = 25.50 and (No) = 40×29/ 80 = 14.50

Where as X^2= Ó [(O - E)^2/E]= 0.486, v= (r-1)(c-1)= (2-1)(2-1)=1, v=1, $X^2$0.05=3.84

The calculated X^2 value of 0.48 is less than the table value, 3.84. Hence the hypothesis H_0: Cow dung is not influencing economic development of tribal women is accepted.

In a nut-shell, use of cow dung by and economic development of tribal women are strongly and positively correlated. But cow dung use by tribal women is not significant enough for their economic development.

7. Conclusion

The study reveals that cow dung not only serves the traditional sentiments of the tribal women, but also helps them earned small income to meet their small personal and household expenditures. It has every potential to develop into small enterprises and enhance their income. It will be difficult for them to take such steps with their poor economic background and limited exposure to the outside world. Help from the government would go a long way in fulfilling this objective of the poor tribal women.

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Growth and Employment Pattern in Odisha during Post -reforms Period

Priyabrata Sahoo*

1. Introduction

Economic growth is a necessary condition for development. The growth history of the developed countries has confirmed that with higher economic growth, a traditional economy gets transformed to modern one in which the shares of industry and service sectors in Gross Domestic Product (GDP) starts to dominate while that of agriculture witnesses a decline. Odisha possesses vast natural resources and as such high growth potential. The state occupies 4.7 % of the country's total geographical area, 7 % of its forest coverage, 10 % of its water resources and 20 % of its mineral reserves. Despite having huge natural resources, Odisha is considered a poor and backward state as its annual per capita income was Rs. 24,928 (2012-13), way below the national average of Rs. 39,904. Rajan Committee Report had ranked Odisha as the least developed state in India on its index of economic development (Government of India, 2013). Both income & non-income indicators of economic growth have been very low for the state over the years.

Some of the recent literature observed that the relative economic position of Odisha has improved. Samantaray, A. *et al*. (2014) considered both the income and non-income indicators (literacy rate, infant mortality rate & maternal mortality rate) to show improved economic situation in Odisha. Their primary survey in three different regions of the state showed that the post-reforms decade has witnessed occupational mobility and high asset holding among the households of the state. Panda (2015) has shown that Odisha has achieved a higher growth rate in the 2000s, especially after 2004-05 with a faster reduction in poverty and inequality. The India Today Group in collaboration with the Institute of Human Development (IHD), New Delhi assessed the state's thirty districts over two decades on the basis of ten indicators. According to them, Odisha has transformed from a poverty stricken state to a front-runner as regards socio-economic development, recorded a high growth rate in the recent past and its relative economic position has improved. If so, it is important to know which are the sectors witnessing faster growth rate in the state. Is there a major structural transformation in output and employment scenario of the state ?

* *Visiting Faculty, School of Liberal Studies, PDPU, Gandhinagar, E.Mail :priyabratasahooo8@gmail.com.*
Author thanks Prof R. Vijay for his valuable inputs.

2. Data and Methodology

The study is based on secondary data collected from relevant reports. The employment figures have been taken from quinquieneal round survey reports of National Sample Survey Organisation (NSSO) in 1993-94 (50th), 1999-00 (55th), 2004-05 (61st) and 2011-12 (68th) and Employment–Unemployment Survey (EUS). The quintile distribution of employment has been calculated from NSSO unit level data of EUS, 61st (2011-12) round.

The paper consists of 6 sections. The introductory Section 1 is followed by discussion on data and methodology used. Section 3 explains the sectoral composition of output in Odisha. Section 4 traces the pattern of economic growth and its sectoral decomposition. Section 5 examines the nature and type of employment in Odisha. Discussion of quintile-wise distribution of employment in Section 6 is followed by a concluding section.

3. Nature and Trend of Employment in Odisha

The sectoral share of employment along with income over time will indicate, the direction in which direction the economy is moving. One of the main objectives of inclusive growth is to provide both quantitative and qualitative employment with high income growth. Table 1 presents the sectoral share of employment in both rural and urban Odisha and India in terms of the Usual Principal Subsidiary Status (UPSS) in the post-reforms period. The data are collected from quinquienial Employment Unemployment Survey (EUS) reports prepared every five year by the NSSO. Due to lack of adequate employment data, the estimates for the 50th , 55th , 61st , and 68th round reports of NSSO have been considered for the study. As the report does have rural and urban classification of employment – unemployment data and does not provide the total employment scenario, the same classification has been considered here.

Table.1 : Sectoral Share of Employment in Rural and Urban Odisha and India

(%)

UPSS	Rural Odisha			Urban Odisha		
Year / Sector	PRIMARY	SECONDARY	TERTIARY	PRIMARY	SECONDARY	TERTIARY
1993-94	80.90	9.40	9.80	15.70	26.40	57.70
1999-00	78.20	11.90	9.90	13.00	32.00	55.00
2004-05	69.00	17.50	13.60	13.90	26.60	59.40
2011-12	62.25	22.64	15.13	14.10	23.11	62.80

UPSS	Rural Odisha			Urban Odisha		
1993-94	78.40	10.20	11.40	12.30	32.10	55.50
1999-00	76.30	11.40	12.40	8.80	32.20	59.20
2004-05	72.70	13.70	13.60	8.80	34.10	57.20
2011-12	64.10	20.39	15.51	6.69	34.99	58.33

Source – Relevant from NSSO EUS Reports

The share of employment in rural Odisha and rural India were more or less the same but different in urban areas. The primary sector witnessed a decline in its employment share, but the secondary and tertiary sectors experienced increase in their shares. The changes were, however faster in the 2000s. A large proportion of the population still depended on the primary sector for their livelihoods. In Odisha, around 65% of the total population were employed in the primary sector in 2004-05 and it declined to 57% in the year 2011-12, while the corresponding all India figures were 58.5% and 49%. In the secondary sector of Odisha, manufacturing and construction activities witnessed high employment share. Though the mining sector recorded a high growth in NSDP during the 1990s period, its share in employment declined and was less than 1%. The employment share of the secondary sector increased faster than that of the tertiary sector despite high growth rate of output in the latter. In the urban Odisha, employment generations in the secondary and tertiary sectors were higher compared to the secondary sector. Employment share of primary and tertiary sectors were higher than that of the primary sector in urban Odisha and India. It implies that in a state like Odisha with low urbanization, employment creation in rural areas would play a vital role for inclusive growth. Around 60% of the population depended on the farm sector for employment in the state.

Table -2: Labour Force Participation Rate in Odisha and India

Odisha/India	Rural Odisha			Urban Odisha			Rural India			Urban India		
LFPR	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
1993-94	577	319	449	546	161	365	561	330	449	543	165	363
2004-05	604	351	476	553	202	386	555	333	446	570	178	382
2011-12	606	251	427	603	158	395	553	253	406	563	155	367

Source: NSSO EUS Reports

Table-2 presents the labour force participation rate (LFPR) of Odisha and India in rural and urban areas. The LFPR of Odisha is higher than that at the national level, rural LFPR is higher than urban figure, and LFPR for males is higher than that for females in both rural and urban areas. Of course, female LFPR is higher in rural areas compared to urban areas. In Odisha, male and female LFPR increased in both rural and urban areas. The state witnessed faster growth in income in later years.

Table -3: Type of LFPR in Rural and Urban Odisha

Rural Odisha	Years	Male			Female			Total		
		self Employed	Regular Employed	Casual Labour	self Employed	Regular Employed	Casual Labour	self Employed	Regular Employed	Casual Labour
	1993-94	566	62	372	562	13	425	564	45	391
	2004-05	564	75	361	619	21	359	584	56	360
	2011-12	606	83	311	659	33	305	624	67	309
Urban	1993-94	371	481	148	377	291	332	372	443	185
	2004-05	462	357	181	379	352	269	444	356	200
	2011-12	496	364	140	581	271	148	512	346	142

Source: NSSO EUS Reports

The quality of employment matters for inclusive growth. Table -3 presents the type of employment in rural and urban Odisha in the post-reform era. The share of regular employed in rural Odisha is very low compared to the self employed and causal labour. But the self - employed and regular employed constitute a major part of the workforce in urban Odisha during the early years under study. The self-employed both increased in rural and urban Odisha, but the casual labour declined in rural areas and increased in urban areas. The regular employed constitute a very small proportion of the rural workers, for which increase in their number would not impact the economy match. During the later years the number of causal labour decreased and that of the self-employed increased.

4. Quintile-wise Employment in Odisha

Growth to be inclusive, it is of significance to know how employment increases in different income decile groups. Table-4 presents sectoral composition of employment in different income groups.

Table -4: Decile-wise Distribution of Sectoral Employment in Odisha, 2011-12

	Rural			Urban			Total		
Docile Group	Primary	Secondary	Tertiary	Primary	Secondary	Tertiary	Primary	Secondary	Tertiary
1	61.95	31.46	6.59	17.99	33.40	48.61	55.17	31.76	13.07
2	69.95	20.71	9.34	17.07	22.20	60.73	60.83	20.96	18.21
3	66.07	22.80	11.13	5.49	18.28	76.22	55.77	22.03	22.20
4	56.00	27.21	16.79	25.40	17.91	56.70	51.22	25.76	23.02
5	58.96	20.61	20.43	23.36	10.83	65.80	53.06	18.99	27.95
6	61.67	22.01	16.32	3.15	25.11	71.74	52.85	22.48	24.67
7	54.42	22.59	23.00	1.15	17.21	81.64	45.26	21.66	33.07
8	53.38	23.57	23.04	0.21	27.18	72.60	44.83	24.15	31.02
9	50.69	19.95	29.36	0.00	18.49	81.51	42.05	19.70	38.25
10	38.47	18.50	43.03	3.10	14.29	82.61	31.96	17.72	50.31
Total	**57.48**	**23.01**	**19.50**	**9.66**	**20.32**	**70.02**	**49.57**	**22.57**	**27.86**

Source –EUS 68th Round and National Industrial Classification (NIC)

Around 62%, 31% and 7% of Odisha's rural population respectively depend on primary, secondary and tertiary sectors in the lowest income decile, while the corresponding proportions in the highest (10th) income decile are 38%, 19% and 43%. It shows that the higher decile income groups mainly depend on the tertiary sector and their counterparts in low income decile group depend on the primary and secondary sectors for their livelihoods. In the urban area, dependence on the primary sector is low, but high on the tertiary sector in all the income groups.

5. Conclusion

The major structural changes in Odisha have taken place in 2000s when income growth was faster, especially in the service sector. In terms of employment, LFPR increased at

faster rate in early years compared to the latter years of the study. Self-employment increased at a faster rate in the latter period. People in the lower income strata were mostly casual labourers and self employed. Though Odisha experienced higher income growth in the post-reform period, employment growth in the state was slow. The state government should focus on more employment generation to achieve faster poverty reduction and inclusive growth.

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Forest Resource and Tribal Livelihood in Odisha

Sabitri Majhi*

I. Introduction

Odisha is rich in forest cover and has recorded forest land of about 58,136 sq. km., which is 37.34% of the State's geographical area. Per capita recorded forest area of the State is 0.14 ha compared to 0.06 ha. at the national level. Odisha is one of the pioneer states where community started managing forests as early as in 1950s. It is the first state in the country to issue resolution in 1988 for involvement of village community in forest protection. The tribal people, being the original inhabitants of India have been dwelling in the forest surrounded by hills for a long period. Their social structure, culture and language are quite different from those of the general public of the country. In the post- independence era, a lot of changes have taken place in the tribal areas due to government endeavours for their socio-economic development, but they are still far away from the mainstream society. A tribal is born and brought up in the forest environment and collects his livelihoods from forest. They used to take keen interest in protecting the forest.

This ultimately speaks of a firm symbiotic relationship between forest and tribes. It can be strongly acclaimed, therefore, that tribals, irrespective of different techno-economic levels, are noticed to be forest-based or forest-orientated. They collect a large variety of edible roots, tubers, fruits, nuts, berries, mushrooms, leaves, flowers etc., for direct consumption all through the year. They also gather various useful produces like fuel wood, fibres, timber, grass, leaves, resin, gum, medicinal to meet their household requirements and sale in the market. Besides such dependencies on forest, the tribals also have emotional attachment with it. The degree of dependency of a food-gathering and hunting tribe is more intense than that of the agricultural or pastoral tribes.

* *Ph.D Research Scholar, Sambalpur University, Email- smajhi.coats@gmail.com, Mob no- 8895628129*

Table -1: Forest and Tree Cover in Odisha, 2015

Total geographical Area (GA)	1,55,707,sq.km.
Recorded Forest Area	58,136 sq.km.
Forest Cover Area	50,354 sq.km.
Forest Land under control of Forest Department Reserve forest	26329.12 sq.km
Per capital unclassified Forest	20.55ha
Per Capita Forest Area (Recorded)	0.14 ha.
Per Capita Forest & Tree Cover	0.13 ha
Percentage of forest Area (Recorded) to Geographical Area	37.34%
Percenrage of Forest & Tree Cover to Geographical Area	34.9%
Forest Land control of Revenue Department	11685.68 sq .km
Demarcated Protect Forest	
Un demarcated Protect Forest	3838.78 sq.km
Other Forest Under Revenue Department	16261.34 sq.km

Source: Economic Survey of Odisha 2016-17

II. Relationship between Forest and Tribal People

At present, tribals are partially nomadic and partially settled. The nomadics meet their needs through collection from the forest. Semi-settled and semi-nomadic tribes utilise semi-open forest land for cultivation, but the settled tribals are agriculturists as well as collectors of minor forest produces. These communities had their base in agriculture and depended on forests only for limited purposes like grazing of cattle and collection of NTFPs. In the more advanced regions, however, many tribal groups have got transformed into agricultural communities their relationship with forest is entirely different from that of the original tribal communities. Besides, they also practise traditional underdeveloped animal husbandry and poultry farming.

Forest is inseparable from tribal life economically, ecologically and socio-culturally. The forest resources are important contributors to the livelihoods of the tribal communities. Forest development integrated with agricultural and industrial progress has great potential to enhance livelihood security, and reduce poverty among the tribals. Earnings from agriculture are generally not sufficient to maintain a tribal family because of low quality of

agricultural land on undulating landscape, traditional agricultural technology, scarce water resources etc. The tribals generally supplement their income as well as food requirements through collection of NTFPs.

NTFPs refer to all biological materials other than timber extracted from natural forests for human and animal uses. It includes plant tissue used for fiber, building material, medicine, edible leaves, roots, flower, fruit, seed, nuts, honey, resin, glue, lac etc. and has both consumption and exchange value. They have income potentials and provide employment opportunities. Prior to national Forest Policy (NFP), 1988, NTFPs were popularly known as Minor Forest Products (MFP). The reliance of tribals on NTFP becomes very high during uncertain agricultural yields for both food securities and income.

Local skills and village-level technology in wood based and small-scale forest-based enterprises provide secondary employment and livelihood opportunities to tribal people. These activities include saw milling, rayon, pulp and paper, ply wood and panel products, wood seasoning and preservation, tanning, sports goods, match splints, veneers, wooden boxes, bamboo and cane products, agricultural implements, furniture, structural wooden items, musical instruments, bidi making, educational goods, wood carving, wooden utensils etc

Despite rich potential of NTFP in Odisha forests with about 120 species, not much effort has been made by the State Government with regards to their collection, processing, marketing and income generation to benefit the tribals. As a result, gross underutilization of available NTFP resources has adversely affected the livelihood sustenance of poor forest dwellers living in and around forest. Various forest Acts have been passed and implemented from time to time and also a number of institutions have been established to do away with exploitative middlemen, traders businessmen etc.

III. Government Forest Policy and Management

Under NTFP policy, any person desirous of purchasing NTFP from primary gatherers or trading in NTFP so purchased shall undertake the trade after registration with the Gram Panchayat concerned on payment of registration fees fixed by the Gram Panchayat. The Government shall not grant lease and levy royalty in respect of NTFP items. No transit permit will be required for transport of these items within the state. Other than 68 NTFP items listed in the policy resolution, 2000, collection and trading of 9 items required permission from the Government of Odisha. In order to ensure payment of fair procurement prices to the primary gatherers. Price fixation for NTFPs was made at the district level as per a resolution in 2001. The District Collector was empowered to fix the minimum procurement prices of all the NTFP items including 68 Minor Forest Produces in consultation with local officials and organizations concerned.

Odisha has been the first State to issue a resolution on Joint Forest Management (JFM) in 1988 for protection of peripheral reserve and protected forests with the participation of local people from adjoining villages. The resolution on JFM has been revised from time to time. There were about 1,199 JFM committees in 2005, managing about 14% forest area. Nearly 17 million families were involved in this programme. Out of these, around 0.7 million families belonged to tribal communities. About 12,166 Vana Surakhya Samities (VSS) have been formed in the State. These VSS have been assigned a total of 11,547 sq.km of forest area. Apart from this, 463 Eco-Development Committees (EDC) have been formed for forest protection activities.

IV. Conclusion

Forest is home for the tribal people through generations. Forest resources play significant role for the livelihood of the tribals including food materials, medicines and equipments. Forest-based tribal livelihoods are undergoing rapid changes. There is a growing tendency among forest-adjacent communities to seek a livelihood strategy which combines forest-based production with farming and off-farm activities. Their produces need easy access to urban markets, which calls for improved infrastructure and creation of organizations specializing in manufacture and trade in NTFPs through a multifunctional production system. This will be possible through location-specific research on the NTFP production potential.

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Female Work Participation and Time Saving Consumption Expenditure: An Empirical Observation from Odisha

Sachita Nanda Sa[1] and Gayatri Nayak[2]

1. Introduction

The pattern of consumption expenditures differs among those households where both the spouses are working and where only husband is working for wages. In dual-earner households, working-wives are supposed to spend more on time saving consumer durables, non-durables and services, because of increased opportunity cost of time of the working-women. Though, labour market participation of women increases the household income, it also leads to extra expenditure on transportation, child care etc. (Mathew &Goyari 2011). Economists like Strober, (1970, 1977) Kaplan, (1938) and Agarwal and Drinkwater, (1972) have theorized on the pattern of consumption expenditure of those families where both the spouses are working.

When the wives start working outside the home, the value of their time increases and this is expected to change the consumption expenditure pattern of the household. In modern age, people have become more time conscious and consider time precious. Participation of women in the labour market is an important parameter in the analysis of consumption behaviour of the households due to the diverse ways in which it influences the pattern of consumption. As Strober (1977) states 'since the total work for employed wives is much longer than for non-working wives, working-wives families should tend more often than non-working wives families to substitute time-saving (and probably fatigue-saving) goods for home production'. The differences in the allocation of resources controlled by both men and women differ and this has major micro and macro implication.

It is observed that income earned by women is generally spent on those goods and services that enhance the standard of living of the households. Empirical studies held in various parts of the world have shown that even after controlling for income differences, female

[1] *Assistant Professor in Economics, P.G dept of Social Science, F.M University, Balasore, Email: sachitanandasa@gmail.com*

[2] *PHD Research Scholar, P.G dept of Social Science, F.M University, Balasore Email: gayatri.you@gmail.com*

headed households are more food secure and register lower incidence of poverty than the male headed households. Also the children of these households, especially girl children, get better treatment in terms of schooling, nutritional levels etc.

2. Objectives of the study

The objectives of the study are as follow:

1) To examine the consumption expenditure patterns of single-earner and dual-earner households on time-saving durable, non-durable goods and services.

2) To estimate econometrically the consumption function of dual-earner and single-earner households with a view to examine the variables influencing the time-saving consumption expenditure.

All the objectives have been analyzed with the primary survey data.

3. Data Sources and Methodology

The study is based mainly on primary data. Data are collected from both the dual-earner (working-wife) and single-earner (non-working-wife) households for comparative analysis. The total sample size is 120 households, 60 from each category. The sample was selected by using stratified purposive sampling method. A structured questionnaire having relevant questions was canvassed among the sample households. The sample was chosen from among the employees working in various government and semi-government departments in an around Bhubaneswar, capital of Odisha during August 2014.

Data thus collected were tabulated and econometric models on consumption were estimated. To examine the objective under study, we estimate mainly two sets of models. The 1st model (Model 1) is the total consumption expenditure function and the 2nd model (Model 2) is the time-saving consumption expenditure function. Both models are multivariate linear regression models and estimated for single-earner and dual-earner households and total sample. In the regression models, per capita consumption expenditure is taken as dependent variable and monthly disposable income as independent variables.

4. Profile of the Sample Households

This section expounds demographic characteristics, educational status, occupational structure, income and expenditure of the sample households. Both the categories of sample households, SHH and DHH showed almost similar characteristics with regard to household size and other demographic characteristic. The largest number (37) of males' was in the age group of 51-55 years and the largest number (37) of females was in the age group of 46-50 years. The age of both male and female respondents varied between 25 and 60 years in

both categories of households. On an average, the difference in age of the spouses is found to be higher in the case of SHGs. between the spouse sare found to be greater in the SHHs. The mean difference in age between the husband and wife is 5.55 years in SHHs and 3.47 years in DHHs. The majority of families in both household categories had four members, mostly parents and two children. None of the households included in the sample had more than three children and only two DHH had no child.

In the sample as a whole, the majority of the respondents have read up to graduation. The next highest education level was Higher Secondary (22 females, and 30 males). Of 240 respondents, except for 9 men and 14 women in SHHs, all respondents had at least secondary education. On the whole, the educational qualification of the non-working women is marginally lower than that of their spouses.

The main source of income of the sample households is salary. In a few households, transfer payment, house rent and income from land etc. form part of income. As salary is the primary source of income for the sample households, total per capita income is considerably less in SHHs compared to DHHs. Total monthly household income in SHH category ranges between Rs.15000 and Rs.125000, and between Rs.30000 and Rs.221000 in the DHHs category. The average monthly income of the SHHs is Rs.38117 and DHHs is Rs.88017.

In the total sample, on an average, the households spend 2.61% and 12.53% of their expenditure for time-saving non-durable goods and services respectively. Taken together, this forms 15.14% of the total household expenditure. An average household spent Rs.1353 and Rs.8053 per month for time-saving nondurable goods and services respectively. Thus, the sample households are spending more on time-saving services than time-saving non-durable goods. SHHs on an average spend 12.01% of their total expenditure on time-saving non-durables, (2.28%) on durable goods and (9.73%) on services; at the same time the corresponding figures for DHHs are 18.25%, (2.93%) and (15.32).

On an average, when a DHHs spend Rs.1877 per month on time-saving non-durables and Rs.12563 per month on time-saving services, the amount spend by single-earner households are respectively Rs.828 and Rs.3543. Thus, the expenditure on non-durable goods by DHHs is about 2.27 times that of SHHs. Similarly the expenditure on time-saving services is about 3.55 times higher among DHHs compared to SHHs.

5. **Estimates**

For the purpose, two linear regression equations are estimated. The 1st equation model is the total consumption expenditure (Model-1) and the 2nd equation model is the time-saving consumption expenditure (Model-2).

MODEL-1

$$Ci = \beta_1 + \beta_2 Y_i + U_i$$

Where

C_i =Total monthly consumption expenditure of household i. (in Rs.)

Y_i = Monthly disposable income of household i

Other terms are usual notations.

MODEL-2

$$C_{(TS)i} = \beta_1 + \beta_2 Y_i + U_i$$

$\mathbf{C_{(TS)i}}$ = monthly time-saving consumption expenditure of household i (in Rs.)

Y_i = monthly disposable income of household i (in Rs.)

Other terms are usual notations.

The models have been estimated for single-earner households and dual-earner households separately and for the sample as a whole, it has also been estimated for single-earner households and dual-earner households across all income groups.

Total Consumption Expenditure Model (Model-1)

The estimates of model-1 are given in Table-1.

Table-1: Estimates for Total Consumption Expenditure (Model-1).

HHs		Coefficients		n	F	D-W	R square
		MPC	Intercept				
SHHs	LI HHs	0.895 (.000*)	714.023 (.670)	16	105.525	2.279	0.883
	MI HHs	0.801 (.000*)	2275.906 (.97)	36	429	1.712	0.927
	HI HHs	0.765 (.000*)	0.765 (.000*)	8	50.395	2.188	0.894
	Total SHHs	0.763 (.000*)	0.763 (.000*)	60	2.820E3.	1.982	0.98
DHHs	LI HHs	.	.	0	.	.	.
	MI HHs	0.744 (.000*)	4180.322 (.204)	30	121.777	1.432	0.813
	HI HHs	0.752 (.000*)	2083.194 (.686)	30	330.406	2.105	0.922
	Total DHHs	0.737 (.000*)	4158.932 (0.21)	60	1.554E3.	2.071	0.964
TOTAL		0.740 (.000*)	4079.253 (.000*)	120	4.868E3.	2.052	0.976

Source: Field survey, August 2014

Notes : SHHs- single-earner HHs, DDHs- dual-earner HHs, HHs- households
LI-lower income, MI- middle income, HI- higher income
Figures in parenthesis are p-statistic values
* denotes 1% level of significance
** denotes 5% level of significance
*** denotes 10% level of significance

The results suggest that when both categories of households are taken together, the estimated MPC is 0.740. This estimated coefficient is in accordance with the popular Keynesian hypothesis that MPC is positive, but less than one. This estimated MPC is also statistically significant at 1 percent level of significance. Thus, the total income is affecting the total consumption expenditure significantly and positively.

In the case of SHHs, the estimated slope coefficient, i.e., MPC is 0.763. This implies that MPC for SHHs is higher than that for the total sample. For DHHs, the estimated MPC is 0.737. This estimated value is lower than the corresponding figures for SHHs. These estimates show that for every increase in disposable income, the corresponding increase in consumption expenditure is significantly higher for SHHs compared to DHHs and the total sample as a whole.

Time-saving Consumption Expenditure Model (Model-2)

Estimates the rate of change of time-saving consumption expenditure with respect to changes in family disposable income are given in Table-2.

The results suggest that when both types of household are taken together, the estimated time-saving MPC is 0.190 and this estimate is statistically significant at one percent level of significance. As the monthly disposable income of a households increases by rupees one thousand, its time-saving consumption increases by Rs. 190.

The estimates show that MPC of time-saving consumption for SHHs and DHHs are respectively 0.142 and 0.180. This implies that time-saving consumption expenditures are less responsive to change in the total family disposable income and MPC for DHHs is marginally higher than that for SHHs. This shows that DHHs are more responsive than SHHs as regards time-saving consumption expenditure.

Table-2:Estimated Results of the Time-saving Consumption Function of Sample HHs, BMC.

HHs		Coefficients		n	F	D-W	R square
		MPC	Intercept				
SHHs	LI HHs	0.239 (.046**)	_2107.043 (.323)	16	4.786	1.84	0.255
	MI HHs	0.119 (.000*)	_391.246 (.619)	36	27.65	1.696	0.449
	HI HHs	0.114 (.229)	2263.706 (.772)	8	1.79	2.149	0.23
	Total SHHs	0.142 (.000*)	803.290 (.084***)	60	177.964	1.988	0.754

DHHs	LI HHs	.	.	0	.	.	.
	MI HHs	0.208 (.000*)	_1753.297 (.316)	30	33.388	2.068	0.544
	HI HHs	0.148 (.000*)	4578.229 (.190)	30	28.706	1.759	0.506
	Total DHHs	0.180 (.000*)	238.508 (.841)	60	201.18	1.595	0.776
TOTAL		0.190 (.000*)	_1554.982 (.007*)	120	596.48	1.476	0.835

Source: Field survey, August 2014

Notes : SHHs- single-earner HHs, DDHs- dual-earner HHs, HHs- households
LI-lower income, MI- middle income, HI- higher income
Figures in parenthesis are p-statistic values
* denotes 1% level of significance
** denotes 5% level of significance
*** denotes 10% level of significance

6. Conclusions

Market participation of women fuels the economic development of a country in various ways. It generates higher income for the households, thereby increase in consumption and resultant higher multiplier effects in the economy. However, the consumption pattern and preferences of working-wife households (DHHs) are different from that of non-working wife households (SHHs). As the opportunity cost of time of employed wives is higher than that of the non-working-wives, the working-wife families are expected to spend more on time-and effort-saving goods for home production.

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Relationship Between Financial Exclusion and Social Exclusion: A study in Tribal Districts of Odisha

Susanta Kumar Sethy[1]

Phanindra Goyari[2]

Abstract

Financial inclusion has been playing an important role for the economic and social development of society. The interrelation between financial exclusion and social exclusion has been the subject of increasing interest and debate. The Scheduled Tribe population in the State is overwhelmingly rural, with 94.5 percent residing in villages. The objective of the paper is to analyze the demographic and socio-economic status of tribes in Mayurbhanj, Malkangiri, Rayagada, Nabarangpur, Gajapati, Kandhamal, Sundargarh and Koraput in Odisha. The study is based on secondary data collected from the Census of India, NABARD and different reports.This paper also attempts to find out the circularity linkages between financial exclusion and social exclusion in tribal districts. After analyzing the fact and figures it can be concluded that thelarge number of tribe households are 'unbanked' (or financially excluded), showing that the extent of exclusion from bank accounts, number of bank branches, credit deposit ratio, loans are significant among the tribe people in Odisha. So there is a circularity linkages between financial exclusion and social exclusion becauseif financial exclusion is addressed, the social exclusion is automatically touched upon.

Keywords: *Financial Inclusion, Financial Exclusion, Social Exclusion, Economic Development*

JEL Classification: *O43, G21, D63, O11*

[1] *Doctoral Scholar, School of Economics, University of Hyderabad, Hyderabad-500046 (India), Assistant Professor, U.N. College, Soro, Odisha, Email: susanthu2010@gmail.com*

[2] *Professor, School of Economics, University of Hyderabad, Hyderabad-500046 (India) Email: phanin12@gmail.com*

I. Introduction

A nation can grow economically and socially if its weaker sections become financially independent and get included in the mainstream financial system through participation in saving and payment mechanism. Financial inclusion helps the poor with better economic opportunities as economic agents in the development process of the nation.

Financial inclusion is defined as the process of ensuring access to timely and adequate financial services and credit where needed by vulnerable groups such as weaker sections and low income groups at an affordable cost (C. Rangarajan Committee, 2008). The inclusive financial sector development makes two complementary contributions to poverty alleviation; (i) It drives economic growth faster which indirectly reduces poverty and inequality and (ii) it can improve welfare and living standard of the poor by making financial services affordable for them. Hence, financial inclusion and social inclusion go hand in hand. If one is addressed, the other one is automatically solved.

Otherwise speaking financial exclusion leads to social exclusion. Social exclusion is a multidimensional phenomenon. It has social, economic, political and cultural dimensions. However, financial exclusion constitutes the most important aspect of social exclusion. Addressing financial exclusion through financial inclusive policy can help reduce social exclusion.

II. Review of Literature

A few studies have been made by different economists, academicians and organizations on the interrelationship between financial and social exclusion. (Demirguc-Kunt & et al., 2007, Cull, Demirguc-Kunt and Morduch 2007, Kimenyi, 2006). Parker (2008) cites Nobel laureate, Prof. Mohammad Yunus stating that philanthropy is needed to stabilise some people before giving them access to credit, which can have significant empowering effect on their poor condition. An inclusive financial system provides a sizeable number of people access to required financial services for suitable livelihood (Beck and De La Torre, 2006). Adewale (2006) and Anderloin and Carluccio, (2006) also observed that the poor were afraid of borrowing from the private sector and had no/limited access to banking services because they were socially excluded.

They also pointed out that there was circularity causation between financial exclusion and social exclusion. In their view, poverty and social exclusion experienced by the tribal people were largely due to discrimination at social and institutional level during colonial as well as post independence era.

III. Objectives

The specific objectives of the present study are:

(1) to understand the present socio-economic status and demographic profile of tribal population in Odisha.

(2) to find out the circularity linkages between financial exclusion and social exclusion in the major tribal districts of Odisha.

IV. Methodology

The present study is based on secondary data collected from Census of India, NSSO, NABARD, and other reports. Out of 30 districts of Odisha, eight are considered tribal dominated districts on the basis of proportion of ST population to total district population. These districts are Mayurbhanj (58.72%), Malkangiri (57.83%), Rayagada (55.99%), Nabarangpur (55.79%), Gajapati (54.29%), Kandhamal (53.58%), Sundargarh (50.75%) and Koraput (50.56%).

V. Financial & Social Exclusion in Tribal Societies

Tribal society of Odisha is an amalgam of 62 tribes including 13 Primitive Tribal Groups (PTGs). Odisha is the third largest tribal dominated state in the country. The STs (41,974,218) account for 22.8% of the state population (Census 2011). The tribes of Odisha can be classified into six types: (i) hunting, collecting, and gathering type; (ii) cattle-herder type; (iii) simple artisan type; (iv) hill and shifting cultivation type; (v) settled agriculture type; and (vi) industrial urban worker type. They are at various stages of socio-economic development.

STs are mostly backward and geographically isolated communities. They fare poorly on all development indicators such as food and nutrition security, literacy and health. Given their high dependence on an ecologically complex natural resource base, they are also highly vulnerable to variability in weather and climate shocks.

The term financial exclusion was first coined in 1993 to describe a situation of having hardly any physical access to banking services (Sinclair and et. al.2009). Financial exclusion meant not only lack of access to financial products like banking and insurance, but also lack of geographical access to banks. However, the term was used to designate the condition of not having access to mainstream financial services (Kempson & Whyley, 1999). Financial exclusion is characterized as a situation where "people encounter difficulties in accessing and / or using financial services and products in the mainstream market that are appropriate to their needs and enable them to lead a normal social life in the society they belong to" (European Commission, 2008).

Financial exclusion is not an absolute concept, but a relative one since the financial system tends to change over time. The poor and disadvantaged communities are more likely to get excluded from the financial system.

In terms of social and occupational groups, landless labourers, marginal farmers, unorganized sector work-force, urban slum dwellers and people from scheduled castes and tribes are more likely to be financially excluded (Dev, 2006). There are different causes of financial exclusion in India such as legal identity, level of income, procedural formalities, limited literacy, place of living etc.

Social exclusion is "*lack of participation in society and emphasizes the multi-dimensional, multi-layered and dynamic nature of the problem*" (Buchardt, 2003). Social exclusion arises due to:

i) Low income related to employment status e.g. lack of employment opportunities and few benefits to the unemployed people.

ii) Hardly or no access to the services like education, vocational training, health care and financial services like banking

iii) Bad social environment, including poor dwelling place, deprived neighborhoods and uneasy family life.

VI. Performance of Financial Inclusion Programmes in Odisha

Financial inclusion, more particularly when promoted in the wider context of economic inclusion aim at improving financial condition and standards of life of the poor and disadvantaged. Access to affordable financial services would lead to increasing economic activities and employment opportunities for poor households with multiplier effect on the economy. It leaves the rural households with higher disposable income and larger savings.

i) Pradhan Mantri Jan Dhan Yojana (PMJDY)

Pradhan Mantri Jan Dhan Yojana (PMJDY) is a government scheme that aims to provide easy and affordable access to financial services such as bank accounts, remittances, credit, insurance and pensions. This financial inclusion campaign was launched by the Prime Minister of India on 28 August, 2014.

Table. 1: Pradhan Mantri Jan-Dhan Yojana Accounts in India (As on 06.06.2018)

(In crore)

Bank Type	Number of Accounts				Balance in Accounts (Rs.)	Number of RuPay Cards
	Rural	Urban	Total	Female		
Public Sector Banks	13.77	11.83	25.6	13.42	[1] 65,297.60	19.29
Regional Rural Banks	4.3	0.79	5.09	2.79	[1] 13,565.81	3.68
Private Banks	0.59	0.4	0.98	0.53	[1] 2,245.16	0.92
Total	18.65	13.02	31.67	16.73	[1] 81,108.57 (US$12 billion)	23.9

Source: GoI PMJDY Progress Reports

Table.2: Pradhan Mantri Jan-Dhan Yojana in Odisha

	Dec -2016	Dec -2017
Total Nos. of Villages covered	47765	47765
Total Nos. of sub service area covered	6276	6276
Total Nos. of wards covered	1729	1729
100% Saturation (Each household having minimum one Saving Bank Deposit Account)	30 Districts	30 Districts
No of accounts opened	Rural –84.45 lakh Urban -36.56 lakh	Rural-92.37 lakh Urban-38.85 lakh
Nos. of accounts opened with zero balance	25.82 lakh	32.72 Lakh
% of zero balance accounts to total account opened	21.34	24.94
Total deposit balance under PMJDY accounts.	2609.95 crore	3404.31 Lakh
Nos. of RuPay Cards issued	87.42 lakh	127.66 lakh
Nos. RuPay Cards activated	66.61 lakh	98.01 lakh
Nos. of Aadhaar seeded accounts	61.77 lakh	95.67 lakh
% of Aadhaar seeding	51.05	72.91
Nos. of active BC Agents (Bank Mitra)	5256	5256

Source: State Level Bankers Committee (SLBC) Reports, Odisha, 2016 and 2017

It is observed that the number of accounts opened under the scheme increased from 84.45 lakh in 2016 to 92.37 lakh in 2017 in rural areas and the corresponding figures for urban areas are respectively 36.56 lakh and 38.85 lakh in Odisha. Further, the number of accounts opened with zero balance increased from 25.82 lakh in 2016 to 32.72 lakh in 2017 and total deposits balance under Pradhan Mantri Jan-Dhan Yojana (PMJDY) accounts were 3404.31 lakh in 2017, which is a positive sign (Table-2).

However, the problem of financial exclusion looms large. Most of the rural Odisha does not have access to banks and rural folks do not have enough awareness/financial literacy to use the financial services.

ii) Pradhan Mantri Mudra Yojana (PMMY)

Pradhan Mantri Mudra Yojana (PMMY) is a flagship scheme of the Government of India to "fund the unfunded" by bringing enterprises to the formal financial system and extending affordable credit to them. It enables a small borrower to borrow from all Micro Finance Institutions (MFIs) and Non-Banking Finance Companies (NBFCs) for loans up to Rs 10 lakh for non-farm income generating activities. The scheme was launched on 8th April, 2015.

Table.3: Progress of PMMY in Odisha (from 01.04.2017 to 30.06.2017)

Financial Institutions	No. of Accounts	Share (%)	Disbursed amount (Rs Crore)	Share (%)
MFIs, NBFCs & Small Finance Bank	483896	87.70	1010.36	61.0
Public Sector Banks	26375	4.79	497.05	30.02
Private Sector Banks	39367	7.13	139.09	8.40
Regional Rural Banks	2107	0.38	9.04	0.55
Foreign Banks	1	0.00	0.06	0.00
Total	551746	100	1655.60	100

Source: State Level Bankers Committee (SLBC) Reports, Odisha, 2017

Table-4: Performance under MUDRA in Major Tribal Districts of Odisha (As on 30.06.2017)

District	Account	Amount(Rs crore)
Mayurbhanj	28767	94.86
Malkangiri	2853	7.73
Raygada	859	25.59
Nabarangpur	11944	26.89
Gajapati	4199	13.10
Kandhamal	1410	8.71
Sundargarh	24952	80.36
Koraput	14364	45.13

Source: State Level Bankers Committee (SLBC) report, Odisha, 2017

Table - 3 reveals that more such accounts were opened and Rs. 1010.36 cr was disbursed by MFIs, NBFCs & Small Finance Banks in 2017. Participation of foreign banks was the least with a disbursement of Rs. 0.06 cr. It is evident from table-4 that the maximum number of accounts (28767) were opened and highest amount (Rs. 94.86 cr.) was deposited in Mayurbhanj district in Odisha under MUDRA progamme, while least number of accounts (859) were opened in Raygada district, and least amount (Rs. 7.73 cr.) were deposited in Malkangiri district.

VII. Financial Services in Major Tribal Districts of Odisha

Financial inclusion of people can be gauged from the number of households availing banking services, number of bank accounts held by them and the Credit-Deposit (CD) ratio of the financial institutions operating in the area. The more these numbers, higher the financial inclusion.

By mid - 2017, the highest number (258) of bank branches were found in Sundargarh district and lowest (42) in Kandhamal district. Rural area bank branch network was the largest (182) in Mayurbhanj district and smallest (29) in Malkangiri district. Rural area bank branches outnumbered the same in the urban and semi-urban areas (Table-5).

Table – 5: Branch Bank Network in Major Tribal Districts of Odisha (30.06.2017)

Districts	Urban	Semi-Urban	Rural	Total
Mayurbhanj	18	61	182	201
Sundargarh	102	53	103	258
Koraput	2	51	66	119
Rayagada	2	35	61	98
Nabarangpur	0	26	36	62
Gajapati	5	23	37	65
Kandhamal	0	31	41	42
Malkangiri	0	15	29	44

Source: State Level Bankers Committee (SLBC) Report, Odisha, 2017

A larger number of tribal people in rural areas are financially excluded compared to their urban counterparts. By opening more bank branches and zero balance accounts, financial inclusion of the illiterate tribals cannot be ensured. Basic education facilities, banking awareness programmes and financial literacy programmes etc hold the key to developing banking habits among people. Both demand and supply (capability) side processes underlay behind the circularity of cumulative causation between financial and social exclusion.

Another indicator of financial inclusion of the people in a region is evident from the banking services availed by them. The relevant information for the major tribal districts of the state are given in Table-6. The table indicates that as per 2011 census, the percentage of households availing banking services in rural areas is the highest in Gajapati (53.34%) and lowest in Nabarangpur (21.90%). The percentage of households (both rural and urban) availing banking services is the highest in Sundargarh (73.98%) and lowest in Nabarangpur (51.45%). It reveals that people in tribal districts are more financially excluded.

Table - 6: Number and Percentage of Households Availing Banking Services

Name of District	Total/Rural/ Urban	Total Number of households	Total Number of households availing banking services
Mayurbhanj	Total	5,87,648	29, 7045 (50.55 %)
	Rural	5,44,764	26, 6585 **(48.94%)**
	Urban	42,884	30,640 (71.30 %)
Malkangiri	Total	1,37,450	40,739 (29.64%)
	Rural	1,26,306	34.646 **(27.43%)**
	Urban	11,144	6,093 (54.68%)
Rayagada	Total	2,25,964	101,731 (45.02%)
	Rural	1,91,615	79,251 **(41.36%)**
	Urban	34,349	22,480 (65.45%)
Nabarangpur	Total	2,73,663	65,893 (24.08%)
	Rural	2,53,461	55,500 **(21.9%)**
	Urban	20,202	10,393 (51.45%)
Gajapati	Total	1,28,818	70,146 (54.45%)
	Rural	1,12,872	60,211 **(53.34%)**
	Urban	15,946	9,935 (62.3%)
Kandhamal	Total	1,72,004	91,813 (53.38%)
	Rural	1,55,335	80,513 **(51.83%)**
	Urban	16,669	11,300 (67.79%)
Sundargarh	Total	4,73,293	27,018 (57.07%)
	Rural	3,10,762	14, 9,875 **(48.23%)**
	Urban	1,62,531	12, 0,233 (73.98%)
Koraput	Total	3,38,205	12, 1746 (36%)
	Rural	2,83,522	85,726 **(30.24%)**
	Urban	54,683	36,020 (65.87%)

Source: District Census Hand Book, Odisha

People get associated with banking sector through deposits and borrowings. More the credit deposit ratio, higher the financial inclusion. But the CD ratio hovers around 40% in these tribal districts. CD ratio was more than 40% in four major tribal districts, namely, Sundargarh, Koraput, Rayagada and Nabarangpur, but less than 40% in Mayurbhanj, Gajapati, Kandhamal and Malkangiri in 2016. But in 2017, CD ratio was more than 40% in Sundargarh, Koraput, Rayagada, Nabarangpur and Malkangiri districts and less than 40% in the remaining three districts.

VIII. Summary and Conclusions

Tribal societies are self-contained for which they are little exposed to the outside world. They remain in the outreach of mainstream development. For their inclusion in the development process, many a schemes like Pradhan Mantri Jan Dhan Yojana (PMJDY) and Pradhan Mantri Mudra Yojana (PMMY) are being implemented throughout the country and so is the case in the tribal districts of Odisha. Further, number of accounts, deposits and credit have increased in tribal districts over time.

Percentage of households availing banking services in rural areas is less than that in urban areas, though there are more bank branches in the former compared to the latter. Increase of bank branch networks and opening of zero balance accounts are not enough for financial inclusion. There is need for more infrastructures, basic educational facilities, banking awareness programmes, financial literacy and social awareness programmes etc. in tribal areas.

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Structural Change in Economic Growth and Employment in Odisha: 1970-71 to 2015-16

Trupti Mayee Sahoo[1] and Kshamanidhi Adabar[2]

1. Introduction

Odisha is one of the most mineral-rich states in India. But, despite having such mineral resource base, persistent low per capita income of the state cannot uplift poor state's status compared to other states in India. It continues to be an agrarian economy, where more than 60 percent of population still depends on agriculture and allied activities for their livelihood. After lagging behind the national economy in the past, it has gone through a high growth trajectory in recent years and thus has become a major growing state in the country (Odisha Economic Survey, 2016-17). As per NSSO (2009b), Odisha has the second highest unemployment rate in both rural and urban areas and has not experienced increase in organized sector employment. Therefore, as Odisha has turned from a slow growth to fast-growing state, structural change in income and employment may play a very important role in influencing the process of growth in the state.

In this context, this paper makes a preliminary attempt to explore structural changes at various sector and sub-sector levels in order to understand the process of growth in income and employment in the state between 1970-71 and 2016-17. The second section gives a brief review of literature on structural change in India as well as Odisha. The third section discusses sectors and sub-sector in NSDP. Section 4 deals with changes in growth and levels of employment share in different sub-sectors. The concluding section outlines appropriate policy recommendation.

2. Literature Review

There are several growth theories analyzing the process of structural change leading to growth, expansion in enhanced employment and productivity in the economy by (Fisher

1 *Ph.D. Research Scholar, Center for Studies in Economics and Planning Central University of Gujarat, email-trupticug@gmail.com*

2 *Assistant Professor, Center for Studies in Economics and Planning, Central University of Gujarat, email-knadabar@yahoo.co.in*

1939 & 1946), Kaldor (1966, 1967), Kuznets (1961), Boumol (1967, 2001) and Lewis (1955) have identified various demand-side factors (income elasticity of demand) and supply-side forces (change in productivity, innovation etc.) through which structural changes lead to economic growth. Because structural changes take place with change in final demand, adoption of a new method of production leading to more efficient allocation of resources or innovation of a new product line augmenting value of the produce and these forms the essence of the growth process (Zagler , 2009). However, many scholars are of the view that structural change does not come without a cost. The most evident social cost of structural change is unemployment and underemployment. The reason is that a firm producing a product in a declining market will lay off workers. Workers specializing in a particular mode of production become redundant until these workers requalify themselves for a new job in an expanding product segment or in a new technology. These workers will suffer from a spell of unemployment. Many researchers have analyzed the structural change process of India by taking different sectors into account (Setthy, 2003; Rao, 1979; Bhattacharya & Mitra, 1990; Papola, 2012; Panagariya, 2008). It has been observed that there was a sharp fall in the share of agriculture in the Indian economy in the first three decades of economic growth, 1960s, 1970s, and 1980s and the growth rate of the economy was followed by the industrial sector. After 1980s, growth rate of the economy has been determined by the growth rate of the service sector. There is stagnation in India's secondary sector after 2008 with decline in the manufacturing sector. It has been observed that in terms of structural change, India is different from other countries in two respects. First, India is able to skip the intermediate phase of industrialization in the transformation of its economic structure. Secondly, the change in the structure of income has not been accompanied by similar change in its structure of employment which raises serious concerns about the jobless nature of economic growth in India.

Some researchers have given snapshots of structural change process of Odisha by focusing mainly on three broad sectors, namely, agriculture, industry and service and on some specific sectors namely, steel, mining and small and medium-scale enterprises etc. (Sahoo, 2014; Panda 2008; Mishra 2010; Hoda, 2017; Panda, 2010; Voi and Sia, 2015). Panda (2008) has analyzed that Odisha has been going through structural changes, moving away from agriculture in favor of industry and services. There has been a turning point in the last few years and the state economy of Odisha has witnessed an acceleration in its GSDP. There has been significant acceleration in growth rate since 2003-04 driven by several sectors such as agriculture and allied activities, manufacturing, transport, storage, communication, trade, hotels, restaurants, real estate ownership, dwelling and business services. Sahoo (2014) has analyzed that the post-reform period has seen a growth rate of 5.11% which was twice that of the pre-reform period at 2.72%. The mining activities in Odisha experience

high growth rate of 12% in 1990s, but declined fast during 2000s, the growth rate has declined at a faster rate. Structural change in the economy (both output and employment-wise) has shifted from low productivity traditional sector to high productivity modern sector. Panda (2014) has observed that despite being the highest mineral-rich state of the country, the contribution of mining to total employment, revenue generation, and GDP is not satisfactory in Odisha because the benefits of mining has gone to a few hands due to large-scale corruption. Several studies are there at national and state level to focus on structural change process based on single time series data.

3. Data & Methodology

This study is based on secondary data on disaggregated NSDP from EPW Research Foundation for the period 1970-71 to 2016-17. For the sake of convenience, the analysis has divided the whole period into different phases on the basis base year such as phase-1 from 1970-71 to 1880-81, phase-2 from 1980-81 to 1993-94, phase-3 from 1993-94 to 1999-00, phase-4 from 1999-00 to 2004-05, phase-5 from 2004-05 to 2011-12 and phase-6 from 2011-12 to 2015-16. Sectoral shares in NSDP and sectoral growth rates have been estimated at different constant prices to avoid underestimation and overestimation observe in a single series. Again, splicing method is used for continuous time series structural / change analysis with the base year 2004-05. Trend growth rate is found to be better as estimated with semi-log model which takes into account all the years in a time period. Using this concept of trend growth rate at sectoral and sub-sectoral levels, structural change in terms of income and employment has been estimated for Odisha for the time period from 1970-71 to 2016-17. Different quinquennial rounds of NSSO on employment and unemployment in rural and urban areas are used to analyze the employment situations in Odisha. Average growth rate of employment is the estimate for analysis.

4. Analysis

4.1 Structural change in terms of income

Phase-1 (from 1970-71 to 1980-81) at 1970-71 prices

It has been observed that the share of primary sector in NSDP for Odisha decreased from 65.46% in 1970-71 to 55.13% in 1979-80 and increased to 61.70% in 1980-81. During the same period, the share of secondary sector increased from 12.21% in 1970-71 to 18.07% in 1979-80 and decreased to 12.45% in 1980-81. Similarly, the share of tertiary sector has increased from 22.34% to 26.80% in 1979-80, but slightly declined to 25.85% in 1980-81. The increase in the shares of primary sector and decline in the share of secondary and tertiary sector in 1980-81 may be due to the unchanged base year (1970). Agriculture excluding forestry and

logging dominated in both primary sector and Odisha economy, and accounted for 60% - 65% of NSDP during the 1970s. Manufacturing was the leading sub-sector in secondary sector with a share of 6 - 11% of NSDP period. As regards the tertiary sector, public administration and other services played a major role with a share of about 20-25%.

Phase-2 (from 1980-81 to 1993-94) at 1980-81 prices

The shares of different sectors for the period from 1980 -1994 were similar to those during the first phase. The shares of primary, secondary and tertiary sectors of Odisha in 1980-81 were 53.14%, 17.64% and 29.22% respectively. The primary sector's share remarkably declined to 37.10% in 1992-93 and increased marginally to 40.29% in 1993-94. During the same period, the share of the secondary sector increased from 17.64% in 1980-81 to 23.13% in 1992-93 and 21.02% in 1993-94. At the same time, the share of tertiary sector increased from 29.22% to 39.77 % in 1992-93 to 38.69% in 1993-94. As in the proceeding phase, agriculture excluding fishing and forestry dominated in Odisha economy in this phase. At the same time, manufacturing continued as the dominant sector with a share of about 9 - 13% of NSDP.

Phase-3 (from 1993-94 to 1999-00 at 1993-94 prices

At 1993-94 price the shares of the primary, secondary and tertiary sectors were 44.25% 20.43% and 35.32% respectively between 1993-94 and 1999-2000. The share of secondary and tertiary sectors went up to 24.52% and 42.31% and that of primary sector declined to 33.17%. Manufacturing sector continued to retain its position and dominated the secondary sector with 7-9% of NSDP. As in the 1980s, trade, hotel and restaurant activities (10-11%) of NSDP dominated the service sector. But considering the whole scenario, the tertiary sector started to dominate the overall state economy with 42.31% of NSDP in 1999-00.

Phase-4 (from 1999-00 to 2004-05) at (1999-00 prices)

In the next phase at 1999-00 prices the share of the primary sector declined from 32.35% to 27.27% whereas those of secondary and service sectors increased from 21.76% to 23.53% and from 45.88% to 49.20% respectively. The manufacturing sector continued to dominate the secondary sector with a share of 7 -10% in the NSDP. Trade, hotel and restaurants and other services constituted prominent tertiary sector activities. During this period, service sector emerged as the leading sector in Odisha's NSDP.

Phase-5 (from 2004-05 to 2011-12) at 2004-05 prices

At 2004-05 prices, there was a decline in the share of both primary and secondary sectors and increase in the share of tertiary sector during the period 2004 to 2011. The shares of agriculture, industry and service sectors were 20.85%, 24.11%, and 55.04% respectively in

2011-12. As in the earlier phases, Not varying from earlier situation, agriculture excluding forestry and fishing continued to lead in the primary sector with a share of about 11-13% of NSDP, construction emerged as the dominant sub-sector within the secondary sector. Trade, hotel and restaurants and other services were the leading sub-sector in tertiary sector. One can observe the tertiary sector as whole overriding secondary and primary sectors.

Phase-5 (from 2011-12 to 2015-16) at 2011-12 prices

During this period the pattern of sectoral shares in NSDP of Odisha was the same as in the preceding phase. The shares of primary, secondary and tertiary sectors respectively were 15.59%, 36.40% and 40.52% in 2015-16 which were 18.00%, 38.77% and 37.38% in 2011-12. Again farm agriculture in primary sector manufacturing in secondary sector and trade hotel & restaurants and other services in service sector played leading roles during this period.

4.2 Growth Rate of Sectoral NSDP of Odisha

Table 1 shows the growth rates of sectoral NSDP for Odisha in five different periods corresponding to 1970, 1980, 1993, 2004 and 2011 constant prices respectively. It was observed that growth rate of primary sector was 1.44% during 1970s, which declinded to 0.51% and 0.54% during the 1980s and 1993.

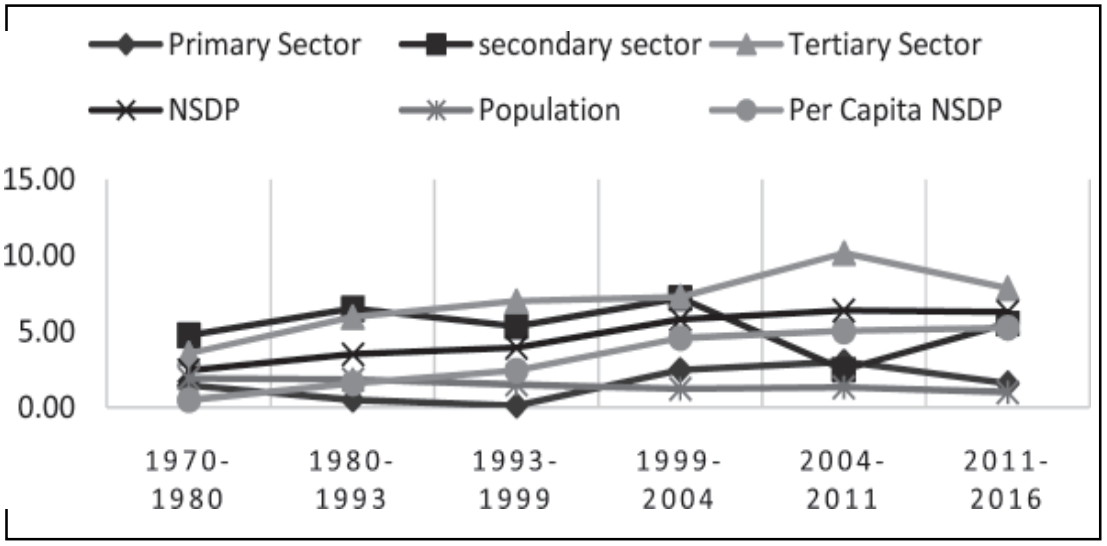
Table -1: Growth Rate of Sectoral Income in Odisha (at different base year prices)

Constant price	1970-71	1980-81	1993-94	1999-00	2004-05	2011-12
Time Period	**1970-1980**	**1980-1993**	**1993-1999**	**1999-2004**	**2004-2011**	**2011-2016**
Agriculture	1.38	0.52	-0.35	2.64	3.44	0.59
forestry & logging	0.43	-3.96	1.44	0.87	0.83	1.40
Fishing	6.58	9.77	5.01	2.38	2.47	8.93
Primary Sector	**1.44**	**0.51**	**0.14**	**2.48**	**3.02**	**1.60**
Mining & Quarrying	2.57	10.95	12.47	16.03	0.56	5.89
Manufacturing	5.33	5.63	4.67	11.18	-4.30	7.96
Registered	6.81	10.11	4.97	14.65	-10.07	NA
Unregistered	2.51	1.35	2.42	1.50	5.49	NA
Construction	4.46	5.29	2.83	-2.69	7.66	2.20
Electricity, Gas and Water Supply	6.87	6.76	-3.49	-2.76	0.40	-5.37
secondary sector	**4.76**	**6.50**	**5.36**	**7.21**	**2.51**	**5.54**
Transport, Storage and Communication	4.51	9.42	6.68	14.87	11.97	8.67
Trade, Hotel & Restaurants	1.39	5.21	5.12	10.08	11.38	10.16
Banking & Insurance	10.29	12.24	11.88	8.85	18.04	8.21
Real Estate, Ownership of Dwelling and business	3.83	2.73	2.57	3.33	5.13	6.29
Public Administration	4.29	6.09	8.26	2.03	5.72	7.02
Other Services	4.29	6.96	10.06	4.35	8.20	5.89
Tertiary Sector	**3.57**	**5.95**	**7.00**	**7.30**	**10.17**	**7.87**
NSDP	**2.43**	**3.49**	**3.93**	**5.82**	**6.41**	**6.31**
Population in 1000	**1.91**	**1.83**	**1.49**	**1.25**	**1.32**	**1.02**
Per Capita NSDP	**0.51**	**1.61**	**2.42**	**4.59**	**5.02**	**5.25**

Source: Author's Calculation

It increased to 2.48% during 1999-2004 and 3.02% during 2004-11 periods and significantly declined to 1.60% during 2011-16 period. For the secondary sector, the growth rate fluctuated between 4-6% except for the year 2004-11 period during which it was 2.51% while the growth rate of agriculture was high (3.02%) because of negative growth rate of its important sub-sectors, namely, mining (-4.30%) and manufacturing (-10.04%). Unregistered manufacturing showed a positive growth rate throughout, but growth rate of registered manufacturing significantly declined to -10.04% during 2004-2011 after increasing prior to it. The performance of electricity, gas and water supply was very fluctuating and declined to -5.37% during 2011-16. The growth rate of mining activities increased gradually up to 1999-2004, but significantly declined to 0.56% during 2004-11 and again increased to 5.8% during 2011-16. The growth rate of the tertiary sector increased significantly from 3.57% in 1970-71 to 10.17% in 2004-11 and declined to 7.87% during the period 2011-16. It is observed that, growth rates of almost all sub-sectors under tertiary sector were higher compared to primary and secondary sectors during 2011-16 (Graph-1).

Graph -1: Trend Growth Rates of Different Sectors and Population in Odisha (1970 - 2016)



One can observe that the growth rate of NSDP increased from 2.43 %during 1970-80 to 6.31 % during 2011-16 with respective population growth rate of during 1.91 % and 1.02%. The most important point to note is that the growth rate of per capita income increased from 0.51 % during 1970-80 to 5.25 % during 2011-15 (Graph-1).

Considering single time series analysis, the share of primary sector in NSDP declined from 58.51 % in 1970-71 to 17.49 % in 2015-16. The share of secondary sector has more or less remained constant at 19.22 % in 1970-71 and 20 % in 2016-17. The share of tertiary sector has

significantly increased from 22.26 % in 1970-71 to 61.61 % in 2016-17. The share of primary sector declined because of fall in the share of agriculture and forestry sectors. In case of secondary sector, the shares of almost every sub-sector marginally increased except that of electricity, gas and water supply. Almost all the sub-sectors of the tertiary sector increased significantly throughout the period under reference.

4.3 Structural Change in Employment

Although the study covers the time period from 1970-71 to 2016-17, structural change in terms of employment is analyzed for the period 1993-94 to 2011-2012 due to non-availability of data for the entire period. The employment data were available for rural as well as urban sectors for quinquennial NSSO rounds of 1993-94, 1999-00, 2004-05 and 2011-12. Within each sector (rural and urban) disaggregated data were also available for different sectors (Table 2).

Table-2: Percentage Share of Male and Female Workers in Different Sectors in Different Time Periods

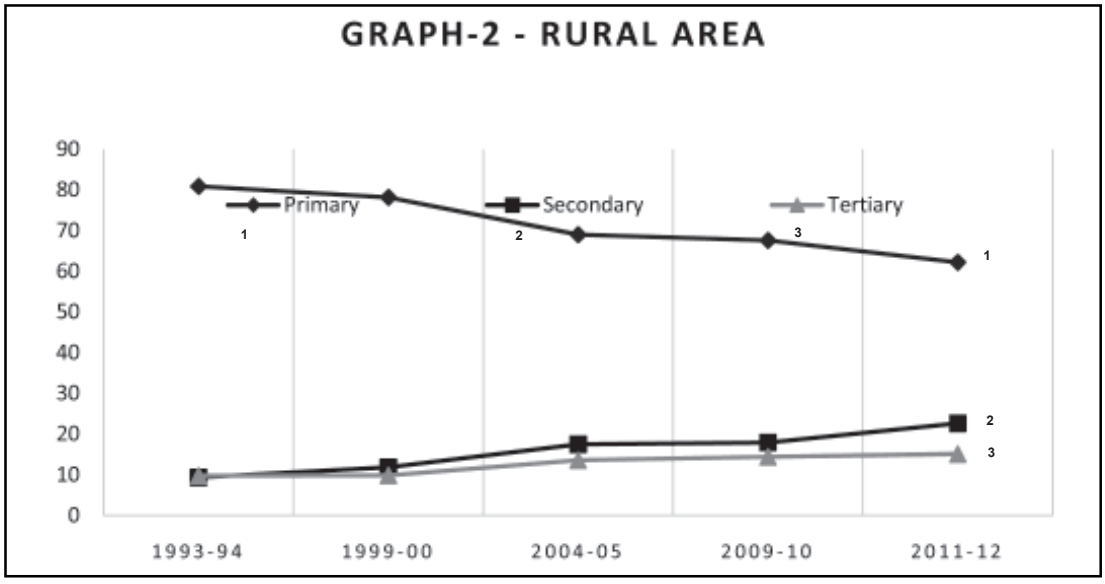
Industry/Year	Rural Area					Urban Area				
	1993-1994	1999-2000	2004-2005	2009-2010	2011-2012	1993-1994	1999-2000	2004-2005	2009-2010	2011-2012
Agriculture	80.9	78.2	69	67.6	62.25	15.7	13	13.9	10.3	14.1
Mining	1.1	0.4	0.8	0.8	0.5	2.1	1.5	1	1.6	0.84
Manufacturing	6.4	8.2	11.1	7.5	9.61	16.6	19.5	14	18.7	10.64
Electricity	0.1	0.1	0.1	0.1	0.22	2	0.9	1.1	1.2	1.62
Construction	1.8	3.2	5.5	9.6	12.31	5.7	10.1	10.5	13.4	10.01
Trade	4.4	4.6	6.7	6.3	5.97	16.3	23.4	24	24	22.07
Transport	0.7	1.1	2	2.9	2.43	10	7.2	8.6	9.7	9.33
Other Services	4.7	4.2	4.9	5.2	6.73	31.4	24.4	26.8	21.2	31.4
Primary	80.9	78.2	69	67.6	62.25	15.7	13	13.9	10.3	14.1
Secondary	9.4	11.9	17.5	18	22.64	26.4	32	26.6	34.9	23.11
Tertiary	9.8	9.9	13.6	14.4	15.13	57.7	55	59.4	54.9	62.8

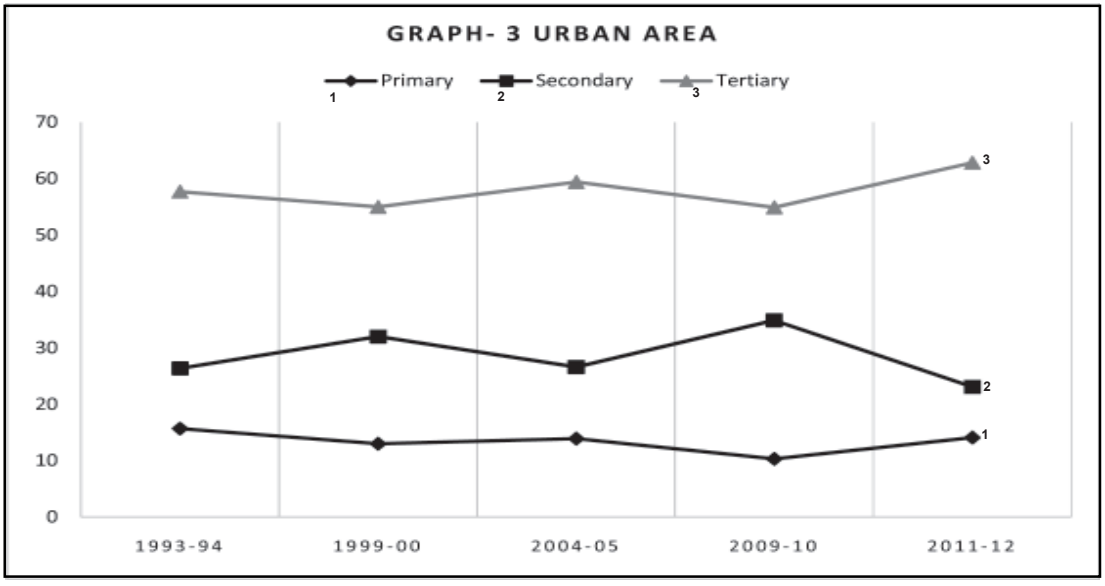
Source: NSSO Employment & Unemployment Survey

The share of employment in primary sector decreased from 80.9 % in 1993-94 to 62.25% in 2011-12, whereas the same increased from 9.4% to 22.64 % in secondary sector and 9.8 % to 15.13 % in tertiary sector over the period in rural areas. It indicates that employment has shifted from primary sector more to the secondary sector compared to the tertiary sector.

The structural change in urban areas is different from that in rural areas. The whole scenario has been presented in Graph 2 and Graph-3.

Graph -2 &3: Sectoral Shares of Employment in Urban and Rural Aareas





Growth rate of employment across different sectors in rural and urban areas between 1993-94 and 2011-12, is given in Table 3. The total time period, 1993-2011 is divided in to five sub periods such as 1993-99, 1999-2004, 2004-2009, 2004-2011, 1993-2004 and 1993-2011. Over this period, the average growth rate of employment in rural areas was -1.28% in primary, 7.83% in secondary and 3.02% in tertiary sectors. Employment in primary sector has shown a decreasing trend. It is observed that employment in secondary sector increased more than that in tertiary sector. Employment in the secondary sector was growing because of growth of employment in all of its sub-sectors.

As regards the urban areas, average growth rate of employment in primary sector was -0.7%, 5.3% in secondary sector and 0.2% in tertiary sector between 1993 and 2011. Employment growth rate in primary sector was negative throughout, but fluctuating in both secondary and tertiary sectors because of opposite trends in their sub-sectors. (Table-3)

Table -3: Growth Rate of Employment in Different Sectors (1993 – 2011)

		Rural area				
year/industry	**1993-1999**	**1999-2004**	**2004-2009**	**2004-2011**	**1993-2004**	**1993-2011**
Agriculture	-0.7	-2.4	-0.4	-1.4	-1.34	-1.28
mining	-12.7	20	0	-5.4	-2.48	-3.03
manufacturing	5.6	7.1	-6.5	-1.9	6.68	2.79
electricity	0	0	0	17.1	0	6.67
construction	15.6	14.4	14.9	17.7	18.69	32.44
trade	0.9	9.1	-1.2	-1.6	4.75	1.98
Transport	11.4	16.4	9	3.1	16.88	13.73
other services	-2.1	3.3	1.2	5.3	0.39	2.4
all	0	0	0	0	0	0
Primary	-0.7	-2.4	-0.4	-1.4	-1.34	-1.28
Secondary	5.3	9.4	0.6	4.2	7.83	7.83
tertiary	0.2	7.5	1.2	1.6	3.53	3.02

		Urban area				
year/industry	**1993-1999**	**1999-2004**	**2004-2009**	**2004-2011**	**1993-2004**	**1993-2011**
Agriculture	-3.4	1.4	-5.2	0.3	-1.04	-0.57
mining	-5.7	-6.7	12	-3.2	-4.76	-3.33
manufacturing	3.5	-5.6	6.7	-4.8	-1.42	-1.99
electricity	-11	4.4	1.8	9.5	-4.09	-1.06
construction	15.4	0.8	5.5	-0.9	7.66	4.2
trade	8.7	0.5	0	-1.6	4.29	1.97
Transport	-5.6	3.9	2.6	1.7	-1.27	-0.37
other services	-4.5	2	-4.2	3.4	-1.33	0
all	0	0	0	0	0.01	0.01
Primary	-3.4	1.4	-5.2	0.3	-1.04	-0.57
Secondary	4.2	-3.4	6.2	-2.6	0.07	-0.69
tertiary	-0.9	1.6	-1.5	1.1	0.27	0.49

Source: Author's calculation

5. Conclusion & Recommendations

The structure of Odisha economy is similar to that of the Indian economy because both

have skipped the intermediate stage of industrialization and structural change in income is not similar to that in employment for which jobless growth is being experienced. The primary sector is gradually shrinking and secondary and tertiary sector income are rising. Growth rate of tertiary sector is higher compared to that of secondary and primary sectors. The economy was dominated by the primary sector up to 1993-94, but 1999-00 onwards the place was taken over by the tertiary sector. Decrease in the growth rate of population has resulted in a higher growth rate of per capita income.

Although the growth rate and per capita income in primary sector has declined, still 62.5% of rural population and 10.3% of urban population depend on agriculture for their livelihoods. The share of employment in secondary sector is rising in rural areas. In urban areas, tertiary sector employment dominates, but is declining which is a matter of concern that needs to be given attention. The share of employment in the mining sector of mineral rich Odisha is declining both in rural and urban areas.

It is clear from the analysis that agriculture in Odisha has not diversified as the share of income from forestry & logging and fishery is neither substantial nor their growth rates are substantial. Measures should be taken to improve these sub-sectors. Besides, growth of the mining sector should be improved for income and employment generation in the state. Appropriate measures should be taken to arrest erratic growth rate of unorganized sector employment which accounts for more than 90% of employment in the state.

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Forest Rights Conflicts and Tribals: A Special Reference to Odisha

Chitta Ranjan Dash*

Abstract

This paper focuses on a very sensitive issue relating to the conflict between traditional forest dwellers, State and the environment experts. To focus periodical evolvement of forest policies pursued in India during (a) pre-independent era; (b) from 1947 to 1980(era of State dominance); (c)1980 to 2005 central dominance and peoples participation and(d) Promulgation of Forests Rights Act and after .

The rights for forest land traditionally enjoyed by the tribalswere undermined by the Forest Act 1864, and the subsequent enactment of the the Forest Rights Act, 2005 is a step forward to diffuse the escalation of number of legal suits filed to protect the interest of marginalised section of society. In June 2004, the Government of India made a significant admission in the Apex Court by holding that a 'historical injustice' had been done to the tribal forest dwellers of the country, which needed to be immediately addressed by recognizing their traditional rights over forests and forestland. This admission came just months after the eviction of about 168,000 families from over 150,000 hectares in a Government order in May 2002. This led the Government of India to introduce the Scheduled Tribes (Recognition of Forest Rights) Bill 2005 in the Parliament in December 2005, and this was finally as an Act in 2006 and is now widely known as The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006.The primary objective of Indian Government is to ensure economic, Political and social justice to every Indians.

Key words: *Scheduled Tribes (ST), Forest Rights Act (FRA), Other Traditional Forest Dwellers(OTFD).*

* *Nabakrushna Choudhury Centre for Development Studies, Bhubaneswar*

1. Introduction

Land, is one of the prime factor of production, is a gift of nature to provide basic needs for survival of all creatures including human being. The conflict for natural resources is not a new one as the ancient "Mahabharat" battle fought between "*Pandavas*" and "K*ouravs*"for land rights is a case in point. Many wars have been fought and conflicts happened to enjoy the right over a piece of land.

Historians cite many examples of battles fought to secure the right over land by kings to expand their authority. From micro to macro level disputes over boundaries causes heavy loss of lives and materials. Nothing is immortal but the charm of life to live peacefully and meaningfully depends on how we use the very limitedperiod of life in productive way resulting in the betterment of self and society.Apart from air and water the primary requirement for survival of human being is food,clothing and shelter, all depend on land. The scarcity of land due to increase in population further reduces the per capita availability of land.

2. Objectives

The primary objective of this paper is to review the Forest Policy of India in various phases (a) from the formation of forest department during British Rule in India to Independence of India, (b) from independence to 1980 (c) after promulgation of the Forest Conservation Act, 1980 to 2005 and (d) post Forest Right Act scenario particularly in Odisha.

3. Why Forest policy?

The relationship of people and natural resources has undergone paradigm shift due to various reasons. The approach of early habitats including people and their inter-relationship, habituated to live in natural life, gradually shifted from traditional living to modern lifestyle and improvement in infrastructure and hence better communication and accessibility provide platform to earn and use comfortable/ luxurious items. Particularly, in India people dwelling in forests were very well aware of protecting their environment, ecology and bio-diversity, on the principle that you live in peace and let us lead our life peacefully. Principles were developed and followed with increase in population requiring more food to support additional population. Forests were sources of sustainability of human society. The journey from pastoral life to settled habitation was transformed by growing food through own efforts leads to agricultural practices by converting forest land to food growing fields.

Consequent upon the settled habitations, various set of norms emerged to regulate the mass behaviour. Peaceful coexistence as way to prosperity was the common principles followed and various measures were enforced effectively to avoid confrontation and disputes.

With the advent of British Rule in India, the norms of society were affected adversely. To protect imperial interest of British Navy, Railways and industrial needs Indian forests were exploited. In 1856 the then Governor General Dalhousie appointed Dietrich Brandis, a German botanist as the first Inspector General of Forests to the Government of India. In order to fulfil the demand for teaks by British Industries and protect imperial interest, Dalhousie suggested that the teak and timber should be retained as state property and trade in teak should be strictly regulated. So, the Forest Department first came into being in 1862. Under Dietrich Brandis, the forest Department was organized and the first Forest Act was enacted. The Forest Act of 1864 was a legal step to regulate the forest exploitation, management and preservation, an attempt to regulate collection of forest produce by forest-dwellers in favour of the "public benefit". Its application was limited to the forests under the control of government and had not any control over forests under private ownership.In 1875, a new Forest Act was enacted, in which forests were classified into: (1) Reserved forests, (2) Protected Forests, and (3) Village forests are communal property of the villagers.

Trespassing or pasturing of cattle was strictly prohibited and imposition of duty on timber was introduced. Certain actions were declared as forest offences and violation of its provisions was prescribed with punishment in term if fines or imprisonment. This was the first step to curtail the age old practices fallowed by tribal people in order to safeguard the British need of forest produces. The forest legislation in the form of Indian Forest Act came into force in 1878 and settlement of forests was started around 1880 and classified forest into reserved forests, protected forests and village forests. The new forest regulations, embodied in the British policy formally initiated in 1894, negated the tribal conviction that the forest belongs to them. The land Acquisition Act, 1894, was first step to legalise acquisition of any land for the requirement of government.

The Indian Forest Act, 1927 was passed to increase government control over the forest lands and regulate people's right over forest and produce based on the principle of *'res nullius'* which implied that any property which does not have a documented legal owner can be appropriated by the government. Taken together, all the rights of the tribal people in the forest were called 'nistari', which means to be free (in this case exemption of tax).The Act was built upon the premise that the State was the owner and custodian of all forest resources, and tribal communities were transformed in to subservient communities who were recipients of NTFP as a concession rather than their natural right. Section 79(1) and 79(2) of this Act were symptomatic of the imperial attitude, whereby every community which resided within or around the fringes of whatever termed 'Reserved' or 'Protected' Forests had to render unpaid obligatory service to the officers of the forest department or any other officer so designated, or the police preventing the commission in such forest of

any forest offence. Under sub-section 2 of the above section, such persons who lived in the fringes or within such forests could be punished with **an imprisonment of up to*one month or a fine of two hundred rupees or both***, if they failed to render the involuntary service, unless armed with a valid legal excuse, which was their burden to prove. The 'aboriginal communities' were made to render unpaid and heavy labour, in return for collecting the fallen dead-wood of trees or the NTFPs from the forests which had been their homes for thousands of years, but, which the rapacious Colonial State had appropriated for its own systematic plunder, debarring the rightful forest dwellers from earning their livelihood, under the pretext of scientific management of the forests.

The government of India Act, 1935, clearly demarcated the subject on which Government of India had exclusive rights was underthe Union List or List-I is a list of 100 items (the last item is numbered 97), the provincial or state had given 66 items to regulate as listed under State List-II (66 items) and Concurrent List-III (47 items),given in Seventh Schedule in the Constitution of India on which both State Legislative Assemblies and Parliament had power to legislate. Land and Forest were in the State list for smooth administration of land use.

4. Post Independence Approaches

The National Forest Policy, 1952 also viewed that the optimum requirement for a sound ecology is to keep 33 per cent of total geographical area under forest cover. Rights enjoyed by the STs as per the 1894 forest policy were converted to mere "rights and concessions" in 1952 policy.

As a result of 42nd amendment to the Constitution of India several provisions changed including seventh Schedule of the constitution. Five subjects were transferred from State to Concurrent List, they are: Education, Forests, Weights & Measures, Protection of Wild Animals and Birds and Administration of Justice. As a result of which, the Union List or List-I is a list of 100 items (the last item is numbered 97) State List-II (66 items, now reduced to 61) and Concurrent List-III (47 items increased to 52) given in Seventh Schedule in the Constitution of India on which Parliament has exclusive power to legislate.

The National Commission on Agriculture (NCA) in 1976 recommended the classification of forests into; a) protected forests-forests on hill slopes and other localities vulnerable to erosion and degradation; b) productive forests- the commercial forests for the production of timber for national economy; and c) social forests- on wastelands for satisfying the rural communities. The NCA recommended the drastic reduction of people's right on forests and also suggested stop of free supply of forest products to tribals and controlled by the forest departments. The 'social forestry' scheme all forestry activities had to be taken in

private lands and non-governmental forest lands through agro-forestry, farm forestry and extension forestry. It has been found that in case of agro-forestry and farm forestry the big farmers have benefited much. "Free supply of forest produce to rural population and their rights and privileges have brought destruction to the forests and so it is necessary to reverse the process. The rural people have not contributed much towards the maintenance or regeneration of the forests. Having overexploited the resources, they cannot in all fairness expect that somebody else will take the trouble of providing them with forest produce free of charge (NCA, 1976 Pp-354-355)". The NCA recommended that 48 million hectares of forests out of 75 million hectares should be set aside for production of forests to cater to industrial needs (NCA, 1976, P-183).).

A common feature shared by most of scheduled tribe communities' habitats is their remoteness and deteriorating quality of territorial resources. Inaccessible habitats of tribes became considered as hub of development due to rapid technological advancement, and acquisition of required area of land without much difficulty. The Land Acquisition Act, 1894 (and amended in 1984) is indiscriminately invoked to alienate tribal's land in the name of public interest. Multi-purpose dams, afforestation, refugee settlement, highway projects, biosphere reserves, national parks in forest areas displace forest dwelling people in general and tribe people in particular. For the greater good of the Indian people, few tribals should have to make sacrifices in terms of surrendering their survival bases and accept the development projects as 'fait accompli'.

There are several factors responsible for loss of forests includes rising population pressure, diversion of forest land to non-forest use, rehabilitation of displaced persons, industrialization, grazing of livestock, shifting cultivation, commercial exploitation of forests etc. For instance Spurgeon observed "while commercial logging does remove the best trees, the greatest harm to the forests is caused by the practice of shifting agriculture. This practice annually destroys 10 million hectares of high forest and causes steady decline in the fertility of the land… In the past the soil's fertility returned to abandoned areas over a period of 25 to 30 years, as a result of natural processes. But as population pressures increased, the cultivators returned to their abandoned sites much sooner, and the period of natural bush fallow was progressively shortened (Spurgeon, David 1982, P-11). In past as their requirements were very limited isolated economy was based on barter and without depending much on monetized economies. The Government of India promulgated the Forest Conservation Ordinance in the year 1980 prohibiting the State Government from allowing the use of any forest land for any other purpose without the prior approval of the Central Government. The Ordinance was listed and converted in to an Act in the same year (No.69 of 1980).

5. The National Forest Policy, 1988

The basic objectives of the National Forest Policy, 1988 are, Maintenance of environmental stability through preservation and, where necessary, restoration of the ecological balances that has been adversely disturbed by serious depletion of the forests of the country.

The Government policy to encourage JFM by providing 'Usufruct' rights to those protects forests. The concept 'Usufruct' has defined as forest produce that may be obtained from dead plants, or the produce of or harvest from living plants including grass, sedges, forbes, herbs, creepers, vines, shrubs, and trees, with their uprooting, felling, copping, pollarding, or destroying otherwise debarking or damaging in such a manner so as to hamper or impair (their) natural growth to threaten (their) survival (Section 1 (29) of NFP, 1988).

The shift in the policy approaches towards resource management from state to resurgence of community to centre stage in development is due to not only state's failure in achieving desirable resource management outcomes there are some other specific reasons for the worldwide shift are: (a) Local communities with their day to day interaction with natural resources and as they directly affected as the state of natural resources better or worse off due to improvement or degraded condition, exclusion of these communities from resource management is not always a desirable strategy. (b) Minimisation of conflicts between community and government officials is possible by making them partner to resources management (Kothari et al, 1989)(c) Indigenous knowledge of resources dependent communities may be harnessed in a better way by involving them to secure good results. (d) There is a possibility of reduction in the cost of natural resources management by the way of local people's cooperation and involvement in natural resource management,(Kothari et al, 1989) (e) Implementation of various development schemes without community participation, it is difficult to judge and justify what people wants and priority can be determined easily through democratic manner by involving community. (f) Community management is considered as suitable alternative to achieve better protection, conservation, equitable distribution of outcome of natural resource management than nationalisation and privatisation by various scholars (Ostrom, 1990, Das, 2008, Panda and Das, 2009).

6. Scheduled Tribes and Forest Land

Forest rights is commonly perceived as rights of the local forest dwellers over the produce and the forestland and these rights have been a major area of concern in post independence India. From colonial times large tracts of land were recorded by the government as 'unclassed' forests; however, their ownership was unclear, and since most of these forests were home to a large number of tribals, land alienation took place without the settlement

of the issue of the tribals' rights over them. After independence, large tracts of land have been declared as Reserve Forests, which further means that no rights over this land ever existed or would exist. This led to the eviction of the local forest dwellers and they have been termed as encroachers in their own land.

The failure to clearly demarcate the extent of the forest has led to many disputes and claims. There are thousands of cases of local inhabitants claiming that they were in occupation of notified forestlands prior to the initiation of forest settlements under the Indian Forest Act. There are a number of cases of pattas/leases/grants said to be issued under proper authority but which have now become contentious issues between different government departments.

In June 2004, the Government of India made a significant admission in the Apex Court by holding that a 'historical injustice' had been done to the tribal forest dwellers of the country, which needed to be immediately addressed by recognizing their traditional rights over forests and forestland. This admission came just months after the eviction of about 168,000 families from over 150,000 hectares in a Government order in May 2002. This led the Government of India to introduce the Scheduled Tribes (Recognition of Forest Rights) Bill 2005 in the Parliament in December 2005, and this was finally as an Act in 2006 and is now widely known as The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006.

The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act 2006 (FRA) is one of the most important legislation has multiple implications, primarily aims at to deliver natural justice to the indigenous / forest dwelling communities to undo the injustice done to them by enacting various Policies, followed by Acts and Rule to made by the government. The primary objective of Indian Government is to ensure economic, Political and social justice to every Indians.

The Act's aim is declared in the Preamble as follows: "to recognise and vest the forest rights and occupation in forest land in forest dwelling Scheduled Tribes and other traditional forest dwellers who have been residing in such forests for generations but whose rights could not be recorded; to provide for a framework for recording the forest rights so vested and the nature of evidence required for such recognition and vesting in respect of forest land."

This chapter III of the FRA Act, 2006 lays down the conditions attached to the recognition and vesting of rights under the Act. That the recognition of rights under the Act supersedes all existing laws is clarified in the first clause of this chapter:

(1) Notwithstanding anything contained in any other law for the time being in force, and subject to the provisions of this Act, the Central Government hereby recognises and vests forest rights in ....STs ....and OTFDs. The recognition of rights is subject to the following conditions:

(2) That the forest land over which rights are claimed had been under occupation of the claimants before the 13th day of December, 2005 (Section 4.3).

(3) That the rights shall be heritable but not alienable or transferrable and shall be registered jointly in the name of both spouses in case of married persons and in the name of the single head in the case of households headed by single persons (Section 4.4).

(4) That no potential claimant shall be evicted or removed from forest land under their occupation till the recognition and verification procedure is complete (Section 4.5).

(5) That the "... forest rights recognised under sub-section 3(1)a ... shall be restricted to the area under actual occupation and shall in no case exceed an area of four hectares" (Section 4.6).

(6) That the recognition of rights will not require central government clearance under the Forest Conservation Act, 1980 or the payment of 'net present value' or 'compensatory afforestation' for the diversion of forest land. This is a major relief for the claimants of rights and the only major provision in the Act clearly providing for the complementary adaption of an existing law and Court orders. The chapter also provides for modification of recognised rights in 'Critical Wildlife Habitats' (CWH) identified through a transparent and consultative process within protected areas, and the conditions under which relocation from such CWHs may be undertaken. This is discussed separately later in the paper.

(7) 'Duties' versus 'empowerment' of holders of forest rights in Section 5

Section 5 of the Act embodies a major institutional reform by changing the existing balance of power between the forest bureaucracy and right holding communities. It statutorily empowers holders of forest rights and their Gram Sabhas to protect wildlife, forests and biodiversity as well as their habitats from destructive practices affecting their cultural and natural heritage:

The holders of any forest right, Gram Sabha and village level institutions in areas where there are holders of any forest right under this Act are empowered to; (a.) protect the wild life, forest and biodiversity; (b.) ensure that adjoining catchments area, water sources and other ecological sensitive areas are adequately protected; (c.) ensure that the habitat of

forest dwelling Scheduled Tribes and other traditional forest dwellers is preserved from any form of destructive practices affecting their cultural and natural heritage; (d.) ensure that the decisions taken in the Gram Sabha to regulate access to community forest resources and stop any activity which adversely affects the wild animals, forest and the biodiversity are complied with;"

Table-1: Status of Implementation of Forest Right Act, 2006 in Odisha (Individual Claims). (As on June, 30, 2016)

	District	No. of Claims received by FRCs	Claims verified by FRCs and sent to Gram Sabha	Claims approved by G.Sand sent to SDLC	Claims approved by SDLC and sent to DLC	Claims approved by DLC for Titles Numbers	Certificates of Titles Distributed Numbers
1	Balasore	4618	4618	2808	2808	2785	2363
2	Bhadrak	202	202	202	175	175	175
3	Cuttack	5868	5868	2532	1627	1627	1560
4	Jagatsinghpur	49	49	48	47	47	47
5	Jajpur	9170	7840	3520	3510	3496	3496
6	Kendrapara	4045	3234	3233	310	305	305
7	Khurda	2331	2098	823	787	787	787
8	Mayurbhanj	62156	62156	52040	43918	43918	35676
9	Nayagarh	4302	4302	4302	3432	3333	3061
10	Puri	1169	1169	1169	0	0	0
	Total CZ	93910	91536	70677	56614	56473	47470
1	Angul	8360	8360	7325	3356	2727	2727
2	Baragarh	3599	3314	2672	1121	1099	1099
3	Bolangir	8799	8799	4987	2397	2344	2226
4	Deogarh	13817	13817	13817	7036	6745	6745
5	Dhenkanal	12600	12600	12600	6180	6109	6109
6	Jharsuguda	9204	9204	9204	2599	2599	2599
7	Keonjhar	67364	67364	54902	52067	52067	49830

8	Sambalpur	33066	31146	20400	13766	13766	13552
9	Subarnpur	1561	1561	1561	394	380	379
10	Sundergarh	53155	47628	32316	20353	18605	13506
	Total NZ	211525	203793	159784	109269	106441	98772
1	Boudh	3499	3499	3499	2034	1657	1657
2	Gajapati	51161	51161	34576	34576	34471	34471
3	Ganjam	12957	12491	8961	5799	5751	5751
4	Kalahandi	11696	11696	11360	10705	10694	10563
5	Kandhamal	60346	60346	58425	57918	57818	57657
6	Koraput	35103	32408	29910	27804	27676	25742
7	Malkangiri	36902	36902	35931	32664	31281	30802
8	Nuapada	23257	23257	12042	6956	6948	6166
9	Nabarangapur	38418	38415	38415	38241	38241	37547
10	Rayagada	34090	33677	33677	23752	22546	22077
	Total SZ	307429	303852	266796	240449	237083	232433
	Odisha	612864	599181	497257	406332	399997	378675

Source: O/o the PCCF, Odisha, Bhubaneswar website information from the Department of SC, ST and OBC Welfare, Government of Odisha.

Table-2: Status of Implementation of Forest Right Act, 2006 in Odisha (Individual Claims). (As on June, 30, 2016)

District	Per cent of Claims received by FRCs	Per Cent of Claims verified by FRCs and sent to Gram Sabha	Per Cent of Claims approved by Gram Sabha and sent to SDLC	Per cent of Claims approved by SDLC and sent to DLC	Per Cent of Claims approved by DLC for Titles	Per Cent of DLC approved Certificates of Titles Distributed
Balasore	100	100	61	61	60	51
Bhadrak	100	100	100	87	87	87
Cuttack	100	100	43	28	28	27

Jagatsinghpur	100	100	98	96	96	96
Jajpur	100	85	38	38	38	38
Kendrapara	100	80	80	8	8	8
Khurda	100	90	35	34	34	34
Mayurbhanj	100	100	84	71	71	57
Nayagarh	100	100	100	80	77	71
Puri	100	100	100	0	0	0
Total CZ	**100**	**97**	**75**	**60**	**60**	**51**
Angul	100	100	88	40	33	33
Baragarh	100	92	74	31	31	31
Bolangir	100	100	57	27	27	25
Deogarh	100	100	100	51	49	49
Dhenkanal	100	100	100	49	48	48
Jharsuguda	100	100	100	28	28	28
Keonjhar	100	100	82	77	77	74
Sambalpur	100	94	62	42	42	41
Subarnpur	100	100	100	25	24	24
Sundergarh	100	90	61	38	35	25
Total NZ	**100**	**96**	**76**	**52**	**50**	**47**
Boudh	100	100	100	58	47	47
Gajapati	100	100	68	68	67	67
Ganjam	100	96	69	45	44	44
Kalahandi	100	100	97	92	91	90
Kandhamal	100	100	97	96	96	96
Koraput	100	92	85	79	79	73
Malkangiri	100	100	97	89	85	83
Nuapada	100	100	52	30	30	27

Nabarangapur	100	100	100	100	100	98
Rayagada	100	99	99	70	66	65
Total SZ	**100**	**99**	**87**	**78**	**77**	**76**
Odisha	**100**	**98**	**81**	**66**	**65**	**62**

Source|: calculated from the data available in the website information from the Department of SC, ST and OBC Welfare, Government of Odisha.

Table-3: No of title distributed under the Forest Rights Act 2006 and land diverted to different ST communities and OTFD in Odisha.(Forest Area in acres)

Achievement Under FRA as on	Titles Issued	Forest Area involved (in acres)	Average area per Titles Issued
26- 02- 2011	248133	388550.18	1.566
01-04-2014	329013	520281.13	1.581
31-05-2015	344541	546330.63	1.586
30,-06-2016	378675	580040.92	1.532

Source: website information from the Department of SC, ST and OBC Welfare, Government of Odisha.

Under Section 3.k) right of access to biodiversity and community right to intellectual property and traditional knowledge related to biodiversity and cultural diversity; (I) any other traditional right customarily enjoyed by the forest dwelling Scheduled Tribes or other traditional forest dwellers. as the case may be, which are not mentioned in clauses (a) to (k) but excluding the traditional right of hunting or trapping or extracting a part of the body of any species Of Wild animal; (m) right to in situ rehabilitation including alternative land in cases where the Scheduled Tribes or other traditional forest dwellers have been illegally evicted or displaced from forest land of any description without receiving their legal entitlement to rehabilitation prior to the 13th day of December, 2005.

(2) Notwithstanding anything contained in the Forest (Conservation) Act, 1980, the Central Government shall provide for diversion of forest Land for the following facilities managed by the Government which involve felling of trees not exceeding seventy-five trees per hectare, namely: (a) schools; (b) dispensary or hospital; (c) anganwadis; (d) fair price shops; (e) electric and telecommunication lines; (f) tanks and other minor water bodies; (g) drinking water supply and water pipelines; (h) water or rain water harvesting structures; (i) minor irrigation canals; (j) non-conventional source of energy; (k) skill up-gradation o

vocational training cent (I) roads; and (m) community centres : will if, - Provided that such diversion of forest land shall be allowed

(1) the forest land to be diverted for the purposes mentioned In this subsection is if only, less than one hectare in each case; and

(ii) the clearance of such developmental projects shall be subject to the conditions that the same is recommended by the Gram Sabha.

Table-4: No of project proposals cleared under Section 3(2) of the Forest Rights Act 2006 and land diverted to different Projects.(Forest Area in Hectares)

Sector	No. of Proposals	% of total	Forest Area Diverted	% of total	Average area per project
Anganwadi	6	1.95	0.27	0.17	0.05
Water Harvesting Structure	7	2.27	1.19	0.74	0.17
Electric line	134	43.51	63.59	39.45	0.47
Tank and other minor water bodies	10	3.25	5.16	3.20	0.52
Road	95	30.84	62.07	38.50	0.65
School	35	11.36	15.70	9.74	0.45
Community Centre	16	5.19	9.65	5.99	0.60
Hospital	5	1.62	3.58	2.22	0.72
Total	308	100.00	161.21	100.00	0.52

Source: Highlights of Odisha Forestry Sector-2016.P-4. Published by PCCF,Odisha.

Table-5:Forest Area in Odisha and per capita forest land.

YEAR	Recorded forest Area ('000 hectares)	per cent of forest area to total geographical area	ST population (in'000)	Forest area per ST people (in ha.)	Total population (in '000)	Per capita Forest land (in ha.)
1961	3566	22.95	42,24	0.84	17,549	0.20

1971	6088	39.18	50,72	1.20	21,945	0.28
1981	6640	42.73	59,15	1.12	26,370	0.25
1991	5476	35.24	70,32	0.78	31,660	0.17
2001	5814	37.34	81,45	0.71	36,707	0.15
2011	5814	37.34	95.91	0.61	41,974	0.14

Source: Das (2014)

The argument against the smaller holding discouraging use of modern technology, high cost, more labour loss, disadvantage for large-scale production, perpetuate poverty, subsistenceagriculture can be refuted by arguing as follows:

Smaller farms produce more per acre of land than larger farms. Smaller land holdings are more productive and ecologically sustainable for a number of reasons:

1. Higher labour intensity. Small farmers use more labour per unit of land, which helps generate more output and more employment per unit.
2. Higher multiple cropping. They grow more crops per year on a given piece of land.
3. Higher intensity of cultivation. Small farmers leave a lower proportion of land fallow or uncultivated. In addition, they cultivate crops that are higher value-added per unit of land.
4. Small and marginal operational holdings use more bio fertilisers: manure, farm wastes, residues of farm outputs, etc. Lower negative environmental impacts. Small farms use fertilizers, pesticides, and other agrochemicals more sparingly than large farms. This reduces negative impacts of harmful chemicals on workers and neighbours. Small farmers, overall, have a greater incentive to employ environmentally sustainable techniques than large industrial ones.

Solutions should be based on locally available technical know-how and resources available. While the economic case for land reform can be construed as a narrow technical argument on how best to boost agricultural productivity—which land-reform opponents could argue is unnecessary due to the advent of the Green Revolution—the socio-political argument is aimed against this kind of narrow technical thinking. The importance of a land reform is in changing the hierarchical structure of agrarian class relations while increasing productivity. The idea is to break the power of landlords, who keep peasants as a captive labour force in rural areas and act as a conservative political force at the local and national levels of the state.

7. Conclusion

- FRA may be summarised as follows:
- Freedom from regular harassment, rent seeking, destruction of assets and extortion resulting from lack of tenure. The Act should alleviate these serious problems for hitherto rights-deprived groups
- Reduced livelihood vulnerability, resulting from secure tenure and rights. Thereby preventing a deepening of poverty
- Community forest rights should secure access to forest products and ecosystem services, providing improved income streams.
- Secure land and forest rights should incentivise investments in land and forest improvements.
- Legal forest rights should allow access to credit although, due to the titles being inalienable, special arrangements will be required to facilitate access to formal credit.
- Recognition of cultivation and use rights over forest land should permit the right holders to gain access to development inputs from other departments which they are currently deprived of. Such instructions have already been issued in Orissa.
- FRA is pro-poor institutional reform is fundamentally important for improving the conditions of the marginalised, but it can only succeed through, and in conjunction with, ongoing concerted political organisation over the long term.
- Mere Land Rights under FRA without proper facility to carryout agriculture and allied activities will not deliver the results to fulfil the objective of the law. So provision for institutional credit, irrigation, climate resilient crops, mixed crop/mono crop/ bund plantation (Neem, Karanj, etc), encouraging of tree crops, promotion of kitchen garden, Dairying and livestock, and marketing network for surplus production at a favourable price should be ensured.
- Convergence of other programmes to facilitate the households to develop infrastructure is primary requirement to break the vicious circle of sufferings.
- Imparting training and skill development programmes which is suitable for available resources utilisation.

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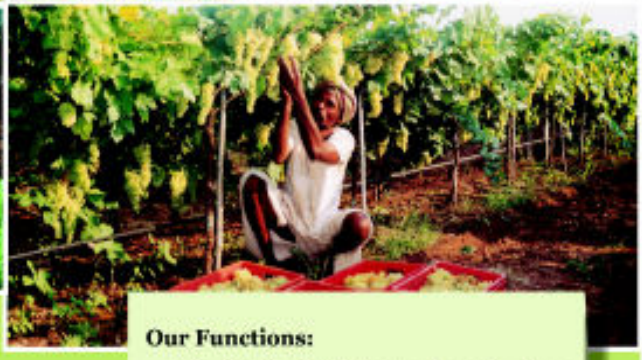

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