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C O N T E N T S

Editorial Note

Need for Equity

Prof. Baidyanath Misra

The International Monetary Fund in a note on Economic Issues discusses whether Equity be a Goal of Economic Policy. It starts with the problem that there has been tremendous growth in GDP in different parts of the world, but the fruits of growth have not been shared equally. On the other hand, it is found that income disparities have grown in many countries, developed as well as developing. That is why one of the pressing issues for the policy makers today is how to respond to these trends. The most important question raised in the IMF document is: to what extent are growth and equity complementary and to what extent is there a trade-off between the two?

Before we consider this important question, we should consider first the components of growth. According to Samuelson, there are four wheels of growth. They are:

(1) Human resources (labour supply, education, skills, discipline, motivation),

(2) Natural resources (land, minerals, fuels, environmental quality),

(3) Capital (factories, machinery, roads, intellectual property), and

(4) Technological change and innovation (science, engineering, management, entrepreneurship).

But the components used in the process of production vary from country to country. Although there are different perceptions regarding the meaning of equity and extent of equity that is desirable, IMF points out that there is a consensus that extreme inequality of income, wealth or opportunity is unfair and efforts should be made to raise the income of the poorest members of the society. If we consider the returns of four wheels of growth, by and large, the returns of the last three are much more than the first one. Further, without Human Resources, no other wheel can operate effectively. We have not come to a stage of automation as to eliminate the use of Human Resources. But human resources suffer from manifold difficulties.

If we take the world position, we find from a recently published report of the Credit Swiss that one per cent rich in the world owns almost half of the wealth of the world. And if we consider the poor of the world, it is found that almost half of the world's poor comes to 3.5 billion and their wealth comes to 2.7 per cent of the world's wealth. When we come to India, almost the richest 20 per cent are possessing more than 50 per cent of the wealth whereas the poorest 20 per cent are found to possess less than 10 per cent of India's wealth.

Apart from income disparities, social amenities provided to the poor are miserable. We only take two examples, primary education and provision of health. These two are basic requirements for development. We cannot discuss all aspects of education. We only consider the level of primary education in India. It is admitted by one and all that primary education is a major indicator of social development. The Economic Survey 2016-17 points out though there have been improvements in access and retention due to different schemes to promote primary education, the learning outcomes for a majority of children is a matter of serious concern. The same Economic Survey also points out some of the underlying causes contributing to low quality of education in the primary sector: they are teacher absenteeism and the shortage of professional qualified teachers. There are also many other deficiencies. We need not elaborate them. We can say that unless remedial measures are taken with a serious concern and with immediate effect, India would lag behind even many other developing countries.

The state of health is equally distressing. A study by Water Aid shows half of India had no access to basic sanitation needs. If women who don't have access to such facilities stand in a queue, it would stretch around the earth 4 times, said the State of the World's Toilets 2017. Though some progress has been made in recent years, there is still a long way to go. The Report said globally, one in three people still have no decent toilet facilities, demonstrating how women and girls bear the brunt of this global crisis. More than 1.1 billion women and girls facing such injustice are bearing an increasing risk of poor health, limited education and harassment, the Report said. Bill Gates, who is involved in India's health program, points out that Human Capital has always been important. For example, research shows that innovating in fundamentals like health and nutrition account for almost 46 per cent of China's phenomenal growth since the late 1970s.

But what is just as important as lost productivity now is lost potential in the future. It is becoming increasingly clear that on many measures of cognitive ability, malnourished Indian children perform two or three times worse than their adequately nourished peers.

Instead of discussing further the maladies we face, we can conclude why equity is necessary. IMF has given a large number of reasons but we will emphasize only four which are necessary for equity.

1. Policies that promote equity can help directly and indirectly to reduce poverty. Equity enhancing policies, particularly such investment in human capital as education can in the long run, burst economic growth.
2. Heightened awareness of discrimination suffered by certain groups because of their gender, race or ethnic origin has focused attention on the need to ensure that these groups have adequate access to government services and receive fair treatment in the labour market.
3. Many of today's policies will affect the welfare of the future generation which raises the issue of intergenerational equity.
4. Policies that promote equity can boost social cohesion and reduce political conflict.

We have indicated only the major advantages of equity.

Presidential Note

Research, Techniques, and Some Insight into Odisha Districts[1]

I was wondering what to talk about and leaning towards preliminary findings from one of my recent research projects. But, a colleague suggested that I not talk about what I am interested in, but what young economics researchers and tomorrow's economics teachers *should* be interested in. I have decided to combine both.

Research is – or, at least, should be – without any limits. We should engage in all kinds of intellectual 'fun' that we like. We can build theoretical models or carry out empirical work. We can engage in field studies or action research. We can even enjoy constructing abstract models that have no direct real-world implications. But, in all this excitement, we should not forget our social obligation. Economics is not just a social science; it is the queen among social sciences. So, we have a duty toward the society; this is a part of our broad 'academic social responsibility'. Therefore, we ought to spend time on studying society-at-large and come up with insights that help people lead better lives through a better understanding of the world – or, rather, the society – around us.

Enjoy building signaling and game theoretic models based on the movie Avatar. But do not forget that there are real *aborigins* and *adivasis* in this world that need the attention of our research; we need to learn from their wisdom and harness policy accordingly. It is said that we often drift away from such commitments because we perceive them to be uninteresting, challenging, or useless. "This disparity between abundance of knowledge on the one hand and poverty in commitment for the common good on the other is a big challenge for every thinking citizen" (Misra 2016, p.59).

Lack of interconnectedness between disciplines also remains a matter of concern. Social issues should not be looked through a single-color prism, because society has heterogeneity. So, the need of the hour is discussion among various branches of knowledge towards bringing out richer solutions to social problems. This should not just happen among 'related' areas, like only among sciences or among liberal arts. It ought to happen even among sciences and arts. "Inter-disciplinary research and inter-departmental collaboration has to be made a reality. The

1 *Address by Banikanta Mishra, Professor of Finance, XIMB (Xavier Institute of Management), XUB, as the President of Orissa Economics Association (OEA), at the OEA Annual Meeting, 2017. Address confined to ten minutes due to protocol reasons.*

research should focus in formulating proper technology so that the fruits of research reach the field. Time has come to reconsider these foci" (ibid, p.79).

What have been said above are basically pre-investigation issues. But, what are the challenges once we embark upon the research itself ? One of the typical issues that arise in the mind of many young researchers is whether the technique should drive the question or question should drive the technique. There is often a tendency to use techniques one knows to address questions of interest. But, that is risky – almost wrong. It is bad enough when, in field studies, we collect data and then try to see if it generates and answers not-yet-posed questions or hypotheses. It is worse when we make our technical tool kit dictate what questions we should pose.

So, let the question lead us to technique. For economists, we can talk about statistical or econometric techniques. If we want to find out whether irrigation affects district agricultural income significantly, we can run regression analysis. But, if our focus is on finding out how many factors influence variability in agricultural income, then factor analysis or principal-components analysis may be the simpler approaches to follow. Some other time, we may have different question in mind. "Looking at the district level parameters a few years back, could we have forecasted which districts would be doing well today and which not well?". This question is better answered by discriminant analysis. But, what if we want to understand how a district is performing in health or education, but only with respect to 'comparable' districts, then data envelopment analysis (DEA) would be the technique to resort to.

The last issue is the one I would dwell upon now in a bit more detail, drawing upon the preliminary work done by Mishra, Mishra and Tripathy (2017). But, before that, a few words about DEA. This technique is becoming more popular among Indian researchers in recent times because it has some good pluses. First, it is a non-parametric method. Thus, though we need to specify the inputs and the output(s), we do not need to specify or know the input-output function. Second, it does not require us to pre-assign weights to different variables, a drawback that many other approaches suffer from. In fact, in some cases, the researcher assigns equal weights to all performance determinants or indicators because she has no prior idea as to what is important and what is not. This is where DEA's strength comes out. Based on the set of inputs and outputs across districts, it determines efficiency of each district and then compares it to efficiency of a peer, 'comparable' district, not to the 'average' district. But, to the extent that the researcher needs to specify what the set of inputs and output(s) should be, investigator bias creeps in.

Anyway, some authors have focused on assessment of performance of Odisha or its districts. Meher (2002) has developed a transportation index for the districts, while Tripathy, Das, and Padhi (2011) rank districts by adding agriculture, industry and human-resource development. More recently, Nayak (2014) uses principal components analysis to study differences in rural infrastructure. But, we think that there has been no research applying DEA to analyze Odisha districts. Mishra, Mishra, Tripathy (2017) have taken 2010-2011 data for various variables in agriculture and health sectors and studied them separately; they also relate the 2013-2014 central and state budgets to the performance of these two sectors.

Their preliminary findings based on DEA can be summarized as follows. While Baleshwar, Bhadrak, Balangir, Cuttack, Ganjam, Jagatsinghapur, Kalahandi, Kandhamal, Kendujhar, Koraput, Mayurbhanj, and Sonepur are agriculture 'efficient' districts, Baragarh, Debagarh, Dhenkanal, Kendrapada, Mayurbhanj, Nayagarh, and Sambalpur are health efficient districts. Interestingly, there is no overlap between health and agriculture efficiency.That may not be so puzzling if we reckon that many agriculture-dependent districts may be backward and lack basic health amenities. A lot of in-depth research is called for to understand the roots.

Many times, young researchers eschew an area if not much work has been done in that. They feel that it is not an interesting area and, therefore, no one has explored it. That may be so; but even the reverse could be true: a fascinating research area waiting to be explored. Bata Shoe Story (Burnett 2011) is a case in point. At the end of the nineteenth century, when colonial Africa was just opening up as a market, many English shoe-makers sent their sales representatives to Africa to explore marketing possibilities. All sales folks wrote back, "Nobody in Africa wears shoes; so, there is no market for our products there." But the Bata sales rep looked at it from a different perspective. "Nobody in Africa wears shoes; so, there's a *huge* market for our products in Africa!", he wrote back.

So, my advice to young researchers would be not to shy away from uncharted waters. Every uncultivated virgin area is an opportunity to explore. It is a fascinating intellectual adventure. Go ahead and explore it. Be eager to learn and enjoy the journey. *Bon appetit and bon voyage*!

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Redressing Horizontal Fiscal Imbalance in India
An Assessment of Fourteenth Finance Commission Recommendation

Shibalal Meher*

Abstract

The Fourteenth Finance Commission has followed the path of its predecessors in redressing horizontal fiscal imbalance in India by adopting trial and error method in determining the relative shares of tax devolution and grants. It has not presented a healthy picture of providing a solution to the problem of equity. The criteria adopted for devolution of the distribution have tended to generate sizeable surplus in the revenue accounts of the richer states that have been enjoying pre-devolution surplus, whereas the poorer states have had to contend with nominal transfers to meet their chronic deficits. The basic approach of transfer seems to recommend a substantial portion through tax devolution and to consider grants-in aid as merely a residuary form of assistance. The present study has suggested an alternative method of redistribution, which is more equitable compared to the method followed by the Thirteenth Finance Commission.

Key Words: Fourteenth Finance Commission, horizontal fiscal imbalance, tax devolution.

Introduction

Fiscal imbalances in Indian federation arise due to non-correspondence of revenue assignments and expenditure responsibilities between different levels of government (vertical) and the disparities in the levels of development (horizontal). In order to resolve the problem of both vertical and horizontal fiscal imbalances, Indian federation is characterised by a definite framework of fiscal transfers from the Central government to the States through different Finance Commissions.

The terms of reference - non-correspondence of revenue assignments and expenditure responsibilities between different levels of government (vertical) and the disparities in the levels of development (horizontal) - of the Fourteenth Finance Commission (FFC), like earlier Finance Commissions (FCs), are to recommend, among others (GoI, 2015):

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i. The distribution between the Union and the States of the net proceeds of taxes which are to be, or may be, divided between them and the allocation between the States of the respective shares of such proceeds.

ii. The principles which should govern the grants-in-aid of the revenues of the States out of the Consolidated Fund of India and the sums to be paid to the States which are in need of assistance by way of grants-in-aid of their revenues under article 275 of the Constitution.

In order to resolve the problem of horizontal imbalance, it is necessary to design transfers to meet the objectives of offsetting revenue and cost disabilities and providing incentives irrespective of whether the transfer stream is tax devolution or grants. So far 14 Finance Commissions have recommended fiscal transfers to the states. However, the disparity among the states still persists. The present paper has made an attempt to assess the recommendation of the Fourteenth Finance Commission and suggest an alternative method of redistribution, which is more equitable compared to the method followed by the earlier Finance Commissions.

The paper is organised as follows. The next section discusses the inequality in resource base of the states in India. The recommendation of the 14 Finance Commissions as per the terms of reference relating to the horizontal transfer is presented in the third section. The assessment of the recommendation of Fourteenth Finance Commission is done in the fourth section. The fifth section presents an alternative approach of distribution and the last section gives concluding remarks.

Horizontal Inequality in Resource Base

Inequality in resource base of states can be seen from the divergences in their fiscal capacities. Income can be taken as the proxy for fiscal capacities. In order to test the divergences in income of states we have used two methods, viz. â-Convergence and ó-Convergence. There are a number of studies which have devoted to test the divergence/convergence of income among Indian States by using neoclassical growth models (Meher, 2009). These models demonstrate that the growth rate in per capita incomes tends to be inversely related to the initial levels of per capita incomes, which is called â-Convergence, where the speed of convergence is measured by â. By using panel data, the â-Convergence coefficient is estimated from the following regression model.

$$\ln(Y_{i,t}) - \ln(Y_{i,t-1}) = \alpha_i - \beta \ln(Y_{i,t-1}) + u_{i,t}, \qquad 0 < \beta$$

Where is the per capita income of the ith State at time period t. This model reveals that the growth rate of per capita income should be negatively related to the previous level of income if neoclassical dynamics are present. That means the poorer regions not only grow faster than richer regions but also all converge to the same level of per capita income. On the other hand, a positive value of indicates divergence of income.

It is observed from Table-1 that the growth of income is directly related to the initial level of income as the coefficient is positive and significant. This shows that there is divergence of income of States over the period 1993-2013.

Table-1: Absolute β Convergence/Divergence in Panel Regression

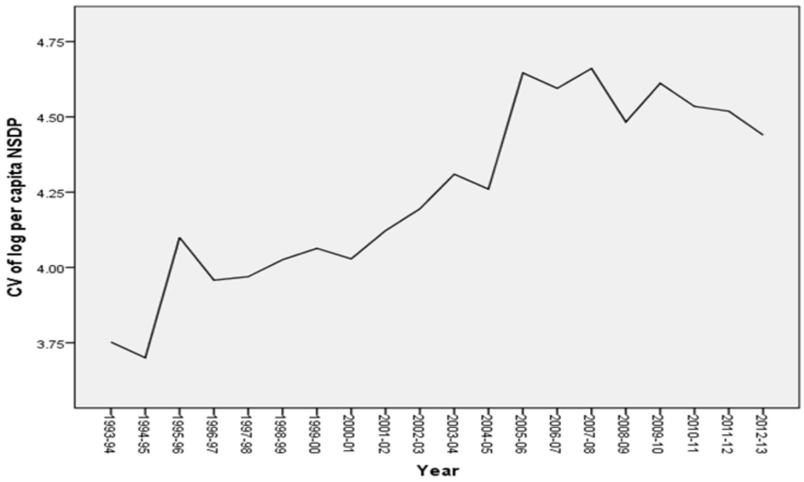
Time Period	Constant	β Coefficient	Adjusted R^2	F
1993 - 2013	-0.126**(-1.984)	0.017*(2.718)	0.019	7.386

Note: Figure in parentheses indicate t-values.
* denotes significant at 1 per cent level
**denotes significant at 5 per cent level.

Source: Author's calculation.

The divergence of income of states measured through convergence shows that there is an increasing trend in the dispersion of income from 1993-94 to 2004-05, after which it has shown a declining trend but has not returned to the initial level (Figure-1). Hence, it can be said that there is divergence of income of states. Therefore, the divergence of income is observed both through convergence and convergence. This needs to be tackled by transferring resources to the poorer states. In Indian federation this has been done through the recommendations of successive Finance Commissions after independence. So far 14 Finance Commissions have recommended fiscal transfers to states but still the horizontal imbalance has not been corrected. We will discuss here recommendations of earlier finance commissions and assess the recommendation of FFC.

Figure-1: Test of ó-Convergence



Recommendations of Finance Commissions

The attempt made by earlier Finance Commissions to redress horizontal imbalances is not satisfactory. This is due to different approaches used for making tax devolution and grants which reduced the relevance of recent normative exercises. As far as the norms prescribed for the Centre are concerned, in the absence of a mechanism to enforce them, these have been merely of academic interest. It may be seen from Table-2 that the different Finance Commissions have adopted different criteria for *inter se* distribution of resources to redress horizontal imbalances. However, adoption of different criteria has not helped the poorer states to catch up with the richer states.

Table-2: Criteria adopted by FCs for *inter se* distribution

Finance Commission	Criteria
First	Contribution, Population
Second	Contribution, Population
Third	Contribution, Population
Fourth	Contribution, Population, backwardness
Fifth	Contribution, Population, backwardness, per capita SDP
Sixth	Contribution, Population, per capita SDP
Seventh	Contribution, Population, poverty, per capita SDP, equalising revenue capacity
Eighth	Population, income distance, inverse of income
Ninth	Population, income distance, inverse of income, index of backwardness
Tenth	Population, income distance, area, index of infrastructure, tax effort.
Eleventh	Population, income distance, area, index of infrastructure, tax effort, fiscal discipline
Twelfth	Population, income distance, area, tax effort, fiscal discipline
Thirteenth	Population, area, fiscal capacity distance, fiscal discipline
Fourteenth	Population, demographic change, income distance, area, forest cover

Source: Finance Commission Reports.

The 14th Finance Commission like earlier Finance Commissions has adopted trial and error method in determining the relative shares of tax devolution and grants. The criteria adopted for devolution of the distribution have tended to generate sizeable surplus in the revenue accounts of the richer states that have been enjoying pre-devolution surplus, whereas the poorer states have had to contend with nominal transfers to meet their chronic deficits (Rao, 1981; Meher, 2009). It is interesting to observe that the States enjoying pre-devolution surplus have got higher per capita post-devolution surplus (Table-3). As a result, they could mount larger plan for development. At the same time, there are poorer states that ended with post-devolution deficit and qualified for revenue deficit grants to balance their revenue account (Table-4). This has created increasing disparities among states in the development.

Table-3: Per Capita Surplus among the States (Rs.)

States	Pre-devolution surplus			Post-devolution surplus		
	12th FC	13th FC	14th FC	12th FC	13th FC	14th FC
Andhra Pradesh		1907		4958	18323	-
Bihar				2585	5926	3988
Chhattisgarh		454		7179	16756	25961
Gujarat	2709	4113	4985	7029	19929	36764
Haryana	8902	9953	4014	12028	43250	25173
Jharkhand				5763	10356	8880
Karnataka	5964	4033		11136	23992	27043
Kerala				1222	5126	-
Madhya Pradesh				5626	11771	24153
Maharashtra	2819	2859		5983	15644	13438
Odisha				701	9782	13532
Punjab		745		-	7518	9711
Rajasthan		116	750	2079	10450	27958
Tamilnadu	1595	1731		6812	15143	10545
Telangana			2529			33582
Uttar Pradesh				3669	10110	8604
Uttarakhand				-	3334	24509
West Bengal				1222	5406	2307

Source: Finance Commission Reports.

Table-4: Post-Devolution Deficit States in the Award of Finance Commissions

Finance Commission	States
Fourth	AP, Karnataka, Kerala, MP, Orissa, Rajasthan, Tamil Nadu
Fifth	AP, Karnataka, Kerala, MP, Orissa, Rajasthan, Tamil Nadu, WB
Sixth	AP, Bihar, Kerala, Orissa, Rajasthan, UP, WB
Seventh	Orissa
Eighth	Orissa, Rajasthan, WB
Ninth	Orissa, Rajasthan, UP
Tenth	AP, Bihar, Orissa, UP
Eleventh	WB
Twelfth	Punjab, Uttarakhand
Thirteenth	-
Fourteenth	Andhra Pradesh, Kerala, West Bengal

Source: Finance Commission Reports.

Since the award of Ninth Finance Commission, the FCs went on estimating the revenue capacities and expenditure needs of the States. This is a marked improvement over past practices but different approaches for making tax devolution and grants reduced the relevance of such exercises. As far as the norms prescribed for the Centre are concerned, in the absence of a mechanism to enforce them, these have been merely of academic interest.

Tax devolution should not be the tool to consider emerging and specific needs of States which actually should be taken care of through grants. Grants can be made purpose-based and need not act as gap fillers in post tax devolution situation as it is at present. Incentive criteria like better tax effort and fiscal discipline can be used for granting additional incentive grants.

Grants are decided in absolute amounts and grants recommended under Article 275 are charged expenditure from Consolidated Fund of India. Tax devolution is decided as a percentage and is subject to the increase and decrease in tax revenue of the Centre. While recommending higher devolution of taxes in place of Article 275 grants, this has to be kept in mind.

Assessment of Recommendation of 14th FC

The 14th FC has followed the path of its predecessors in redressing horizontal fiscal imbalances in India by adopting trial and error method in determining the relative shares of tax devolution and grants. Its attempt in making transfers to redress horizontal imbalance can be assessed as follows:

1. First, the Commission has increased the share of tax devolution from 32% to 42%, thereby raising the plan size of the States.
2. Second, the Commission has modified the *inter se* distribution criteria for tax devolution to make it more progressive.
3. Third, the Commission has given revenue deficit grants to the post-devolution deficit states.

First, the higher share of tax devolution to states can be a relief to the poorer states to increase their plan size. As the share of tax devolution has increased by 10 percentage points from the recommendation of its predecessor, the states are expected to get more central transfer. In fact, a poor state like Odisha has benefited from this hike in tax devolution. In the budget estimate of the Centre in 2015-16, Odisha has a gain from shared tax of Rs. 5279.58 crore if we compare this with the 13th FC (Rs. 24411.60 crore – Rs. 19132 crore). However, there is loss of central assistance amounting Rs. 6873.88 crore (Table-5) due to

- Removal of both Sector and State specific Grants,
- Schemes delinked from Central Assistance,
- Withdrawal of Normal Central Assistance and
- Restructuring of revenue sharing pattern between Centre and State on 33 nos. of identified CSS.

Hence, the overall net loss for Odisha is Rs. 1594.30 crore (CEFT, 2015).

Table-5: Net Impact of the Recommendation of 14th FC on Odisha Revenue

	Net Impact on the State	Rs. Crore
A	Net Gain from Share Tax	5279.58
B	Net Loss from Central Assistance	6873.88
	Normal Central Assistance	732.17
	Schemes Delinked from Central Assistance as indicated in Union Budget 2015-16	1854.05
	Schemes identified to run with Changed Sharing Pattern (as per Union Budget and indications received from Ministries/ Line Departments)	3096.75
	State specific & other 13thFinance Commission Grants (not available as per recommendations of 14thFinance Commission)	1190.91
	Net Loss (B-A)	1594.30

Source: CEFT, 2015.

Second, the 14th FC has followed the previous Commissions regarding distribution of tax share. It has retained population, area and income/fiscal capacity distance as criteria for distribution, but dropped fiscal discipline and added demographic change and forest cover. However, there is no consensus among the states regarding the distribution criterion to be used for tax devolution. Hence, the 14th FC has adopted trial and error method so that not many states would end up with large surpluses and not many would leave with large deficits to be made good through grants. However, the Commission has made its own estimation for finding revenue deficits through normative methods. Once the revenue requirement to provide the expenditure is worked out through a normative approach, there is no need to adopt any criteria to fill this. However, after filling this gap the balance amount of tax share may be distributed among the States based on the incentive criteria like better tax effort and fiscal discipline.

Third, disbursing grants for filling gaps, as adopted by 14th FC as well as the earlier Commissions, needs to be reconsidered. Any gap filling (for differing fiscal capacities) needs to be done through tax devolution and grants should be specific purpose-based. The changes, to be brought about, will need discussion with the States and should take into consideration Constitutional implications.

Alternative Approach

We have proposed the following method of *inter se* distribution of shared tax.

1. Workout the fiscal capacity and fiscal needs of states using normative method.
2. Fill the gap with the shared tax.
3. Distribute the balance amount of shared tax among states by using incentive criteria like better tax effort and fiscal discipline.

Here in the first junk, bulk of the shared tax is distributed and the criteria is required for only a small portion of the total tax devolution amount.

Considering the 14th Finance Commission's assessment of revenue and expenditure of states as normative, we have worked out the gap, which are filled with the shared tax. Then the balance amount of shared tax is distributed among all states based on the criteria. In the absence of the estimation based on the above criteria, we have used the criteria suggested by the 14th Finance Commission to show an example to distribute the balance amount of shared tax among the states. The *inter se* distribution of tax devolution as per our method is compared with that of the 14th FC. In our estimate all states have post-devolution surplus except states like Andhra Pradesh, Himachal Pradesh, Jammu and Kashmir, Kerala, Manipur, Meghalaya, Mizoram, Nagaland and Tripura that are left with post-devolution deficits in 14th FC estimate. The states which will get higher per capita post-devolution surplus as per our estimate are: Andhra Pradesh, Kerala and West Bengal from middle income states; Bihar, Jharkhand, Odisha and Uttar Pradesh from low income states; Assam, Himachal Pradesh, Jammu & Kashmir, Manipur, Meghalaya, Mizoram, Nagaland and Tripura from special category states (Table-6). On the other hand, the states which will lose according to our estimate are all the high income states; Karnataka, Tamil

Nadu and Telangana from middle income states; Chhattisgarh, Madhya Pradesh and Rajasthan from low income states; Arunachal Pradesh, Sikkim and Uttaranchal from special category states.

Table-6: Comparison of post devolution status of states between 14th Finance Commission Recommendation and alternative approach

Category of States	States with higher tax devolution in the alternative approach compared to 14th Finance Commission estimate	States with lower tax devolution in the alternative approach compared to 14th Finance Commission estimate
High Income States	-	Goa Gujarat Haryana Maharashtra Punjab
Middle Income States	Andhra Pradesh Kerala West Bengal	Karnataka Tamil Nadu Telangana
Low Income States	Bihar Jharkhand Odisha Uttar Pradesh	Chhattisgarh Madhya Pradesh Rajasthan
Special category states	Assam Himachal Pradesh Jammu & Kashmir Manipur Meghalaya Mizoram Nagaland Tripura	Arunachal Pradesh Sikkim Uttaranchal

The average per capita surplus of different category of states is presented in Table-7. In the alternative approach, the average per capita surplus of high income states becomes significantly lower compared to the recommendation of 14th Finance Commission. However, it marginally decreases in the case of low income states and increases in the case of middle income states. While the per capita surplus decreases in the case of non-special category states in the proposed methodology, the deficit in the case of special category states changes to surplus with huge amount. The coefficient of variation in the 14th Finance Commission recommendation is about 5 times of the proposed methodology of distribution.

Table-7: Comparison of per capita surplus/deficit of different groups of states between 14th Finance Commission Recommendations and alternative approach

Group of States	Per capita surplus/deficit as per 14th FC estimate (Rs.)	Per capita surplus/deficit as per alternative approach (Rs.)
High Income States	20615	11943
Middle Income States	9371	9688
Low Income States	13384	12623
Non-special Category States	13527	11536
Special Category States	-10131	21132
All States	12111	12111
CV of all states (%)	111.93	527.25

Source: Author's calculation

Conclusion

The Fourteenth Finance Commission has followed the path of its predecessors in redressing horizontal fiscal imbalances in India by adopting trial and error method in determining the relative shares of tax devolution and grants. It has not presented a healthy picture of providing a solution to the problem of equity. The criteria adopted for devolution of the distribution have tended to generate sizeable surplus in the revenue accounts of high income states like Gujarat, Haryana and Telangana that have been enjoying pre-devolution surplus, whereas the poorer states have had to contend with nominal transfers to meet their chronic deficits. The basic approach of transfer is to recommend a substantial portion through tax devolution and to consider grants-in aid as merely a residuary form of assistance. The proposed study has suggested an alternative method of redistribution, which is more equitable compared to the method followed by the Fourteenth Finance Commission. The variation of devolution to states in the proposed methodology has reduced drastically compared to the devolution under 14th Finance Commission.

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Analysis of Devolution Criteria and their Weights from First Finance Commission to Fourteenth Finance Commission

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Intrduction

The 'efficiency through devolution' argument is at the heart of recent devolutionalist and 'new regionalist' discourses. This perspective stipulates an active bottom-up approach to economic development driven and emanating from the regional/local level. India is a semi-federal polity and the existing constitutional allocation of financial powers between the centre and the states is heavily skewed in favour of the former. The finance commission is entrusted with the twin responsibility of distributing central government revenues between the centre and the states on the one hand and among the individual states on the other.

The two basic principles for determining the *inter se* shares of the states are those of equity and efficiency. The principles of horizontal equity is guided by the consideration that as a result of revenue sharing, the resource deficiencies across the states arising out of systematic and identifiable factors are evened out. The principle of equity makes up for resource deficiency. To neutralize this adverse incentive it needs to be complemented by suitable criteria for rewarding efficiency and efforts to improve the resource bases and deliver services at minimum cost.

With this backdrop the present paper is a modest attempt to analyse the criteria and weights assigned to different criteria for *inter se* distribution of resources across the states. The paper is organized as follows. The section-II discusses the criteria used by different Finance Commissions. Weights assigned to different criteria are presented in section-III. Section-IV comprises findings and suggestions followed by the concluding Section.

Criteria used by the finance cmmissions

The criteria used by the Finance Commissions for *inter se* distribution of tax shares across states can be grouped under two heads such as equalising fiscal capacity criteria and fiscal performance criteria.

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(a) Equalising fiscal capacity criteria

Income criterion

Variants of income criterion have been in use in India since the Fifth Finance Commission. In general, this criterion appears to be directly linked to interstate equity and therefore ought to be progressive and redistributive. The problem with this is that neither the productive capacity of the state nor the purchasing power in the hands of the residents is accurately reflected in the estimated figures. Two variants of the income criterion have been used in India: the distance criterion and the inverse income criterion. The distance criterion reflects the disparities in the states' per capita income and measures their absolute resource gap while the inverse income criterion essentially reflects relative disparities.

Population criterion

The population criterion reflects the assumption that a state's expenditure needs to generally grow proportionally with the number of its inhabitants. This criterion does not take into account the differences of states in their fiscal capacities but provides equal per capita transfers to all states. However, it is elementary to ensure that accurate and timely data are used in the distribution formula. Unfortunately this is not the case for the Finance Commission allocation formula in India. The finance commission is politically bound to use census data of 1971 for the calculation of the population based shares, even though census information 1981, 1991, 2001 and 2011 are available. The objective is to implicitly penalize states that do badly on the population front. This provision is bad in law, bad in theory and bad in practice.

The area criterion

The area criterion is intended to reflect cost disadvantages to state governments for providing basic services to its citizens. Less densely populated areas typically require higher levels of governments' services and these create higher costs. But the other side of the coin is that the costs of delivering public services tend to be higher in very densely populated areas as well. The Tenth Finance Commission in their report recognize that costs do not necessarily increase proportionately with the size of the states. There are economies of scale to be considered also and the states with very small areas or with hilly terrain would face higher than proportionate per capita costs. In any case it may be pointed out that indicators such as population density or territorial size are very rough proxies of actual expenditure needs and are therefore always somehow unsatisfactory.

The poverty and backwardness criteria

The Ninth Finance Commission used poverty as a criterion in its first report. At the time it was used, poverty was not even a good indicator of either revenue capacity or cost disability. It is an outcome that is not outside the control of the state. In this situation, using poverty estimates for distributing transfers could easily provide the wrong incentives. In comparison, the backwardness criterion did not suffer from these problems. It could perhaps be improved by rationalizing and widening the variables as the percentage of population dependent on government expenditure but it certainly has the advantage of not being influenced by government policy except in the long run.

The infrastructure criterion

The infrastructure criterion was meant to compensate state governments with smaller infrastructure endowments that reflect their cost deficiencies. The assumption involved is that the greater the infrastructure deficiencies of a state, the greater will be its costs of providing public services. However, the Finance Commission's explicit reason for incorporating this criterion has been to promote development and growth of backward states. The ultimate aim is to improve living conditions, educational services and investment appeal of disabled regions. Instead using an infrastructure index in the transfer formula fails several tests of a good indicator of cost disability as it is not exogenous to the system.

(b) Fiscal performance criteria

The fiscal performance criteria embedded in the Finance Commission devolution formula aim to correct possible systemic disincentives and foster fiscal discipline of state governments.

The tax effort criterion

The tax effort criterion aims to reward the states' revenue performance. A state receives a higher share in the finance commission tax devolution the more it exploits its presumed tax base. Tax effort is defined as the ratio of per capita own tax revenue of a state to its per capita GSDP. It is an imperfect indicator of fiscal efficiency because it is one sided and does not take into account the expenditure side of the budget, a high price is paid to motivate the states to raise higher taxes which may not come about in practice and may not even be desirable.

The fiscal discipline criterion

The Eleventh Finance Commission for the first time constructed an index of fiscal improvement, which compares the ratio of a state's own revenue receipts to its total revenue expenditure with a similar ratio for all states. The better the performance of a state in achieving revenue balance relative to others, the higher is its share in devolution. It is a performance criterion, which measures relative fiscal improvements in a reference period compared to a specific base period. But a careful analysis shows serious weaknesses and the effect of this criterion on the efficiency of the use of public resources is really unpredictable. This type of incentive for achieving a revenue balance cannot distinguish between different ways of achieving the improvement in fiscal discipline. The greatest flaw of this criterion is that it is unlikely to have a substantial incentive effect.

Collection/ assessment criterion: returning tax revenues to originating jurisdictions

This criterion was in use from the very First Finance Commission to the Ninth Finance Commission, after which it was discontinued by the Tenth Finance Commission and has so far not reappeared. The weight attached to it varied between 10 and 20 per cent. It has predictably been criticized by the relatively developed states. The idea in such a case is to approximate the revenues that a state would have collected, had it administered the tax itself. The use of this criterion can possibly be justified for the additional excise duties and the taxes that the states could have collected, but the distribution of income tax was not supported by the logic.

Weightages Assigned to Criteria

As regards the determination of the *inter se* shares of the states, the basic objective of the Finance Commission transfers has been to (i) correct the differentials in revenue capacity and cost disability factors inherent in the economies of the states and (ii) foster fiscal efficiency among the states. The criteria and the weightages used by the successive Finance Commissions are presented in the Appendix.

As regards the weight of different variables in the distribution criteria of net proceeds of income tax, only two factors were taken into account till the Seventh Finance Commission. Population was a dominant factor with the highest weight of 80 to 90 per cent, while contribution in tax collection was a minor factor. There was no change in the horizontal distribution criteria of net income tax proceeds except that there was some adjustment between the respective weights of population and contribution. Apart from population (with a weight of 90 per cent), the Fifth Finance Commission added 'assessment' instead of 'collection' with 10 per cent weight in the distribution scheme of income tax proceeds. This distribution scheme remained unchanged till the Seventh Finance Commission.

The Eighth Finance Commission noted that the criteria for allocating income tax should be more progressive. It recommended that 90 per cent of states' share in income tax remaining after distributing 10 per cent on the basis of contribution should be allocated based on population (with a weight of 22.5 per cent, i.e., 25 per cent of 90 per cent), income adjusted population (with a weight of 22.5 per cent, i.e., 25 per cent of 90 per cent) and the distance of per capita income (with a weight of 45 per cent, i.e., 50 per cent of 90 per cent). Subsequently, the Ninth Finance Commission made a major change by introducing a composite measure of backwardness with a weight of 11.25 per cent. The composite indicator of backwardness comprised two indices, viz., (i) population of Scheduled Castes and Scheduled Tribes and (ii) number of agricultural labourers in different states as revealed by census 1981. The Tenth Finance Commission adopted a different approach and stopped using 'contribution' as one of the factors for the distribution criteria and also discarded the inverse income formula due to the implicit convexity. Instead, it assigned a larger weight of 60 per cent to distance of per capita income along with population (20 per cent) and some new factors, viz., tax effort (10 per cent), area adjusted (5 per cent) and index of infrastructure (5 per cent). Therefore, there was an explicit emphasis on incentivisation of states for their tax efforts. The Eleventh Finance Commission introduced a new index of fiscal discipline; tax effort and index of fiscal discipline were together given a weight of 12.5 per cent. The Twelfth Finance Commission evolved a new formula that balanced equity with fiscal efficiency and accorded 50 per cent weight to income distance along with 25 per cent weight to population, while 'area' was assigned a weight of 10 per cent, and better fiscal management in terms of tax efforts and fiscal discipline was given a higher weight of 15 per cent compared with the 12.5 per cent weightage given by the Eleventh Finance Commission. The Thirteenth Finance Commission recommended estimation of per capita fiscal capacity at reasonably comparable levels of taxation from their respective group averages of non-special category and special category states. The Thirteenth Finance Commission accorded the highest weight to fiscal capacity distance (47.5 per cent) followed by population (25 per cent), fiscal discipline (17.5) and area (10.0 per cent). In recommending horizontal distribution, the Fourteenth Finance Commission has used broad parameters such as, population (17.5 per cent), demographic changes (10 per cent), income distance (50 per cent), area (15 per cent) that has a floor limit at 2 per cent for smaller states and finally for the first time introduced forest cover (7.5 per cent) as the proxy for opportunity cost in terms of area not available for other economic activities.

Findings and Suggestions

The above discussion suggests that while determining the formula for horizontal distribution of inter-se shares of states, the basic aim of the Finance Commissions has been to correct the differentials in revenue capacity and cost disability factors inherent in the economies of states and to foster fiscal efficiency among the states. While the greater weight to 'fiscal capacity distance' in the tax devolution formula of the Thirteenth Finance Commission is expected to facilitate convergence among the states, the increase in weight for 'fiscal discipline' encouraged a reversion to the path of fiscal consolidation. Finally, the efficiency based criteria was dropped during the Fourteenth Finance Commission, on the other hand, the equity based criteria was given maximum weightage. It is found that the weightages assigned to the distribution criteria are quite arbitrary without any rationale for which the *inter se* distribution has often been contrary to the expectations. Moreover, the introduction of elements of equity in the formula for the *inter se* distribution of union excise duties has taken place much earlier.

Conclusion

The present study suggests that more criteria should be included to capture the disparities that really exist among the states. Secondly, appropriate weights should be assigned to the selected criteria so that the resource distribution is just and at the same time does not tell upon the fiscal efficiency of the states. This requires a judicious trade-off between equity and efficiency which must be kept in mind while distributing resources among the federating units.

On the basis of the above findings, it can be concluded that the horizontal distribution does not appear to have made any significant departure from the past in terms of greater progressivity of transfers. To be fair enough to every state, transfers have to be worked out on the basis of fiscal capacities, cost condition and expenditure efficiency.

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Appendix

Criteria and Relative Weights Used for Determining Inter-se Shares of States by the Successive Finance Commissions of India

Commissions	Population	Demographic	Contribution	Per capita income		Poverty	Infrastructure index	Area adjusted	Fiscal discipline	Tax effort	Forest cover
				Inverse	Distance						
First	80		20*								
Second	90		10*								
Third	80		20*								
Fourth	80		20*								
Fifth	90		10#								
Sixth	90		10#								
Seventh	90		10#								
Eighth	22.5		10#	22.5	45						
Ninth (1)	22.5		10#	11.25	45	11.25					
Ninth (II)	22.5		10#	11.25	45		11.25**				
Tenth	20				60		5+	5		10	
Eleventh	10				62.5		7.5	7.5	7.5	5	
Twelfth	25				50			10	7.5	7.5	
Thirteenth	25				47.5			10	17.5		
Fourteenth	17.5	10			50			15			7.5

*Collection

Assessment

** Index of Backwardness

+Index of Infrastructure

Source: Finance Commission reports.

Recommendations of 14th Finance Commission, Fiscal Empowerment of States and Impact on Odisha

Kartik Prasad Jena*

Abstract

This paper makes an attempt to analyse the key recommendations of the Fourteenth Finance Commission and to bring out some good things about the Commission in making Indian States fiscally more stable and allowing them to customise government interventions in keeping with local needs. The Commission's recommendations mark a big step forward in giving Indian States more fiscal autonomy for raising the standards of their governance. By raising the statutory transfer of central tax collections to States by 10 percentage points, the 14th Finance Commission has prevented Indian States from running to the Centre for handouts or 'special packages' on every occasion. But this should be accompanied by greater freedom in tweaking central policies to suit state situations as the states deem suitable and fit. Implementation of the recommendations will empower States. This is to be welcomed.

Key Words: Finance Commission, Fiscal Autonomy, Fiscal Empowerment, Fiscal Federalism, Fiscal Policy, Budget Proposals.

Introduction

India is a union of States with vertical and horizontal imbalances. Widening regional disparity has been a feature of India's social and economic trajectory at least since the 1960s. The process of economic reforms since 1991 has certainly aggravated it - both between and within states – in sectoral as well as social dimensions. This rising regional disparity is also characterized by wider sectoral disparities among different regions and widening social disparities along with wider rural – urban disparities and imbalances. In order to address these disparities and imbalances, the Constitution of India provides an 'Institutional Mechanism' namely, the Finance Commission, to recommend the formula of revenue sharing between Centre and States.

This paper makes an attempt to analyse the key recommendations of the Fourteenth Finance Commission (FFC) and to bring out some good things about the Commission in making Indian States fiscally more empowered and allowing them to customise government interventions in

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keeping with local needs. The Commission's recommendations mark a big step forward in giving Indian States more fiscal autonomy for raising the standards of their governance. The Government of India accepted the Commission's recommendation on 23rd February, 2015 to devolve 42 per cent of the divisible tax pool to States during 2015-16 to 2019-20 against 32 per cent recommended by the previous 13th Finance Commission.

Issues for discussion

The main issues for discussion in this paper are: Whether vertical fiscal imbalances are being reduced? Whether the criteria for inter se distribution is favourable for horizontal fiscal balance? Whether the recommendations promote fiscal autonomy of states? Whether FFC recommendations pave the way for achieving cooperative federation? Whether Odia is disappointed by the FFC award? Following objectives are designed.

Objectives and the Methodology of the Study

The core objectives of this study are (a) to examine the impact of recommendations of FFC on the total Central Transfer of resources (both Share tax and Grant from Centre) to major States vis-à-vis Odisha; (b) to assess whether financial recommendation promotes fiscal autonomy of States and (c) to analyze whether vertical fiscal imbalances are reduced. This study is entirely based upon the secondary data collected from different published sources as referred to at the end.

Summary of Recommendations of Fourteenth Finance Commission (FFC)

The recommendations of Fourteenth Finance Commission (FFC) broadly comprise tax devolution from Centre to States, non-plan grants and loans to States, Central assistance for States and Union Territories and assistance for central and centrally sponsored schemes. Following is the summary of recommendations of FFC :

(i) The Commission has increased the share of tax devolution to 42 per cent from previous 32 per cent of the divisible pool which would serve the twin objectives of increasing the flow of unconditional transfers to the States and yet leave appropriate fiscal space for the Union to carry out specific purpose transfers to the States (Para 8.13). This is a weighted base formula, i.e. fiscal capacity has been given 47.5 per cent weight in Thirteenth Finance Commission (TFC) but in FFC it has been increased to 50 per cent.

(ii) The FFC has assigned a 17.5 per cent weight to the 1971 population. On the basis of the exercises conducted, the FFC has concluded that a weight to 2011 population would capture the demographic changes since 1971, both in terms of migration and age structure. The FFC has, therefore, assigned a 10 per cent weight to the 2011 population.

(iii) The FFC believes in that a large forest cover provides huge ecological benefits, but there is also an opportunity cost in terms of area not available for other economic activities and this also serves as an important indicator of fiscal disability and has been given 7.5 per cent weight in this FFC recommendations (Para 8.27).

(iv) Similarly, the changing revenue sharing pattern in centrally sponsored schemes (CSS), removing some of major schemes in CSS and restructuring of both plan and non-plan grants are the major changes in the FFC recommendations.

(v) The FFC has decided to revert to the method of representing fiscal capacity in terms of income distance and assigned it 50 per cent weight and has calculated the income distance following the method adopted by the 12th Finance Commission.

(vi) The FFC has not consented to the submission of States on minimum guaranteed devolution (8.14). A service tax is not levied in the State of Jammu & Kashmir and proceeds cannot be assigned to this State. The FFC has worked out the share of each of the remaining twenty-eight States in the net proceeds of service taxes (Para 8.31).

Table-1 shows the criteria and weights assigned for determination of the inter-se shares of taxes to the States (Para 8.30).

Table-1: Comparative Illustration of Criteria and Weight used in 14th, 13th and 12th Finance Commissions for sharing the Union Tax Revenue

14th Finance Commission		13th Finance Commission		12th Finance Commission	
Criteria	Weight (%)	Criteria	Weight (%)	Criteria	Weight (%)
Population Demographic Change	17.5 10	Population Area	25 10	Population Area	25 10
Area	15	Fiscal Discipline	17.5	Fiscal Discipline	7.5
Income Distance Forest Cover	50 7.5	Fiscal Distance Capacity ----------	47.5 ----------	Per Capita Income Distance Tax Effort	50 7.5

Source: 12th, 13th and 14th Finance Commission Reports, Government of India

An analysis of the above data for criteria and weights spells out that for the first time demographic changes as a criterion are considered by the FFC for the devolution of the funds. Likewise, forest cover has also been included with 7.5 weights in the FFC, whereas this criterion was not used by 13th and 12th Finance Commissions. The weight for the population was reduced from 25% in 13th Finance Commission to 17.5% in FFC. Criteria like Fiscal Discipline and Fiscal Distance Capacity have been done away with in the FFC. In the FFC, population has been given more weight.

While determining the inter-se share of States, the basic aim of Finance Commissions has been to correct the differentials in revenue raising capacity and expenditure needs, taking into account the cost disability factors to the extent possible. To achieve these goals the past Finance

Commissions have generally followed the principles of equity and efficiency. The criteria used by earlier Finance Commissions can be categorized as : (a) factors reflecting needs, such as population and income; (b) cost disability indicators, such as area and infrastructure distance; and (c) fiscal efficiency indicators such as tax effort and fiscal discipline. But the Fourteenth Finance Commission has decided that the devolution formula should continue to be defined in such a way that it attempts to mitigate the impact of the differences in fiscal capacity and cost disability among States. While doing so, the FFC has kept in view the approaches suggested by individual States for horizontal distribution. Table-2 shows the percentage of devolution of resources from Central Government to major States or State-specific share of taxes (Para 8.30).

Table-2: Percentage of Horizontal Devolution of Inter-se Share of States

States	Share from the 14th Finance commission	Share from the 13th Finance com.mission	Gain/Loss
Andhra Pradesh	4.305	6.937	-2.632
Arunachal Pradesh	1.370	0.328	1.042
Assam	3.311	3.628	-0.317
Bihar	9.665	10.917	-1.252
Chhattisgarh	3.080	2.47	0.610
Goa	0.378	0.266	0.112
Gujarat	3.084	3.041	0.043
Haryana	1.084	1.048	0.036
Himachal Pradesh	0.713	0.781	-0.068
Jammu & Kashmir	1.854	1.551	0.303
Jharkhand	3.139	2.802	0.337
Karnataka	4.713	4.328	0.385
Kerala	2.500	2.341	0.159
Madhya Pradesh	7.548	7.120	0.428
Maharashtra	5.521	5.199	0.322
Manipur	0.617	0.451	0.166
Meghalaya	0.642	0.408	0.234
Mizoram	0.460	0.269	0.191
Nagaland	0.498	0.314	0.184
Odisha	**4.642**	**4.779**	**-0.137**

Punjab	1.577	1.389	0.188
Rajasthan	5.495	5.853	-0.358
Sikkim	0.367	0.239	0.128
Tamil Nadu	4.023	4.969	-0.946
Telangana	2.437	0.000	2.437
Tripura	0.642	0.511	0.131
Uttar Pradesh	17.959	19.677	-1.718
Uttarakhand	1.052	1.12	-0.068
West Bengal	7.324	7.264	0.060
All States	100.000	100.000	0.000

Source: Report of the 14th Finance Commission 2015-20, Volume -1 & II, December-2014

A review of the above horizontal tax devolution from the centre to states reveals that Odisha's share has come down to 4.642 per cent in 14th FC award against 4.779 per cent in 13th FC period. Therefore, Odisha has a loss of share of 0.137pc in the tax devolution framework. Odisha will get **Rs.183274.80** from the Union tax proceeds during 2015-20.

Grants-in Aid

Normally, the Finance Commission recommends grants-in-aid for five purposes-. Revenue deficit, disaster relief, local bodies, sector-specific schemes and state-specific schemes. But the 14th FC proposed to give grants-in-aid on three aspects like Post Devolution Revenue Deficit, Local Government and Disaster Management.

Table-3:Grant – in – Aid to states

1	Local Government	2,87,436
2	Disaster Management	55,097
3	Post-devolution Revenue Deficit	1,94,821
	Total	**5,37,354**

Source: 14th Finance Commission Report, Volume -1.

Post Devolution Revenue Deficit Grant-in-aid

This grant-in-aid is given to those States which are projected, after due assessment of resources and needs by the Finance Commission, to have a post-devolution non-Plan revenue deficit in any year. Since the FFC has taken a comprehensive approach to the assessment of expenditure needs by taking both Plan and non-Plan expenditure in the revenue account, (unlike previous Finance Commissions), the grants are intended to cover the entire post-devolution revenue deficit as assessed by the Commission. This grant-in-aid is the largest component of the grant-in-aid till 13th Fiance Commission. Only in 13th Finance Commission, the grants to local bodies formed the largest component of grants-in-aid.

Table-4: Revenue deficit Grant-in-Aid (2015-20)

State	2015-16	2016-17	2017-18	2018-19	2019-20	2015-20
Andhra Pradesh	6609	4930	4430	3644	2499	22113
Assam	2191	1188	Nil	Nil	Nil	3379
Himachal Pradesh	8009	8232	8311	8206	7866	40625
Jammu & Kashmir	9892	10831	11849	12952	14142	59666
Kerala	4640	3350	1529	Nil	Nil	9519
Manipur	2066	2096	2091	2042	1932	10227
Meghalaya	618	535	404	213	Nil	1770
Mizoram	2139	2294	2446	2588	2716	12183
Nagaland	3203	3451	3700	3945	4177	18475
Tripura	1089	1089	1059	992	875	5103
West Bengal	8449	3311	Nil	Nil	Nil	11760
Total State	**48906**	**41308**	**35820**	**34581**	**34206**	**194821**

Source: 14th Finance Commission Report, Volume -1

FFC awarded the revenue deficit grants to eleven states. Seven states i.e. Andhra Pradesh, Himachal Pradesh, Jammu and Kashmir, Manipur, Mizoram, Nagaland and Tripura will get grant for each of the years during 2015-20. There are four States - Assam, Kerala, Meghalaya, and West Bengal - that will need a revenue deficit grant for at least one of the years. As per the assessment of the FFC, the Pre-Devolution Revenue Deficit for Odisha has been Rs 126,511 crore. However, as per the projections of Revenue and Expenditure submitted by Government of Odisha for 2015-16 to 2019-20, the pre-devolution revenue deficit was Rs. 338,498 crore indicating a gap of Rs.111,987 crore in the projections which will bound to create dissent in Odisha. Similarly the pre devolution non-plan revenue deficit was projected by Odisha as Rs 187,518 crore. But this deficit is not considered by the Finance Commission while devising principle for sharing grants-in-aid among states. Odisha has not got any benefit of the post devolution revenue deficit grant-in-aid from the 14th Finance Commission as in the assessment by the Commission, Odisha has a post devolution revenue surplus.

Table-5 : Comparative assessment of projections made by Odisha and FFC

Grants-in-aid	Projection by Odisha government	Assessment by FFC	Remark
Pre-devolution revenue deficit	3,38,498	1,26,511	No revenue deficit is available to Odisha as FFC found the post-devolution revenue as surplus for the state.
Pre-devolution non-plan deficit	1,87,518	Not considered	

Source: 14th Finance Commission Report

Disaster Relief

During 2015-20, the Odisha government will get a total of Rs.4130 crore out of which the State share will be Rs.413 crore and Union share is Rs.3717 crore. Looking to the fund devolution to State Disaster Response Fund of the States, Odisha ranks 4th in the series. Maharashtra will get the highest amount i.e Rs. 8195 crore followed by Rajastan (Rs. 6094 crore) and Madhyapradesh (Rs. 4848 crore) .

Local Bodies

Grants for local bodies have been awarded on the basis of the recommendation of individual state finance commissions (SFCs). The distribution of grants for the local bodies should give 90% weight to 2011 population and 10% weight to area. The Commission recommended grants in two ways-a basic grant and a performance grant .The ratio of basic to performance grant is 90:10 for Gram Panchayats and 80:20 for Urban Local Bodies. For Odisha, the 14th FC allocated Rs 885.03 crore for Rural Local Bodies during 2016-20 and Rs. 354.50 crore for the Urban Local Bodies. The net impact of the recommendations of 14th Finance Commission on the State Odisha is summarised in Table 6 below:

Table-6 : Net Impact on the State

	Description	Impact (Rs.Crore)
A.	**Net Gain from Share Tax**	**5279.58**
B. (2+3+4+5)	**Net Loss from Central Assistance**	**6873.88**
2	Normal Central Assistance	732.17
3	Schemes Delinked from Central Assistance as indicated in Union Budget 2015-16	1854.05
4	Schemes identified to run with Changed Sharing Pattern (as per Union Budget and indications received from Ministries/Line Departments)	3096.75
5	State specific & other 13th Finance Commission Grants (not available as per recommendations of 14th Finance Commission)	1190.91

Source: Odisha Budget and Accountability Centre (OBAC), CYSD

Conclusion

By raising the statutory transfer of central tax collections to States by 10 percentage points increaseing from the previous 32 per cent in Thirteenth Finance Commission to 42 per cent the Fourteenth Finance Commission has prevented Indian States from running to the Centre for handouts or 'special packages' on every occasion and instead relying more on their own resources. This should be accompanied by greater freedom in tweaking central policies to suit state situations as the States see suitable and fit. The Commission envisages an increase of less than 2 percentage points in the aggregate transfer of central funds to States over the next five years. Federalism in India, however, receives a boost as discretionary transfer of funds from Centre to States is reduced. This should help in reducing friction between two levels of governments and, in the process, enhance the level of co-operation in reforming other areas of economy. An independent Council which provides an advance assessment of the impact of fiscal policy and fiscal implications of budget will help to raise their quality. Implementations of these recommendations will empower States fiscally and allow them to customize government intervention in keeping with local needs. The above recommendations will result in comprehensive assessment of the revenue and expenditure of States and the Union. More freedom to States and local governments, more direct grants to Gram Panchayats and Municipal Governments, good proposals for augmentations of revenues, and favorable compensation package to States regarding GST will promote cooperative fiscal federalism. This is to be welcomed. But in respect of Odisha , on account of the recommendations of 14th Finance Commission, the net loss to the State revenue (additional burden) is Rs. 1594.30 crore as estimated by the Odisha Budget and Accountability Centre (OBAC), CYSD Odishaa.

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Finance Commission Awards and Funds for Disaster Management in India

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Abstract

Financing of disaster relief has been an important aspect of federal fiscal relations. The primary responsibility for undertaking rescue, relief and rehabilitation measures during a disaster lies with the State Governments. The Union Government supplements their efforts through logistic and financial support. Financial assistance in the wake of natural calamities is provided in accordance with the schemes of relief funds. These are based on the recommendation of the successive Finance Commissions (FC). The Second FC made a provision for 'Margin Money' for meeting out such contingencies. Subsequent FCs have reviewed various aspects of funding disaster management in the country in consultation with the different stakeholders. Based on the recommendations, funds have been maintained by the Government of India and States to meet disaster relief. In this article an attempt has been made to examine the financial mechanism available at State and Central levels for disaster management as per the recommendations of various Finance commissions. Further, an attempt has been made to examine the situations in the post 2005 period, particularly the change that has been incorporated by the XIII FC & XIV FC keeping in view the provisions of Disaster Management Act 2005.

Introduction

India as a federal system is about 70 years old, with a constitutional division of functions between the Union and the States. From the division of subjects between the Union and the States, it is clear that there is an asymmetry between the taxation powers and the functional responsibilities. While the Centre is assigned with taxes with higher revenue potential, States are assigned with more functional responsibilities. The rationale underlying this design of responsibilities lies in the fact that Central Government is supposed to enjoy scale economies in the collection of taxes, while expenditure responsibilities are assigned to States due to their proximity to local issues and needs. The division of resources and functions between the Union and the States is such that there would be an imbalance between them. Vertical and horizontal imbalances are a common phenomenon across the federal States. This requires an institutional mechanism of fiscal transfer

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from Central to the State Governments. In our country the Finance Commission (FC) periodically corrects this imbalance, bringing about an alignment between the two. 'Financing of relief expenditure' is one such matter which the Finance Commission since Sixth Finance Commission have been looking into.

Disaster and its Management

Disasters, both natural and man-made, create havoc for the economy. Disasters halted the process of development, disrupt the progress of the economy and very often pushed nations back by several decades. A disaster, as defined by the World Health Organisation, "is any occurrence that causes damage, economic destruction, loss of human life, and deterioration in health and health services on a scale sufficient to warrant an extraordinary response from outside the affected community or area". Disaster could be natural, such as, earthquake, floods, droughts and cyclones; or man-made, like industrial accidents, environmental fallouts of an industry or a commercial establishment, communal riots and epidemics, etc.

Centre for Research on the Epidemiology of Disasters (CRED) defines a disaster as "an unforeseen and often sudden event that causes great damage, destruction and human suffering and a situation or event, which overwhelms local capacity, necessitating a request to national or international level for external assistance".

As per the Disaster Management Act 2005, "Disaster" means a catastrophe, mishap, calamity or grave occurrence in any area, arising from natural or man made causes, or by accident or negligence which results in substantial loss of life or human suffering or damage to, and destruction of, property, or damage to, or degradation of, environment, and is of such a nature or magnitude as to be beyond the coping capacity of the community of the affected area.

The economic impact of a disaster usually consists of direct consequences on the local economy (e.g., damage to infrastructure, crops, and housing) and indirect consequences (e.g., loss of revenues, unemployment, and market destabilization) on the entire economy. Natural disaster of similar nature and intensity affects the developed and developing countries differently in terms of the damage of property and loss of lives. Among all continents, Asia is the most vulnerable to disasters and within Asia, India is known to be one of the most disaster-prone countries. Natural disasters, on an average affect 60 million Indians annually. In india, about 85 percent of the area is vulnerable to one or multiple natural disasters. About 68 percent of the total sown area in the country is drought-prone, roughly 57 percent of the country's area lies in high seismic zone, floods and high winds account for 60 percent of all natural disasters in the country.

Disasters, natural or man-made, not only affect the people of that particular region rather impede the socio-economic development of the entire state, in some cases, the whole economy. The worst affected in natural disasters are undoubtedly the poor and marginalized sections of the society. They are most vulnerable and their ability to recover from the shock brought by a disaster is the lowest. In the aftermath of disaster the deprived sections of the society face an immediate and acute shortage of resources and also lose their access to livelihood in many cases. Therefore, the occurrence of natural disaster in any part of the country necessitates state intervention. The role played by the state vis-à-vis natural disasters could be divided into four categories that are interlinked with each other. These are: Disaster mitigation; Preparedness; Response; and Rehabilitation & Recovery. Disaster management in India has evolved from an activity-based reactive set up to a proactive institutionalized structure. With the enactment of 'Disaster Management Act' by the parliament in 2005, the scenario has changed.

Disaster management generally involves diversion of resources from the creation / expansion of social and economic infrastructure to responsibility for undertaking rescue, relief, and rehabilitation measures during a disaster. There are significant variations in the disaster proneness profiles of different states and there exists a wide variation of level of economic development across the states. This implies that the capacity of majority of the states to deal with disasters on their own is quite inadequate. Further it is to be mentioned that the poorer states are often the most disaster prone. Therefore, the financing of disaster relief has been accepted as a joint endeavour of the Central and State Governments.

Objective

The financing of disaster relief has been an important aspect of federal fiscal relations. In this article an attempt has been made: (1) to examine the financial mechanism available at state and central levels for disaster management as per the recommendations of various Finance Commissions, (2) to examine the situation in post-2005 period, particularly the change that has been incorporated by XIII Finance Commission and XIV Finance Commission keeping in view the provisions of Disaster Management Act 2005.

Constitutional Provision of Disaster Management

Under the Constitution of India, provision of relief to the victims of natural calamities is the primary responsibility of the States. However, often the scale of a natural calamity combined with the economic and infrastructural abilities of the State Governments create such a situation where assistance from the Central Government towards meeting the relief expenditure becomes necessary. The Union Government evolved a policy of assisting States affected by natural calamities as early as 1953, which underwent a series of revisions thereafter.

First Phase (Second to Eighth Finance Commission)

Starting from the recommendations of the Second Finance Commission systematic efforts have been made towards financing of relief expenditure. Finance Commissions from Second onwards have commented on the Relief Expenditure, even though the term 'financing of relief expenditure' was first found place in the Terms of Reference (ToR) of Sixth Finance Commission.

Second Finance Commission while calculating the estimate of the states' committed expenditure included a 'margin for enabling them to set apart annually from their revenues sizeable sums to be accumulated in a fund for meeting expenditure on natural calamities'. Amounts of money available to different states annually for the recommended period (1957-62) amounted to Rs. 6.15 Crore. This arrangement later on came to be known as 'Margin Money Scheme'. Fourth Finance Commission received complaints from many states regarding the conditions governing the grant of assistance under the margin money scheme because they found them very inflexible. Fifth Finance Commission reassessed the margin money for the period 1970-75 and increased it to the extent of 25 percent in each case. However, if the amount allowed by Fourth FC exceeded the average estimated by the Fifth FC, then the earlier amount shall be retained. As regards central assistance to states for their expenditure on natural calamity exceeding their margin money, it recommended that 75 percent assistance should be given in the form of grants and the rest amount be given as central loan.

Sixth Finance Commission, for the first time, was given the mandate to look into the feasibility of establishing a National Fund (for financing relief expenditure) to which the Central and State Governments would contribute a percentage of their revenue receipts. But the Commission found it was neither feasible nor desirable. Commission further mentioned that the existing arrangements for providing assistance to the States for meeting expenditure on relief operations need to be completely overhauled. Detailed programmes of both medium and long term significance for permanent improvement of the areas liable to drought and flood should be drawn up with utmost urgency and these programmes be fully integrated with the Plan. Sixth Finance Commission followed the practice of earlier Commissions in arriving at the margin money for each state and amounts of Margin Money for different States for the recommended period 1975-80 amounted to 50.71 crore.

Seventh Finance Commission made a distinction between different types of calamities. Necessity for relief in the event of floods, cyclone and earthquakes is immediate whereas the incidence of droughts could be foreseen which permitted certain margin of time for planning relief works. Unlike the earlier Commissions Seventh FC took into account the expenditures incurred on repair and restoration of public assets damaged by natural calamities for calculation of 'Margin Money'. However, the expenditure on relief works giving employment was kept outside its purview. Further, the Commission also observed that in case of calamity of 'rare severity', the Union Government could extend assistance to the States even beyond the scheme suggested by the Commission. Eighth Finance Commission recommended the continuation of scheme as suggested by Seventh FC. The Commission increased the quantum of Margin Money for all States to Rs.240.75 crore per year and suggested that the Margin Money should be shared on a matching basis between the Centre and the States. The Eighth FC considered the damage caused by fire as well to be treated on the same footing as floods, cyclones and earthquake.

Second Phase (Ninth to Twelfth Finance Commission)

Ninth Finance Commission was mandated to suggest appropriate modification in the existing arrangements of relief expenditure and to examine the feasibility of establishing a national insurance fund. Almost all States complained about the deficiencies in the existing arrangements and pointed out the operational problems that the scheme gave rise to. Having heard them Ninth FC introduced a new scheme known as 'Calamity Relief Fund' (CRF). A total of Rs. 804 crore was made available each year to all States taken together as funds earmarked for relief on account of natural calamities, which was shared by Centre and States with a ratio of 75:25. However, if any region faces a calamity of 'rare severity' the Centre will take appropriate action and incur the necessary expenditure. But, the Commission did not define what constituted 'rare severity'. Finally, Commission observed that the establishment of a 'National Insurance Fund' is not feasible.

As there was a near unanimity among the States for the continuation of scheme of 'Calamity Relief Fund', Tenth Finance Commission recommended continuing the scheme with existing sharing pattern and earmarked an amount of Rs. 6304.27 crore for all States during the period of report 1995-2000 towards this purpose. However, the fund should be kept outside the Public Account of States in a manner to be prescribed by the Ministry of Finance. The existing arrangement for coordinating relief work at the Centre in the Ministry of Agriculture may continue. A committee of experts and representatives of state governments may be set up by the Ministry of Agriculture to frame common guidelines in regard to items of expenditure and their rates and norms that can be debited to the CRF. The Tenth Finance Commission considered the issue of a calamity of 'Rare Severity' and was of the opinion that 'rare severity' would have to be examined on a case-to-case basis by taking into account, inter alia: (1) The intensity and magnitude of the calamity, (2) Level of relief assistance required, (3) The capacity of the State to tackle the problem, and (4) The alternatives and flexibility available within the plans to provide succor and relief, etc. The Commission proposed that in addition to CRFs for States, a National Fund for Calamity Relief (NFCR) should be created to deal with calamity of 'Rare Severity'. The size of the fund was worked out at Rs. 700 crore to be built up over the period 1995-2000, with an initial corpus of Rs. 200 crore to which the Centre would contribute Rs. 150 crore and the rest 50 crore by the States.

Eleventh Finance Commission recommended the continuation of the scheme of Calamity Relief Fund (CRF) with same sharing pattern, but discontinued the scheme of NFCR mooted in previous FC. To deal with calamity of rare severity and its damage assessment the Commission suggested establishment of an independent body under the Ministry of Agriculture namely National Centre for Calamity Management (NCCM), which was empowered to make recommendation to the Central Government as to whether a calamity is of such severe nature that would call for financial assistance to the affected State over and above what is available in the CRF or from other plan/non-plan sources. Any financial assistance provided by the Central Government to the States in this regard, should be recouped by levy of a special surcharge on Central taxes. Collections from such surcharge/cess should be kept in a separate fund, known as National Calamity Contingency Fund (NCCF), created in the public account of the Central Government, to which it should contribute Rs.500 crore as the initial core amount. Outgo from this fund should be recouped by levy of the surcharge.

The Twelfth Finance Commission recommended that the scheme of CRF be continued with contributions from the centre and the states in the ratio of 75:25. Likewise to deal with calamity of rare severity the scheme of NCCF may continue with core corpus of Rs. 500 crore. The outgo from the fund may continue to be replenished by way of collection of National Calamity Contingent Duty and levy of special surcharge. The size of the CRF was worked out at Rs. 21333.33 crore for the period 2005-2010.

Third Phase (Thirteenth & Fourteenth Finance Commission)

The perception about disaster management has undergone a change following the enactment of Disaster Management (DM) Act 2005. The Act provides for setting up of a National Disaster Management Authority (NDMA) at the national level, State Disaster Management Authorities (SDMAs) at State level, and District Disaster Management Authorities (DDMAs) at district level under the Chairmanship of Prime Minister, Chief Ministers and Collectors/District Magistrates/Deputy Commissioners respectively. It also mandates the constitution of different Executive Committees at national and state levels. Under its aegis, the National Institute of Disaster Management (NIDM) for capacity building and National Disaster Response Force (NDRF) for response purpose have been set up. The concerned Ministries and Departments are required to draw up their own plans in accordance with the National Plan.

The Act further contains the provisions for financial mechanism. The DM Act provides for two funds (one for disaster response and another for disaster mitigation) each at all the three levels, namely, national, state and district. For national funds, although the Act provides for funding to be sourced through the Central Government, there is no specific mention of the criteria to be adopted in fixing the size of the contribution to the fund. Further, the Act is altogether silent on the source of funding for state and district funds.

Thirteenth Finance Commission mandated to '…review the present arrangements as regards financing of disaster management with reference to National Calamity Contingency Fund (NCCF) and the Calamity Relief Fund (CRF) and the funds envisaged in the Disaster Management Act, 2005'. In response to this TOR Thirteenth Finance Commission viewed that the current schemes of the CRF and the NCCF have served their purpose well. However, with the 'Disaster Response Funds' coming into existence, the Commission feels that there is a need to merge the existing funds into the newly constituted funds.

The Commission recommended the CRF to be merged into the SDRFs of the respective states and the NCCF into the NDRF. Contribution to the SDRFs to be shared between the Centre and states in the ratio of 75:25 for general category states and 90:10 for special category states. Balances as on 31st March 2010 under NCCF and the state CRFs were to be transferred to the NDRF and respective SDRFs. Budgetary provisions for the NDRF to be linked to expenditure of the previous year from the fund. With cesses being subsumed on introduction of the GST in future, alternative sources of financing should be identified.

So far as disaster mitigation is concerned, the Commission believes that it should be a part of the plan process and that the expenditure therein should be met out of the plan resources of the respective ministries of the Union and the States. Hence the Commission recommended that mitigation and reconstruction activities be kept out of the schemes funded through Finance Commission Grants and should be arranged out of overall development plan funds of the Centre and the States.

The Commission feels that the best methodology to assess the requirement of the SDRF would be the Hazard-Vulnerability-Risk profile of the states, but in the absence of any such reliable indicator the Commission followed the earlier expenditure-based approach. To arrive at the allocations to the SDRFs of various states, the expenditure on relief booked under the 'Major Head of Account 2245' for the period 2001-08 was taken into account. These figures have been adjusted for inflation to arrive at 2009-10 prices. After adjusting for inflation, average expenditures were taken. To give additional weightage to the States having low fiscal capacity, the Commission laid emphasis on all Special Category States and all States with per capita income below the all-state average per capita GSDP, viz., Bihar, Chhatisgarh, Jharkhand, Madhya Pradesh, Odisha, Rajasthan and Uttar Pradesh, and allowed a 30 percent hike for the above mentioned States. Then, the Commission compared the figure so obtained with an amount of 10 percent above the CRF size for the year 2009-10, as recommended by Twelfth Finance Commission, and retained higher of the two. Finally, it allowed a 5 percent increase every year to arrive at the projection for the award period. Total size of the SDRF has been worked out at Rs. 33,581 crore to be shared in ratio given above. An additional grant of Rs. 525 crore provided for capacity building. Assistance of Rs. 250 crore to NDRF to maintain an inventory of items required for immediate relief. However, the Commission mentioned that the provisions relating to the DDRF in the DM Act may be reviewed and setting up of these funds left to the discretion of the states.

The list of disasters to be covered under the scheme financed through FC grants to remain as it exists currently. However, manmade disasters of high-intensity may be considered for NDRF funding once norms have been stipulated and requisite additional allocations made to the NDRF. Financial matters to be dealt with by the Ministry of Finance as per the existing practice.

In tune with the recommendation of Thirteenth Finance Commission, a National Calamity Contingency Duty (NCCD) is levied to finance the NDRF and additional budgetary support is provided as and when necessary. A provision also exists to encourage individual or institution to make a contribution to the NDRF. Fourteenth Finance Commission recommended that in the event of discontinuation of cesses with the implementation of GST, the Union Government should consider ensuring an assured source of funding for the NDRF, the decision on granting of tax exemption to private contributions to NDRF be expedited and also consider invoking the use of 'Corporate Social Responsibility' as an enabling provision for financing the NDRF.

The SDRF is the primary fund available with the States for disaster response. Many States as well as the Ministry of Home Affairs and the NDMA emphasized the relevance of Hazard-Vulnerability-Risk profile of the States as the basis of SDRF. Keeping in view the above fact the Commission recommended that the Union Government should expedite the development and scientific validation of the Hazard-Vulnerability-Risk profile of the States. However, in the absence of a validated index of hazard vulnerability, Fourteenth Finance Commission adopted the practice of previous Commissions' expenditure-based approach and used past expenditure on disaster relief for the period 2006-07 to 2012-13 to find out the SDRF corpus for each State. Further, the Commission followed the methodology of the FC-XIII to arrive at an aggregate corpus for all States of Rs. 61,219 crore for the award period. Contribution to the SDRFs are to be shared between the Centre and States in the ratio of 90:10. The decision of constituting DDRFs is best left to the wisdom of the State Governments, and hence, separate grants for the financing of DDRFs are not recommended.

Fourteenth Finance Commission has also taken note of the location-specific natural disasters not mentioned in the notified list, which are unique to some States. Considering the need for flexibility in regard to state-specific disasters, the Commission recommend that up to 10 per cent of the funds available under the SDRF can be used by State Governments for natural disasters that they consider to be 'disasters' within the local context and which are not included in the notified list of disasters of the Ministry of Home Affairs. While calculating the requirement for funds from the NDRF during severe calamities, the existing practice of adjusting the contribution made by the Union Government to the SDRF should continue.

The Commission restricted its recommendation to existing arrangements on the financing of the already constituted funds (National Disaster Response Fund and State Disaster Response Fund) only, as per its 'Terms of Reference'. The Fourteenth Finance Commission did not make any specific recommendation for a mitigation fund.

Conclusion

India has been actively pursuing a paradigm shift in disaster management from a relief centric approach in the past to the current holistic one, encompassing all aspects of disaster management. The problem of funding relief expenditure has been recognized by every FC since the Second, though Sixth FC specifically mandated, for the first time, to review the policy and arrangements in regard to financing of relief expenditure by the States. The earliest arrangement in this regard was called the 'Margin Money Scheme'. This arrangement involved setting apart a specified sum by the states as margin for relief expenditure, with centre meeting excess requirement. The size of Margin Money has been increased from Rs. 6.15 crore per annum in Second FC to Rs.240.75 crore per annum in Eighth FC. At the National level, a dedicated fund for calamity relief, namely Calamity Relief Fund (CRF) for each State was mooted by the Ninth Finance Commission. The fund was shared by the Union and State Governments with 75:25 basis. For calamities of rare severity, the Central Government was asked to render assistance and support beyond that envisaged in the CRF. The Tenth Finance Commission put in place a formal mechanism and recommended the setting up of a national Fund for Calamity Relief (NFCR) to assist a State affected by a 'calamity of rare severity' through contribution from the Centre and state Governments. The fund was to be managed by a committee represented from both Central and state governments, known as 'National Calamity Relief Committee'. The Eleventh Finance Commission modified the policy of Tenth FC and recommended the setting up of a 'National Calamity Contingency Fund' (NCCF) with an initial corpus of Rs. 500 crore. The funds were to be recouped by levying a special surcharge on Central taxes. The Twelfth Finance Commission continued with this arrangement. By the enactment of 'Disaster Management Act 2005' and consequent changes in the design and structure of disaster management, the Thirteenth Finance Commission recommended the merger and transfer of NCCF balance as on 31st march 2010 to the NDRF and the available balances in the State CRFs on 1st April 2010 were merged with SDRFs. In the event of a disaster of 'a severe nature' any excess fund needed for relief expenditure beyond the balance of SDRF, would be provided from the NDRF after following prescribed procedure. Since 2010-11 fiscal, the Union Government has been financing the NDRF through the levy of a cess and the SDRF through grants-in-aid. The Fourteenth Finance Commission followed same procedure as that of the Thirteenth, however, recommended that in the event of discontinuation of cesses with the implementation of GST, the Union Government should consider ensuring an assured source of funding for the NDRF, the decision on granting of tax exemption to private contributions to NDRF be expedited and also consider the invoking the use of 'Corporate Social Responsibility' as an enabling provision for financing the NDRF. The Commission recommended that all States contribute 10 percent of SDRF with the remaining 90 percent coming from Union Government.

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Fourteenth Finance Commission and Odisha: Problems and Prospects

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Abstract

The major recommendations of the Fourteenth Finance Commission (FC-XIV) are devolution to the states, big jump in the tax share, resource transfers, NITI connect, grants and its types, transfers of the grants, disaster relief, post devolution revenue deficit grants, delinking of the schemes and cooperative federalism.

Tenth Finance Commission recommendations outlined states like Uttar Pradesh, Madhya Pradesh, Rajasthan, Odisha and Bihar as Low Income States. In the meantime, states like Madhya Pradesh, Uttar Pradesh and Bihar have been bifurcated. Therefore, to know whether the present recommendations are beneficial to these states or not we have to analyse all these outlined states. The study will analyse whether Odisha as a low-income state benefited or not from the recommendations of the Fourteenth Finance Commission. It will also find out whether the intra state and intra Finance Commission recommendations provide benefits or losses to Odisha.

Introduction

The Fourteenth Finance Commission (FFC) like its predecessors was guided by the terms of reference (ToR); the approach of previous Finance Commissions; the prevailing macroeconomic situations, in particular the fiscal environment of the country. In addition, the FFC reviewed in detail the relevant deliberations in the meetings of the National Development Council, the views of the Administrative Reforms Commission (1966), National Commission on Review of the Working of the Constitution (Venkatachalaiah Commission 2002), Commission on Centre–State Relations (Sarkaria Commission 1988), Commission on Centre State Relations (Punchhi Commission 2010), etc. to analyse union– state ûscal relations in a fundamental manner. The core mandate of the FFC, as laid down in Article 280 of the Constitution and incorporated in the ToR relates to: (a) proceeds of taxes to be divided between union and the states, usually referred to as the "vertical balance;" (b) the allocation of distribution of taxes among the states, usually

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referred to as the horizontal balance; (c) the principles which should govern the grants-in-aid to states by the finance commission, which are over and above the devolution of taxes as per a formula; and (d) measures to augment the consolidated fund of a state to supplement the transfer of resources to panchayats and municipalities, based on the recommendations of the respective state Finance Commissions, usually referred to as Finance Commission grants to local bodies.

Terms of Reference

The Commission made recommendations regarding the sharing of union taxes, principles governing Grants-in-aid to States and transfer of resources to local bodies. The ToR and matters that were taken into consideration by the Fourteenth Finance Commission are:

(i) The distribution between the Union and the States of the net proceeds of taxes which are to be or may be divided between them under Chapter -I, Part – XII of the Constitution and the allocation between the States of the respective shares of such proceeds. (ii) The principles which should govern the grant-in-aid of the revenues of the States out of the Consolidated Fund of India and the sums to be paid to the States which are in need of assistance by way of grants-in-aid of their revenues under Article 275 of the constitution. (iii) The measures needed to augment the consolidated Fund of a State to supplement the resources of the Panchayats and Municipalities in the State on the basis of the recommendations made by the Finance Commission of the State. The Commission reviewed the state of the finances, deficit and debt levels of the Union and the States keeping in view the fiscal roadmap recommended by the Thirteenth Finance Commission. It also suggested measures for maintaining a stable and sustainable fiscal environment consistent with equitable growth including suggestions consistent with equitable growth including suggestions to amend the Fiscal Responsibility and Budget Management (FRBM) Act currently in force.

In making its recommendations on various matters, the Commission shall generally take the base population figures of 1971 in all cases where population is a factor of determination of devolution of taxes and duties and grants-in-aid. The Commission may also take into account the demographic changes that have taken place subsequent to 1971. It may review the present Public Expenditure Management systems in place including the budgeting and accounting standards and practices, the existing system of classification of receipts and expenditures; linking outlays to outputs and outcomes and make appropriate recommendations thereon. The Commission also reviewed the present arrangements as regards financing of Disaster Management with reference to the funds constituted under the Disaster Management Act 2005 and make appropriate recommendations thereof.

Sharing of Union tax Revenues

Article 280 (3) (a) of the Constitution and Para 4 (i) of the terms of reference mandated to make recommendations regarding “the distribution between the Union and the States of the net proceeds of taxes which are to be or may be divided between them" as well as the allocation between the States of the respective shares of such proceeds. The FFC have considered six factors in determining the approach to sharing of Union Taxes. These are (a) The Constitutional provision and intent, (b) The approaches of previous Finance Commissions,

(c) The need for continuity, to the extent possible, (d) The requirement for rebalancing in the sharing of resources needed in the context of overall fiscal relations, (e) The anticipated macroeconomic environment during the award period and (f) The views of the Union and State Governments in the macroeconomic context.

Vertical Devolution

The main task of the FFC was to make a realistic estimate of the vertical imbalance of resources between the Union and States. This assessment required careful estimation of the expenditure needs of each level of government and the revenue resources available with them. For making assessment of vertical imbalance, the emerging macro economic and fiscal scenarios of Union and State Governments are taken into account.

As outlined by the FFC, two issues become important in assessing the vertical imbalance. One, a realistic estimation of revenue accruing solely to the Union as well as its expenditure needs and the resources required to meet its obligations under the constitution. Second, a realistic assessment of the revenue capacities of the States and the expenditures required to meet obligations mandated under the constitution. In this context, the FFC have examined three factors (a) the spirit of Constitutional provisions, (b) the concerns about fiscal space expressed by Union and States, and (c) the need for clarity on the respective financial and expenditure responsibilities of Union and States in the interest of sound federal fiscal relations. The FFC is of the view that tax devolution should be the primary route of transfer of resources to the States since it is formula based and thus conducive to sound fiscal federalism. However, to the extent that formula based transfers do not meet the needs of the specific States they need to be supplemented by grants-in-aid on an assured basis in a fair manner.

A compositional shift in transfers from grants to tax devolution is desirable for two reasons. First, it does not impose an additional fiscal burden on the Union Government. Second, an increase in tax devolution would enhance the share of unconditional transfers to the States. These are factored in four important considerations: (a) States not being entitled to the growing share of cess and surcharges in the revenues of the Union government; (b) the importance of increasing the share of tax devolution in total transfers; (c) an aggregate view of the revenue expenditure needs of States without plan and non-plan distinction and (d) the space available with the Union Government. Considering these factors, the Commission increased the share of tax devolution to 42% of the divisible pool. This would serve the twin objectives of (a) increasing the flow of unconditional transfers to the States and (b) leave appropriate fiscal space for Union to carry out specific purpose transfers to the States.

Horizontal Sharing

Most indicators proposed by various States can be grouped into six broad categories namely population, income and fiscal capacity distance, fiscal performance area, social and economic backwardness and availability of infrastructure. While determining the inter-se share of the States, the basic aim of the Finance Commission has been to correct the differentials in revenue raising capacity and expenditure needs, taking into account the cost disability factors to the extent possible. To achieve these goals, the past Finance Commissions have generally followed the principles of equity and efficiency. The criteria used by earlier Finance Commissions can be categorized as: (a) factors reflecting needs such as population and income; (b) cost disability indicators such as area and infrastructure distance; and (c) fiscal efficiency such as tax effort and fiscal discipline. FFC is of the view that the devolution formula should continue to be defined in such a way that it attempts to mitigate the impact of the differences in fiscal capacity and cost disability among States.

The Commission holds that the weight assigned to population should be decided and an indicator for demographic changes should be introduced separately. It assigned a weight of 17.5 percent to the 1971 population. In order to capture the demographic changes since 1971 in terms of migration and age structure it assigned a weight of 10 percent to 2011 population. The State with larger area will have to incur additional administrative and other costs in order to deliver comparable services to its citizens. They therefore, followed the method adopted by Twelfth Finance Commission and assigned 15 percent weight. A large forest area provides huge ecological benefits. There is also an opportunity cost in terms of area not available for other economic activities, which is an important indicator of fiscal disability. It assigned 7.5 percent weight to the forest cover. Successive Finance Commissions have used the distance of actual per capita income of a State from the State with the highest per capita income as a measure of fiscal capacity. The Commission decided to represent fiscal capacity in terms of income distance and assigned a weight of 50 percent.

Local Governments

The ToR of the Finance Commission is to recommend "the measures needed to augment the Consolidated Fund of a State to supplement the resources of the Panchayats and Municipalities of the State based on the recommendations made by the Finance Commission of the State". Basing on recommendations of the State Finance Commissions (SFCs) the FFC recommended measures to supplement resources of duly constituted Panchayats and Municipalities.

The local bodies should be required to spend the grants only on the basic services within the functions assigned to them under relevant legislation. The Commission recommend that the book of accounts prepared by the local bodies should distinctly capture income from own taxes and non-taxes, assigned taxes, devolution and grants from the State, grants from the Finance Commission and grants for any agency functions assigned by Union and State Governments. FFC recommend distribution of grants to the States using 2011 population data with weight of

90 percent and area with weight of 10 percent. The grant to each State will be divided into two – a grant to duly constituted Gram Panchayats and grant to duly constituted Municipalities, based on urban and rural population of that State using the data of Census 2011.

Grants-in-Aid

The general principles that have underlined the Finance Commission grants were articulated by the FC-I. These included determining the need of the State from its budget, recognizing efforts made by States to realize their potential revenue and equalizing standards of basic services across the States. However, previous Finance Commissions have predominantly adopted a gap-filling approach to determine the quantum of grants to States to cover the deficit in the non-plan account. The Commission relied primarily on tax devolution to cover the assessed revenue expenditure needs of the States. It had to give revenue deficit grants to cover their revenue expenditure requirements after assessing post-devolution revenue deficits derived from their projected fiscal capacities and needs.

Previous Finance Commissions have enunciated four main considerations governing grants-in-aid to the states: (i) to meet their residuary budgetary needs after taking the devolution of taxes into account; (ii) to facilitate the upgradation of standards of administrative and social services, and (iii) to ensure minimum expenditures on such services across the country. Grants-in-aid have been recommended in the past to meet the special needs, burdens and obligations of the states and also to address the specific sectors of national importance. (iv) A separate grant was given to the states for maintaining the ecology and environment for promoting sustainable development. They have generally been recommended for augmenting expenditures, rather than for substituting what a state government was already spending.

The FFC departed, to some extent, from previous practice, and adopted four principles: First, the devolution of taxes from the divisible pool should, as in the past, be based upon an appropriate formula which should, to a large extent, offset revenue and cost disabilities. Second, the assessment of expenditures should build in additional expenditures in the case of states with a per capita expenditure significantly below the all-states average. The assessment of revenues should build in the scope for additional revenue mobilisation based on the current tax–GSDP ratio relative to the all-states average. This will enable fiscally-disadvantaged states to upgrade their services without earmarking or specifying sectors. Third, if the assessed expenditure need of a state, after taking into account the enabling resources for augmentation, exceeds the sum of revenue capacity and devolved taxes, then the state concerned will be eligible to receive a general purpose grant-in-aid to fill the gap. Fourth, grants-in-aid for state specific projects or schemes will not be considered, as these are best identified, prioritised and financed by the respective states. Fifth, promotion of sustainable development is mainstreamed by taking the area under forest cover as a factor in tax devolution itself.

The FFC conceded that there is a case for transfers from the union government to the states to augment expenditure in specific sectors with a high degree of externalities in order to ensure desired minimum level of expenditures in every state. However, past experience shows that achieving this through the mechanism of Finance Commission grants may not be appropriate. Further, Finance Commission grants on this account often operate in parallel with other transfers. The FFC concluded that all such transfers, in whichever sectors are considered necessary, should be addressed through a different institutional arrangement proposed by the FFC.

Effects of Fourteenth Finance Commission on Odisha

The deficits i.e. revenue deficit and gross fiscal deficit for Odisha, low income states and all states are presented in Table-1. In the year 2004-05, revenue deficit of Odisha was lower than the average of low income states and all the states. During 2005-06 to 2014-15 Odisha managed to generate surplus in the revenue account. Low income states also represented similar behaviour. During 2005-06 to 2014-15 they had surplus in their revenue account. All states showed mixed results. During 2004-05 to 2014-15 in some years they had surplus and in some had deficits.

Gross fiscal deficits of Odisha were 1.8 per cent of GSDP during 2004-05. It gradually decreased over the years and during 2006-07 and 2007-08there was surplus in the gross fiscal account of Odisha. However, the situation was worse during 2013-14 and 2014-15. Fiscal deficits of low income states were highest during 2004-05 at 4.3 per cent. The situation gradually improved. However gross fiscal deficit of all states also present similar behaviour.

a) Own Tax Revenue and Own Non-Tax Revenue

Own tax revenue and non-tax revenue of Odisha, low income states and all states are presented in Table-2. Own tax revenue for all category states are more than the own non-tax revenue. In Odisha, own tax revenue was 5.4 per cent of the GDP which continuously increased and it was 6.0 per cent of GSDP in the year 2006-07. In the year 2007-08, own tax revenue of Odisha was 5.3 per cent of GSDP. In the years 2012-13, 2013-14 and 2014-15 it was around 6 per cent of the GSDP. On the other hand, own non-tax revenue was 1.7 per cent of GSDP in the year 2004-05. It gradually increased and was 3.2 per cent in the year 2012-13. There was a slight fall in the own non-tax revenue as percentage of GSDP during 2014-15 which was 2.5 per cent.

It can be seen from the table that Odisha's own non-tax revenue as percentage of GSDP is more than that of the low-income states and all states. Non-tax revenues are government revenue not generated from taxes. Taxation is the primary source of income for the state. It can be seen for Odisha, low income states and all states that the own tax revenue as percent of GSDP is more than the percentage of own non-tax revenue as percentage of GSDP. This is good sign for the economy.

b) Horizontal Devolution

Horizontal devolution formula for 13th and 14th Finance Commissions are presented in Table-3. In Thirteenth Finance Commission's award, population of 1971 was given weight of 25 per cent. This was reduced in the Fourteenth Finance Commission award to 17.5 per cent. Earlier demographic change was not having any importance. However in the Fourteenth Finance Commission it is taken into account and population of 2011 was given weightage of 10 per cent. Similarly, fiscal capacity/ income distance was given 47.5 per cent weight in Thirteenth Finance Commission award which increased to 50 per cent in Fourteenth Finance Commission award. Earlier area of the state was designed a weight of 10 per cent which increased to 15 per cent in Fourteenth Finance Commission award. Forest cover was earlier given no importance which was given a weight of 7.5 per cent during Fourteenth Finance Commission award. Fiscal discipline which was given a weightage of 17.5 per cent during Thirteenth Finance Commission award has lost its significance during Fourteenth Finance Commission award.

c) Share of States in Taxes and Service Tax

The inter-state share of low income states in taxes and service tax are presented in Table-4. In the low-income states share of taxes are highest for Uttar Pradesh and it was 17.959 per cent. This is followed by Bihar and Madhya Pradesh which are respectively 9.665 per cent and 7.548 per cent. It can be pointed out that the average of low income states is 6.5725 per cent. This is followed by Rajasthan and Odisha which are respectively 5.495 per cent and 4.642 per cent and by Chhattisgarh, Jharkhand and Uttarakhand. It can be seen that share of taxes for Odisha is less than the average of low income states. Hence it can be stated that Odisha had not gained from the Fourteenth Finance Commission award as far as shared taxes are concerned.

Share of service taxes also indicate similar result. The share of Uttar Pradesh is 18.205 per cent which is highest among the low-income states. This is followed by Bihar and Madhya Pradesh which are respectively 9.787 per cent and 7.727 per cent. The average of low income states in the share of service tax is 6.6927 per cent. This is followed by Rajasthan and Odisha which are respectively 5.647 per cent and 4.744 per cent. Therefore, it can be underlined that Odisha gained less as compared to other low-income states. Its award is less than the average of all low-income states.

Conclusion

The Fourteenth Finance Commission (FFC) benefited immensely from the work done by the previous commissions. It benefited from the way the ToR was constructed. ToR gave an opening for examining several fundamental issues, such as population, plan and non-plan distinction, fiscal management legislations, privatisation of public enterprises, etc. ToR required the consideration of several issues affecting both union and states symmetrically. The listing of considerations in assessment of resources and needs was thoughtful, though superfluous matters persist. The FFC has formulated its recommendations without reference to the distinction between plan and non-plan. As a follow-up, it is essential to delink the plan from the classification in budget documents and accounts so that the intended benefits accrue. Such a delinking will facilitate assessment, scrutiny and approval of all expenditures in a sector or activity, or department in a comprehensive manner, and not only incrementally. Above all, the planning process will also be liberated from its close association with the budget, reflecting the new realities, namely, that the process of development requires significantly more than investments by government in development activities, and actions by the regulators, private sector and financial markets are at least equally important.

The intergovernmental fiscal relations in future will also, hopefully, reflect the principles underlying the recommendations of the FFC. First, our Constitution, and for that matter, the available literature on the subject, does not confer overriding responsibilities on national governments the economic and fiscal management of state governments. Every tier of government should be regarded as equally accountable and responsible for functions assigned to it. At the same time, the existence of overlapping responsibilities should be recognised and mechanisms put in place for their discharge. Second, the global trend is towards greater centralisation of taxes and decentralisation of government expenditures, and such trends should be analysed in their relevance to our systems. Similarly, globalisation of economic activity and need for provision of global goods cast special responsibility on the union. These do have an impact on union-state fiscal relations. Third, it should be recognised that the Directive Principles of State Policy of the Constitution or national priorities are of equal concern to union and state governments. Further, a subject of national importance does not automatically confer total expenditure responsibility on the union government without reference to the Constitution. Odisha as a state did not gain from the Fourteenth Finance Commission recommendations.

The state governments being closer to the people have an increasingly important role to play in view of the greater fiscal freedom that has been accorded to them by the FFC in the fiscal transfers from the union to the states. In particular, each state has the opportunity to take a comprehensive view of its developmental strategies and allocate financial resources appropriately without being unduly constrained by approvals of annual plans by an agency like the Planning Commission in the union government and multiplicity of central schemes with conditions attached. The states could take full advantage of interacting with the experience of various strategies and programmes in other states, in view of greater autonomy in deciding some of their strategies and schemes. On the way forward, it may be appropriate to consider significant inter-state exchange of information and even expertise in regard to public fiscal management and public expenditures, in particular.

In regard to local bodies, it is hoped that the state governments will, depending on the local circumstances, strengthen the local bodies, in particular, those in urban areas. The state governments could consider three important initiatives, namely, to remove the bottlenecks and hurdles in the exercise of the powers of local bodies within the existing legislation; empower the State Finance Commissions; assist capacity building at local levels for implementing works and maintaining accounts; and review the existing legislations to empower the local governments in terms of resources and functions.

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Table-1: Revenue Deficit and Gross Fiscal Deficit of States

(per cent of GSDP)

Year	Odisha		Low Income States		All States	
	RD	GFD	RD	GFD	RD	GFD
2004-05	0.7	1.8	0.8	4.3	1.2	3.3
2005-06	-0.6	0.3	-0.3	4.0	0.2	2.5
2006-07	-2.2	-0.8	-2.1	1.6	-0.7	1.6
2007-08	-3.3	-1.0	-2.4	1.7	-0.9	1.4
2008-09	-2.3	0.2	-1.3	2.5	-0.2	2.4
2009-10	-0.7	1.4	-0.5	2.9	0.6	3.0
2010-11	-2.0	0.3	-1.5	1.5	0.0	2.1
2011-12	-2.6	-0.3	-1.7	1.4	-0.3	1.9
2012-13	-2.2	0.0	-1.4	1.8	-0.2	1.9
2013-14	-0.7	2.1	-0.7	3.3	0.0	2.5
2014-15	-1.3	3.0	-1.5	3.0	-0.3	2.4

Source: Report of the Fourteenth Finance Commission.

Note: Here Deficit is Positive and Surplus is Negative. Low income states include Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh, Odisha, Rajasthan, Uttarakhand, and Uttar Pradesh.

Table-2: Own Tax Revenue and Own Non-Tax Revenue of States

(per cent of GSDP)

Year	Odisha		Low Income States		All States	
	OTR	ONTR	OTR	ONTR	OTR	ONTR
2004-05	0.7	1.8	0.8	4.3	1.2	3.3
2004-05	5.4	1.7	5.7	1.9	5.6	1.4
2005-06	5.9	1.8	6.1	1.7	5.7	1.3
2006-07	6.0	2.5	6.2	1.8	5.9	1.6
2007-08	5.3	2.1	6.0	1.7	5.7	1.5
2008-09	5.4	2.1	5.8	1.7	5.7	1.4
2009-10	5.5	2.0	5.9	2.0	5.6	1.4
2010-11	5.7	2.4	6.1	1.9	5.9	1.2
2011-12	6.3	3.0	6.6	2.0	6.2	1.1
2012-13	5.9	3.2	6.6	2.0	6.4	1.2
2013-14	5.9	2.6	7.0	2.0	6.6	1.2
2014-15	6.1	2.5	7.3	2.1	6.5	1.2

Source: Report of the Fourteenth Finance Commission.

Note: Low income states include Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh, Odisha, Rajasthan, Uttarakhand, and Uttar Pradesh.

Table-3: Horizontal Devolution Formula in the 13th and 14th Finance Commission

Variable	Weights Accorded (percent	
	S13th Finance Commission	14th Finance Commission
Population (1971)	25	17.5
Demographic Change (Population 2011)	0	10
Fiscal Capacity / Income Distance	47.5	50
Area	10	15
Forest Cover	0	7.5
Fiscal Discipline	17.5	0

Source: Economic Survey 2014-15, Government of India.

Table-4: Inter-se Share of States in Taxes and Service Tax

Sl. No.	States	Share of Taxes	Share in Service Tax
1	Bihar	9.665	9.787
2	Chhatisgarh	3.08	3.166
3	Jharkhand	3.139	3.198
4	Madhya Pradesh	7.548	7.727
5	Odisha	4.642	4.744
6	Rajasthan	5.495	5.647
7	Uttar Pradesh	17.959	18.205
8	Uttarakhand	1.052	1.068
	Average	6.5725	6.69275

Source: Report of the Fourteenth Finance Commission.

Major differences between 13th and 14th Finance Commission Recommendations and impact on Odisha

Nirakar Pattanaik[1]
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India is a union of states with vertical and horizontal imbalances and in order to address these imbalances, the Constitution of India provides for an institutional mechanism-Finance Commission. The Commission is to be constituted in every five years to recommend the formula of revenue sharing between centre and states. It recommends tax devolution and grants-in- aid for post devolution revenue deficit, disaster, and for local bodies. The FFC submitted its report to President of India on December 15, 2014. As per the Term of Reference (TOR), the Commission made recommendations on the basic tasks assigned to it by the Constitution. Also the FFC made suggestions on certain additional tasks assigned by President of India in the interest of sound finance. The main recommendations have been discussed below.

Vertical Devolution

The share of tax devolution has been increased to 42 per cent of the divisible pool to fulfil the twin objectives of increasing the flow of unconditional transfers to the States and giving more fiscal space to states to carry out specific-purpose transfers to the States. FFC keeps the aggregate transfers at 50 per cent of the gross revenue receipts of the union

Criteria and Weight: *horizontal balance*

To address the horizontal balance, Finance Commission has determined the *inter-se* share of the States to correct the differentials in revenue raising capacity and expenditure needs, taking into account the cost disability factors to the extent possible.

The FFC made recommendations for devolution five factors with varying weights. They are: (i) population - 17.5 per cent, (ii) demographic change - 10 per cent, (iii) area - 15 per cent, (iv) income distance - 50 per cent and (v) forest cover - 7.5 per cent.

A comparative illustration of Criteria and Weight used in 14th,13th and 12th Finance Commission for sharing the Union Tax Revenue is given in the following table.

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Table-1; Criteria and Weights - 12th to 14th FC

14th Finance Commission		13th Finance Commission		12th finance Commission	
Criteria	**Weight** (Per Cent)	**Criteria**	**Weight** (Per Cent)	**Criteria**	**Weight** (Per Cent)
Population	17.5	Population	25	Population	25
Demographic change	10	Area	10	Area	10
Area	15	Fiscal Discipline	17.5	Fiscal Discipline	7.5
Income distance	50	Fiscal Distance capacity	47.5	Per Capita income distance	50
Forest Cover	7.5	————	————	Tax effort	7.5

The gains/losses to states/union territories from the 14th Finance Commission relative to the 13th Finance Commission are shown in the table below.

Table-2: Horizontal tax devolution from Centre to states and union territories

States	**Share from the 14th Finance commission**	**Share from the 13th Finance commission**	**Gain/Loss**
Andhra Pradesh	4.305	6.937	-2.632
Arunachal Pradesh	1.370	0.328	1.042
Assam	3.311	3.628	-0.317
Bihar	9.665	10.917	-1.252
Chhattisgarh	3.080	2.47	0.610
Goa	0.378	0.266	0.112
Gujarat	3.084	3.041	0.043
Haryana	1.084	1.048	0.036
Himachal Pradesh	0.713	0.781	-0.068
Jammu & Kashmir	1.854	1.551	0.303
Jharkhand	3.139	2.802	0.337
Karnataka	4.713	4.328	0.385
Kerala	2.500	2.341	0.159
Madhya pradesh	7.548	7.12	0.428
Maharashtra	5.521	5.199	0.322
Manipur	0.617	0.451	0.166
Meghalaya	0.642	0.408	0.234
Mizoram	0.460	0.269	0.191
Nagaland	0.498	0.314	0.184

Odisha	**4.642**	**4.779**	**-0.137**
Punjab	1.577	1.389	0.188
Rajasthan	5.495	5.853	-0.358
Sikkim	0.367	0.239	0.128
Tamil Nadu	4.023	4.969	-0.946
Telangana	2.437	0	2.437
Tripura	0.642	0.511	0.131
Uttar Pradesh	17.959	19.677	-1.718
Uttarakhand	1.052	1.12	-0.068
West Bengal	7.324	7.264	0.060
All States	100.00	100.00	0.000

The above table shows that Odisha's share has come down to 4.642per cent in 14th FC award against 4.779 per cent in 13th FC period. Therefore, Odisha has a loss of share of 0.137 per cent in the tax devolution framework. Odisha will get Rs.183274.8 from the union tax proceeds during 2015-20.

Grants-in-Aid

Normally, the Finance Commission recommends grants-in-aid for five purposes- Revenue deficit, disaster relief, local bodies, sector-specific schemes and state-specific schemes. But 14th FC proposed to give grants-in-aid on three aspects like Post Devolution Revenue Deficit, Local Government and Disaster Management.

Post Devolution Revenue Deficit Grant-in-Aid

This grant-in-aid is given to those States which are projected, after due assessment of resources and needs by the Finance Commission, to have a post-devolution non-Plan revenue deficit in any year. Since the FFC has taken a comprehensive approach to the assessment of expenditure needs by taking both Plan and non-Plan expenditure in the revenue account, (unlike previous Finance Commissions), the grants are intended to cover the entire post-devolution revenue deficit as assessed by the Commission. This grant-in-aid is the largest component of the grant-in-aid till 13th Finance Commission. Only in 13th Finance Commission, the grants to local bodies formed the largest component of grants-in-aid.

FFC awarded the revenue deficit grants to eleven states. Seven states like Andhra Pradesh, Himachal Pradesh, Jammu and Kashmir, Manipur, Mizoram, Nagaland and Tripura will get grant for each of the years during 2015-20. There are four States - Assam, Kerala, Meghalaya, and West Bengal - that will need a revenue deficit grant for at least one of the years.

As per the assessment of the FFC, the Pre-Devolution Revenue Deficit for Odisha has been Rs 126511 crore. However, as per the projections of Revenue and Expenditure Submitted by

Odisha State Government for 2015-16 to 2019-20, the Pre-Devolution Revenue Deficit was Rs. 338498 crore causing a gap of Rs.111987 crore in the projections created dissent in Odisha. Similarly the pre devolution Non-plan Revenue deficit was projected by Odisha at Rs 187518 crore. But this deficit is not considered by the Finance Commission while devising principle for sharing Grants-in-aid among states. Odisha has not got any benefit of the post devolution revenue deficit grant-in aid from the 14th Finance Commission as in the assessment of the commission, Odisha has a post devolution revenue surplus.

Disaster Relief

During 2015-20, the Odisha government will get a total of Rs.4130 crore out of which the state share will be Rs.413 crore and union share Rs.3717 crore. Looking to the fund devolution to State Disaster Response Fund of the states, Odisha ranks 4th in the series. Maharashtra will get the highest amount i.e Rs. 8195 Crore followed by Rajastan (Rs. 6094 Crore) and Madhya Pradesh (Rs. 4848 Crore).

Local Bodies

Since the 10th Finance Commission, grants for local bodies have been awarded on the basis of the recommendation of individual state finance commissions (SFCs). The distribution of grants for the local bodies should give 90 per cent weight to 2011 population and 10 per cent weight to area. The commission recommended grants in two ways-a basic grant and a performance grant. The ratio of basic to performance grant is 90:10 for Gram Panchayats and 80:20 for urban local bodies. For Odisha, the 14th FC allocated Rs 885.03 crore for Rural Local Bodies during 2016-20 and Rs. 354.50 crore for the urban local bodies.

Sector-specific Grants

The 14th FC has categorized the sectors into general administration (including judiciary and police), environment (forests), maintenance (irrigation, roads and bridges) and social sector (education, health, drinking water and sanitation). Except accepting the proposal of Rs. 9,749 crore of the Department of Justice of Government of India which covers areas like reduction in pendency of cases, re-designing existing court complexes to make them more litigant friendly, enhancing access to justice and capacity building of personnel, the commission has not recommended any specific purpose grants for any sector including social sectors.

State specific grants

The14th FC desisted from awarding state specific grants. It has mentioned that grants for both sector-specific and state-specific schemes by the Finance Commission are not necessary. Similarly, for state specific grants, no categorization of states has been made by the commission.

However, for sector specific and state specific grants, the commission has suggested to redesign and expand the scope of the Inter State Council for ensuring the cooperative federalism. Four considerations have influenced the decision of FFC while taking a decision not to award funds for the state specific needs. They are (i) the state-specific grants recommended by previous finance commissions constitute a small fraction of the proposals submitted by the States. (ii) the state-specific grants were not allocated on the basis of any formula or any uniform principle. (iii) state-specific schemes are best identified, prioritised and financed at the level of the State Government and (iv) state Governments repeatedly raised the issue of the need for flexibility in the use of state-specific grants during its discussions with state governments.

Conclusion

An analysis of the implication of the FFC on the state budget especially for the 2015-16 has been done. The analysis shows that though Odisha will lose a substantial amount under different Central Sponcered Schems as part of the effort of restructuring by Union Budget and stoppage of NCA, the increased tax devolution by 14th FC has given Odisha a net gain of Rs. 1516.56 crore(approximately), which can be used by the state with autonomy. These contextual changes pose challenges as well as provides opportunities to the state government. The challenge is there because the government has to redesign the budget process. May be for 2015-16, Odisha budget has to be revised twice against the conventional norm of one revised budget. But the opportunity for the state government will be to have a relook at the social sector. To start with, health sector may be targeted as the health indicators like IMR, MMR of the state vis-a vis India are far from satisfactory. Therefore, a special focus may be given on the health sector to address the human resources deficits especially doctors and para medical staff so that HDI of the state will be a much improved one in near future.

Implications of 14th Finance Commission Recommendations for Financing the Social Sectors in Odisha

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Abstract

The mechanism of Finance Commission in the centre and in the states of India is intended to address the vertical and horizontal inequities prevalent in the country and the states. The 14th Finance Commission was given the mandate to recommend tax devolution, grants-in-aid and other grants. Accordingly, the commission has provided a fiscal road map for the states and centre for the period 2015-20. One of the highlights of the recommendations of 14th Finance Commission is the increasing the share of states in tax devolution to 42 percent from the 32 percent in the 13th Finance Commission. Further, after the action taken report of 14th finance commission recommendation by the then union government, the budget 2015-16 also announced the restructuring of central sponsored schemes and hinted at the reduction of the sharing pattern between the centre and states for these schemes. This paper tried to assess the impact on the social sector financing in Odisha as a result of the recommendation of the 14th Finance Commission and restructuring of the centrally sponsored schemes has been fixed at 60:40. For theis purpose the budget allocation for the year 2014-15, 2015-16 and 2016-17 has been considered. The discussion is divided into two sections. Section-I discusses the recommendation of the 14th FC and Section-2 presents the impact of 14th FC award and other central devolutions on the state budget.

Keywords: Fourteenth Finance Commission, India, Odisha, Budget, Social Sector

1. Award Summary of the 14th FC

1.1 The Recommendations

The share of net proceeds of union taxes is increased to 42 per cent from 32 per cent in 13th FC. An amount of approximately Rs.39, 48,187 crore from the union tax proceeds are to be given to the states and union territories. Out of Rs.537354 crore Grants-in-aid, Rs.1,94,821 crore is to be given to only 11 states as revenue deficit grants, Rs.55, 097 crore as disaster relief grant (this is union share which is 90 per cent of aggregate corpus of State Disaster Relief Fund of Rs.61, 219 crore) and Rs. 2, 87,436 crore as grants to local bodies of states. However, the grants-in-aid eligibility of the states is contingent upon the revenue raising and

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fiscal consolidation measures taken by the states. The Commission considers only plan revenue expenditure while assessing revenue deficit grants. The gap filling approach for awarding post devolution revenue deficit grants will be continued. No distinction is made between Plan and non-Plan expenditure but there is continuity of the distinction between revenue and capital expenditure. The practice of analyzing the Non-plan Revenue expenditure of union and states by the Finance Commissions has been stopped. Local bodies are required to spend the grants only on the basic services within the functions assigned to them as per the Constitution. Distribution of grants for the local bodies should give 90 per cent weight to 2011 population and 10 per cent weight to area. The Commission recommended grants in two ways-a basic grant and a performance grant. The ratio of basic to performance grant is 90:10 for Gram Panchayats and 80:20 for urban local bodies. For the first time two new criteria are used by the FFC for determining the shares of the states. They are demographic changes and forest area. For horizontal distribution of resources among states, no categorization of states like special category states is considered. No sector/state specific grants will be awarded. FFC suggests institutional mechanisms for better monitoring of fiscal rules and to achieve "co-operative federalism".

1.2 Impact of FFC Award on Centre-State Finance

The impact of FFC award my be discussed in respect of vertical and horizontal imbalance.

1.2.1 Vertical Imbalance

The share of tax devolution has increased to 42 per cent of the divisible pool to fulfil the twin objectives of increasing the flow of unconditional transfers to the states and giving more fiscal space to them to carry out specific-purpose activities on the basis of their own priorities. FFC keeps the aggregate transfers at 50 per cent of the gross revenue receipts of the union government.

1.2.2 Horizontal Imbalance

To address horizontal imbalance the Finance Commission has determined the *inter-se* share of the states to correct the differentials in revenue raising capacity and expenditure needs, taking into account the cost disability factors to the extent possible. The weights assigned to varuous factors have been population - 17.5 per cent, demographic change - 10 per cent, area - 15 per cent, income distance - 50 per cent and forest cover - 7.5 per cent.

A review of the criteria and weights reveals that for the first time, demographic changes are considered by the FFC for the devolution of the funds. This led to increase in the population linked weightage to 27.5 percent which is not progressive in character. Similarly forest cover has also been considered with 7.5 weights in the FFC. Criteria like fiscal discipline and fiscal self reliance have been done away with. Some states are not happy with this approach as fiscal prudence has been emphasized as the most desirable objective of state finance since 2000-01.States not serious with fiscal discipline were rewarded in the 14th FC recommendations which contradicts the very principle of fiscal responsibility. Many advanced states like Gujarat, Maharashtra and Goa got higher share under this Commission award whereas poor and backward states like Bihar, Odisha and Rajasthan got less.

1.3 Grants-in-Aid by FFC

Normally, the Finance Commission recommends grants-in aid for five purposes-. Revenue deficit, disaster relief, local bodies, sector-specific schemes and state-specific schemes. The 14th FC recommended grants-in-aid only for three purposes. These are Post Devolution Revenue Deficit, Assistance to Local Governments and Disaster Management.

Table -1: Grant-in-Aid to states

Sl. No	Items	Amount (in Crores)
1	Local Government	2,87,436
2	Disaster Management	55,097
3	Post-devolution Revenue Deficit	1,94,821
	Total	**5,37,354**

Source: 14th FC report, Volume -1

FFC awarded the revenue deficit grants to eleven states. Seven states getting grant for each of the five years during the award period are Andhra Pradesh, Himachal Pradesh, Jammu and Kashmir, Manipur, Mizoram, Nagaland and Tripura. Four States i.e. Assam, Kerala, Meghalaya, and West Bengal will get revenue deficit grant for a part of the total period as assessed by the Commission.

2. Central Devolution and Odisha Budget

Normally resources flow from the central government to the states in two ways: - through Finance Commission devolution and grant-in-aid and through non-Finance Commission devolution. At present, planning commission has been replaced by the NITI Aayog and the grants by the planning commission have been stopped. Rather the funds for the CSSs for the states are released by the ministries.

2.1. Share of Odisha in 14th FC Award

21.1Shared Tax

The share recommended for Odisha from the centre has come down to 4.642per cent in 14th FC award against 4.779 per cent in 13th FC period. Therefore, Odisha has a loss in share to the extent of 0.137 percent in the tax devolution framework. Odisha will get **Rs.183274.8** from the union tax proceeds during 2015-20. It implies a loss to the tune of Rs 4000 crore approximately in five years. The annual loss is to the tune of 800 crore compared to the 13 FC share.

2.1.2 PDRF

The FFC estimated the pre-devolution revenue deficit for Odisha at Rs 126511 crore. The state claimed that its' post devolution revenue deficit will be around Rs. 338498 crore. The significant difference between the two is due to the government's own admission that its position has improved and Odisha became a revenue surplus state. The government also could not convince the FFC that its revenue surplus is mostly due to reduction in manpower in the government and this situation could not be continued for a longer period. Most of the non-special category states did not qualify to get PDRF grant except the states of Andhra Pradesh, Kerala and West Bengal.

2.1.3 Grants for Disaster Relief

During 2015-20, the Odisha government will have a total of Rs.4130 crore out of which the state share will be Rs.413 crore and union share is Rs.3717 crore. Looking to the fund devolution to State Disaster Response Fund of the states, Odisha ranks 4th in the series. Maharashtra will get the highest amount i.e. Rs. 8195 Crore followed by Rajasthan (Rs. 6094 Crore) and Madhya Pradesh (Rs. 4848 Crore).

2.1.4 Grants for Local Bodies

The basis for distribution of grants for the local bodies has been already discussed earlier. For Odisha, the 14th FC allocated Rs 885.03 crore for Rural Local Bodies during 2015-20 and Rs. 354.50 crore for the urban local bodies.

2.1.5 Sector-Specific Grants

Except accepting the proposal of Rs. 9,749 crore of the Department of Justice, Government of India which covers areas like reduction in pendency of cases, re-designing existing court complexes enhancing access to justice and capacity building of personnel**,** the Commission has not recommended any specific purpose grants for other items including social sectors.

During the FFC period, Odisha will get Rs.1, 98,019.47 crore as a result of the implementation of the FFC as detailed in Table-2.

Table-2: Odisha's share from 14th FFC

Demand Heads	**Share of Odisha during 2015-20**
Tax devolution	1,83,274.8
Post Devolution Revenue Deficit grants-in-aid	Nil
Union share for Disaster Relief grant-in-aid	3717
Grants-in-aid for panchayats and municipalities	10622
As per the department of Justice (Government of India)grant-in-aid	405.67
Total	1,98,019.47

Source: compiled from 14th FC report

2.2. Impact of the FFC in the first FFC year of the Odisha Budget

Before considering the impact of the FFC, it will be pertinent to understand the contextual changes after the acceptance of the FFC report by the union government. The government restructured the CSSs as follows.

a) Schemes to be fully supported by Union Government will be those which are targeted at reducing poverty, having legal backup and schemes dependent on cess (category-1), (b) Schemes to be run with the changed sharing pattern in which state share will be enhanced and the total resources will not be affected (category-2), (c) Schemes delinked from the union support and these programmes may hence forth be run by the states from their enhanced resources or they have been subsumed in the FFC award (Category-3), and (d) The government abolished the practice of giving normal central assistance which is based on Mukherjee-Gadgil formula.

To understand the impact of the FFC on state budget, 2014-15, the last year of the 13th finance Commission has been taken as the base year and 2015-16(RE) instead of 2015-16(BE) has been considered as the first year of the FFC. The reason is that Odisha government introduced the 2015-16 budget before the presentation of the union budget in the same year. It may be noted that the restructuring of the CSSs was declared in the 2015-16 union budget. Therefore, 2015-16(RE) can provide the real picture.

Table-3: Odisha's share of central resources before and after FFC

(Amount in Rs. Crore)

Particulars	2012-13	2013-14	2014-15	2015-16(BE)	2015-16(RE)	2016-17(BE)
State's share in central taxes	13965.00	15247.24	16181.22	19580.00	23573.75	26567.56
Grant-in-aid from centre	6859.73	8429.42	12917.50	21066.57	17295.43	18536.22
Total central transfer	20824.73	23676.66	29098.72	40646.57	40869.18	45103.78
Total budget of the state	47255.62	56130.92	66679.82	84487.77	84694.50	94052.65
Total revenue receipt	43936.91	48946.85	56997.88	70940.50	71569.18	78126.71
% of Grant-in-Aid of state budget	14.52	15.02	19.37	24.93	20.42	19.71
% of shared tax in state budget	29.55	27.16	24.27	23.17	27.83	28.25
% of shared tax in state revenue receipt	31.78	31.15	28.39	27.60	32.94	34.01

Source: Budget at Glance 2016-17,Finance Department,GoO

Impact of the FFC may be considered on four criteria such as (a) Share of the grant-in-aid in the state budget(expenditure), (b) Share of the shared tax(devolution) in the state budget(expenditure), (c) Share of the shared tax in the state's revenue receipt and (d) Share of the central transfer on the state budget.

The share of grants-in-aid in state budget has been increased to 20.42 per cent in 2015-16(RE) from 19.37 per cent in 2014-15. In absolute sense, an amount of Rs.4377.93 crore was available to the state in the first year of FFC. The tax share out of the devolution in the state budget has been enhanced from 24.27 percent in 2014-15 to 27.83 percent in 2015-16(RE). In absolute terms, Rs. 7392.53 crore as shared tax was available in the first year of the 14th Finance Commission. The impact of devolution on the state revenue receipt is positive which is the natural impact of the increase of the devolution from 32 percent to 42 percent by the FFC.For example, the contribution of the shared tax in the state's revenue receipt was 28.39 percent in 2014-15 and it inceased to 32.94 percent in 2015-16(RE). The share of the central transfer has been calculated by combining the share of the shared tax and grant-in-aid from the centre. The share of the total central transfer in the state budget has been increased from 43.64 percent in 2014-15 to 48.25 percent in 2015-16(RE).This indicats a positive impact of the FFC on the state budget. At the same time,it also proves that the dependence of the state on the centre has been increasing from last three years of the 13th Finance Commission to the first year of the FFC. If we look at table-3, we find that an additional amount of Rs. 11770.46 crore was available to the state government in the year 2015-16(RE).

Conclusion and Way Forward

It may be concluded that certainly a fiscal space has certainly been created for Odisha after the implementation of the FFC. The study finds a positive impact of the FFC on the state budget. A significant feature of the 14th Finance Ccommission is that resources are flowing to the local bodies in greater volume and with intensity. But several issues like lack of participatory planning at Panchayat levels, absence of integration of Gram Panchayat plan with district and state plan, poor capacity of the functionaries of the local bodies and ineffective devolution of the funds, constrain the effective utilization of the resources for improving the quality of the lives of the population in Odisha. Therefore, to know the impact of the Finance Commission on Odisha budget further research on planning and budgeting at district and gram Panchayat level is required.

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Effect of Recomdendations of 14th FC on Social Sector Budget in Odisha

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Abstract

The recommendations of the Fourteenth Finance Commission in 2014 provide not only for increased devolution of taxes but also fiscal autonomy to the states to design their own schemes based on their requirements. In this context the states in India have an opportunity to be innovative in designing and implementing programs relating to their specific issues, especially catering to vulnerable sections of the society. This has also increased the responsibility of the states in increasing their role to improving the lives of the vulnerable sections and providing for social infrastructure. Center does play an important role, but has increasingly been shifting its responsibility to the states, more with the restructuring of the central sponsored schemes. Thus the scope of social sector has increased encompassing a wide spectrum from the traditional areas like education and health to urban and rural development, welfare of SC (Schedule Caste), ST (Schedule Tribe), minorities, social security, and disaster management. This requires not just increase in allocation on social sector expenditure but a restructuring within the allocation made toward priority areas such as rural healthcare, sanitation ,elementary education especially for SC,ST, backward classes and minorities. This is depicted using Human Expenditure Ratio (HER), an index to compute efficiency of social sector developed by UNDP. Expenditure under social sector as a whole has depicted an increasing trend, thus calling for a restructuring in social sector expenditure. From the supply side, the recommendations of the Fourteenth Finance Commission, provides for not only increased fiscal space due to the devolution of taxes from 32 per cent to 42 per cent but also autonomy to design schemes specific to states. This paper analyzes the trend in HER post 2015 especially post the recommendations came into effect and advocate required changes in existing policies based on the same.

Key Words: 14th Finance Commission, Social Sector, Odisha, Efficiency, Public Expenditure, Priority, Welfare.

Introduction

Odisha has cultural diversity mainly due to the existence of a sizeable tribal population and diverse climatic conditions across regions. The state is prone to various kinds of disasters,

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bound by a high disease burden, and huge income disparities. Due to these reasons, the state government has increasingly given prominence to social sector over the years. Initially only education, health and community services were included under this sector, but after 1975-76 the scope was widened. Women and child development, labour and employment, rural and urban development and relief on natural calamities were included. The scope was further increased during 1987-88 by including welfare of SC, ST and minorities and food storage and warehousing.

More than one-third of Odisha's government expenditure, (comprising expenditure only by the central and state government), is directed towards social sector and therefore there is no dearth of funds. This is in line with the international agenda in the form of sustainable development goals (SDGs) ratified in December 2015. Six of the 17 SDGs are dedicated towards social sector. In spite of all these efforts, Odisha has one of the highest maternal and infant mortality rate, malaria incidence and death in the country. It lags behind in most of the social indicators such as high open defecation rates, low access to drinking water supply especially in rural areas and literacy rates have been improving, yet lower than most of the other states (Odisha Economic Survey, 2015-16). Thus the focus currently should move towards a restructuring within the expenditure, rather than only focusing on increasing the expenditure. Just as economic growth and development prominently benefit the well off allocation towards social sector is providing benefit to the well-off among the vulnerable, i.e. people in urban areas, men among the lower classes and so on. This implies that even under social sector, special focus needs to be dedicated towards rural and backward areas and especially towards women and children and vulnerable groups of the society. This paper throws light on the effectiveness of social sector expenditure incurred by the government, rather than analyzing trends and patterns as is done in many research papers in this area.Measuring effectiveness and efficiency of expenditure incurred toward social sector is not straight forward, as the output or the impact from this expenditure has a long gestation period and is indirect. Therefore this paper has used a method adopted by UNDP, as it is quantifiable and measurable from a budget stand point.

Efficiency of Public Investment in Social Sector

In 1991, UNDP had assessed the financial support provided by the governments towards the development of social sector, and the improvement of the human development indicators over time for them. UNDP came up with an indicator known as Human Expenditure Ratio to monitor government's spending in social sector, especially priority areas of social sector. It is also commonly known as a measure of efficiency of social sector spending by the government. This ratio measures the proportion of public expenditure spent on human-priority concerns, as a share of total income. It can be higher or lower depending on (a) Importance of government spending in the economy in general (G) as measured by public expenditure ratio, (b) The share of social services in government spending (S) measured by the share of social services in the government budget, i.e. social services ratio, and (c) The type of social services provided (P) measured by social priority ratio, the share of social services budget that is allocated to human-development concerns.

This ratio indicates how much of national income (GNP/GDP) is devoted to human priority expenditure such as basic education, maternal and child, rural health, water supply and sanitation. The HDR noted that human expenditure ratio may need to be in the vicinity of 5 per cent if a country wishes to perform well in terms of human development indicators. This indicator, though was developed to check the efficiency of social sector spending at the national level, can be applied to the state level as well the only change being that instead of GDP/GNP, GSDP (Budget at a Glance, 2000-01 to 2016-17) is taken into account.

Data

Secondary data on government expenditure has been taken from Demand for Grants published by Odisha government from 2001-02 to 2016-17(Demand for Grants, 2001-02 to 2016-17). The main variables include GSDP, total public expenditure, which includes total budget expenditure and central sponsored schemes (CSP) bypassing the state budget (Budget at a Glance, 2000-01 to 2016-17). Social sector expenditure, which is allocation on social services and on food storage and warehousing and four areas under rural development such as Special Programmes for Rural development, Other rural development programs, other special area programs and Rural employment (State Finances A Study of Budgets of 2015-16, 2015-16).

Methodology

Public expenditure ratio (PER) - This ratio measures public expenditure, as a percentage of GSDP of the state. Here total expenditure of consolidated fund in the state budget along with CSS that bypassed the budget during this period is also included in computing public or government expenditure. Ideally state spending should be about 25 per cent of GSDP as per UNDP norms.

SocialAllocationRatio (SAR) –This ratio depicts the share of social services in government's budget. This formula has been given by UNDP and used in all human development reports. Here however, instead of social services, a more inclusive measure, social sector expenditure, which has been computed by aggregating social services with food storage and warehousing and rural development, is taken. These two areas come under economic services in the state budget, but do form a part of social sector. This definition of social sector is provided by RBI. It includes revenue and capital expenditure and also central sponsored schemes bypassing the state budget from 2001-2015 (State Finances A Study of Budgets of 2015-16, 2015-16).

SAR= Social sector expenditure/total public expenditure

Social priority ratio (SPR–This ratio depicts the share of human priority concerns in social services budget. It includes priority spending such as spending on elementary education, preventive and curative healthcare, maternal and child health care and welfare, and rural health and water and sanitation facilities. The HDR of Odisha in 2004 has defined the priority areas, specifically with reference to the state. They have identified three main areas, viz-education, health and water supply and sanitation.

For this paper, allocation for SC, ST, Minorities, and backward classes under each of these three divisions has also been considered as priority areas, as Odisha is a tribal dominated state. Hence SPR has been computed by reclassifying education, health care and water supply and sanitation based on budget heads, drilled down to the sub-minor head level to provide complete clarity on the type and purpose of expenditure. As per UNDP norms, social priority expenditure should be at least 50% of the social sector expenditure, i.e. SPR should at least be 0.5.The main areas under social priority expenditure are

Education (Elementary education has been taken as the priority area), **Health** (concerning preventive and curative health, care of maternal and child health and healthcare in rural areas and nutrition are termed as priority), **Water supply and sanitation** (catering especially to the rural areas), **Welfare of SC, ST and minorities** (expenditure on Tribal sub plan and Schedule Caste sub plan) (Human Development Report 2004 Orissa, 2004).

Desired Level of Ratios	SPR	SAR	PER	HER
	50 per cent	40 per cent	25 per cent	5 per cent

Table-1: Expenditure (in Rs. Crore) and ratios from 2001-02 to 2014-15

Year	Total Priority Expenditure*	Social sector Expenditure*	Public Expenditure*	GSDP*	SPR	SAR	PER
2001-2002	1,400.51	3,890.99	19,438.99	51,703.71	0.36	0.20	0.38
2002-2003	1,602.91	4,150.99	21,832.69	54,801.11	0.39	0.19	0.40
2003-2004	1,681.81	4,296.11	24,161.91	66,100.14	0.39	0.18	0.37
2004-2005	1,928.55	4,547.57	18,730.45	77,729.43	0.42	0.24	0.24
2005-2006	2,193.66	5,351.72	17,861.21	85,096.49	0.41	0.30	0.21
2006-2007	2,502.69	6,085.47	21,961.22	101,839.47	0.41	0.28	0.22
2007-2008	3,578.07	8,159.71	25,974.94	129,274.45	0.44	0.31	0.20
2008-2009	4,981.62	11,056.08	31,219.18	148,490.71	0.45	0.35	0.21
2009-2010	5,146.66	12,476.70	38,545.50	162,946.43	0.41	0.32	0.24
2010-2011	6,006.55	15,185.94	43,102.52	197,529.90	0.40	0.35	0.22
2011-2012	6,793.71	18,006.49	51,752.64	220,589.27	0.38	0.35	0.23
2012-2013	7,713.60	19,601.24	51,047.68	251,220.46	0.39	0.38	0.20
2013-2014	8,201.02	24,747.35	61,584.37	272,979.92	0.33	0.40	0.23
2014-2015	10,981.46	31,760.30	79,404.52	310,810.24	0.35	0.40	0.26
2015-2016(R.E)	11,934.47	37,334.04	84,487.77	348107.00	0.32	0.44	0.24
2016-2017(B.E)	11,47,937.12	44,68,605.62	94052.65	383,22,800.00	0.26	0.48	0.25

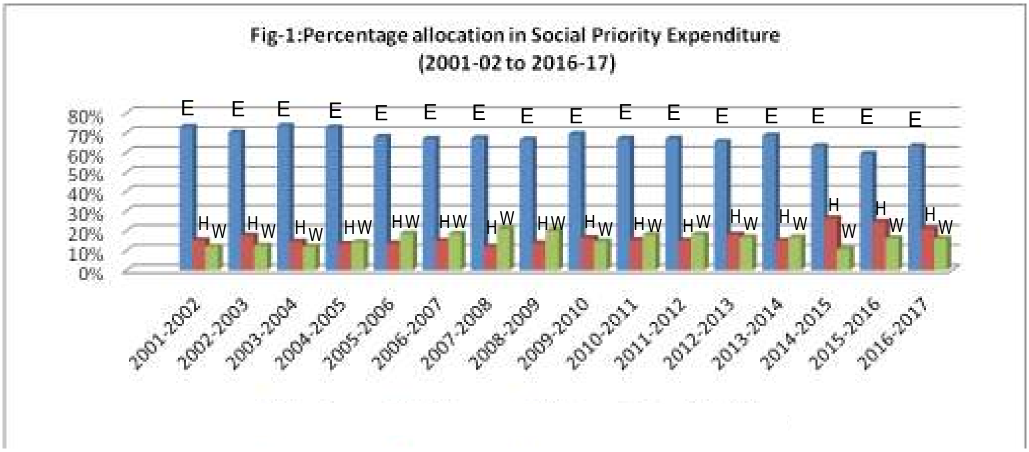
**Source: Data compiled from various demand for grants from 2001-02 to 2016-17.*

*Note: *Expenditure & GSDP in crore of Rs*

From the table it may be seen that PER from 2001-04 has been above the desired rate of 0.25, but declined after 2004, and increased at a decreasing rate, finally reaching 0.25 in 2014-15. The decline after 2004-05 is not because public expenditure has declined but because of two main reasons. Firstly the increase in GSDP in absolute nominal terms has been much higher than the increase of public expenditure in nominal absolute terms. The second main reason is that FRBM act was passed in 2005, wherein the state governments were required to maintain a revenue surplus for which the expenditure dipped slightly. Thus, public expenditure ratio has been fluctuating, but below the desired level of 25 per cent, which it reached in 2014-15 (26 per cent), which fell to 24 per cent in 2015-16. In spite of that, SAR has shown an increasing upward trend, and the actual was higher than desired from 2014-15onwards at 40 per cent, implying that a substantial part of the total budget expenditure is spent on social sector. This is a positive sign in government spending.Though the desired SPR is 0.5 (50 per cent), the actual value of SPR has been constant mostly at0.39 for most years. The lowest was 0.32 in 2013-14, and the highest being 0.45 in 2008-09 followed by 0.41 in 2009-10.Overall trend has been constant on an average at 0.39, way below the desired level of 50 per cent.

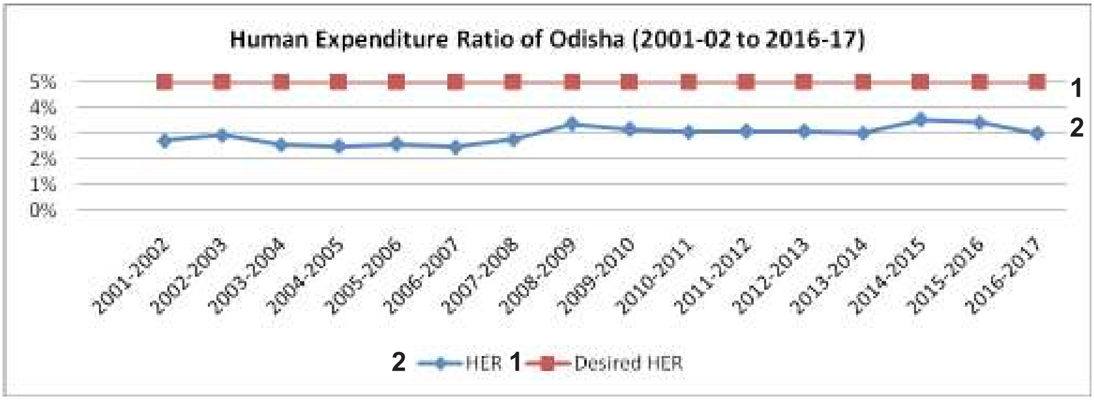
It is interesting to note that SAR has depicted an increasing trend till 2008-09 after which it has shown a declining trend. This implies that though allocation for social sector has been increasing, focus has deviated from the priority areas.

Among the social priority spending, elementary education is around 67 per cent on an average, rural, maternal and child healthcare is about 15.5 per cent and rural water and sanitation is about 16 per cent of the total priority spending on social sector. Post 2013 there is a slight change in the trend, wherein allocation on elementary education has fallen and health and rural water supply and sanitation have increased as a percentage of priority spending. This cannot be cited as a positive sign, as allocation on all three as a percentage of social sector expenditure should simultaneously increase, thus increasing the overall priority spending. As it is important to increase expenditure on social priority spending, it will provide a context as to which area under the priority is given importance and which one is neglected. This is depicted in Figure-1.



**Source: Data compiled from various demand for grants from 2001-02 to 2016-17.*

From the above figure it is seen that elementary education has always been given the main priority as about 60-70 per cent of social priority spending is on elementary education and the remaining 30-40 per cent on the remaining two areas which is insufficient. Though the proportion of elementary education has fallen slightly in 2015-16, the proportion of rural health and water supply and sanitation still requires attention.



**Source: Data compiled from various demand for grants from 2001-02 to 2016-17.*

Due to a constant and declining SPR, the HER has also been constant at around 3 per cent, showing a slight increase of 0.82 per cent, less than 1 per cent rise from 2001-15, implying that human priority spending is not sufficient in the state when compared to other social sector expenditure of public expenditure. This should be increased, to have a significant positive impact on the human development indicators that cater to basic needs of the people.

Conclusion

The human expenditure ratio is a clear indicator of divergence between various areas of social sector expenditure. This is clearly seen between the positive trend of social allocation ratio while the trend of social priority ratio is way below the basic desired level. This vividly depicts that though the allocation towards social sector has been rising, priority areas under social sector have not been receiving sufficient allocation. This implies that expenditure on social sector is unintentionally deflected away from the most vulnerable of the vulnerable sections of the society.

Moreover it is seen that expenditure in priority areas of social sector has been declining or constant at 2014-15.This can be attributed to the restructuring in the central sponsored schemes, where center's share has reduced (Explanatory Memorandum a to the Action Taken on the Recomendations made by the Fourteenth Finance Commission, 2014). This should have been offset by an increase in state's share of expenditure, along with the state taking an initiative to design program to focus on chronic area such as anemia among pregnant women, malnourishment among children, epidemic diseases such malaria which are prominent in the state. Some prominent examples of these central sponsored schemes are National Rural Health Mission focusing on maternal and child health in rural areas, Swach Bharat Mission (Gramin), focusing on sanitation in rural areas and so on.

This justifies the argument that there is a necessity of restructuring of expenditure towards the priority areas such as rural health, rural water supply and sanitation and maternal and child health care. It requires for the state to design and implement its own schemes especially for the vulnerable sections of the society. Among the priority areas due importance has been given to elementary education alone. Thus the state may take advantage of increased autonomy in deigning schemes and with the increase in tax devolution to bring about a restructuring in social sector expenditure to cater to the vulnerable sections of the society.

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Recommendations of the 14th Finance Commission and Cooperative Fiscal Federalism in India

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Abstract

The recommendations of the 14th Finance Commission in India for the period of 2015-20 have come at the right time when the new regime believes in more fiscal autonomy to states. The FFC's recommendations of a shift in the composition of union transfers to state governments and provide higher formula-based tax devolution rather than grants are positive for fiscal federalism. Moreover, tax proceeds as an untied source of funds for state governments offer them greater autonomy and flexibility to plan expenditures based on their own priorities. The recommendations of the 14th Finance Commission support greater decentralisation of decision making. The implications and fiscal arrangements of the recommendations of the Commission aim at reducing regional disparities and fiscal imbalances, creating a sustainable fiscal environment, reducing fiscal deficit to 3 per cent of GDP, and establishing true cooperative and competitive fiscal federalism with expansionary fiscal approach.

Keywords: Horizontal and Vertical Devolution, Fiscal Autonomy, Cooperative Fiscal Federalism, Decentralisation of Decision Making

Introduction

The recommendations of the 14th Finance Commission in India for the period 2015-20 have come at the right time when the new regime believes in more fiscal autonomy to states. Apart from its recommendations on sharing of tax proceeds between the centre and the states out of the divisible pool, the principles governing the grants-in-aid, and measures needed to augment the consolidated fund of a state to supplement the resources of Panchayats and Municipalities, the Commission was asked to assess the impact of GST and devise a compensation mechanism for states and give recommendations on pricing of public utilities and public sector undertakings. It also considers issues like disinvestment for financial sustainability, efficiency and improvement in fiscal health. It had been asked to suggest fiscal principles towards fiscal autonomy of states,

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raising tax ratios of both centre and states, improving the performance of pubic sector enterprises, addressing widening inequality in government spending across states, taking challenges in ecology, environment and climate change. As mandated by Terms of References (ToRs) it reviewed the fiscal finances to facilitate fiscal consolidation roadmap and increase the tax – GDP ratio.

Issues on Vertical Devolution

Conceptually two issues are important in assessing vertical imbalance i.e. (i) revenue accruing solely to the Union as well as the expenditure needs and the resources required to meet the obligations, and (ii) revenue capacities of the states and the expenditure required to meet obligations mandated under the Constitution. A related issue in the assessment of vertical imbalance is the issue of non-divisible pool of resources, namely cess and surcharges. The Commission has therefore, correctly pointed out that tax devolution should be the primary route of transfer of resources to states since it is formula based and thus conducive to sound fiscal federalism. The Fourteen Finance Commission has raised the share of states in the central divisible pool from 32 percent under the Thirteen Finance Commission (2010-15) to 42 per cent for the period 2015-20. This is the biggest ever increase and a huge jump in vertical tax devolution. Grants to states constitute 5.72 per cent.

Formula for Horizontal Devolution

The Fourteenth Finance Commission has proposed a new formula for the distribution of the states' share in the divisible pool among the states. There are changes in both the variables as well as the weights assigned to them. Relative to the Thirteenth Finance Commission the Fourteenth Finance Commission has incorporated two new variables such as, 2011 population and forest cover.

In the horizontal tax devolution the 14th Finance Commission focuses on income or fiscal capacity (distance formula), area, environment and ecology and socio-economic indicators with change in weights. The criteria and weights of resource transfer in ascertaining the horizontal tax devolution are income distance 50 per cent, population (1971 Census) 17.5% and (2011 Census) 10 per cent capturing demographic changes, area 15 per cent and forest cover newly added for ecological benefits 7.5 per cent. In accordance with the new criteria the shares among the states in tax devolution (excepting service tax), Uttar Pradesh gets the highest share (17.959 per cent) followed by Bihar (9.665 per cent), Madhya Pradesh (7.548 per cent) and West Bengal (7.324 per cent). Resource transfers recommended by the 14th Finance Commission are shown in Table-1.

Table-1 : Transfers Recommended by the 14th Finance Commission (Rs. Crore)

1.	Tax Devolution to States	39,48,187
2.	Total Grants to States from Finance Commission (A+B+C)	5,37,354
	(A) Post-Devolution Revenue Deficit Grants to States	1,94,821
	(B) Disaster Relief Grant to States	55,097
	(C) Grants to Local Bodies of States	2,87,436
3.	Aggregate Transfers to States from Finance Commission (1+2)	44,85,541
4.	Divisible Pool	94,00,444
	As a Percentage of Divisible Pool	
1.	Tax Devolution to States	42.00
2.	Grants from FC to States	5.72
3.	Tax Devolution and FC Grants to States	47.52
4.	Fiscal space with the Union	52.28
5.	Provision for other transfers (expected) to States	15.72
6.	Aggregate Transfers to States	63.44

Source: Government of India, Report of the Fourteenth Finance Commission (2015-20) (Delhi) Volume-II

Grants-in-Aid

The previous Finance Commissions recommended grants-in-aid for five purposes – revenue deficit, disaster relief, local bodies, sector- specific schemes and state-specific schemes. The 14th Finance Commission has departed significantly from earlier Finance Commissions in the sense that it has not recommended any grant for sector – specific and state-specific schemes. As far as grants-in-aid for revenue deficit are concerned, the 14th Finance Commission recommends a total revenue grant of Rs.1,94,821 crore for eleven states during the period 2015-20.

Disaster Relief

On disaster management and relief, the 14th Finance Commission suggested that the percentage share of states will continue to be as before following the existing mechanism. The 14th Finance Commission recommends that while the financing of the National Disaster Response Fund (NDRF) has so far been almost wholly through the levy of cess on selected items, if the cesses are discontinued or when they are subsumed under the GST in future, there is assured funding from the centre for the NDRF. As regards the SDRF, the 14th Finance Commission recommends to the State: Centre's contribution to change from 25:75 percent to 10:90 during the award period.

Local Bodies

The Commission has recommended grants to local bodies in two parts – a basic grant and a performance grant for duly constituted gram panchayats (GPs) and municipalities. In case of GPs 90 per cent of the grant will be the basic grant and 10 per cent will be performance grant. In case of municipalities the division between basic and performance grant will be on 80:20 basis. It is quite innovative to transfer grants on the basis of performance in revenue mobilization by local governments.

The 14th Finance Commission has expressed the need to review the existing arrangements for transfers between the union and the states with a view to minimizing discretion and improving the design of transfer for promoting co-operative federalism. The Commission advocates the evolution of a new institutional arrangement consistent with the objective of strengthening co-operative federalism on the basis of following rules: (i) identifying the sectors in the states that should be eligible for grants from the union, (ii) indicating criteria for inter-state distribution, (iii) helping designed schemes with appropriate flexibility being given to the states regarding implementation, and (iv) identifying and providing area specific grants. The Commission recommends that the new institutional arrangement should also become the forum for integrating economic and environmental concerns in decision making. The changes in inter se share of states during 14th Finance Commission relative to the 13th Finance Commission are shown in Table-2.

Table-2: Change in Inter Se Share of States during FFC period relative to the FFC period

Increase in inter se share		Decrease in inter se share	
General Category	SpecialCategory	General Category	SpecialCategory
Andhra Pradesh	Arunachal Pradesh	Bihar	Assam
Chhattisgarh	Jammu & Kashmir	Odisha	Himanchal Pradesh
Goa	Manipur	Rajasthan	Uttarakhand
Gujarat	Meghalaya	Tamil Nadu	
Haryana	Mizoram	Telangana	
Jharkhand	Nagaland	Uttar Pradesh	
Karnataka	Sikkim		
Kerala	Tripura		
Madhya Pradesh			
Maharashtra			
Punjab			
West Bengal			

Source: FFC Report, ICRA Research

Based on the revised criteria and weights recommended by the FFC, the inter se share of 20 states shown in Table-2 are higher for the FFC award period as compared to the 13th FC award period, while the shares of the remaining states are correspondingly lower. Nevertheless, the expected buoyancy in union tax collections going forward suggests that in absolute terms, the magnitude of central taxes devolved to each state is expected to be significantly higher during the FFC period as compared with the 13th FC period.

Core Objectives of Cooperative Fiscal Federalism

Fiscal Federalism in India has undergone many changes through different constitutional amendments and changes in criteria to fulfil the spirit of cooperation. These include the following; (i) Reducing fiscal imbalances and regional disparities and ensuring provision of equal level of public services like education, health etc. across states. It is realised by changes in both the vertical and horizontal devolution of resources. (ii) Changes in the composition of fiscal transfers by more statutory transfers are predominantly by tax devolution through the Finance Commission removing the methodological weakness of gap-filling approach. The total statutory transfers covering shared central taxes and grants have gone up from 60 per cent in VIII-FC to 69 per cent in XI-FC and declined to 67 per cent in 13th FC. (iii) Measures to raise tax ratios of both centre and states. The total tax – GDP ratio of the centre and states combined, was 17.4 per cent, with the direct tax – GDP ratio 5.8 per cent and indirect tax – GDP ratio 11.6 per cent. Raising the ratio will increase the progressivity of taxes and will make it more buoyant. (iv) Ensuring fiscal autonomy to the states without erosion in fiscal power of states. It was supposed to assess the impact of GST and a device as compensation mechanism to states.

Roadmap for Fiscal Consolidation

The 14th FC aims at creating a fiscal environment that is sustainable and promotes equitable growth by a roadmap for fiscal consolidation. They include; (i) The ceiling on fiscal deficit will be 3% of the GDP from 2016-17. (ii) The state governments be excluded from the operations of the National Small Savings Fund from April, 2015 which would be limited only to discharging debt obligations. (iii) The Commission suggested the amendment of the FRBM Act to provide statutory flexible limits on fiscal deficit. It urged to replace the existing FRBM Act to ensure greater sanctity and legitimacy on fiscal management.

Implications of FFC for Cooperative Fiscal Federalism

Based on its recommendations and projections, the FFC has assessed and quantified the implications for the revenues of the states. All states stand to gain from FFC transfers in absolute term. However, to assess the distributional effects the increases should be scaled by population, NSDP at current market price or by states' own tax revenue receipts. Tax buoyancy is an indicator to measure efficiency and responsiveness of revenue mobilisation in response to the growth of GDP. It is to be improved. The FFC recommendations are expected to add substantial spending capacity to states' budget. In terms of impact based on NSDP the benefits of FFC transfer are highest for Chhattisgarh, Bihar and Jharkhand among the general category states (GCS) and for the states like Arunachal Pradesh, Mizoram and Jammu & Kashmir among the special category states (SCS). The FFC transfers are progressive in nature which implies that states with lower per capita NSDP receive on an average much larger transfers per capita. The recommendations will obviously go in the direction of equalising the income and fiscal disparities among the major states. The increase in the automatic transfers to the states gives them more fiscal autonomy and this is ensured by increasing share of state from 32 per cent to 42 per cent of divisible pool.

Conclusion

The 14th Finance Commission recommendations have the implications meant to have fiscal arrangements to give fiscal autonomy to states, greater fiscal space to them, reducing encroachment of centre on states, reducing regional disparities and fiscal imbalances, creating sustainable fiscal environment, reducing fiscal deficit to 3 per cent of GDP from 2016-17, according on amendment of the FRBM Act and to establish true co-operative and competitive fiscal federalism with expansionary fiscal approach. The Commission has achieved many goals in one shot. When the Planning Commission has been abolished, to realise these goals the scope of the Finance Commission is enlarged considerably as a statutory body giving the states more scope for their own and independent resources. Adequate policy measures need to be undertaken to narrow down inter-state disparities by adopting a set of criteria distinctly biased in favour of backward states. Balancing fiscal autonomy and fiscal space will lead to an ideal and cooperative fiscal federalism.

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Likely Impact of recommendations of the 14th FC on budgetary allocation of Odisha for child health and education

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Abstract

Centre–state financial relations and appropriation of budgetary resources is taking a new turn. The states are yet to assess the impact of their finances under the changed scenario. Increased devolution from the central pool of taxes (42per cent from 32per cent) based on 14th FC recommendations seems to improve the financial strength of the states, post annulment of V.A.T. However things are very different from what is being portrayed. There are claims contending contraction in net realization by states which might affect expenditure on vital areas having bearing on some key HDIs. In light of the above development an attempt is being made to study the expenditure pattern on two crucial areas of human development i.e. child education and health in Odisha.

Key words: GST, Increased devolution of taxes, annulment of V.A.T, Net realization by states, CSS, HDI's

Introduction

Children are the bedrock of any nation. It is of utmost importance to have in place all enablers which would promote the all round growth of children. Constitutions of all nations across the world provide for development of children in the list of things to ensure and insure a nation's social and economic progress .The Indian constitution is no exception in this regard. It treats children as equal citizens. The National Policy for Children, 1974 has recognized children as "supremely important asset" who will have the same rights as those enjoyed by any adult male or female in the country. The fundamental rights and the directive principles of the Constitution contain adequate provisions to address issues related to children's development.

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To secure the broad goals enshrined in the constitution there are hosts of legislative and legal provisions i.e. 46 special and local laws. The effectiveness of all the arrangements depends on their enactment and enforcement. The achievement of any government in areas related to child development is gauged with the aid of some widely accepted metrics. Some of the popular indicators in this regard are sex ratios, IMR, MMR, literacy level, school dropout ratio and the like. In the contemporary world, United Nations MDG in its effort to eradicate the menace of poverty, hunger and inequality existing in the human race has laid significant emphasis on the issue of child development. The headlines under which these agendas are pursued are 1) Achieve universal primary education, 2) Promote gender equality and empower women and 3) Reduce child mortality. In line with the MDG, Government of India has also focused on working on three agendas which are related to children, their development and rights. To achieve the set goals it is imperative to provide the states with adequate financial resources. Percentage of GDP allocated for the stated causes is the most widely recognized proxy which shows the commitment of a state towards them.

Child–Budgeting

Child budgeting refers to the quantum of expenditure of public money on schemes targeted towards welfare for children. The major areas of expenses are incurred under the heads of a child's health, education and protection of their rights. Access to affordable and quality healthcare and education empowers people in a natural way. It helps human beings to seek freedom from poverty, hunger, malnutrition and lead a healthy life (Sen, 1999). For a developing country as India this aspect is very important because in terms of Human Development Index her rank is 131 in the list of 188 countries (UNDP Report 2016). It is essential that it works towards promoting welfare of two most vulnerable sections of the society i.e. children and women. Public health and education are a part of List-II i.e. state list and List –III i.e. concurrent list respectively of the Indian Constitution. Budget analysis will enable to take stock of the impact of the central and state sponsored programs to seek holistic development of women and children. In India 30 per cent of total population are in the age group of 0-14. It is a big task for the policy makers to provide for adequate budgetary provisions. As per 2011 census, the ratio of children to adult population is 39:61. Children in the age group of under 15 comprise 84 per cent of total child population. The gender ratio in this segment is 52:48.

It is matter of major concern as there has been a drop in share in the union budget from 4.76 per cent to 3.32 per cent (Union Budget 08-09 to 16-17, Govt of India) in the matters of child health and education. India cannot afford to relax as in the last 15 years the allocation from the union budget has always been below 5 per cent. Post implementation of 14th FC there has been restructuring in Centrally Sponsored Schemes. Impact of the above measure will be seen when a detailed analysis of budget will be done for the state of Odisha. Before we start analysis of the budget of Odisha it would be helpful to have a quick view of the demographic structure of Odisha as well as appropriation of budgetary resource on host of developmental issues related to children.

Table - 1: Odisha's Demographic Structure in the age group 0 – 18 years

Age Group	Boys	Girls	Total	% of Total	Gender Ratio
0 - 5	18817	13637	32454	0.53%	725
6 - 10	1955628	1725843	3681471	59.79%	883
11 - 14	971195	879233	1850428	30.05%	905
15 - 18	318684	274177	592861	9.63%	860
Total	3264324	2892890	6157214	100.00%	886

Source: OPEPA Survey, 2009 – 10

Table 2: Comparison of Gender Ratio

Sex Ratio	2001	2011	2001	2011
Age group	India	India	Odisha	Odisha
0-6	927	914	953	934
7+children	934	944	976	985

Source: Statement 13-Census 2011

Census studies reveal that the proportion of children's population in the state is much less than the national average. On comparing gender ratio in the age group of 0-6 and 7+ children it's seen that Odisha has fared better than the country's average. Figures from the Census of 2001 and 2011 stand as a testimony to this. Majority of children population i.e. 60 per cent are in the age group of 6-10 followed by age group 11-14, 30 per cent. Thus there is a need to visit the programs and budgetary resources that are directed towards providing quality health and education to the segments.

Odisha's track record is satisfactory as there has been a consistent rise in budgetary support towards social sector spending. The contribution towards social sector spending has moved up significantly. There has been a growth of 3.54 per cent in the share of spending on social sector (2011-12 to 2014-15). The non-compromising attitude of the government to bring social reforms is highly laudable. There is an increasing trend in the total budget receipts for Odisha. There is jump from Rs.1,59,056.58 crore in 2012-13 to Rs.2,39,753.43 crore in 2015-16(BE) . The spending on social sector in the stated period has jumped from 9.13 per cent to 12.43 per cent for the same period (Odisha State budget 2014-15).

Fiscal mechanism from centre to states in Indian union

India has a federal structure of governance. The responsibilities of the union and state governments are distributed under the union, state and concurrent lists. Education and Health are subjects in the state list and states have to bear the responsibility to ensure quality education and healthcare for their citizens. The funds transfer route before the 14th FC was through two routes.

a) The funds are remitted as vertical devolution from central pool of divisible taxes as per article 270 of the Indian Constitution. Subsequently the amount is appropriated between states based on the formula derived by the Finance Commission. The proportion of devolution has gone up significantly to 42 per cent in the 14th FC in comparison to 30.5 per cent and 32 per cent recommended by the 12th and 13th FC. The net proceeds of taxes as per article 379 that is devolved is untied by nature and the state government has the flexibility to spend on avenues based on priority.

b) The second route is the grant-in-aid given to the states as per Article 275 where the amount is appropriated under heads of ToR. The funds are credited to the consolidated fund of individual states as per the demands of State Finance Commission.

The Terms of Reference in the 14th FC have been scaled down to 3 from 5 as sector –specific grant-in-aid and state specific grant-in-aid have been cancelled. Odisha had received Rs.170crore and Rs.1745crore under recommendations from the 12th and 13th FC respectively as state specific grants. Odisha is also not a part of the list of 11 states which are to receive grant-in-aid to fill in post-devolution revenue deficit. The projection for Odisha for the period 2015-19 in terms of Pre devolution revenue deficit is 3,38,498 crs.

Planning Commission was another body through which transfer of funds from centre to state takes place in two ways. 1) Central Assistance under State Plans (CASP)and 2) Centrally Sponsored Schemes. CASP is further truncated into i) Normal Central assistance, ii) Grants under Externally Aided Projects Assistance and iii) ACA-Special and other Programs. NITI Aayog has annulled the CASP.

NITI Aayog which replaces the erstwhile Planning Commission has charted out the National Development Agenda. All schemes of CSS will target the sectors in the national development agenda. 2015 budget has reduced the number of CSS to 28. Under the new framework CSS is divided into core of the core (6) , core (22) and optional schemes. All schemes aimed to secure child health and education fall under the core schemes. The ratio of funding by centre and state for such schemes is 60:40. Schemes such as the SSA, MDM, and ICDS fall in the category of core schemes. It is apprehended that post restructuring of the centrally sponsored schemes, the burden of the states is further going to increase. This may be seen from the Table below. The share of allocation in the state's own revenue by the departments of Women and Child Development and School and Mass Education is as high as 40 per cent. This makes it essential for the state to depend on the central funds. There is curtailment in the funds through CSS in ICDS (5.99 per cent in 2013-14 to 4.85 per cent in 2015-16). This is a problem for Odisha to fight challenges of IMR, MMR, Neo-natal mortality rate(NMR) ,under 5 mortality rate etc. As per the 12th 5 year plan goal there are to be improvement in the above parameters. MMR to be reduced from 222 to 117, NMR from 37 to 23, <5 mortality rate from 66 to 52. An enhanced budgetary support to attain these goals is a must. On similar terms child education in the state is facing lots of challenges. There is urgent need to undertake steps to ameliorate the implementation of MDMS. The MDMS Chaturvedi committee report of restructuring of CSS pointed towards host of issues which impede the attainment of the goals set under MDMS in Odisha such as: a) Irregularity in serving meals, b) Irregularity in supply of food grains to schools, c) Caste based discrimination in serving of food, d) Poor coverage under school health program and e) Poor infrastructure (kitchen sheds in particular).

Odisha's allocation of revenue receipts to Women and Child Development and School and Mass Education Departments

	2012-13	2013-14	2014-15	2015-16	2016-17
State's own total revenue receipts to the Consolidated fund	23112.16	25270.19	27899.17	30293.93	33022.93
Total allocation to W&CD	3193.28	4112.6	3557.31	3451.3	2786.6
% allocation to W & CD	13.82%	16.27%	12.75%	11.39%	8.44%
Total allocation to S&M Edn	5892.95	6705.44	7860.74	9261.25	11292.85
% allocation to S& M edn	25.50%	26.53%	28.18%	30.57%	34.20%

Source : Odisha budget at glance 2016-17 (in crs)

Conclusion

The status of child health and education still needs lot of focus of the government of Odisha. On few fronts the achievements are certainly laudable but not enough. The quantum of planned allocation has gone up in the last three fiscal. This trend is indicative of more expense being incurred on scaling capital assets. Quantity without quality will not lead one to the cherished goal. The quality of services being rendered by the institutions in the domain of public health and education has to see massive transformation. The National Health Mission's contemporary review of its programs has identified shortfall of doctors in the PHCs. The government has to craft plans and design policies to bring about the stated change. If the state of Odisha wishes to be a vanguard among the leading states it has to give due attention to child health and education to get optimal results. Accountability has to be brought in the domain as the valued money of tax-payers is being utilized for the purpose. In an era of free flow of information, public awareness is seen to be on the rise. Non-delivery of essential services will not only draw public annoyance and displeasure but also sow the seeds of unrest among the common people. Non-attendance to the issues of child development would prove to be exceptionally costly in the days to come for any incumbent government. The dream of demographic dividend will go unredeemed. For child development related issues it is high time to pull up the sleeves and start delivering results as no one can afford to be “CARELESS TODAY, HELPLESS TOMORROW”.

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Implications of 4th State Finance Commission Recommendation for Local Bodies

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Introduction

In a modern dynamic economy, decentralization of power between centre, state and local governments is important for sustainable development of an economy. India being a federal set up, its states are ridden by the problems of vertical and horizontal imbalance. Recognizing these two imbalances, the Indian Constitution provides an institutional framework to bridge the gap under which the Finance Commission (FC) came into existence in 1951. The role of Finance Commission widened after the 73rd and 74th Constitutional amendments in 1992 and 1993. These amendments recognized rural and urban local bodies (LB) as tiers of government and the constitution of India mandate the FC to recommend measures to augment the Consolidated Fund of a State to supplement the resources of Local Bodies based on the recommendations of the State Finance Commissions (SFCs). The mandate of SFCs is to recommend the principles of distribution resources between state and LBs, generation of resources by LBs, and grant-in-aid to LBs and the SFC is also empowered to suggest measures to improve the financial position of the LBs.

As of now fourteen FCs are constituted by the union government in India and four SFCs are constituted at the state level in Odisha. For the local bodies to perform the assigned roles, the state and union governments transfer money to the local bodies as per the recommendations of respective Finance Commissions. Thus, FC and SFC recommendations not only impact the state finances but also have a wide range of implication on local bodies. Based on the 14th FC and 4th SFC recommendations, this study explores the implication of the recommendation on revenue and expenditure of local bodies, implication on utilization of money and creation of basic civic services by local bodies and the implication on financial accountability and management by local bodies. A clear understanding of the implication of FC and SFC recommendations for the local bodies is useful for policy making at centre, state and local levels.

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Review of Literature

For a better understanding of the different dimensions of FC & SFC recommendations a brief review of related literature has been made. Babu (2009) analysed the fiscal position of panchayat raj institutions (PRIs) in Indian and observed that 29 broad subjects or functions are assigned to PRIs for which state and central government transfer money to them. But the transferred funds are not sufficient for performing the assigned functions. Due to shortage of funds PRIs are not able to utilize the received funds properly and efficiently. Further there is lack of autonomy with PRIs to borrow money from other sources. Oommen (2010) studied the impact of 13th FC on PRIs for 15 states and found that the own source revenue of PRIs has dramatically declined but public sector expenditure increased over the years. Further, the study also observed that the per capita own source revenue and per capita own tax revenue decrease but per capita expenditure of PRIs increased during the period studied. Bandyopadhya (2008) studied the recommendation of 12th FC and found that the fund provided by central government to state government has not been utilised fully as far as local bodies are concerned. Poor performance of state government was noted in implementation of recommendation for PRIs. Bohl, etal. (2008) have shown that SFCs have less impact on the formulation of intergovernmental fiscal policy at the state level and majority (94 per cent) of total revenue of the PRIs comes from the federal and state government. Alok (2009) suggested the corrective measures that the FC can take for building the fiscal capacity of local governments in India. He argued that a considerable gap between own resources and requirements of LBs exists. To achieve inclusive growth, it is important to have inclusive governance by restructuring the fiscal architecture for PRIs and ULBs in a more equitable and efficient manner. The limited financial space available to the states and the perceived low capacity of PRIs and ULBs have prevented the states from strengthening these institutions.

The above review of literature suggests that there is wide range of variability of implications of various FC recommendations. The implication varies from state to state and FC to FC. To bridge the research gaps, this study attempts to explore the implication of the recommendation of the recent FC and SFC on local bodies in Odisha.

Implementation Status of the Previous SFC in Odisha

As of now, four SFC has been constituted by the state government of Odisha. The study is limited to the implementation status of the 2nd, 3rd and 4th SFC on local bodies.

Implementation Status of the 2nd SFC

The 2nd SFC was constituted in 2004 and submitted it report in 2005. It recommended transfer of 10 per cent of the state's average gross tax revenue to the local bodies during the period from 2005 to 2010. But to a stark contrast the government has not released the recommended money to the local bodies.

There is a huge difference between recommendation and released amount under different heads. So far as urban local bodies (ULBs) are concerned the scenario is completely different. The 2nd SFC recommended Rs.211.83 crore to the urban local body (ULB) on devolution head but the state government has released no amount under this head. But under the compensation and assignment head the government has released Rs.1074.26 crores against the zero recommendation. So far as total amount is concerned the government has released Rs.723.04 crore over and above the recommended amount. Thus there is a differential approach adopted by the state government towards PRIs and ULBs. This differential approach needs to be streamlined. Though the SFC has given more priority to PRIs, the state government has released more money to ULBs

Implementation status of the 3rd SFC

The 3rd SFC was constituted in the year 2008. It recommended 15 per cent of state tax revenue to be transferred to the local bodies on the ground of devolution, grant-in-aid and assignment. The state government has not released the required fund recommended by SFC. The SFC recommended 3360.64 crore fund to PRIs under devolution but state government has released only Rs.906.45 crore. In case of grant-in-aid, SFC recommended Rs. 2224.45 crore but the government has released only Rs836.66 crore to PRIs. So far as total recommendation is concerned SFC had recommended Rs. 5585.19 crore but the state government had released only Rs.1918.15 crore. So there is a huge gaps of Rs. 3667.04 crore between released amount and recommended amount.

In the case of ULBs, the scenario is different. The state government has released more money to the ULBs than the recommended amount. This means that the state government has also adopted differential approach between PRIs and ULBs. The 3rd SFC basically focuses on devolution head of local bodies but government actually released more fund under assignment and compensation sector. During 2nd and 3rd SFC the state government has not released the recommended amount to the PRIs. This calls for a serious introspection in the ongoing 4th SFC.

Recommendation of 4th SFC for Local Bodies

According to 4th SFC report the 'constitutional provisions fairly assumed that the financial sustainability of the rural and urban local bodies could not be ensured only by assigning taxes, duties, tolls and fees. Indeed, these are less buoyant in nature and the local bodies have not been able to exploit the assigned sources of revenue. To supplement the resources of the local bodies, transfer from the State's own revenue as well as grants-in-aid, plays a pivotal role. The role of the State Finance Commission in determining the principles governing these transfers and for activities of the local bodies assumes significance. Addressing the vertical and horizontal imbalances is also a pertinent issue for the State Finance Commission.' Recognising the fiscal constraints of the state the current SFC tries to strengthen the fiscal domain of the PRIs and municipalities so as to enable them to function effectively. The 4th SFC identified eight thrust areas where the local bodies have to focus for delivering services. These thrust areas are water supply, solid waste management, storm water drainage, sanitation, street light, repairing of living quarters for functionaries, maintenance of assets and revenue generation.

To perform the assigned duties, the local bodies will get resources from two sources such as (a) own revenue and (b) transfer receipts. To generate own revenues, the PRIs, particularly gram panchayats, are empowered to levy and collect taxes, fees and duties. The Commission recommends that rate of taxation be revised by the PRIs themselves. It has suggested three new taxes for PRIs such as (1) Fees for approval of construction, (2) Advertisement Tax and (3) Property Tax. So far as transfer receipts are concerned, the 4th SFC has recommended for transfer of funds under three broad heads: (a) Devolution, (b) Assignment taxes and (c) Grants-in-Aid which is discussed below in detail.

a) Scheme Devolution

The quantum of devolution under 4th SFC is Rs. 3291.85 crores which is 3 per cent of the state's net shareable pool of taxes (excluding Entry Tax, Entertainment Tax and Motor Vehicle Tax). The devolution money is generally to be spent on meeting the infrastructural gap and welfare needs of the community. The 4th SFC has recommended that the devolution amount is to be untied and it is to be divided between rural and urban local bodies in the proportion of 75:25. The inter-se distribution amongst three tiers of PRIs and categories of ULBs is based on population, category number of units like number of GPs, Panchayat Samits etc. The formula used for the devolution of money between PRIS and ULBs is shown in the following table.

Table-5 Criteria for fund allocation among PRIs and ULBs

				Ratio within criterion		weight to criterion	Ratio after weight is assigned to criterion	
Criteria	Data reference	Rural	Urban	Rural	Urban		Rural	Urban
Population	2011	83.31	16.69	4.99	1	30	1.50	0.3
Density of population		228.48	2636.63	0.09	1	30	0.03	0.3
% age of persons below poverty line (Tendulkar Methodology)	2011-12 68th ROUND NSS	35.69	17.29	2.06	1	20	0.41	0.2
Literacy Rate	2011	70.2	90.7	0.77	1	10	0.08	0.1
SC & ST concentration	2011	90.66	9.34	9.71	1	10	0.97	0.1
						Total weight	2.98	1
	Rural Urban Divide (converted into percentage)						75	25

Sources : 4th SFC Report Odisha

As per the criteria, PRIs will get 75 per cent of the total devolution which worked out to be Rs.2468.85 crore out of which Rs.1852.95 crore meant for Gram Panchayats, Rs.498.15 crore for Panchayat Samitis and Rs.117.75 crore for Zilla Parishads during the award period 2015-2020. Further ULBs will get 25 per cent of the total devolution which worked out to be Rs. 823 crore out of which municipal corporations will get Rs.258.90 crore, municipalities will get Rs. 430.45 crore and NACs will get Rs.133.65 crore over the five years 2015-2020.

(b) Assignment of Taxes

The Commission considered the recent development of meeting the establishment expenses of local bodies from grants or assignments out of recommendations of the State Finance Commissions. The total assignments worked out to be Rs. 6530.50 crore out of which Rs 3001.70 crore is meant for PRIs and Rs.3528.80 crore for ULBs. The assignment money is generally spent on salaries and establishments head of the PRIs and ULBs.

(c) Grants-in-Aid

One of the mandates of the Commission was to lay down norms for providing grants-in-aid to the units of local self-government from the consolidated fund of the State. The grant-in-aid is provided for some specific sector development. Institutions of local governance are expected to look after the sectors of development and services as specified in Eleventh and Twelfth Schedules of the Constitution. Having recommended funds to be devolved and assigned to the local bodies, the Commission proceeds to identify specific services and infrastructure needs that should be met in ensuing five years of award period. Sectors needing thrust are drinking water supply, solid waste management, storm water discharge, sanitation, street lighting, drainage & roads, staff quarters, maintenance of assets, creation of revenue generation avenues, capacity building, incentive structure etc. The funds recommended under grand in aid to PRI and ULB are given in the table below.

Table-2: Sector Specific Funding

Local Bodies	Component	Fund requirement (2015-20)
PRIs	**Water supply**	
	1. i) Mega Water Supply to Acute Affected Villages	1010.97
	ii) Instalation of Tubewell	775.46
	iii) O & M for Rural Water Supply	2515.00
	2. Street Lighting	259.38
	3. Drainage system and concretisation of internal	
	habitation roads	2972.00
	4. Construction of Staff Quarters in GPs	215.14
	5. Construction of Staff Quarters in Panchayat Samiti	140.18
	6. Maintenance of Capital Assets	330.94
	7. Creation of Capital Assets for Revenue generation	622.70
	8. Incentive	75.36
	9. Engagement of CAs and Database Management	120.54
	Total	**9037.67**

ULBs	**Water supply**	
	1. i) New installation	2703
	ii) O & M	1754.00
	2. Solid Waste Management	882.80
	3. Strom Water Drainage	802.00
	4. Street light	92.00
	5. Mainenance of Capital Assets	45.75
	6. Urban Sanitation	52.46
	7. Creation of Capital assets for revenue generation	84.00
	8. Incentive	34.00
	9. Capacity Building and database management	15.00
	Total	**6465.01**
	Grand Total	**15502.68**

A total sum of Rs.15502.68 crore are recommended under grant-in-aid out of which 9037.67 crore are recommended for PRs and Rs. 6465.01 crore recommended for ULBs. For PRIs major thrust are given to drainage system and rural water supply. For ULBs major thrust are given to water supply and solid waste management.

Implication of the Recommendation on Local Bodies

The above recommendation has a wide range of implication on local bodies. The major implications are: (i) The grants are linked to performance requirements and thus the local bodies have to show their performance in terms of revenue generation and expenditure. (ii) The local bodies have to maintain proper Accounts and Audits to get performance grants. But still there is trust deficit between the state and local bodies which needs to be bridged. (iii) The recommendation has stressed on priority to basic services and thus the local bodies should be required to spend the grants only on the basic services within the functions assigned to them under relevant legislations. (iv) The 4th SFC recommendation will augment the revenue and expenditure of the local bodies but it may create doubtful expenditure for which proper monitoring is required. (v) Money will be direct by transferred to GPs which will reduce the complexity of fund transfer. This will speed up the process. (vi) Though the revenue and expenditure of the PRIs will increase they are still needing focus approach to increase own revenue. (vii) The current recommendation will increase direct accountability and local level planning will be very effective, however to bridge the trust deficit some monitoring agency is required. (viii) The thrust areas like water supply, solid waste management, storm water drainage, sanitation, street light etc. will be upgraded but local influence needs to be managed in a positive manner.

Conclusion

To sumup it can be said that the current SFC has given more priority to accountability and focus on basic services. Further, the SFC has given more choices in the hands of the local bodies to increase their revenues. There is need of effective monitoring of Fund Management system, and maintainace of local assets and creation of assets must be supervised under a surveillance system to make the local bodies functioning more effective. Further PRIs level planning requires professional help and government should make provision for this

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The tyranny of number: Gender wage-gaps and their decomposition

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Abstract

That globally a gender gap exists along axes of economic, social and political outcomes is well documented. Studies have shown such gaps to be increasing or decreasing, changing by varying degrees and varying by magnitude depending on the period of study and region of analysis. However, the gap exists either on account of inputs or characteristics that are different across members of different genders (the explained gap) or on account of differential premium on possession of comparable characteristics across genders (the unexplained gap). Decomposition of such gaps into their explained and unexplained fractions is important for the purpose of measuring the precise extent of gender discrimination. This paper fills a void in the existing literature by analysing such gaps across select states of India – more particularly Odisha – and thereby deriving key insights regarding gender gaps in terms of earned wages. It uses the technique of Blinder-Oaxaca decomposition for the purpose of study, which has not been applied so far in studying inter-state characterization of gender wage gaps.

Keywords: gender, wage gap, decomposition, Blinder-Oaxaca

JEL classification: J16, J31, J71, C21

Introduction

World Economic Forum's (WEF) Global Gender Gap Report affords an opportunity for analysing long-term trends in gender equality along indices of economic participation and opportunity, educational attainment, health and survival and political empowerment – using their attendant indicators. The 2016 report (WEF 2016) shows tardy progress on closing the gender gaps along multiple axes. The report states that even as the global gender gap has narrowed since 2006, it has done so by just four per cent; were that glacial pace to continue it would take another 118 years for the world's women to be on an even footing with men.

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India is ranked 87 out of 144, improving from its 108 position in 2015. It has closed its gender gap by 2 per cent in a year: its gap now stands at 68 per cent across the four pillars of economy, education, health and political representation. The major improvement, however, has been in education, where it has managed to close the gap entirely in primary and secondary education. In the economic sphere, much work remains to be done. Overall, it ranks 136 in this pillar out of 144 countries, coming in at 135th for labour force participation and 137 for estimated earned income. Clearly, therefore, albeit India has improved its gender gap by 8 per cent, much work remains to be done in terms of bridging the economic gap between men and women – particularly, in terms of the wage gap.

The International Labour Organisation's report – *Women at Work: Trend 2016* (ILO 2016) – finds that gender equality in work place remains elusive. Inequality between women and men can be observed in global labour markets, with respect to opportunities, treatment and outcomes. Since the Fourth World Conference on Women in Beijing in 1995, the improvements have been at best marginal, leaving large gaps to be covered in the implementation of the 2030 Agenda for Sustainable Development, adopted by the United Nations in 2015. Over the last two decades there has been significant progress in educational achievements of women, but these have not translated into a comparable improvement in their position at work. In many regions in the world, in comparison to men, women are more likely to become and remain unemployed, have fewer chances to participate in the labour force and – when they do – often have to accept lower quality jobs. Worldwide, the chances for women to participate in the labour market remain almost 27 per cent lower. Millions of women worldwide are not getting the same kind of quality, well-paying jobs as men. New data from 178 countries present a gloomy picture of the current state of working women. The report shows the gender gap in employment, wages and social protection has changed little in 20 years and that women are less likely to participate in the labour market then men.

Throughout their working lives, women continue to face significant obstacles in gaining access to decent jobs. Progress in surmounting these obstacles has been slow and is limited to a few regions across the world. Even in many of those countries where gaps in labour force participation and employment have narrowed and where women are shifting away from contributing family work and moving to the services sector, the quality of women's jobs remains a matter of concern. Globally, the gender wage gap is estimated to be 23 per cent; in other words, women earn 77 per cent of what men earn and these gaps cannot be explained by differences in labour market inputs like education, training or experience. Though some progress has been made in bridging these gender wage gaps, the improvements are small. It has been estimated that at the prevailing trends, it will take more than 70 years to close the gender wage gaps. Another significant finding of the report has been that the gender wage gaps are unrelated to a country's level of economic development- some countries with high per capita income levels exhibit high gender wage gaps.

The 2012 World Bank Report unequivocally pronounced that gender equality is "Smart Economics", as it enhances economic productivity, improves development outcomes for the next generation, and makes institutions and policies more representative and so the laws do more for all the different groups of society, especially the marginalised. Hence closing the gender gaps is a desirable objective for economies at all levels of development.

Applying the widely used Oaxaca-Blinder decomposition technique to the NSS 66th Round data this paper investigates the level of gender gap in earnings across the state of Odisha. The gender gap in wages in Odisha are compared with the gaps in comparable or competing states, to ascertain how better or worse the state fares in terms of wage equality along the gender axis.

Methodology

An often used methodology to study labor market outcomes by groups (sex, race, and so on) is to decompose mean differences in log wages based on regression models in a counterfactual manner. The procedure is known in the literature as the Blinder-Oaxaca decomposition (Blinder, 1973; Oaxaca, 1973) and divides the wage differential between two groups into a part that is "explained" by group differences in productivity characteristics such as education or work experience and a residual part that cannot be accounted for by such differences in wage determinants. This "unexplained" part is often used as a measure for discrimination, but it also subsumes the effects of group differences in unobserved predictors. Most applications of the technique can be found in the labor market and discrimination literature. A brief explanation of the technique is in order, before it is applied for the purposes of analysis. This section draws on the exposition in Jann 2008.

Given are two groups *A* and *B*, an outcome variable *Y*, and a set of predictors. In our case, males and females are the two groups, (log) wages are the outcome variable, and human capital indicators such as education and work experience are the predictors. The question now is how much is the mean outcome difference?

$$R = E(Y_A) - E(Y_B)$$

Where $E(Y)$ denotes the expected value of the outcome variable, is accounted for by group differences in the predictors.

Based on the linear model

$$Y_W = X'_W \hat{a}_W + \mathring{a}_W,\ E(\mathring{a}) = 0,\ W\{A, B\}$$

Where X is a vector containing the predictors and a constant, $\hat{a}$ contains the slope parameters and the intercept, and $\mathring{a}$ is the error, the mean outcome difference can be expressed as the difference in the linear prediction at the group-specific means of the regressors. That is

$$R = E(Y_A) - E(Y_B) = E(X_A)'\hat{a}_A - E(X_B)'\hat{a}_B$$

since $E(Y_W) = E(X'_W\, \hat{a}_W + \mathring{a}_W) = E(X'_W\, \hat{a}_W) + E(\mathring{a}_W) = E(X'_W)\hat{a}_W$ with $E(\hat{a}_W) = \hat{a}_W$ and $E(\mathring{a}_W) = 0$ by assumption.

In the above formulation, the slope coefficients – sometimes referred to alternatively as 'rates of return' to a predictor – vary as per the group being considered. This difference in the slope coefficients presupposes discrimination between the groups, that is, a gap in the outcome what is not attributable to gap in inputs (or predictors). This does not bias the statistical exercise or taint it with the investigator's preconception of existence of bias – the results of the decomposition of the wage gap, as we shall see shortly, allows for the slope coefficients to be the same for the two groups.

One decomposition that is prominent in the discrimination literature results from the concept that there is some nondiscriminatory coefficients vector that should be used to determine the contribution of the differences in the predictors. Let $\hat{a}^*$ be such a nondiscriminatory coefficients vector. The outcome difference can then be written as

$$R = [E(X_A) - E(X_B)]'\, \hat{a}^* + [E(X_A)'(\hat{a}_A - \hat{a}^*) + E(X_B)'(\hat{a}^* - \hat{a}_B)]$$

This way, we have a two-fold decomposition where the first component is the part of the outcome differential that is "explained" by group differences in the predictors (the "quantity effect") and the second summand is the "unexplained" part. The latter is usually attributed to discrimination[3]. It may be noted here that in case of absence of significant discrimination – which is indeed the ideal scenario –the latter part may be approximated to be insignificant. In such a case, $\hat{a}^* = \hat{a}_A$ and $\hat{a}^* = \hat{a}_B$; thus $\hat{a}_A = \hat{a}_B$ i.e. slope coefficients are same for the two groups.

The determination of the components of the two-fold decomposition is made complex by the requirement of an estimate for the unknown non-discriminatory coefficient $\hat{a}^*$. Several suggestions have been made in the literature. For example, there may be reason to assume that discrimination is directed towards one of the groups only, so that $\hat{a}^* = \hat{a}_A$ or $\hat{a}^* = \hat{a}_B$. Often, however, there is no specific reason to assume that the coefficients of one or the other group are non-discriminating. Moreover, economists have argued that the undervaluation of one group comes along with an overvaluation of the other. Faced with this dilemma, Cotton (1988) suggests to weight the coefficients by the group sizes. Others have suggested to use $\hat{a}^*$ to represent the slope coefficients obtained by pooling all observations across the two groups – the so called 'pooled coefficients'. This paper uses weighted coefficients, because of econometric problems encountered while using pooled estimates.

Literature Review

Blinder (1973) and Oaxaca (1973) introduced the use of decomposition of outcomes to study the relative roles played by differences in inputs and differences in coefficients in influencing differences in outcomes. The methodology was further refined by Cotton (1988) and Banerjee

3 *But it is important recognize that it also captures all potential effects of differences in unobserved variables.*

and Knight (1983). This method has been widely employed to statistically characterize group-wise gaps in wages (see for example Kim, 2010 and Bhaumik and Chakrabarty, 2009) and other outcomes (more recently in Haddad *et al.,* 2012).

Studies on India-centric research themes include Borooah (2005), which analyses poverty and inequality in the caste discrimination framework. Using the similar technique of decomposition of economic outcomes in India over data collected for 28922 households, it showed that at least one-third of the average outcome differences between upper caste households and SC/ST households was due to unequal treatment – the so called 'unexplained differences' – of the latter. Similarly, Poel and Speybroeck (2009) decompose malnutrition inequalities between SC/ST and the remaining Indian population using Blinder-Oaxaca decomposition of the 1998-99 Indian Demographic Health Survey data and it reveals no significant unexplained differences between SC/ST and the remaining population, most of the differences being accounted for by differences in inputs.

Among the important papers on gender wage gap in India are the following: Reilly and Dutta (1996) find the mean wage gap between men and women to be relatively stable in the 1980s and 1990s. Madheswaran and Khasnobis (2007), while focusing on decomposition of gender wage gaps, discover that gross wage gap between males and females declined over time. They also find that decline in endowment differences contributed to decline in wage gap over time while a worsening of endowment differences in casual labour market led to the opposite trend in outcomes. Khanna (2012) goes a step forward and investigates the gender wage gap in India using NSS 66th Round data at various quintiles of the wage distribution, discovering a phenomenon of 'sticky floor' with wage gaps being wider at lower ends of the wage distribution. This paper employs the Machado-Mata-Melly decomposition which is a finer extension of the Blinder Oaxaca decomposition methodology, as outlined above. Other quantitative assessments in the Indian context include Duraisamy and Duraisamy (1996) and Kingdon and Unni (1997).

To the best of our knowledge, no paper so far has analysed the gender wage gap at the state level, nor has there been any comparison of such gaps in an inter-state framework. We intend to make a contribution in this direction, by investigating the decomposition of gender wage gap for Odisha and comparing the results thereby obtained with the all-India level decomposition outcomes and with the results obtained for other states. Since the analysis is proposed to be made at the state level, this paper disregards any distinction between regular and casual wage labour, which is an unnecessary and irrelevant distinction for the current study.

Data and results

As mentioned earlier, this paper relies on the NSS 66th Round, which is a comprehensive data set with coverage of all relevant indicators for the current investigation. Choice of variables to be used as predictors is guided by insights offered by previous studies on the subject.

The data figuring in NSS 66th Round dataset corresponds to the relevant data items captured in

NSS Questionnaire used for the survey. A brief discussion of the variables used is given here to facilitate better understanding of the analysis and its results.

Wages are recorded on a weekly basis, as “wage and salary earnings (received or receivable) for the work done during the week”. For the econometric exercise in this paper, daily wage has been computed (with adjustment for number of weeks worked and the wages received thereby) and then the log form of the same has been taken. This measure is then decomposed into explained and unexplained parts using regressors such as age, sector, levels of education (general and technical), duration of training and number of workers in the economic enterprise.

Age is accepted as a standard measure of experience in the labour market, and hence is expected to significantly influence wages. Sector – rural or urban – determines the size of market, cost of living, degree of specialization, all of which determine wages. Educational level, apart from experience, is also accepted as an important determinant of wages. The utility of educational level is not only important in white collar jobs, but throughout the labour market – this is corroborated by most studies on labour market outcomes. Duration of training contributes directly to level of skills embodied in a worker, and hence impacts wages. Number of workers in the economic enterprise is a measure of the size of the business organisation, and hence likely to contribute to wage determination.

Table-1 shows a simple OLS regression carried out in order to ascertain the significance or otherwise of the variables listed above. A noteworthy finding is that controlling for all relevant regressors, gender (the variable ‘sper’) has an insignificant coefficient – which means, there does not exist a wage gap along the axis of gender in Odisha. For the state of Odisha, most variables enumerated above hold significance in wage determination. Remarkably, sector does not matter in wage determination, that is to say that rural and urban wages do not vary significantly.

The major finding of non-significant gender wage gap for Odisha are verified using the Oaxaca-Blinder decomposition technique. The relevant figures are in Table-2. Confirming the earlier findings from OLS regression run before, no significant gender wage gap is found in Odisha for the considered data source and the adopted econometric specification. Since there arises no notable gender wage gap, the scope for decomposing the gap into explained and unexplained components lose much of its significance.

Further exercises are therefore made to compare the findings from Odisha with those for all India and other reference states. Keeping in tune with conventional academic comparisons, the analysis of Odisha-specific findings are restricted to those for Bihar, Madhya Pradesh, Rajasthan and Uttar Pradesh. For overall comparison, wage gap is calculated for India as a whole. The relevant figures can be found in Table-3. Taken at the all India level, gender wage gap is significant at 95 per cent level and major chunk of the gap (nearly 89 per cent) is simply wage discrimination – that is, gap in wages which is not explained by endowments such as education, experience or duration of vocational training. Bihar, Odisha and Madhya Pradesh exhibit broadly similar features when it comes to gender wage gap – no significant wage gap (Bihar being slightly out of league because of its reverse wage gap, evidenced by the negative sign of the wage gap). Rajasthan and Uttar Pradesh demonstrate two extreme cases of gender wage gaps, although they are similar in magnitude of the gender wage gaps which are significant at 90 per cent level of significance. While nearly 90 per cent of the gender wage gap in Rajasthan is attributed to discrimination (the unexplained portion of gender wage gap), the wage gap in Uttar Pradesh is comparatively merit based – it is based on difference in characteristics such as education, experience, duration of vocational training etc. Thus, while Rajasthan reflects the trend broadly visible at all-India level, Uttar Pradesh lies on the other end of the decomposition of wage gap spectrum. Odisha, Bihar and Madhya Pradesh turn out to be largely gender neutral, judged by wage gap between the genders.

Further comparison with states at the diametrically opposite end of the income scale yields interesting insights. While Maharashtra exhibits significant gender wage gap with most of it being based on unexplained differences, Gujarat shows no appreciable difference in wages along axis of gender. Thus, whereas Gujarat mirrors the trend displayed by Odisha, Bihar and Madhya Pradesh, Maharashtra's situation is emblematic of that prevalent at the all-India and Rajasthan levels.

Some caveats, however, ought to be kept in mind while interpreting the aforementioned results:

1. The numbers of observations available for state-wide analyses, albeit qualifying for the large sample treatment, may be judged by some scholars as not being large enough to draw wage gap comparisons. While appreciating this view point, it may be pointed out that NSS Data is inarguably the most comprehensive data available for undertaking analyses of the above nature and hence in absence of a better alternative, the given dataset must be treated as acceptable.

2. The unexplained part of the wage gaps, as mentioned elsewhere, also captures all potential effects of differences in unobserved variables. Therefore, labeling all of the unexplained fractions of the wage gaps as discrimination is technically unsound. However, the very fact that a significant gap in wages along the axis of gender is not explained in terms of differences in characteristics/inputs raises doubts about the gender-based equality of value of labour.

3. Even as we 'explain' parts of the gender wage gap in terms of differences in characteristics or inputs, such decomposition exercises fail to capture discrimination faced in access to or acquisition of such characteristics or inputs. This is often called 'pre-market discrimination' (see for example Juhn *et al.,* 1993) – that is, the discrimination that members of a group(s) experience while trying to acquire the characteristics or credentials that receive a premium in the wage market. In the instant case, discrimination faced by women (or men) in accessing levels of general education, levels of technical education, vocational training, gaining

employment in enterprises employing varying levels of workers, etc. is not captured by our Blinder-Oaxaca decomposition. This is as much a strength as a demerit. While the full spectrum of discrimination fails to get captured, this exercise illustrates that 'equality in access to inputs' does not lead inexorably to 'equality in outcomes' for groups. The policy implication of this is that efforts to mitigate discrimination in the labour/wage market must be pursued as vigorously as efforts to end the discrimination in the access to valuable inputs such as education, health, skilling, etc.

Conclusion

The basic conclusion one may draw from the foregoing analysis is that viewed at an aggregate level, there is no evidence of significant gender wage gap in Odisha. Although this sits at odds with prevailing and pervasive evidence and opinion that wage gap is perceptible in numerous spheres of occupation, our finding may be reconciled by considering that this pertains to the whole of the economy taken comprehensively – which masks immutable gender wage gaps in certain activities. Our finding, however, does not in any way cast aspersions on the other kinds of gender gaps that exist in the economic sphere – for example in access to credit, in ownership of land and other assets, in control over earned income, etc. The increasing participation levels of women in the paid labour market activities is viewed as a positive outcome for improving women's status by bridging the hiatus in this crucial sphere of economic involvement. However, mere increases in participation remain inadequate in altering the gender inequalities unless these are supported by the nature of work they undertake being decent, lucrative, equally remunerative and secure. Therefore our findings must be viewed as a subsection of the larger picture of multiple gender gaps that exist in India in general and in Odisha in particular. Recent data or more detailed studies with wider coverage than NSS Rounds may also afford opportunities to revisit the findings of this research.

Notes

1. The codes used for levels of general education (represented in the tables as 'genedu') in the NSS Questionnaire Schedule 10: Employment and Unemployment are – not literate -01, literate without formal schooling: EGS/ NFEC/ AEC -02,TLC -03, others -04; literate: below primary -05, primary -06, middle -07,secondary -08, higher secondary -10, diploma/ certificate course -11, graduate -12, postgraduate and above -13.

2. The codes used for levels of technical education (represented in the tables as 'techedu') in the NSS Questionnaire Schedule 10: Employment and Unemployment are – no technical education -01, technical degree in agriculture/ engineering/ technology/ medicine, etc. -02, diploma or certificate (below graduate level) in: agriculture -03, engineering/technology -04, medicine -05, crafts -06, other subjects -07;diploma or certificate (graduate and above level) in: agriculture -08,engineering/ technology -09, medicine -10, crafts -11, other subjects -12.

3. The codes used for number of workers in the enterprise (represented in the tables as 'noworker') in the NSS Questionnaire Schedule 10: Employment and Unemployment are – less than 6 -1, 6 & above but lessthan 10 -2, 10 & above but less than 20 -3, 20 & above -4, not known -9.

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Table-1: Explaining variation in log of wages

Source	SS	df	MS
Model	29.5365169	23	1.28376161
Residual	8.73729934	33	.264766647
Total	38.2538163	56	.683232433

Number of obs	=	57
F(23, 33)	=	4.85
Prob > F	=	0.0000
R-squared	=	0.7717
Adj R-squared	=	0.6125
Root MSE	=	.51455

lnwage	Coef.	Std. Err.	t	P>|t|	[90% Conf.	Interval]
age	.0377085	.0087448	4.31	0.000	.0229092	.0525078
2.sector	.2993407	.1996829	1.50	0.143	-.0385947	.637276
genedu						
6	.2199753	.5404012	0.41	0.687	-.6945782	1.134529
7	-.722559	.4716232	-1.53	0.135	-1.520724	.0756059
8	-.7537512	.4864034	-1.55	0.131	-1.576961	.0693786
10	-.3835187	.6348258	-0.60	0.550	-1.457373	.6908353
11	.0631046	.5795912	0.11	0.911	-.9104496	1.040659
12	.1320803	.4781544	0.28	0.784	-.6771291	.9412898
13	.9482634	.7286672	1.30	0.202	-.2848922	2.181419
techedu						
2	-1.207060	.5600734	-2.12	0.041	-2.170615	-.2451200
4	.5706697	.150663	1.27	0.214	1.333352	.1920127
5	-.192033	.516001	-0.37	0.712	-1.065293	.6812266
6	-.657555	.7073691	-0.93	0.359	-1.854678	.5395684
7	-.3092778	.4454732	-0.69	0.492	-1.063179	.4446233
10	.1076688	.6454377	0.17	0.869	-.9846444	1.199982
12	.3133199	.5233278	0.60	0.553	1.158070	.5723304
noworker						
1	.1959545	.6590679	0.29	0.771	-.9363095	1.328299
2	.7951364	.6570292	1.21	0.235	-.3167937	1.907067
3	.0094700	.6417070	1.39	0.175	-.1965291	1.975471
4	1.155008	.6525262	1.73	0.084	.0600216	2.269994
9	.9018072	.6892238	1.31	0.200	-.2646779	2.068222
durtrain	.0044027	.0024275	1.81	0.079	.0002943	.0085111
spsi	-.3850123	.2795732	-1.38	0.178	-.8588353	.0888118
_cons	3.499402	.7933157	4.41	0.000	2.156326	4.841978

Table-2: Decomposition of gender wage gap for Odisha

```
Blinder-Oaxaca decomposition                      Number of obs   =        57
                                                  Model           =    linear
Group 1: sper = 1                                 N of obs 1      =        49
Group 2: sper = 2                                 N of obs 2      =         8
```

lnwage	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
overall						
group_1	5.532996	.1262459	43.83	0.000	5.285558	5.780433
group_2	5.1955	.3045809	17.06	0.000	4.598532	5.792468
difference	.3374958	.3297033	1.02	0.306	-.3087206	.9837123
explained	1.576762	.4465656	3.53	0.000	.7015094	2.452014
unexplained	-1.239266	.3571069	-3.47	0.001	-1.939324	-.5392510

Table-3: Region-wise variation in gender wage gap decomposition

Region for wage comparison	'lnwage' gap	Explained	Unexplained
India	0.333*	0.0378	0.2952*
Odisha	0.3374	1.576	-1.239
Bihar	-0.292	-0.258	-0.033
Madhya Pradesh	0.538	-0.097	0.635
Rajasthan	0.450**	0.044	0.406**
Uttar Pradesh	0.486**	0.560*	-0.074
Maharashtra	0.516*	-0.007	0.523*
Gujarat	0.172	-0.042	0.214

*: significant at 95%, **: significant at 90%

Inclusion and Economic Empowerment of Rural Tribal Women in Cashew Value Chain and Market:
A Case Study of Nabarangpur District in Odisha

Pradeep Kumar Panda*

Abstract

The tribal communities in central India are excluded in many ways from accessing and benefiting from the fruits of mainstream development. Within tribal groups, women are more marginalized and sidelined than men despite their multiple roles in the household. Women's exclusion from the mainstream knowledge systems, market sphere and their limited access and control over the resources affects the overall development of tribal communities. Key for economic growth of tribal communities is the equal participation and promotion of women's physical and economic rights. This necessitates for a purposive design of activities and institutional mechanisms for both socially inclusive economic empowerment and environmentally sustainable growth by building their knowledge and skills to restore NTFP based value chains for sustainable livelihoods. The present paper is an attempt to analyse and document the findings of an inclusive Cashew livelihood model executed by Udyogini, a national level NGO established by World bank in 1992, with support of RCDC to address the geographical, social, technological and economic inclusion of 10,000 tribal women in the Cashew supply chain and downstream market integration to improve their incomes in Navrangpur district of Odisha state. It is found that by employing inclusive strategies, scientific technologies and participative approaches the socially excluded women could be organized, engaged and integrated successfully by leveraging proven Cashew based livelihood model in the value chains and markets for increasing their incomes. The women demonstrated entrepreneurial abilities to handle markets and acquired economic empowerment over the incomes generated for family needs, mostly for education and health, and in some cases for assets building. The case study provided ample evidence that disadvantaged women could be receptive, cooperative and capable of acquiring new skills and leadership responsibilities for value chain refinement, micro-enterprise development and management through appropriate training and skill building. Udyogini in partnership with RCDC has revived the neglected and insignificant Cashew based livelihoods for social and economic inclusion of tribal women through inclusive approach in the trouble torn Nabarangpur district in Odisha.

Key Words: Social Exclusion, Social Inclusion, Women Empowerment, Cashew Cultivation, Value Chain, Rural markets, Sustainable Livelihoods

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Introduction

It is an undeniable fact that tribal communities, particularly in central India, are excluded in many ways from accessing and benefiting from the fruits of mainstream development initiatives over the centuries. The tribal societies have inseparable association with natural resources and they are generally self-sufficient for their socio-economic, cultural and physical existence. But, gradual exposure to non-tribal culture and changes in the surrounding environment - physical, social and economic - speeded up the change process in cultural domain of tribal groups. Due to these changes, the tribal people have lost their traditional dependence and authority over their economic resources - land, forest and other resources, and therefore, their livelihoods are badly affected. *Tribal society in the post-Independence era has undergone an unprecedented change in respect of culture, modes of making a living and social differentiation (*Xaxa, 2004*).*

The tribal people are invariably found to be having lower income, poorer physical living conditions, basic amenities and a range of other services. They have poor access to labour, land and capital markets and poorer returns to work as well as weaker political representation. Interestingly, the social exclusion and poverty have become interrelated for tribes. Conventional poverty indicators reveal that there is a strong correlation between being indigenous or tribal and being poor or extremely poor (Thakur, 2012). The poverty and social exclusion experienced by tribal people are largely due to discrimination at social and institutional level during colonial and post independent era despite the apparent inclusive policies, institutions and special funds allocation for their development.

Social Exclusion and Inclusion

In the context of development and welfare discourse for tribal communities, it is important to understand the concepts of 'social exclusion' and 'social inclusion' that are most widely used in recent years by social scientists, development professionals, politicians, and the elite general public as well. Social exclusion is a widely written subject to understand and explain the backwardness, discrimination and poverty of dalits, minorities, women and tribal communities. This concept first emerged in the policy discourse in France and subsequently its adoption by other European countries have had an increasing impact on the analyses of social disadvantages in Europe over the last couple of decades (Aasland and Flotten,2000). After the World Summit for Social Development held in Copenhagen in 1995, the concept gained widespread applicability and increasing attention has been paid on relevance of the concept to social policy analysis in developing countries (Kabeer, 2012), and it was widely adopted by development agencies and in development studies as another way of understanding and identifying reasons for reducing poverty (Jackson, 1999).

There are several definitions of 'social exclusion' in the literature. European Foundation has defined 'Social exclusion' as 'the process through which individuals or groups are wholly or partially excluded from full participation in the society within which they live' (Francis, 2002). It is the process by which certain groups are pushed to the margins of society and prevented from participating fully because of their poverty, low education and inadequate life skills. This distances them from education, employment and income generation opportunities as well as social and community networks. They have little access to power and decision-making bodies and little chance of influencing decisions or policies that affect them, or that improve their standard of living.

'Social inclusion' is the opposite of social exclusion. The World Bank defines social inclusion as "the process of improving the terms for individuals and groups to take part in the society". Social inclusion aims to empower poor and marginalized people to take advantage of the opportunities in equitable and non-discriminative modes. It ensures that people have a voice in decisions which affect their lives and that they enjoy equal access to markets, services and political, social and physical spaces (World Bank, 2013).

Therefore, social inclusion is a term that can be used to describe a series of positive actions to achieve equality of access to goods and services, to assist all individuals to participate in community and society, to encourage the contribution of all persons to social and cultural life and challenge all forms of discrimination. By ensuring that the marginalised and those living in poverty have greater participation in decision-making, which affects their lives, it will allow them to improve their standard of living and overall well-being.

Rationale for Project Intervention

Interestingly, both 'social exclusion' and 'social inclusion' have negatively contributed to the marginalization and disempowerment of tribal groups in the country. In inclusive process, the tribes were exposed to new surrounding environment which is different in culture, physical, social and economic spheres and they have lost their traditional identity and cultural disintegration was quite rapid. Social scientists have mentioned that social and cultural disintegration through influence of such external forces has made tribal people more vulnerable to severe exploitation throughout the country. This inclusion process has not enabled them to access and enjoy the basic necessities, services and markets of mainstream development to lead a better quality of life. While the inclusion process has made them vulnerable to external forces and broke their traditional safety nets, the inherent shortcomings such as lack of awareness, knowledge and skills to cope up and integrate with inclusion effects led them to be 'excluded' from the mainstream development and alienated from their symbiotic relationship with natural resources; they are left to fend for themselves in backwardness and dire poverty.

Within tribal groups, women are more marginalized and sidelined than men despite their multiple roles and considerable hard work to contribute for the livelihood security of the family. Key for economic growth of tribal communities is the equal participation and promotion of women's economic rights which entails promoting a range of women's rights to education, ownership, mobility, income opportunities and voice in decision making, suitable technologies and gadgets. Women's exclusion from the market sphere and their limited access to, and control, over the resources affects the overall development of tribal communities (Bradshaw, 2013).

Therefore, any developmental activity designed for tribal livelihood promotion should take cognizance of historical transgression of increased vulnerability, cultural erosion and collapse of livelihood systems through negative inclusion process and inadvertent exclusion leading to marginalization. This calls for a purposive design of activities and institutional mechanisms for both socially inclusive economic empowerment and environmentally sustainable growth focusing on building their knowledge and skills to restore sustainable livelihoods.

Contribution of Cashew

In this scenario, Cashew (focus of the current study) often regarded as 'poor man's crop and rich man's food' is an important highly valued global cash crop on one hand and is a vital component of food processing industry on the other. It has a potential to link Odisha's agriculture, industry and economy. Strengthening of Cashew value chain efficiently align with the development strategy of the state as it is the most valuable processed nuts traded on the global commodity markets with immense potential to provide source of livelihood for the smallholders, empower rural women in the processing sector, create employment opportunities and generate foreign exchange through exports.

Table-1: Profile of Cashew in Odisha

Year	Area (000 Ha)	Production (000 tonne)	Productivity (kg/Ha)
2011	158	97	614
2012	164	101	685
2013	167	86	514

Odisha accounts for 17 per cent of total area (167000 ha) under Cashew plantation in India and contributes 11 per cent of total production (86000 Tonne) of India. Thus, it is the third largest cashew producing and processing state in the country. Factors such as quality of local cashews, availability of fertile land and low labour costs provide Odisha competitive edge over the other cashew producing states. Five districts in Odisha namely Gajapati, Puri, Ganjam, Koraput, and Nabarangpur prominently figure in cashew production and processing. Each of these centres has excellent potential to become major cashew hubs in this state. Ganjam and Chatrapur together process about 24,000 tonnes of raw cashew nut per annum, Koraput and Nabarangpur process 30,000 tonnes. About 240 processing units in the state processing more than 80,000 tones of cashew kernel annually. Most of the processing units are located in southern Odisha districts including Ganjam (80), Gajapati (58) and Koraput (48). The processing units, however, remain idle for about 3-4 months in a year due to shortage of raw material. Though the areas under cashew cultivation in the state are sufficient to cater to the need of the processing units, the yield suffered due to poor management of plants. The yield rate of cashew in the state is around 550 kg per hectare as against the national average of 650 to 700 kg per hectare. Odisha can export around Rs. 300 crore of cashew in the next five years, provided the sector gets the right impetus in the state.

Inclusive Interventions of the Project

Udyogini has evolved a replicable and scalable model on cashew as women's enterprise promotion and empowerment over the years of working with cashew supply chain in India. The best practices are evolved over a period of time and standarised as a model consisting of a set of five components, viz., (1) introduction of scientific practices for Cashew cultivation, (2) Cashew Business Development Service Providers (cashew BDSPs) for training and monitoring of PSCC applications, (3) Farm promotion, (4) Establishment of Village Level Service Centers (VSLCs), and (5) Institutionalization through Cooperatives to address the inclusion and empowerment of tribal women. RCDC partnership helped it to extend the model to Navrangapur district, which is in need of good initiatives for social inclusion to generate dependable and sustainable income opportunities for poor rural communities. The project has set forth the following five objectives to achieve inclusion and economic empowerment of 10000 women through implementation of these components in five blocks of Navrangapur district, covering rural tribal producers in each block with the support of RCDC.

- Enhance the income of 10000 women producers
- Establish farms to combat sampling insufficiency
- Strengthen backward linkages by building a cadre of 50 BDSPs to increase outreach
- Strengthen forward linkages in terms of aggregation and marketing
- Establish Systems and Institutions for Monitoring and Evaluation

The subsequent sections are devoted to discuss about the analysis and findings of this model on the ground.

Geographical Inclusion

Nabarangpur was carved out from the mother district Koraput on 02.10.1992. It is spread over an area of 5294.5 Sq. kms (i.e. 3.4%of the total geographical area of Odisha). It consists of 10 Community development blocks and four Tehsils that comprise of 880 villages. It is declared as a scheduled area. RCDC is working in three blocks-Kosumguda, Jharigam and dabugam- with about 10000 households. Review of secondary literature suggests that the rural community is pre-dominantly dependent on agriculture, horticulture, forest, livestock and wage labour (govt schemes, agriculture, and construction in nearby towns) and migration to big cities like Bangalore, Chennai and Hyderabad. The coping mechanisms to overcome the adverse affects of natural calamities (like drought, cyclone and floods) and displacement are as follows; Reduction (quantity) and change (to low nutrition and cheap) in food consumption pattern, Sale of livestock and assets, Shift in employment pattern-distress migration to big cities, Forest products for food and cash and Selling of livestock and physical assets (gold/silver jewellery).

Social Inclusion

This section deals with ways and means that Udyogini has attempted to address the socializing of excluded tribal communities into Cashew value chain. Mainstreaming of social inclusion process is mainly aimed at capacity building of producers, generating community based resource for retaining and extending the knowledge within the community and evolving self-reliant and self-sustained institutions for promoting Cashew as sustainable livelihood opportunity among the tribal communities. The project has brought 10000 women Cashew producers, which constitute 78.03% of tribal households followed by 0.92%, 0.79% and 0.38% of SC, BC and other community households respectively into the Cashew value chain and improved market linkages. The tribal households belong to Munda, Oraon and Kadhia tribes which represented different tribes (dynasties) namely Topno, Indwar from Munda tribe, Ekka from Oraontribe, while Barla and Kerketta from Khadiya tribe. The Scheduled Castes (SC) households are included mainly from Lohra, Lohar and Ram, while the Backward Castes (BC) households belonged to Sahu, Mahto, Gop, Ohadar living in the project areas. The project has covered a small percentage of households from BC communities as well. However, the coverage of producers in each block is not uniform as envisaged initially. Udyogini adopted a set of strategies and approaches based on previous experience elsewhere to implement the activities designed for social inclusion in Cashew cultivation, marketing and institution building process in a totally new geographical area in a short span of time. The relevance and impact of these strategies and approaches are discussed below.

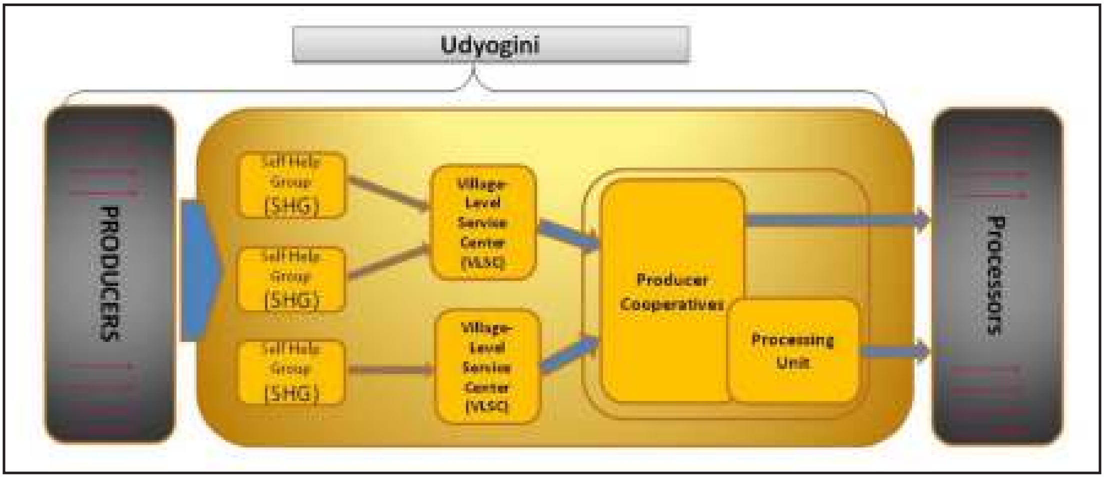
Table-2: Social status of households included by the project

Sl. No	Social status	No. of Producers
1	Scheduled Tribes	7896
2	Scheduled Caste	925
3	Backward Caste	795
4	Others	384
	Total	**10,000**

Udyogini's interventions began with the market assessment and Cashew value analysis study and base line survey of selected sample of households in the project area, which helped Udyogini to get better grasp over the communities' socio-economic backgrounds, migration and gender issues, status of Cashew cultivation and its productivity related constraints, the market structure, gaps in the backward and forward linkages in the Cashew sub sector.

Udyogini selected the field staff from the project villages. This helped in quick access to the nook and corner of new project area and selection of villages, having more number of Cashew trees and favourable conditions for Cashew cultivation, for the project smoothly. The project has followed cluster approach and built up a cadre of 25 field staff from the local communities and trained them in all technical aspects of handling Cashew trees and nurturing for higher Cashew productivity. Another good strategy is that the women Cashew producers were identified in a short span of time from the existing SHGs, formed either by another NGO or SHGs formed by the villagers themselves to access the government support. For, these women were already in the social inclusion process in the mainstream thrift and credit activities, linked to financial institutions and handling their own affairs.

Inclusive model of Cashew Value Chain



This strategy has helped not only to easily mobilize the women for social inclusion process but also saved at least one year of project time and considerable resources for mobilizing and organizing the communities for the project in that new, remote and naxal affected areas. However, Udyogini could have considered taking entire SHG group members into the Cashew supporting activity, which would have not only ensured better integration of Cashew value chain into group activities but also helped in institutionalizing the social inclusion process for long term to impact their economic empowerment into other sectors like education, health, and so on.

Though Udyogini specialized in working with women, it took more than a quarter of the project period to motivate the women to come out, interact and work in the male dominated society. Udyogini being a new player in the area had to put in more efforts to build its credibility and visibility for acceptance of the communities, government departments and PRIs. Village meetings were held for sensitizing the community about Udyogini' work, the potential of Cashew activity and the huge contribution that women could make in the process of Cashew cultivation right from making bundles of brood to scrapping of Cashew to make it as assured source of family income. As this sensitivity developed and confidence built up on Udyogini staff, women came forward to attend meetings and started taking part in the process of Cashew cultivation. Udyogini established crèches for children of Cashew producers to facilitate participation of women with infants in Cashew cultivation activities. A Gender Justice Module was developed as part of Grassroots Management Training (GMT) to build the skills of women to negotiate and sensitise their male counterparts to free some time for themselves to perform the activities like pruning and spraying on time, while handling the household engagements.

Trainings were organized by technical experts cluster wise in all villages and panchayats to women groups. The module was designed to cover all the aspects of Cashew production cycle for both the strains. Training and exposure visits of Panchayati Raj functionaries were done mainly to share details of the intervention and showcase the performance of Cashew production with scientific methods, which helped create a positive ambience for the project as it helped the PRI members realize the potential of Cashew cultivation as one of the major tools for livelihood generation for their community and enlisted their full support and cooperation for the project.

The project has formed four Project Management Committees (PMCs) for 20 Panchayats, one each for four Panchayats, consisting of village *Mukhyas*, women cluster representatives and opinion makers of the area for quarterly reviews of project activities in the *Gram Sabhas*to help address the issues related to Cashew transactions in the village and motivate non beneficiary villagers to adopting PSCL technologies, thus helping to increase the outreach and impact of the project. Udyogini attempted the quarterly social audits in the Panchayats with an aim to ensure transparency, accountability and participation of all stakeholders, but it has encountered many challenges like delicacy in sharing financial information publicly in the extremist infested areas for the fear of extortion and non participation of community leaders and government officials. Though it is a very good strategy to bring about social inclusion process at the village level, it is, however, an ambitious activity at this stage as it requires more time and efforts for social engineering to prepare all stakeholders for it.

Udyogini has a strategy of creating a cadre of women known as Cashew Business Development Service Providers (Cashew BDSPs), which is an integral part of Udyogini's enterprise promotion, for localizing the extension system to reach more number of Cashew producers and monitor the activities effectively through this cadre of community based resource persons. Though the target is 50 women BDSPs, Udyogini has identified initially 197 women, who are capable of becoming BDSPs, keeping in mind the premature drop out of BDSPs. It is reported that about 60 women are now active and have potential to become BDSPs. These BDSPs are made well equipped with various training curriculums to enable them to act as resource persons for the community. Initially Udyogini with the support of PACS are paid the remuneration (on the basis of performance) to the BDSPs and later on the BDSPs are expected to charge this as a service fee from the community. They are intended to earn additional incomes through their service provision roles such as training on Cashew cultivation, facilitating market linkages etc. Udyogini has created service portfolio for Cashew BDSPs, which is used for deciding their remuneration.

BDSPs, being from the community, have the advantage of ensuring better learning processes in the community and easier mobility. BDSPs are selected through a standard format designed to analyse crucial aspects like mobility, reading and writing skills, basic accountancy skills etc. This stringent selection criterion enables the best of the service providers to be selected. If this concept succeeds, the community rooted technical knowledge and skills would indeed ensure horizontal spread and have cascading effect on inclusion of the larger number of households in the district. However, the sustainability of the cadre needs to be reviewed by Udyogini and this cadre needs to be further strengthened especially in the context of its withdrawal soon from the area and so does its honorarium payment. Income generation for BDSPs from the community for providing services may not be a feasible idea in practice and gradually BDSPs may be de-motivated to continue their services in the absence of economic incentive i.e., payments from community, due to the spread of PSCC practices across the region in due course of time.

Udyogini introduced one more institutional innovation of Village Level Service Centres (VLSCs) to run by women entrepreneurs for strengthening the market integration through forward linkages in the Cashew supply chain for aggregation, value addition and marketing of Cashew and assure fair weighment and pricing to the producers by eliminating the intermediaries. Udyogini identified 50 women for VLSCs, but only 25 of them were given three phase training on enterprise development so far. Out of the 25 trained, eight have started their shops recently. Udyogini has arranged Rs. 10,000 as loan from its ICCO project to interested four VLSCs out of the eight for opening their shops with groceries and food grains. The rest have put in their own money to start their shops. Udyogini visualizes a retail portfolio for VLSCs to sustain offering a two-way service for goods.

VLSC is a good concept to train rural women to become business entrepreneurs and improve their livelihoods. It is a good tool to create numerous such women entrepreneurs in the rural areas for their economic empowerment and social inclusion. However, as it is, VLSCs are independent entities and needs to be strengthened so that the VLSCs do not become an exploitative layer in course of time in order to make their business viable and handle the risks of price fluctuations in the market, while earning adequate compensation for the time of holding stocks. It should be ensured that VLSCs do not resort to unfair weighing and pricing to sustain their shop / business and the interests of VLSCs do not become counterproductive in addressing the interests of Cashew producers and their empowerment.

The project visualized formation and registration of Cooperatives of Cashew producers basically for accessing the benefits from government schemes. The project could organize all women Cooperatives, which would enable women to take lead role in the earlier male dominated Cashewvalue chain. Under the project, the target was to form only two Cooperatives for the 10000 Cashew producers, but Udyogini formed and registered 8 Cooperatives in 3 blocks of district targeting 400 members in each Cooperative. These Cooperative bodies are together having a membership base of about 3222 members by now. Udyogini is conducting phase wise trainings in order to mobilise and build the capacities of the Cooperative members.

However, the Cooperatives are in the initial stage and it is preposterous to comment on their strength, governance, independence and capability for achieving the inclusion of socially excluded communities through anchoring the Cashew value chain and building forward market linkages at this juncture. As of now, the Cooperatives need to be strengthened beyond the RCDC project and make them vibrant and viable institutions that entail removing the social and institutional barriers for its members to increase their access to development opportunities through collectivization of diverse communities for solidarity and empowerment. This is a very long process which requires knowledge and skills on the part of facilitators to achieve it. Interaction with three Cooperative members revealed that in general they seem to be under the impression unanimously that these bodies are for their benefit and collective marketing of Cashew for better price.

Based on the above discussion, it can be concluded that the excluded communities, especially women, are receptive, cooperative and capable of acquiring new skills and leadership responsibilities for any value chain provided they are given a space deliberately through appropriate training and skill building and if that new domain of opportunity impacts their livelihoods positively. However, institutionalizing the social inclusion process in a sustainable manner in any value chain in the given ecosystem in which they live requires appropriate institutional structures that provide opportunities and resources necessary, apart from capacity building, to participate fully in economic, social, political and cultural life and enjoy a standard of well-being (World Bank, 2011). In this context, Udyogini has succeeded in mobilizing a large group of women to revive the neglected and insignificant Cashew based livelihoods for improving their incomes through technical trainings and gender sensitization, but the relevance and potential of institutional arrangements envisaged viz., BDSPs, VLSCs and Cooperatives for guaranteeing the space and opportunities for social inclusion needs a critical review for this inclusive Cashew based livelihoods enterprise promotion model to succeed and replicate elsewhere.

Technological Inclusion

A Standard Operative Procedures (SOP) document for Cashew cultivation has been prepared by Udyogini. The knowledge and skill building mainly involved in training sessions, exposure visits and guiding adoption of practices through handholding by field assistants. As per the data shared by Udyogini, all the targeted 10000producers got trained in PSCC and practically applied the training in Cashew cultivation with good results. They were given sapling and fertiliser from the project to encourage kick-start the PSCC adoption. They were also given producer cards to record the data for key steps of Cashew cultivation including production, investment and profit details empowering the producers in data management for better planning and execution. Due to PSCC introduction, Cashew activity got impetus to become the primary source of livelihood over the precarious rainfed agriculture based incomes to these families. This is the most perceptible and worthwhile impact of the project indicating technological inclusion of these communities in scientific Cashew cultivation practices. The impact of technological inclusion was quite evident as all the producers have internalized the key process steps well in PSCC such as pruning the branches with secateurs, estimation of optimum brood quantity based on host tree age and canopy size, tying the brood to branches with thread, and spraying the pesticides twice for insect and disease control. It is most likely that these aspects can gradually spread horizontally to their peers across the villages in the five project blocks and beyond in Navrangpur district, as everyone is having trees and aware of Cashew cultivation traditionally.

Economic Inclusion

Studies on tribal communities indicate that the status of tribal women is generally better than the women of non-tribal societies. However, gender discrimination does exist within tribal communities as well in terms of access to basic rights and economic opportunities. Tribal culture does not allow ownership rights to women on lands, as the land ownership is always lineal and individuals are not entitled to own nor sell it to outsiders; more so in case of women. Nevertheless, tribal women work harder than men and undertake multiple roles to support the family. In fact, tribal societies consider women as "goods of assets" for their hard working nature and diverse productive roles. Udyogini's Cashew based livelihood model showed that the tribal women could be integrated into the value chains and markets of NTFPs taking control over the production, processing and marketing of the usufructs of trees being grown on their lands. This demonstrates new opportunities for women, who are denied of land ownership, to assert ownership over the usufructs of trees underutilized for their economic empowerment in male dominated society.

Tribal women travel 15–20km each way to the nearest market to sell their Cashew. They have little or no control over the price received for their produce and their Cashew is not adequately value added to fetch a premium price. Due to cash flow issues, women sell when they need the money but not when the price is high. VLSC is a two way supply chain model which Udyogini innovated and it has the potential to eliminate the intermediary or middlemen between the village products and the potential market. It can help to empower the women producers to become stakeholders in this two way supply chain model. After the harvest, all the Cashew is aggregated in VLSC and the women entrepreneur of

The Cashew model of Udyogini has provided sufficient evidence that improvement of value chains of NTFP, Cashewin this case, can help empower women when they are given access and control over these economic assets and economic independence can elevate their status in the house and society. It was found in field enquires and progress reports that the scientific methods ensured a minimum of 3 to maximum of 20 times of Cashew production over the quantity of brood Cashew used compared to the highly unpredictable base line of production before the project intervention. Going by the reports of Cashew producers interacted, Cashew cultivation through scientific methods is assured to give at least three times production and definitely a good income for producers. The random case studies from the Cashew producers revealed that the income levels ranged from Rs. 20,000 to Rs. 50,000 in one cycle, despite the fluctuating market prices, over the previous base line of meager income levels ranging from Rs.2000 to Rs.5000 per annum, depending upon the number and diversity of trees endowed by the family.

Dissemination of PSCC technologies and its positive impact in terms of higher production and incomes to the producers made the women to look at Cashew trees as money making 'machines' now. They are closely guarding the trees for any theft of Cashew and extra care is being taken to nurture them. This is a remarkable achievement of the project, which demonstrated the potential of Cashew cultivation model for income augmentation of these poor households leading to economic inclusion of women particularly.

The random case studies have also revealed that the increased incomes have mostly been handled by women and interestingly in majority of the cases the money was spent for education of their children instead of material goods, which could in the long run lead to socio-economic inclusion of these families. Increased incomes from Cashew cultivation can also discourage distress migrations and encourage families to stay back and take care of their host trees to get regular incomes for better livelihood. However, the impact of economic inclusion through project interventions on migration needs to be further studied to make any worthwhile comment on its influence.

Conclusion

Social inclusion and exclusion refer to the extent that individuals, families and communities of tribal households are able to fully participate in the society and control their own destinies by improving the value chains of the natural resources endowed in their ecosystem (Stewart, 2000). The Cashew model has demonstrated that the Navrangpur district with more than one fourth of its geographical area under forests could offer ample opportunities for socio-economic inclusion of tribal and other poor communities by reviving and improving the Cashew value chains and micro-enterprise development. Scientific approaches and timely inputs can revive the traditional Cashew based livelihoods, for tribal communities and harness them to generate sustainable incomes for their socio-economic inclusion.

The model has also shown that that the excluded tribal communities could be brought into the mainstream development fold through appropriate strategies for their mobilisation, capacity building on scientific methods of handling the livelihood activity and the necessity of introducing the community based institutions to provide space for their participation. With appropriate inclusive strategies and approaches, the marginalized women could be receptive, cooperative and capable of acquiring new skills and undertaking new responsibilities of value chain refinement, micro-enterprise development and management through appropriate training and skill building. However, the complete inclusion of women from poor households in all facets of development in the society requires a set of policies, strategies, approaches and inclusive institutions that support pro-poor growth and social equity for accessing and benefiting from the fruits of mainstream development (Bennett, 2002). The interventions of Udyogini have, to a large extent, ensured the technical, social and economic inclusion of women by giving those opportunities to acquire new skills, space for active participation in decision making as well as leadership for carrying out multiple roles in the Cashew value chain and market integration. Nevertheless, Udyogini needs to review the institutions introduced in the model and the complementary of their roles and responsibilities to institutionalize the inclusion process for empowerment of tribal and non tribal women living in the rural areas of Navrangpur district in Odisha.

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Gender Disparity in Rural Labour Market in Odisha

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Abstract

Women are discriminated against in the labour market when they are engaged in low-paid and low-status jobs and paid lower wages than their male counterparts. This paper analyses gender disparity in the rural labour market of Odisha in comparison to India. Using data from Reports on Employment and Unemployment in India published by National Sample Survey Office over the period from 1972-73 to 2011-12 and on wages from various issues of Rural Labour Enquiry Report on Employment and Unemployment of Rural Labour Households, published by Labour Bureau of India the paper concludes that there is a need to reduce the wage disparity between male and female labourers by enforcing the laws and regulations on equal pay for equal work. The planners, policy makers and development practitioners in Odisha are required to formulate appropriate policies, programmes and strategies for generation of additional employment for females and removing gender-disparity in work allocation and wage payment in the rural labour market.

Key words: Rural Labour Market Imperfections, Gender Wage Disparity, Unemployment Rate

Women have always played a crucial role in agricultural production. But most of their contributions go unnoticed and are invisible. They perform manifold services to maintain their family which include preparing food, securing water, fuel and fodder, bearing and rearing children, growing crops in family farm, which of course go unpaid. However, during the last few decades, women are increasingly taking up paid work outside their house to increase their personal or family income. In the post-reform period, rapid expansion of trade, capital flows and economic restructuring have taken place accompanied by significant changes in working conditions. Fierce global competition, improvement in communications and technology, and changes in the organisation of production have resulted in the increasing shift of jobs from the formal to the informal sectors. In response to these changing conditions, rural households also reallocate labour. These changes have brought new opportunities for employment to many, especially women, but they have also created gaps and imbalances particularly for women working in rural

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informal sector. The traditional roles of women have even transformed, as women increasingly become wage earners alongside men.

Increasing female participation in rural labour market or feminisation of agriculture is no doubt a welcome trend (Unni, 1992). But the matter for concern is that discriminations against women are widely prevalent in a low-income country like India and tend to persist (Lynn, 1992). Women are discriminated against in the labour market when they are engaged in low-paid and low-status jobs and getting lower wages than their male counterparts (Nayyar, 1987; Deininger *et al.*; 2013). Despite the emphasis laid on equality of sexes in the Indian Constitution and different legislative enactments, women are still subjected to various discriminatory practices in the social and economic spheres. However, with technological change and growing feminisation of agriculture it is expected that gender disparity in agricultural wage will be reduced (Singh and Meenakhi, 2004).

The main objective of the paper is to analyse gender disparity in the rural labour market of Odisha in comparison to India. The paper is divided into four sections. Section-1 analyses gender disparity in the level and structure of the workforce in rural Odisha and India, which is studied with the help of dimensions like a) Worker Population Ratio; b) Unemployment Rates; c) The proportion of Workers in Agriculture; d) The proportion of Casual Workers by Employment Status in Rural Areas. Section-2 examines the disparity in the days of employment available to male and female workers in the rural labour market. Section-3 analyses the gender wage disparity in both agricultural and non-agricultural operations in the rural labour market. Section-4 concludes highlighting the major findings of the study.

The study uses data mainly from secondary sources. Data used in Section-1 have been collected from Report on Employment and Unemployment in India from National Sample Survey (NSS) 27th Round, 32nd Round, 38th Round, 43rd Round, 50th Round, 55th Round, 61st Round, 66th Round and 68th Round. The NSS data are preferred over Census as the based on more exhaustive questionnaire based survey and are likely to have captured more of female workers (Nayyar, 1987). Section-2 uses data from the various issues of Rural Labour Enquiry Report on Employment and Unemployment of Rural Labour Households, published by Labour Bureau of India. Section-3 uses three different sources of data which include (i) various issues of Rural Labour Enquiry Report on Wages and Earnings, published by Labour Bureau, (ii) Agricultural Wages in India; published by Ministry of Agriculture and Farmers' Welfare, Government of India and (iii) Wage Rates in Rural India published by Ministry of Labour and Employment; Labour Bureau, Government of India.

1. The Level and Structure of the Workforce

The level and structure of the workforce in Rural Odisha and India over the period from 1972 to 2011 are examined with the help four estimates viz. a) worker population ratio; b) unemployment rate; c) The proportion of workers in agriculture; and d) The proportion of casual workers by employment status in rural areas.

1.1 Worker Population Ratio

The number of persons employed per thousand persons is referred to as Worker Population Ratio (WPR). Persons who are engaged in any economic activity or who despite their attachment to economic activity abstained themselves from work for any reason of illness, injury or physical disability, bad weather, festivals, social and religious functions or other contingencies necessitating temporary absence of work constitute workers. Unpaid households who assisted in the operation of an economic activity in household farm and non-farm activities are also considered as workers. WPR is a broad indicator of the level of employment in the economy. Whenever there are large fluctuations in the WPRs from one NSS round to another, it indicates the possibility of less than complete enumeration of workers. Women with multiple roles and as unpaid family helpers are likely to be missed.

Worker population ratio in rural Odisha and India from 1972 to 2011 as given in Table-1 shows that worker population ratio of male in Odisha increased from 57.7 per cent in 1972 to 59.2 per cent in 2011. At the all India level the WPR of male increased from 53.1 per cent to 54.3 per cent in 2011. It is observed that in all the NSS Rounds the worker population ratio of males in Odisha was more than the all-India averages.

On the contrary, the worker population ratio of female in rural areas of Odisha, and India depict a declining trend. The worker population of female in Odisha declined from 30.7 per cent in 1972 to 24.6 per cent in 2011. It was also observed that at the national level WPR of female declined from 31.8 per cent in 1972 to 24.8 per cent in 2011. This decline in the worker population ratio may be due to the increase in the household income emanating from implementation of many poverty alleviation programmes, which is one of the factors leading to women's withdrawal from the workforce (Vaidyanathan, 1996).

The worker population ratio of male in Odisha was more than that in India from 1972 to 2011 but WPR of female in Odisha and all India were more or less the same. However, there exists a visible disparity in the WPR of male and female in Odisha as well as in all India. In Odisha there was a difference of 27 per cent between the WPR of male and female in 1972 which increased to 34.6 per cent in 2011. This disparity in WPR also increased at all India level from 21.3 per cent in 1972 to 29.5 per cent in 2011. Thus, it is observed that the disparity in WPR between male and female is higher in Odisha as compared to all India.

Table-1: Worker Population Ratios in Rural Odisha and All-India, 1972 to 2011

NSS Round	Odisha			All India		
	Male	Female	Diff.	Male	Female	Diff.
1972-73 27th Round	57.7	30.7	27.0	53.1	31.8	21.3
1977-78 32nd Round	56.5	27.4	29.1	52.6	32.6	20.0
1983-38th Round	57.5	29.4	28.1	53.9	34.2	19.7
1987-88 43rd Round	56.6	27.6	29.0	32.3	55.3	-23.0
1993-9450th Round	56.6	31.7	24.9	55.3	32.8	22.5
1999-00 55th Round	55.1	29.9	25.2	53.1	29.9	23.2
2004-05 61st Round	58.6	32.2	26.4	54.6	32.7	21.9
2009-1066th Round	57.8	24.3	33.5	54.7	26.1	28.6
2011-1268th Round	59.2	24.6	34.6	54.3	24.8	29.5

Sources:

1. NSS Report on Employment and Unemployment in India, Relevant NSS Rounds

1.2 Unemployment Rate

Unemployment rate is defined as the percentage of persons unemployed to the persons in the labour force. The labour force constitutes persons who are either 'working' (i.e. employed) or seeking or available for work (i.e. unemployed) during the reference period. The unemployment rates are computed by three status viz., usual, weekly and daily, which vary considerably and are expected to capture different dimensions of the problem. Usual status unemployment rates estimate the proportion of unemployed persons over a long period of time in a year. It can be expected to capture open and chronic unemployment.

The unemployment rates of male and female in Odisha and all India have been studied according to usual status, weekly status and daily status. Usual status unemployment rate estimate the proportion of unemployed persons over a long period of 365 days and approximates to an indicator of chronically unemployed. The weekly status unemployment rates estimate the proportion of unemployed persons during the reference week. A large number of persons, particularly in agriculture, face seasonal unemployment. This shorter reference period helps to capture the seasonal unemployment in addition to the chronic unemployment. Hence, in general, the weekly status unemployment rates are higher than the usual status rates. The daily status unemployment rate records the unemployed days, in half day units, during the reference week. It measures unemployment during the week and provides the highest estimates of the three statuses. It is considered the most comprehensive measure of unemployment. The usual status unemployment rates are the lowest compared to the weekly and daily status. Data are shown in Table-2.

It is observed that the usual status unemployment rate of male and female increased from 1972 to 2011 in Odisha and all India. The unemployment rate of male in Odisha increased from 1.2 per cent in 1972 to 2.3 per cent in 2011. Also, in all India there was a rise in the unemployment rate from 1.2 per cent in 1972 to 1.7 per cent in 2011. In case of adjusted usual status female unemployment rate, it increased from 0.4 per cent in 1972 to 2 per cent in 2011 in Odisha. During the same period, it increased from 0.5 per sent to 1.7 per sent at the all India level.

The disparity in the unemployment rates of male and female workers continues to exist in rural labour market in both Odisha and all India. The unemployment rates were higher among males in comparison to females in both Odisha and India. The difference between the male-female unemployment rates in Odisha was 0.8 per cent in 1972 which declined to 0.3 per cent in 2011. However in all India, although there was difference between the male-female unemployment rates in 1972 at 0.7 per cent, in 2011 there is no difference between the unemployment rates of male and female workers.

Table-2: Unemployment Rates by Usual, Weekly and Daily Status by Sex in Rural Areas of Odisha and All India, 1972-73 to 2011-12

States/Year	Usual Status		Weekly Status		Daily Status	
	Male	**Female**	**Male**	**Female**	**Male**	**Female**
Odisha						
1972-73	1.2	0.4	3.7	9.6	7.6	15.7
1977-78	1.9	2.3	3.8	5.6	7.5	9.7
1983	1.5	0.4	3.6	5.9	7.8	11.8
1987-88	2.2	3.1	4.4	6.1	5.0	0
1993-94	1.8	0.8	4.5	4.0	7.6	5.1
1999-00	2.4	1.1	3.8	1.0	7.6	5.6
2004-05	3.1	8.3	6.1	10.2	9.3	12.6
2007-08	2.8	1.3	5.6	3.3	8.7	6.8
2009-10	3.1	2.7	5.4	5.3	8.2	7.8
2011-12	2.3	2.0	5.1	5.3	8.8	8.5
All India						
1972-73	1.2	0.5	3.3	5.5	6.8	9.9
1977-78	1.3	2.0	3.6	4.0	7.1	9.2
1983	1.4	0.7	3.7	4.3	7.5	9.0

1987-88	1.8	2.4	4.2	4.3	4.6	6.7
1993-94	1.4	0.8	3.0	3.0	5.6	5.6
1999-00	1.7	1.0	3.9	3.7	7.2	7.0
2004-05	1.6	1.8	3.8	3.7	7.2	7.0
2007-08	1.9	1.1	4.1	3.5	8.5	8.1
2009-10	1.6	1.6	3.2	3.7	6.4	8.0
2011-12	1.7	1.7	3.3	3.5	5.5	6.2

Source: Same as in Table 1.

1.3 Proportion of Workers in Agriculture

With economic growth it is expected that the employment in the economy will shift from agriculture to industry and services. But, agriculture still is a dominant activity in rural India and 59.36 per cent of male workers and 74.94 per cent of female workers engaged in this sector in 2011. Agriculture is broadly defined to include crop production and allied activities such as livestock, forestry, plantation and orchards. Long-term trend of decline in the proportion of both male and female workers in agriculture in rural Odisha and all India was also observed from 1972 to 2011 based on NSS Rounds data. Figures are given in Table-3.

The proportion of male workers in agriculture in Odisha declined from 84.7 per cent in 1972 to 59.3 per cent in 2011 and in all India it declined from 83.2 per cent in 1972 to 59.4 per cent in 2011. The proportion of female workers in agriculture declined in Odisha and all India from 86.2 per cent in 1972 to 69.3 per cent in 2011 and from 89.7 per cent in 1972 to 74.9 per cent in 2011 respectively.

During the reference period of 1972 to 2011, it was observed that more females were engaged in agriculture as compared to males over all the years in various NSS rounds. It was observed that after 1977 the proportion of male workers in agriculture in Odisha was more than that for all India. However, in 2011, the proportion of males in agriculture at all India (59.4 per cent) was slightly higher as compared to Odisha (59.3 per cent).

The proportion of women workers in agriculture in Odisha was 86.2 per cent in 1972 which reduced to 69.3 per cent in 2011. In all India it was 89.7 per cent in 1972 and fell to 74.9 per cent in 2011.

With economic progress and development of secondary and tertiary activities; there is a decreasing trend in the proportion of both male and female workers in agriculture, however the proportion of female workers was always higher than that of the male workers and this may be due to the increasing outmigration of males from the rural areas to urban areas in search of better paying jobs. As women labourers are mostly unskilled and lack mobility, they tend to stay in the village doing household chores and engaging themselves in agricultural activities to support their family.

Table-3: Percentage of Workers in Agriculture in Rural Areas of Odisha and All India, 1972 to 2011

Year	Odisha		All India	
	Male	Female	Male	Female
1972-73	84.7	86.2	83.2	89.7
1977-78	84.6	85.8	80.5	88.1
1983	78.2	81.0	77.5	87.5
1987-88	74.9	78.0	74.5	84.7
1993-94	78.7	85.0	74.1	86.2
1999-00	77.0	80.4	71.4	85.4
2004-05	65.9	74.6	66.5	83.3
2007-08	68.1	83.8	66.5	83.5
2009-10	64.0	76.2	62.8	79.4
2011-12	59.26	69.31	59.36	74.94

Source: Same as in Table-1.

1.4 Casualisation of the Workforce

One of important dimensions of employment is the status distribution of the workforce into salaried, self-employed and casual workers. The casual workers are those who are engaged in others' farm and non-farm enterprises (both household and non-household) and getting wage in return according to daily or periodic work contract.

The percentage of casual workers in rural areas of Odisha and India from 1972 to 2011 are given in Table-4. In Odisha the percentage of male casual workers was 27.1 percent in 1972, which increased to 45.8 per cent in 1999-00, after that it declined to 31.1 per cent in 2011.The percentage of female casual workers which was 37.6 per cent in 1972, increased to 49.5 per cent in 1999-00.The increase in casualisation of labour may be due to large proportion of landless and marginal landholders who work as casual wage labourers. The increase in landless households and marginal holders may increase the pressure on casual wage labour market (Unni, 1997). However, the percentage of female casual workers in Odisha declined to 30.5 per cent in 2011.

The shares of male and female casual workers in all India were 22 per cent and 31.4 per cent respectively in 1972, which increased to 35.5 per cent and 35.1 per cent respectively in 2011.

It is observed that after 2004, male workers tend to be more casual as compared to females in rural areas of Odisha. In all India also till 2004, female workers tend to be more casual than male, however after that the percentage of male and female casual workers, balances with each other.

Table-4: Percentage of Casual Workers by Status of Employment in Rural Areas of Odisha and All India, 1972 to 2011

Year	Odisha		All India	
	Male	Female	Male	Female
1972-73	27.1	37.6	22.0	31.4
1977-78	33.9	47.9	26.7	35.1
1983	33.6	40.7	29.2	35.3
1987-88	37.6	41.3	31.4	35.5
1993-94	37.2	42.5	33.8	38.7
1999-00	45.8	49.5	36.2	39.6
2004-05	36.1	35.9	32.9	32.6
2009-10	36.9	40.4	38.0	39.9
2011-12	31.1	30.5	35.5	35.1

Sources: Same as in Table-1.

2. Days of Employment Available

Worker population ratio or workforce participation alone is not an efficient measure of employment available to the labour households as it only indicates the proportion of working persons during a year; the intensity of work or the number of work days available to each worker during a year provides a clearer and more complete picture of the employment situation.

This section examines: a) the full days (in a year) of wage paid employment in agriculture per agricultural labourer in rural labour households; b) full days of employment in various occupations per agricultural labourer in rural labour households in rural areas of Odisha and all India from 1964 to 2004 with the help of Report on Employment and Unemployment of Rural Labour Households published by Labour Bureau of India.

2.1 Wage-paid Employed Days in Agriculture

Days of employment received by an agricultural labourer in a particular year is an interplay and net result of the changes in the demand and supply of labour. It is expected that in a year where there is low agricultural production, the demand for labour would be much less, thus reducing the total available days. Over the years it is observed that more wage-paid employed days were available to male as compared to female in rural areas. Data on the number of full days in a year of wage paid employment in agriculture per agricultural labourer in rural labour households in Odisha and all India from 1956 to 2004 are provided in Table-5.

It may be observed that in Odisha the male full days of wage paid employment in agriculture was 175 days in 1956 which increased to 213 days in 2004 and in all India the male full days of wage paid employment in agriculture was 194 days in 1956 which increased to 228 days in

2004. The female full days of wage paid employment in agriculture in Odisha increased from 70 days in 1956 to 179 days in 2004 and in all India the full days of female wage paid employment in agriculture increased from 131 days in 1956 to 199 days in 2004.

Over the years from 1956 to 2004 it is observed that there is disparity in male-female full-days of wage-paid employment, where the male full days of employment was higher compared to female in both Odisha and all India.

The disparity between the full-days of wage paid employment between male and female workers in agriculture has declined in Odisha during 1956-2004. The difference between the wage paid employed days of male and female declined from 105 days in 1956 to 34 days in 2004. This reduction took place although the days of wage employment increased for male workers, and this increase was very less as compared to the increase in the number of wage paid employed days of female workers in agriculture. This outstanding increase in number of wage paid employed days availed by female in agriculture in Odisha may be because of male members migrating out of the rural areas quitting agricultural jobs in their villages and engaging themselves in other non-farm activities in urban or semi-urban areas.

In all India the male-female disparity in the wage paid employed days of in agriculture depicted a continuous decline from 63 days in 1956 to 29 days in 2004. Perhaps due to withdrawal of male workers and /or due to increase in the agricultural activity, the women labourers who remained in the workforce obtained a larger number of days of work than male agricultural labourers.

It was observed that the difference between the male-female full days of wage paid employment in agriculture was higher in Odisha as compared to all India from 1956 to 2004.

Table-5: Full Days in a Year of the Wage paid Employment in Agriculture per Agricultural Labourer in Rural Labour Households in Odisha and All-India, 1956 to 2004

NSS	Odisha			All India		
	Male	Female	Diff.	Male	Female	Diff.
1956-57	175	70	105	194	131	63
1964-65	225	164	61	219	161	58
1974-75	162	111	51	192	136	56
1977-78	218	159	59	229	189	40
1993-94	213	171	42	237	215	22
1999-00	216	189	27	238	213	25
2004-05	213	179	34	228	199	29

Sources: Various issues of Rural Labour Enquiry Report on Employment and Unemployment of Rural Labour Households, Labour Bureau.

2.2 Self-Employed Days in Agriculture

While a major proportion of the time was spent in the wage employment, the agricultural labourers also engage themselves in self-employment. Self-employed persons are those who operate their own farm and non-farm enterprises or are engaged independently in a profession or trade on own or with few partners. The number of wage paid employed days and number of self-employed days per year and their respective percentages to the total days of employment from 1993-2004 are presented in Table-6. The wage paid employed days is divided into the agricultural and non-agricultural activities and self-employed days are divided into cultivation and other activities.

Table-6: Full days of Employment in Various Occupations per Agricultural Labourer in Rural Labour Households in Odisha and All- India, 1993 to 2004

States/Year	Wage-Paid Employment			Self-Employment			Total
Odisha			**Adult Males**				
	A	B	C	D	E	F	
1993-94	213(80.3)	14(4.7)	227(76.9)	49(16.6)	19(6.4)	68(23)	295
1999-00	216(72.4)	11(3.6)	227(92.9)	55(18.4)	16(5.3)	71(23.8)	298
2004-05	213(77.1)	13(4.7)	216(78.2)	47(17.0)	13(0.3)	60(21.7)	276
			Adult Females				
1993-94	171(69.7)	15(6.1)	186(75.9)	47(19.1)	12(4.8)	59(24)	245
1999-00	189(75)	10(3.9)	199(78.9)	36(14.2)	17(6.7)	53(21)	252
2004-05	179(75.5)	5(2.1)	184(77.6)	37(15.6)	16(6.7)	53(22.3)	237
			Adult Males				
All-India							
1993-94	237(79.5)	17(5.7)	254(85.2)	30(1)	14(4.6)	44(14.7)	298
1999-00	238(98.6)	7(2.4)	245(85.3)	28(9.7)	14(4.8)	42(14.6)	287
2004-05	228(81.1)	11(3.9)	239(85.5)	31(11)	11(3.9)	42(14.9)	281
			Adult Females				
1993-94	215(83.3)	9(3.4)	224(86.8)	22(8.5)	12(4.6)	34(13.1)	258
1999-00	213(85.8)	3(1.2)	216(87)	21(8.4)	11(4.4)	32(12.9)	248
2004-05	199(82.2)	4(1.6)	203(83.8)	26(10.7)	10(4.1)	36(14.8)	242

Sources: Various issues of Rural Labour Enquiry Report on Employment and Unemployment of Rural Labour Households, Labour Bureau.

Notes: (i)A- Agriculture, B- Non-Agriculture, C- All, D- Cultivation, E- Others, F- All.

(ii) Figures within parentheses refer to percentage to total days of employment.

In rural Odisha the self-employed days for male labourers declined from 68 days in 1993 to 60 days in 2004 and the percentage of self-employed days in agriculture to total days of employment decreased from 23 to 21.7 in 2004. The self-employed days of female labourers decreased from 59 days in 1993 to 53 days in 2004 and the percentage of self-employed days in agriculture to total days of employment declined from 24 in 1993 to 22.3 in 2004.

In all India the number of self-employed days for male workers in agriculture declined from 44 days in 1993 to 42 days in 2004 and its percentage to total days of employment increased slightly from 14.7 in 1993 to 14.9 in 2004. The days of employment among female labourers increased meagerly from 34 days constituting 13.1 per cent of the total days of employment in 1993 to 36 days, accounting for 14.8 per cent of the total days of employment in 2004.

It was observed that males are more engaged in self-employment in agriculture than females over the period 1993-2004 in Odisha and all India. The proportion of self-employed days in agriculture and its percentage to total days of employment of both male and female labourers is more in Odisha than at all India.

3. Labour Market Imperfections and Wage Differentials

Female participation in the labour market is a function of landlessness, poverty and other socio-economic factors. However, another important determining factor is the male participation rates and male wage rates. With rise in the household income, women tend to withdraw from the labour market and with rise in male wage rates there is a decline in the female participation (Parthasarthy, 1996). In India, the confinement of women inside the house is considered to be a status symbol. Male is the main bread winner of the family and hence the role of women is automatically of a subordinate.

There is a general notion that females are physically inferior to males. But in rural India women are engaged in the construction sites carrying the heavy loads, work entire day in the field while transplanting rice, carry water from far away ponds and other water sources and along with that cope with all the household chores. On an average a woman puts 12-16hours of work, as such women cannot be considered as physically weak.

There are social prejudices about the nature of work that women can do, which are the result of the traditional norms and values. There is traditional division of labour, there are certain occupations which have a greater concentration of women workers, and there are certain times in the year when women participate higher as compared to others. Within agriculture women are engaged in the post-harvest operations, in addition they work in the fields during transplanting of paddy. On the other hand, ploughing, cattle grazing and harvesting are mainly male dominated occupations. This division in the kinds of jobs between men and women is termed as market segregation (Nayyar, 1987)

Due to this market segregation women are confined to poorly paid, low technology and inferior jobs. Also evidences suggest that if male and female are performing the same task, male labourers are paid more than the female labourers (Deininger *et al*. 2013). This puts forward the question of wage rates and wage rate differentials that exist between male and female worker.

In this section an attempt has been made to examine the male female wage differentials in Odisha and India and for this purpose, the following dimensions are taken into consideration: a) Average daily money earnings of adult male and female workers of rural labour households in all agricultural operations from 1956 to 2004, b) Real agricultural and non-agricultural wage earnings/rates among wage workers in rural labour households from 1964 to 2013; c) Male-female real wage ratio in agriculture and non-agriculture operations from 1964 to 2013 and d)Average daily wage rates in different agricultural occupations for July, 2014-15.

3.1 Average Daily Money Wage Earnings in Agricultural Operations

The Rural Labour Enquiries (RLE) provide information on the average daily wage earnings of workers by dividing the earnings recorded for a week for each activity by the corresponding number of full days of employment in that activity. Therefore, these data do not relate to the prevailing wage rate in the region but it shows only the average based on the number of days of employment and total wage income. Relevant information is contained in Table-7.

The average daily money wage earnings (in rupees) in agricultural operations of male and female labourers in Odisha increased from 0.8 in 1956 to 39.63 in 2004 and 0.5 in 1956 to 28.05 in 2004 respectively. In all India, the male and female average daily wage earnings in agricultural operations were 1.0 and 0.6 in 1956 which increased to 48.07 and 33.77 in 2004 respectively.

Over the period of time from 1956 to 2004 it was observed that both the male and female average daily wage earnings were the lowest in Odisha as compared to all India. There is an increase in difference between the average daily money wage earnings in agricultural operations of male and female in Odisha and all India. The difference between the average daily money wage earnings of male and female in Odisha increased from 0.3 in 1956 to11.58 in 2004. In all India, the difference between male female wage earnings in agriculture rose from 0.4 in 1956 to 14.3 in 2004. However, over the years it was observed that the difference between the average daily wage earnings of male and female workers in agricultural operations in Odisha is less as compared to all India.

Table-7: Average Daily Money Wage Earnings (Rs.) of Adult Males and Females of Rural Labour Households in All Agricultural Operations in Odisha and All India, 1956 to 2004

Year	Odisha			All India		
	Male	Female	Diff.	Male	Female	Diff.
1956-57	0.8	0.5	0.3	1.0	0.6	0.4
1964-65	1.3	0.9	0.4	1.4	0.9	0.5
1974-75	2.6	1.8	0.8	3.3	2.3	1.0
1977-78	3.2	2.3	0.9	3.8	2.7	1.1
1993-94	16.30	12.09	4.21	21.52	15.33	6.19
1999-00	28.69	22.31	6.38	40.50	28.57	11.93
2004-05	39.63	28.05	11.58	48.07	33.77	14.3

Sources: Various issues of Rural Labour Enquiry Report on Wages and Earnings of Rural Labour Households, Labour Bureau of India.

Notes: (i) 1956-57 data refer to wages of casual labourers in agriculture in all agricultural households.

(ii) Diff. = Difference between money wage earnings of male and female (average daily money earning male- average daily money earnings female).

3.2 Real Agricultural and Non-agricultural Wage Earnings/Rates

Ministry of Agriculture publishes wage rates accruing to various agricultural operations and certain skilled and non-agricultural works for each month of the year. These are known as the Agricultural Wages in India (AWI). The AWI data used in this paper refer to the wage rates prevailing in the month of July-August which is considered to be the peak agricultural season in the year. The data from all the centres in each state was averaged for each year. The real wages are obtained by deflating the actual wages by the Consumer Price Index for the Agricultural Labourers. It is obvious that the absolute real wage earnings from Rural Labour Enquiries cannot be compared with the wage rates from AWI. However, it is assumed that ratios of male-female and agricultural and non-agricultural wages can be compared over time.

Many studies have shown that from the mid-seventies to mid-eighties the real wage rates in agriculture tended to rise slowly and steadily (Unni, 1988; Jose, 1988; Bhalla, 1993; Vaidyanathan, 1994). The diversification of the workforce towards the non-agricultural activities is the main reason behind the rise in the agricultural wage rates rather than the increase in the labour productivity (Bhalla, 1993). During the 1990s the rising trend of agrarian wages did not sustain (Parathasarthy, 1996 and Mukherjee, 1996). There has been a sharp fall in the agricultural wages in most of the states in 1991-92 and 1992-93.

The real wage earnings in agricultural operations among the wage workers in the rural labour households in Odisha and all India during 1964 to 2004 are given in Table-8. It may be seen that the real wage earnings of male in agricultural operations increased from 0.9 in 1964 to 0.1 in 2004 in Odisha. In all India it decreased from 1.0 in 1964 to 0.09 in 2004. In case of the non-agricultural operations, the real wage earnings of male increased from 1.0 in 1964 to 1.3 in 1987 in Odisha and in all India it increased from1.3 in 1964 to 1.7 in 1987.

The real wage earnings of female workers in agricultural operations in Odisha decreased from 0.6 in 1964 to 0.08 in 2004 and in all India it decreased from 0.6 in 1964 to 0.09 in 2004. In case of the non-agricultural operations the real wage earnings of female labourers in Odisha increased from 0.6 in 1964 to 0.9 in 1987 and in all India it increased from 0.8 in 1964 to 1.2 in 1987.

Over the period of time the real wage earnings of male and female workers in both agricultural operations and non-agricultural operations are higher in all India than Odisha.

It is observed that the real wage earnings of male workers in both the agricultural and non-agricultural operations were higher than female in Odisha and all India. The difference between the male-female real wage earnings in agricultural operations in Odisha decreased from 0.3 in 1964 to 0.02 in 2004. However, in all India the difference in respect of agricultural operations decreased from 0.6 in 1964 to 0.09 in 2004. In case of the difference between male-female real wage earnings in non-agricultural operations in Odisha it was 0.4 in 1964 which remained the same in 1987. In all India the difference doubled from 0.5 in 1964 to 1.0 in 1977 and after that fell to 0.5 in 1987.

Table-8: Real Agricultural and Non-Agricultural Wage in Rural Labour Households in All Agricultural and Non-Agricultural Operations in Odisha, and All-India, 1964 to 2004 at 1960-61 Prices

Year	Odisha		All India	
	Male	Female	Male	Female
Agricultural Operations				
1964-65	0.9	0.6	1.0	0.6
1974-75	0.7	0.5	0.9	0.6
1977-78	0.9	0.7	1.2	0.8
1983	0.6	0.5	1.0	0.7
1987-88	1.1	0.8	1.4	1.1
1999-00	0.9	0.7	0.1	0.09
2004-05	0.1	0.08	0.1	0.09
Non-Agricultural Operations				
1964-65	1.0	0.6	1.3	0.8
1974-75	0.7	0.4	1.1	0.6
1977-78	1.2	0.9	1.9	0.9
1983	0.7	0.5	1.5	0.8
1987-88	1.3	0.9	1.7	1.2

Source: Same as in Table-7.

The recent data from AWI for the period 2005 to 2013 are given in Table-9. They do not present any all India wage rates and state level rates are simple averages of few centres for which the data are available.

The real wage rates of male workers in agricultural operations in Odisha decreased from 0.8 in 2005 to 0.2 in 2013 while for females, they remained stable over the reference period. It was 1.0 in 1987 which declined to as low as 0.07 in 2011, which again showed a slight increase to 0.1 in 2013. In all India the real wage rates of male in agricultural operations decreased from 0.4 in 2005 to 0.3 in 2013 and real wage rates of female in agricultural operations increased from 0.5 in 2005 to 0.2 in 2013.

It is observed that from 2005 to 2013, the real wage rates of male labourers in agricultural operations in Odisha was more than all India in 2005; became equal to each other in 2006 and after that from 2011 to 2013 they remained less as compared to all India. The real wage rates of female in agricultural operations in Odisha were equal to all India in 2005 and 2006, however from 2011 to 2013 the real wage rates of female in agricultural operations in Odisha were less than all India.

It is also observed that during the reference period in both Odisha and all India, the male real wage rate was more than female real wage rate in agricultural operations. However, the difference between the male - female wage rates in agricultural operations declined over the reference period from 0.7 in 2005 and 0.1 in 2013 in Odisha and from 0.3 in 2005 to 0.1 in 2013 in India.

Table-9: Real Agricultural Wage Rates in rural Odisha and all India, 2005 to 2013

Agricultural Operations				
Year	**Odisha**		**All India**	
	Male	**Female**	**Male**	**Female**
2005	0.8	0.1	0.4	0.1
2006	0.4	0.1	0.4	0.1
2011	0.1	0.07	0.3	0.2
2012	0.2	0.1	0.3	0.2
2013	0.2	0.1	0.3	0.2

Sources: Various issues of AWI.

Notes: (i) Wage rates for female workers in non-agricultural operations are not available.

(ii) The real agricultural wage rates after 1995 are calculated with index numbers at base 1986-87=100.

3.3 Male-Female Wage Differentials

This section explains the male-female wage differentials with the help of two dimensions: i) The ratio between male and female wage earnings/rates; ii) The male-female wage differentials according to various agricultural operations.

The ratio of male and female real wage earnings/rates are computed for agricultural and non-agricultural operations for the period 1964-65 to 2013 from RLE data are shown in Table-10. The ratio declined from 1.5 in 1964 to 1.25 in 2004 for Odisha and at the all-India level, it declined from 1.7 in 1964 to 1.1 in 2004.

The ratio of the male female real wage earnings in non-agricultural operations in Odisha declined from 1.7 in 1964 to 1.4 in 1987 in agricultural operatioins it declined from 8.0 in 2005 to 2.0 in 2013, whereas in all India level it declined from 4.0 in 2005 to 1.5 in 2013.

The male-female wage differentials are discussed across the various agricultural operations like ploughing, sowing, transplanting, weeding, harvesting, winnowing, animal husbandry etc. Activities like weeding and transplantation are considered to be exclusive domain of females and ploughing, manure application are activities those are mostly performed by males. But, it is observed that there exist wage differentials between male and female performing the same task. Wage rates of male and female engaged in various agricultural occupations in Odisha and all India in July for the year 2014-15 are gives in Table-11. Month of July is chosen as it is the peak season in a year.

Table-10: Male-Female Real Wage Ratio in Agriculture and Non-Agriculture Operations

	Real Wage Earnings	
Year	**Odisha**	**All-India**
Agricultural Operations		
1964-65	1.5	1.7
1974-75	1.4	1.5
1977-78	1.3	1.5
1983	1.2	1.4
1987-88	1.4	1.3
1999-00	1.3	1.1
2004-05	1.25	1.1
Non-Agriculture Operations		
1964-65	1.7	1.6
1974-75	1.7	1.8
1977-78	1.3	2.1
1983	1.4	1.9
1987-88	1.4	1.4
	Real Wage Rates	
	Odisha	**All India**
Agricultural Operations		
2005	8.0	4.0
2006	4.0	4.0
2011	1.42	1.5
2012	2.0	1.5
2013	2.0	1.5

Source: Table 8 & 9.

It is observed that wage rate for males in Odisha were lowest at Rs.208.90; whereas Rs.256.72 in all India. The wage rates of female in ploughing/tilling work in Odisha are unavailable, at all India level it was Rs.192.36. The wage rates of both male and female in harvesting/threshing/ winnowing work are unavailable for Odisha, at all India level the wage rate for male and female was Rs. 236.55 and Rs.199.19 respectively. In sowing which incorporates transplanting, planting, weeding workers, the wage rate of male in Odisha was Rs.193.04 and for female it was Rs.156.37. At all India level the wage rate of male was Rs. 225.03 and for female it was Rs.184.22.

Wage rates of female in all the agricultural operations were less than male wage rates in Odisha and all India.

Table-11: Average daily wage rates in different agricultural occupations in rural Odisha and all India for July, 2014-15.

Operations	Odisha		All-India	
	Male	Female	Male	Female
Ploughing/ Tilling Workers	208.90	-	256.72	192.36
Harvesting/Winnowing/Threshing Workers	-	-	236.55	199.19
Sowing (Transplanting/Planting/Weeding Workers)	193.04	156.37	225.03	184.22
Animal husbandry workers(including, poultry, daily)	125.96	109.86	180.79	136.59
General agricultural labourers (watering/irrigation etc.)	175.98	154.76	220.82	171.44
Horticulture Workers(including nursery growers)	125.00	-	215.44	154.22
Loggers/ Wood cutters	215.63	-	307.34	171.47

Source: Wage Rates in Rural India (2014-15)

4. Concluding Observations

In this section, the important conclusions that emerge from preceding comparative analysis of gender disparity in rural labour market in Odisha and all India are recapitulated. Over the years from 1972 to 2011, the worker population ratio of male is more than that of female in rural Odisha and all India. The unemployment rate of females was higher in comparison to males in both Odisha and all India, but this gender disparity over the years gradually narrowed down. Female labourers were more casualised as compared to male in Odisha and all India.

The number of wage paid employed days in agriculture available to females was lower than that of males in Odisha and all India. More maleswere engaged in self-employment in agriculture as compared to females.

In Odisha as well as all India, the average daily real wage rate for males was higher than females. However, the difference between the average daily wage rate of male and female in agricultural operations in Odisha was less as compared to all India.

The male-female real wage earnings ratio in agricultural operations in Odisha and all India declined over the period 1964 to 2004. This ratio was lower in Odisha as compared to all India. Also, women were discriminated in the labour market by paying them lower wages as compared to men for the same agricultural activity. Wage rates of female in all the agricultural operations were less than male wage rates in Odisha and also at all India level.

In the above situation of visible gender discrimination in the rural labor market in Odisha and all-India, there is a need to enforce the laws and regulations on equal pay for equal work. In accordance with the Fundamental Rights, Directive Principles of State Policy and Equal Remuneration Acts and National Policy for Women, the employer should pay equal remuneration to men and women workers for same work or work of similar nature. No discrimination should be made while recruiting men and women workers. To ensure pay parity, there should be transparency in wage payment. Payments may be preferably made through bank account and employer has to maintain a register showing the details of work and payment made thereof.

There should be awareness among female workers and employers on constitutional provisions, Remuneration Acts, rules and regulations regarding wage payment. Sensitization of all people may be attempted through awareness generation programmes on the equality between women and men for transformation of the social mindset.

Because, information, knowledge and skill are pre-requisites to empowerment, the planners, policy makers and development practitioners are required to take steps to impart training on handling machines and adopting new technology to women workers. For skill development, special entrepreneurship programmes for women should be organized and strategies for generation of additional employment for women must be initiated.

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Gender Equality and Economic Growth: Empirical Evidence from SAARC Nations

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Abstract

Gender equality has broad and positive implications for economic and social development. The extant literature infers that gender equality can contribute significantly to economic growth by expanding human capital, raising labour productivity, and increasing the stock of physical capital. Thus, gender equality is highly critical for the long-run economic growth of less developed economies. It is in this backdrop, this paper makes an attempt to examine the trends in indicators of gender equality and advancement of women in SAARC countries, and investigates the effects of gender equality on the long-run economic growth of these economies over a period spanning from 1990 to 2014. The result provides the evidence of improved women advancement in SAARC economies and the gradual movement of these economies towards gender equalities. However, there are still many miles go in the direction of gender equality in these economies. The results how of the positive and significant effects of gender parity indicators on real economic growth of SAARC nations. The findings are significant for policy makers in developing strategies and programmes favouring women in SAARC economies.

Key Words: Gender Equality, Education, Health, Employment, Growth, ARDL, Panel Data

Introduction

In the globalized and competitive world, women are facing both economic and non-economic challenges to be in the group of beneficiaries of the process of sustainable inclusive development, primarily due to the disparities that is observed between males and females across time and space. In a most recent work, Stotsky *et al*. (2016) pointed out that although "the world has moved closer to gender equality and narrowed gaps in education, health and economic and political opportunity; ……. substantial differences remain, especially in South Asia, the Middle East, and Sub-Saharan Africa". In line with the findings of Brummet (2008a), such differences, generally called gender inequality, would undermine the growth prospectus of these regions.

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Thus, there is a dire urge to focus on this issue and chalk out appropriate policies to enhance women's capabilities for empowering them to get the benefits of inclusive growth. This particular issue can be addressed either by bottom-up approach, or by top-down approach. While the former addresses the problem at the household level, or very local level, the latter addresses the problem at the macro level. In line with the '*trickle-down theory*', the macro level approach offers insight for policy-makers to focus on specific development targets. On the other hand, the micro level approach examines only one or the other facets of women's development or gender equality and thus, policy makers and researchers may overlook the areas of national and/or global interest. This paper chooses to adopt the macro level approach to analyse the issue. The focus is on the South Asia region of Asia-Pacific in view of the presence of substantial gender inequality in this region (Klasen & Lamanna, 2009; Rodgers & Zveglich, 2012; Stotsky *et al*. 2016). Specifically, the focus is on the South Asian Association for Regional Cooperation (SAARC) nations – Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka.

Tarique & Sultan (2006) observed that the SAARC nations lag far behind Norway, a country having ranked one in both Human Development Index and Gender Related Development Index in 2003. And, among the SAARC nations, except for Maldives and Sri Lanka, the gender inequality is relatively more in other countries (UNDP, 2012). Jayachandran (2015) provided the evidence of the presence of large degrees of gender gaps in several domains including education, health and employment in developing countries. Sengupta (2015) also reported that the gender inequality remains a serious issue in South Asia, particularly in the SAARC region. Although SAARC and UN Women[1] signed a MoU to work together towards gender equality, gender justice and empowerment of women, women's advancement in all the SAARC countries is a dire necessity.

It is not that South Asian women have not excelled in different fields as producers, reproducers and community leaders at national as well as international levels, but the opportunities afforded to them for their own progress and development are yet to go many miles. The lives of the majority of women of the SAARC region are grounded in poverty and controlled by patriarchy which has made them deprived multi-dimensionally. Precisely, they are lagging behind in terms of education, health, and labour force participation among other socio-economic deprivations. The women in the SAARC region are relatively less literate, have less access to healthcare services, less likely to enjoy civil, political and legal equality with men, less participation in employment opportunities, and less exposure to the benefits of socio-economic securities (SAARC & UNIFEM, 2007). Even in recent years the situation has not changed a lot. The important gender-based indicators for the SAARC nations are presented in Table-1 for the year 2014 and/ or 2015.

It is clear from the table that gender disparity persists in terms of literacy in SAARC nations in 2015. But the most important observation is that such disparity is very low among the youngest age groups, and is absent in certain countries like Bangladesh, Maldives and Sri Lanka. However, the gap widens with age. The disparity in terms of adult literacy rate is quite pronounced except for Maldives and Sri Lanka. It is heartening to note that the female life expectancy at birth has surpassed that of male in all SAARC nations in 2014. But the women's health and nutrition as measured by the proxy of Maternal Mortality Ratio for the year 2015 is quite discouraging in all SAARC countries except for Maldives and Sri Lanka. The factors that contribute to lower health outcomes for women in this region may include their low status, low education levels, and female shame about the body and reproductive functions (ETC, 2013). It is also quite discouraging to notice that a vast gender gap persists in employment opportunities and labour force participation in the SAARC region in the year 2014. The larger gaps are seen in Bangladesh, Pakistan and India. The possible reasons may be the larger size of informal economy, wage gaps, employers' biases, women's weak bargaining power, limited access to skill acquisition, lack of proper training, safe and affordable public transport, inadequate working conditions, household constraints, cultural norms, and others (ENERGIA, 2015). In terms of political opportunities, it is observed from Table-1 that there is high degree of disparity in women's participation in the political leadership and decision making across SAARC countries. All these substantiate the gravity of the issue of gender inequality in the region. Thus, the obvious questions that often strike our minds are: does this gender disparity incur additional consequences for the society as a whole? Does it hurt real economic growth in the long-run?

Table-1: Gender Inequality Indicators in SAARC Nations

Country	Afghanistan	Bangladesh	Bhutan	India	Maldives	Nepal	Pakistan	Sri Lanka
Literacy and Women's Education								
Literacy Rate, Adult Female (% of female ages 15 and above) - 2015	23.87	58.31	55.11	62.98	98.85	54.75	42.72	91.71
Literacy Rate, Adult Male (% of Male ages 15 and above) - 2015	51.47	64.64	71.14	80.93	99.79	75.80	69.57	93.61
Literacy Rate, Youth Female (% of female ages 15-24) - 2015	46.10	85.86	90.44	87.25	99.51	87.41	66.79	99.16
Literacy Rate, Youth Male (% of Male ages 15-24) - 2015	69.42	80.62	93.56	91.83	100	92.58	80.23	98.36
Women's Health and Nutrition								
Life Expectancy at Birth, Female (Years) - 2014	61.61	72.91	69.73	69.49	77.78	71.06	67.15	78.25
Life Expectancy at Birth, Male (Years) - 2014	59.19	70.40	69.22	66.60	75.81	68.21	65.26	71.51
Sex Ratio at Birth (male births per female births)-2014	1.06	1.05	1.04	1.11	1.10	1.07	1.09	1.04

Maternal Mortality Ratio (Modelled estimate, per 100,000 live births)-2015	396	176	148	174	68	258	178	30
Employment Opportunities and Labour Force Participation								
Labour Force, Female (% of Total Labour Force) - 2014	16.05	40.41	41.47	24.17	42.48	50.85	22.26	33.53
Labour Force, Male (% of Total Labour Force) - 2014	83.95	59.59	58.53	75.83	57.52	49.15	77.74	66.47
Labour Force Participation Rate, Female (% of female population ages 15+)(modelled ILO estimates) - 2014	15.90	57.60	66.90	27.00	56.60	79.90	24.80	35.10
Labour Force Participation Rate, Male (% of Male population ages 15+)(modelled ILO estimates) - 2014	79.30	84.00	77.60	79.90	77.80	87.00	83.00	76.20
Political Opportunity								
Proportion of Seats held by women in national parliaments (% of total in the last election) - 2014	27.70	20.00	8.50	12.00	5.90	29.60	20.60	5.80

Source: Compiled from the Gender Statistics, World Bank database

It has been argued in the development literature that greater degrees of gender inequality in an economy can have negative outcomes for its sustainable inclusive growth (Araar & Timothy, 2006; Klasen, 2003; Knowles *et al*. 2002; Esteve-Volart, 2000; Tzannatos, 1999). World Bank (2011b) aptly remarked that "greater gender equality can enhance productivity, improve development outcomes for the next generation, and make institutions more representative". The reduced disparities between male and female in education, health, employment opportunities can directly improve economic growth by contributing to productivity in an economy by utilizing the skills of women in productive activities (Dollar & Gatti, 1999; Klasen, 2002; Klasen & Lammana, 2008, World Bank, 2011a).

In view of the perceived as well as observed negative impacts of gender inequality on macroeconomic growth, and of the presence of relatively larger degrees of gender disparities in the SAARC region, this paper is an attempt to investigate the dynamics of the relationship between gender equality and real economic growth in the context of this region. Specifically, the objectives are two-fold: (i) to examine the trends in gender parity indicators in the SAARC nations; and (ii) to investigate the effects of gender equality on the long-run real economic growth of SAARC economies.

The rest of the paper is organised as follows: Section 2 makes a review of the extant theoretical as well as empirical literature on the possible linkages between gender equality/inequality and economic growth; section 3 makes a note of the data and methodology section 4 examines the trends in gender parity indicators in the context of SAARC nations; section 5 explores the effects of gender equality on the real economic growth of SAARC economies; section 6 makes a discussion of the results; and section 7 concludes.

Literature Review

There exists a wide range of studies concerning the nature, causes, and policies of gender inequality in the development literature. And, all these in some way or the other emphasize on the necessity of gender equality. Gender equality may be understood as all human beings, regardless of sex, have equal rights, responsibilities and opportunities in life and enjoy equality in law and in fact in both the public and private sphere[2]. It requires that the different needs, priorities, circumstances, and aspirations of women and men be considered, valued and favoured equally. In the literature, gender equality has been considered as an important pillar for the holistic development of a nation (Sajid, 2014) and thus, gender inequality has been argued to have negative impacts on economic growth (Dollar & Gatti, 1999).

Jayachandran (2015) argued that gender inequality favouring male populace in the spheres of education, health, labour force participation and in other areas are systematically larger in poor economies than in rich economies. Kiriti & Tisdel (2003) provides the evidence of the existence of disparities between men and women in the areas of equal rights and opportunities. Dollar & Gatti (1999) also added that the status of women is vulnerable relative to men in developing countries. After the claim of Sen (1990) about missing 100 million women worldwide on the basis of social exclusion and inequality, Klasen & Wink (2002) observed that the number of missing women has increased during 1991 and 2000. Such gender inequality has taken a toll in terms of poverty and consequential low degrees of human development (Kiriti & Tisdell, 2003). Timothy & Adeoti (2006) provides the evidence that gender disparity in employment has negative effects on productive efficiency of an economy.

In view of the likely efficiency losses due to gender inequalities, several studies have been conducted over time and space to examine the relationship between gender disparity and economic growth at the macro level. There exist two different strands of literature concerning this relationship. One group of argument is that economic growth has effects on gender inequality while the second school of thought is that gender inequality has effects on the economic growth.

Boserup (1970) argued that in the initial stages, economic growth is always characterized by a growing gender inequality, which only begins to decline once economies develop beyond a certain threshold. Forsythe *et al*. (2000) considered that gender inequalities are likely to decline with industrialization or economic growth. Economic development reduces the disadvantages faced by women, especially in educational attainment, life expectancy, and labour force participation

(World Bank, 2011b). Economic development brings higher incomes and improved service delivery, which helps reducing gender gaps in educational attainment, health outcomes, and employment. The World Bank (2001) report however, concludes that growth alone does not deliver the desired results with respect to gender equality, and that it may be necessary not only to reform legal and economic institutions, but also to take active measures to correct the gender gaps in access and control of resources or political voice. Duflo (2010) argued that "economic development alone is insufficient to ensure significant progress in important dimensions of women's empowerment (particularly, decision-making ability in the face of persistent stereotype)" and that "to bring about equality between men and women it will be necessary to take policy action that favour women at the expense of men, and it will be necessary to do that for a long time". Similarly, Cuberes & Teignier (2014) argued that the economic growth can promote gender equality only when policy makers intervene to reduce gender gaps by promoting greater education among women, providing better healthcare services for women, eliminating distortions in labour markets, and altering property laws.

Gender disparity has negetive effects on the real economic growth of a nation. Dollar & Gatti (1999) found that gender inequality in education negatively affects economic growth. Klasen (1999) and King *et al*. (2007) show that gender inequality in education is found to have negative effects on economic growth, since this inequality reduces the average amount of human capital with the extension of girls who are competent at the level of educational opportunities. The World Bank (2001) report states that gender inequality not only reduces the well-being of women, but also reduces that of men and children and hinders economic development. Blackden *et al*. (2006) opined that gender inequality affects economic growth because it has a negative impact on asset accumulation and factor productivity. Some other authors, like Sen (1990) and Klasen & Wink (2002), add that gaps in gender employment and earnings also decrease the bargaining power of women at home, which may lead to lower investments in children's education and health which in turn affect human capital formation for long-run economic growth. Boschini (2003) showed that the presence of gender stereotypes reduces skill acquisition, technological change, and economic growth. Stotsky (2006) adds that gender differences in behaviour may influence aggregate consumption, savings, and therefore, macroeconomic performance.

Esteve-Volart (2009) presents another channel through which gender discrimination hinders economic development, namely the reduction of available talent in the economy and the distortion on the allocation of talent across occupations. According to her analysis, if women are excluded from managerial positions, equilibrium wages and human capital investment for both male and female workers are reduced and the average talent of managers is lower. Lower talent then leads to less innovation and technology adoption. On the other hand, if women are completely excluded from the labour force, they can only engage in home production, which leads to lower aggregate productivity and lower GDP per capita. Klasen & Lamanna (2009) confirmed the substantial negative effect of gender gaps on growth as found in the earlier literature. This study specifically found that countries with wider gender differences in labor force participation rates grow more slowly. Karoui & Feki (2015) found the evidence of negative and significant relationship between gender inequality and economic growth.

It is, thus, inferred that gender disparities in various spheres such as education, health and employment have detrimental effects on economic growth. In other words, promoting gender parity through appropriate policy measures can positively contribute to long-run economic growth. Therefore, the issue is whether or not gender equality has any effect on growth in the long-run. Hence, this paper proceeds to explore the possible long-run relationship between gender parity and economic growth in the context of SAARC economies.

Data and Methodology

In line with the objectives of the study, the sample period spans from 1990 to 2014. This period is deliberately chosen on the basis of the availability of data for the SAARC nations, and so as to include the period of globalization. The data sources include Gender Statistics and World Development Indicators provided by World Bank. The methodology of this study is outlined below in terms of the objectives specified in section-1 above.

The first objective of trend analysis has been complied by examining the trends in gender equality indicators in education, health, economic/employment and political dimensions. The gender parity indicator in education dimension is chosen to be female-male ratio of gross primary school enrolment; in health dimension is female-male ratio of life expectancy at birth; and in the economic/ employment dimension are the female-male ratio of labour force participation rate, and the female-male ratio of unemployment. Besides, the women advancement indicators included are maternal mortality rate in the human capital dimension, and proportion of seats held by women in national parliaments in the political dimension. For all the above mentioned gender related indicators, we first find female to male ratios except for maternal mortality rate and proportion of seats held by women in national parliaments. The female to male ratio is a key to indicate the progress in gender equality. If this ratio is 1, then it indicates equal status of women and men; greater than 1 means women's empowerment relative to that of men; and smaller than 1 means women's deprivation in the society. Then, we calculated five-year averages as data set is not continuous over the sample period. The cases where data are available for only a portion of the five years, we generate the average from the years for which the data were available. At last, time series plots have been created to observe and compare the trends in gender equality indicators across SAARC economies.

The second objective of impact analysis has been complied by examining the effects of gender equality on the real economic growth of SAARC economies over the sample period from 1990 to 2014. Since gender is a multidimensional term, we have tried to incorporate gender equality that is observed in education, health and employment in our analysis. We have considered these three dimensions of gender equality because of availability of data so as to form a balanced panel of eight countries over the sample period. The dependent variable in the analysis is the natural logarithm of real GDP per capita (*gdp*). The explanatory variables are female-male ratio of gross primary school enrolment (*PSE*), female-male ratio of life expectancy at birth (*LEB*), and female-male ratio of labour force participation rate at ages 15-64 (*LFPR*). These ratios indicate female attainments compared to that of male. Thus, these are nothing but the indicators of both gender equality and inequality. If these ratios tend to 1 or 100%, then there would be no gender disparity; women and men would have an equal opportunity to be advanced. Now, in order to estimate the long-run effect of explanatory variables on the dependent variable, we have applied panel Autoregressive Distributed Lag (P-ARDL) model based on Pooled Mean Group (PMG) estimators of Pesaran *et al*. (1999). According Pesaran & Shin (1999), panel ARDL model can be applied even if the variables follow different orders of integration, i.e. I(0) and I(1) or a mixture of both. Since in ARDL model, no variable should be integrated of order two, we have to check the order of integration of all the variables of our study. For this purpose, we used Levin *et al*. (2002), Im *et al*. (2003), ADF-Fisher and PP-Fisher (Maddala & Wu, 1999; Choi, 2001) unit roots test. In this panel ARDL estimation, it is assumed that both the dependent variable and the regressors have the same number of lags in each cross-section ($p = q = r = s$). The PMG based panel ARDL model takes the cointegration form of the simple ARDL model and adapts it for a panel setting by allowing the intercepts, short-run coefficients and cointegrating terms to differ across cross-sections. Specifically, the PMG based panel ARDL model can be stated as follows:

$$\Delta gdp_{it} = \phi_i EC_{it} + \sum_{j=1}^{p-1} \lambda_{ij} \Delta gdp_{i,t-j} + \sum_{j=0}^{q-1} \beta_{1ij} \Delta PSE_{i,t-j} + \sum_{j=0}^{r-1} \beta_{2ij} \Delta LEB_{i,t-j} + \sum_{j=0}^{s-1} \beta_{3ij} \Delta LFPR_{i,t-j} + \varepsilon_{it}$$

Here, is the error correction term which represents deviations from long-run equilibrium that is corrected gradually through a series of partial short-run adjustments. The coefficient of this term ϕ_i is expected to be negative sign with statistical significance under the assumption of bringing back the variables to the long-run equilibrium. This coefficient indicates the speed of adjustment of any disequilibrium in the model from the short-run towards a long-run equilibrium state.

Trends in Gender Equality and Women's Advancement

The review of related literature indicates that the trends in gender parity indicators point toward improvement in education, health, economic opportunities and political empowerment. But the most important observation by some recent studies that such progress in gender related progress across the world is quite uneven (United Nations, 2015; Stotsky *et al*. 2016). Thus, further study is warranted on this matter. Therefore, this section highlights the trends in individual gender equality indicators concerning education, health and economic/employment and political opportunities. In line with the extant literature, we assume that women's advancement in access to education and health status and an ability to participate in the labour market as well as in political decision making are important indicators of gender equality in developing countries, and thus relevant to SAARC economies.

Education: It is hypothesized that primary education lays the foundation for better higher education and thus, ultimately contributes to inclusive growth of a nation. So, we use gross primary enrolment rate as a measure of the capability of boys and girls to acquire an education. The trends of female to male ratio of gross primary school enrolment over the period from 1990 to 2014 for SAARC countries show that all countries depict an increase in the female to male ratio over this period. It suggests a progress in equalizing female and male access to primary education. Specifically, the equalization on an average has been achieved in Bangladesh, Bhutan, India and Nepal. Rest of the countries shows a satisfactory trend pattern.

Health: It is one of the important factors that affect human capital. Maternal ill health reduces educational attainments of women, harms children's health, well-being and educational opportunities, and also adversely affects skill acquisition and productive capacity of women. For health, we use life expectancy at birth as it is one of the most widely used summary indicators of health status and captures many variables that affect health and well-being. Furthermore, since our focus is on less developed nations, we also use maternal mortality rate. It is a key indicator of women's advancement and well-being, even though no comparison of women and men is possible.

As regards the trends in the female to male ratio of life expectancy at birth over the period from 1990-2014 for SAARC countries. All the countries show a ratio above one, reflecting that the natural life expectancy for females exceeds males. Again, this plot shows a consistent increase in the gender ratio relating life expectancy in SAARC region over time. It is well accepted that the degree to which life expectancy would increase more or less depends on the degree to which maternal mortality is reduced. Thus, examining the trend in maternal mortality rate is important. The trends in maternal mortality ratios from 1990-2014 for SAARC countries also show that all the countries in the region achieved a decline in maternal mortality. This on the one hand indicates improvements in healthcare facilities, and on the other hand indicates women's advancements.

Labour Force Participation: Female labour force participation constitutes an important factor of economic development because it is a driver of growth, and therefore, higher female-male ratio of labour force participation rate indicates the potential for a country to growth rapidly. It is well established that improving gender equality makes labour markets work better. Klasen & Lamanna (2008) observed that gender gaps in employment seem to explain a large extent of the growth differential between regions over time.

Thus, to capture trends in economic/employment opportunity, we use labour force participation rate as it reflects women's economic role and has been a focus of policymakers. Another useful sex-disaggregated variable that we use is unemployment. This variable is especially significant for less developed economies. The trends in economic/employment opportunity measured by the female to male ratio of labour force participation, among people aged 15 and older for the period from 1990-2014 for SAARC countries indicate that the ratio for Bangladesh, Bhutan, Maldives and Nepal is heading towards one, i.e., towards gender parity; but remains at low level in Afghanistan, India, Pakistan, and Sri Lanka.

The trends in economic opportunity measured by the female to male ratio of labour force participation, among people aged 15-64 for the period from 1990-2014 for SAARC countries point out that the ratio for Bangladesh, Bhutan, Maldives and Nepal is heading towards one, i.e., towards gender parity; but remains at low level in Afghanistan, India, Pakistan, and Sri Lanka. The trend in female to male ratio of unemployment from 1990-2014 for SAARC countries has reverse interpretation. If the ratio is greater than one, then there exists gender disparity in the labour market – means employment accessibility of women is relatively less than that of male work force. If the ratio is equal to one, then there is gender equality in the labour market. If the ratio is smaller than one, then this would mean women empowerment. It is observedh that in all countries except Nepal, the ratio is above one. It indicates that gender disparity is present in SAARC countries. Specifically, this type of gender inequality is relatively more in Maldives, Pakistan and Sri Lanka.

Women Advancement: Women advancement and empowerment is an important indicator. So we use the political indicator, i.e., the proportion of seats held by women in lower house of national parliaments so as to capture the degree of accessibility of women towards political opportunity. This indicator is significant in reflecting the status of women in society, and is considered complementary to the economic measures. The trend in the proportion of seats held by women in the lower house of national parliaments shows that all countries of the SAARC region made satisfactory progress in improving women's legislative representation except for Bhutan, Maldives and Sri Lanka where the representation remains below 10 percent.

It is learned from this section that the countries in the SAARC region are making progress in gender equality and women's development. Such progress would certainly have favourable effects on the long-run economic growth of these economies. However, in some areas such as labour force participation and political participation, the achievement is not yet satisfactory.

Impact of Gender equality on Economic Growth

It has been argued by the feminist economists that gender is an important macroeconomic variable which can influence the economic growth of a nation (Mukherjee & Mukhopadhyay, 2013). Our concern here is to show whether gender inequality has a significant effect on long-run economic growth of less developed economies. For this purpose we have taken the sample of SAARC economies and attempted to examine the said issue over the period from 1990 to 2014. And, we have used PMG based panel ARDL model for estimation purposes. This model is particularly useful when there are reasons to expect that the long-run equilibrium relationship between the variables is similar across countries under consideration. In the SAARC region, all countries are less developed, and the natural logarithm of real GDP per capita show similar growth patterns over the sample period. Furthermore, as seen from the trend analysis in the previous section, the indicators of gender equality in all countries follow almost similar pattern. Thus, we expect similar long-run equilibrium relationship between the variables across SAARC countries. This justifies the selection of PMG based panel ARDL model for analysis.

Since in panel ARDL model, no variable should be integrated of order two, we have first checked the order of integration of all the variables of our study. For this purpose, we have applied Levin, Lin & Chu, Im, Pesaran & Shin, ADF-Fisher and PP-Fisher unit roots test. The results are presented in Table-2 which indicate that *gdp* is I(1), *PSE* is I(0), *LEB* is I(0) and LFPR is also I(0). In other words, the variables are a mix of I(0) and I(1). Thus, we can estimate the PMG based panel ARDL model.

Table-2: Results of Panel Unit Root Tests

Method: Individual Effects	***gdp***	**PSE**	**LEB**	**LFPR**
Levin, Lin & Chu Unit Root Test: H_0: Unit Root/Non-Stationarity (Common Unit Root Process)				
Level Form	4.50 (1.000)	-3.24 (0.000)*	-3.473 (0.000)*	-4.14 (0.000)*
First Difference	-7.49 (0.000)*	-	-	-
Im, Pesaran & Shin Unit Root Test: H_0: Unit Root/Non-Stationarity (Individual Unit Root Process)				
Level Form	6.78 (1.000)	-1.35 (0.088)***	-2.416 (0.007)*	-1.851 (0.032)**
First Difference	-8.30 (0.000)*	-	-	-
ADF-Fisher Chi-Square Unit Root Test: H_0: Unit Root/Non-Stationarity (Individual Unit Root Process)				
Level Form	1.91 (1.000)	31.76 (0.010)*	34.82 (0.004)*	33.85 (0.005)*
First Difference	91.19 (0.000)*	-	-	-
PP-Fisher Chi-Square Unit Root Test: H_0: Unit Root/Non-Stationarity (Individual Unit Root Process)				
Level Form	1.91 (1.000)	28.39 (0.028)**	42.309 (0.000)*	17.06 (0.381)
First Difference	150.12 (0.000)*	-	-	-

*Note: Values within parentheses are p-values; *, **, *** rejection of null hypotheses at 1%, 5% and 10% levels of significance respectively*

Source: Authors' Own Estimation

Table-3: Results of Panel ARDL Model (PMG Estimates)

Dependent Variable: $\Delta(gdp)$:	**Dependent Lag**: 1	**Dynamic Regressor Lag**: 1		
Regressors	**Coefficient**	**Std. Error**	**t-statistic**	**p-value**
LONG-RUN RELATIONSHIP				
PSE	2.836456*	0.376207	7.539615	0.0000
LEB	21.00660*	2.694982	7.794708	0.0000

	2.163086*	0.791536	2.732771	0.0070
ERROR CORRECTION TERM				
ϕ	-0.085664***	0.049342	-1.736126	0.0845
SHORT-RUN RELATIONSHIP				
	-0.186562	0.148464	-1.256621	0.2108
	-45.10093	44.35876	-1.016731	0.3108
	-2.165650	2.013524	-1.075552	0.2838
	-1.523776***	0.899659	-1.693726	0.0923

*Source: Authors' Own Estimation *, **, *** rejection of null hypotheses at 1%, 5% and 10% levels of significance respectively*

The panel ARDL model having dependent variable lag of one and dynamic regressor lag of one has been selected by Akaike info criterion. The results of this model are summarized in Table-3. It is inferred that the regressors PSE, LEB and LFPR have positive and statistically significant impacts on real GDP per capita in the long-run. But, there is no evidence of any short-run relationship between them. The estimated coefficient of error correction term in the *gdp* equation is statistically significant, and has a negative sign, which confirms that there exists no problem in the long-run equilibrium relationship between the independent and dependent variables at 10% level of significance, and its relative value (-0.085) for SAARC economies shows a satisfactory rate of convergence to the equilibrium state per period.

Discussion of Findings

The finding of this paper is that reduction in gender inequality as reflected in female-male ratios concerning the gross primary school enrolment, life expectancy at birth and labour force participation rate, positively affects the long-run economic growth of economies in the SAARC region. The detailed discussion of this broad finding follows:

Gross Primary School Enrolment: The results of the panel ARDL estimation show that the female-male ratio of primary school enrolment is positive and statistically significant in the long-run at the 1% level of significance. Thus, this indicator of gender inequality has positive impact on the real economic growth of SAARC economies. On an average, 1% increase in this ratio is estimated to lead to 2.83% increase in real GDP per capita in the long-run. And, the female-male ratio of primary school enrolment will increase only when the female enrolment increases more rapidly than that of male. In other words, economic growth would be accelerated only when the society as a whole moves towards gender equality and women's advancement in terms of education. This finding corroborates to the earlier findings of Hill & King (1993), Schultz (1995), Galor & Weil (1996), Dollar & Gatti (1999), Lagerlof (2003), and Klasen & Lamanna (2009). There may be several reasons why increase in female enrolment in primary school level may ultimately contribute to higher level of economic growth. For example, Todaro & Smith (2011) argued that rising women's education reduces fertility, improves child health and nutrition, decreases maternal and adult mortality rates, and enhances labour force participation. Brummet (2008a) and Mukherjee & Mukhopadhyay (2013) pointed out that rise in the level of women's education would enhance their capacity to adopt better technology through skill development. All these will efficiently utilize economies scarce resources and contribute to long-run sustainable development.

Life Expectancy at Birth: The results of the panel ARDL estimation show that the female-male ratio of life expectancy at birth is positive and statistically significant in the long-run at the 1% level of significance. This indicator more accurately describes the human capital levels in a country and signifies the importance of health for a country to growth. Thus, this indicator of gender inequality has relatively greater positive impact on the real economic growth of SAARC economies. On an average, 1% increase in this ratio is estimated to lead to 21.00% increase in real GDP per capita in the long-run. And, the female-male ratio of life expectancy at birth will increase only when the female life expectancy at birth increases more rapidly than that of male. In other words, economic growth would be accelerated only when the society as a whole moves towards gender equality and women's advancement in terms of better health and longer healthy lives. This finding corroborates to the earlier findings of Bloom & Sachs (1998), Gallup *et al.* (1999), Bloom *et al.* (2003, 2004), and Lorentzen *et al.* (2008).

Labour Force Participation Rate: The results of the panel ARDL estimation show that the female-male ratio of labour force participation rate is positive and statistically significant in the long-run at the 1% level of significance. Thus, this indicator of gender inequality has positive impact on the real economic growth of SAARC economies. On an average, 1% increase in this ratio is estimated to lead to 2.16% increase in real GDP per capita in the long-run. And, the female-male ratio of life expectancy at birth will increase only when the female labour force participation rate increases more rapidly than that of male. In other words, economic growth would be accelerated only when the society as a whole moves towards gender equality and women's advancement in terms of better economic and employment opportunities. This finding corroborates to the earlier findings of Klasen & Lamanna (2009), and Lechman (2014). When women are able to develop their full labour market potential, there can be significant macroeconomic gains (Loko & Diouf, 2009). The employment of women on an equal basis would allow firms to make better use of the available talent pool with potential growth implications (Barsh & Yee, 2012).

Concluding Remarks

The development literature provides evidence that countries that increase women's access to education, healthcare facilities, employment and credit, and that reduce the disparities between women and men in economic opportunities, have increased the pace of economic development and poverty reduction. Thus, gender equality is an important determinant of economic growth. Gender equality in education enhances growth by increasing the amount of human capital in a society and improving the possibility of a more efficient allocation of human resources. Gender equality increases growth through increased health and education of the next generation. Reducing gender inequalities in the labour market contributes to growth. Gender equalities in the access to economic incentives, productive resources, and time raise productivity and output of the economy. Since the less developed countries face the problems of persistent gender inequalities, the growth rates of their economies have been delimited to certain extent. Thus, it is essential for them to narrow down the gender gaps in all spheres through the implementation of appropriate policy options. It is in this context, this paper is an attempt to examine the trends in indicators of gender equality and advancement of women in SAARC countries, and also to investigate the effects of gender equality on the long-run economic growth of these economies over a period from 1990 to 2014. The results of the trend analysis of gender equality specific indicators such as female-male ratios of gross primary school enrolment, life expectancy at birth, labour force participation rate, and unemployment rate provide the evidence of progress in these ratios indicating thereby the gradual movement of SAARC economies towards gender equalities. The trends in women advancement specific indicators such as maternal mortality rate and proportion of seats held by women in the national parliaments suggest for improved women advancement in SAARC economies. Especially the performance of maternal mortality rate in Maldives and Sri Lanka is noteworthy. However, there are still many miles go in the direction of gender equality in SAARC economies. Furthermore, the long-run impacts of gender parity indicators on real economic growth of SAARC countries investigated through employing Pooled Mean Group estimator based ARDL model provide the evidence of the positive and significant effects of gender parity indicators on real economic growth of SAARC nations. This finding is significant for policy makers in developing strategies and programmes favouring women assuming that educating girls is one of the most cost-effective development investments. In this direction, the policy recommendations may include focusing on reducing gender gaps in primary education, and improving female transition from school to work, improving the quality of healthcare services for women, removing women's obstacles to access labour market opportunities, eliminating gender pay gaps through appropriate wage legislations, providing maternity welfare support and childcare options. The roles of private sector, government, and non-governmental organizations for ensuring effectiveness of the implementation of gender polices is critical in attaining the ultimate growth-benefits of gender equality.

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Crimes Against Women: a Social Barrier to Economic Development

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Abstract

The focus of this paper is on rising crimes against women in Odisha and its implications. The purpose of the paper is to study (a) the trend in these crimes, (b) growth rate of crime against that of economic development and (c) make a comparative study between crimes committed by the family members with that of other categories. The paper is based on secondary data, collected from various National Crime Records Bureau Reports. The time period of the study is 15 years i.e. from 2001 to 2015. The various types of crimes studied here are: rape, kidnapping and abduction, dowry deaths, assault on women with intent to outrage her modesty, insult to the modesty of women, cruelty by husband or his relatives, importation of girls from foreign country, immoral traffic, indecent representation of women, commission of sati. Simple tools of statistics are used to comprehend the data. Ever since the beginning of this millennium many drastic steps have been taken by government towards women empowerment, but in spite of it crimes against women has gone up in India and Odisha. Women are increasingly being tortured at home and beyond. Because of the sensitivity of the subject, crimes against women are almost universally under-reported. It's more so when committed by family members. The paper is unique in the sense that it focuses a sensitive social issue i.e. increasing crimes against women in developing India and to raise public attention on it so that women empowerment would not be a just spoken word without any practical implication.

Key Words: crimes against women , domestic crime, Odisha,

Introduction

Economic development and crime have two way relationships. Criminologists say bad *economies* create more *crime.* From economic point crime can have a multi-fold impact on development. It leads to financial or physical damage and prevention costs and indirectly influences the regional and national economy of a country. According to Detotto and Otranto (2010), "crime acts like a tax on the entire economy". Crime affects economic growth, income, labor force

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participation, income spent on security measures, reallocation of resources creating uncertainty and inefficiency, Crime reduces competitiveness of companies and investments, and quality of life or human capital. Thus, crime in general must be reduced and contained. By 2000 WHO, American Medical Association, International Federation of Obstetricians and Gynecologists, and other international bodies began giving importance to elimination of violence against women as these are human rights violations. The Universal Declaration of Human Rights establishes that: All human beings are born free and equal in dignity and rights; everyone has the right to life, liberty and security of person; no one shall be subjected to torture or to cruel, inhuman or degrading treatment or punishment. Violence against women in public or private affects everyone as they are restricted from participating in societal development. Violence against women is rampant, about 35 per cent of women worldwide have experienced some kind of violence. Violence against women has been shown to reduce countries' gross national product, by *Corporate Alliance to End Partner Violence, 2005, for Atlanta*. The ranking of Indian women in economic empowerment is 0.3, where 1.0 means equality, and the World Economic Forum's Gender Gap Index Report goes on to rank India 113 out of 135 countries. According to India's 2011 census, the sex ratio was 933 females to 1,000 males.

The citizen-led nationwide protest for death penalty for convicts accused in rape and murder of Jyoti Singh (Nirbhaya), the public outcry in support of Bilkis Banu, Nayana Pujari cases and many such recent crimes against women have urged the need to study the trend of violence against women on various segments of society. The judgment upheld the death sentences of Nirbhaya's rapists and murderers whereas Mumbai High Court refused a CBI plea to hang those who were found guilty in the Bilkis Bano gang rape and murder case, and a city trial court awarded death penalty to the three accused in rape and murder of software professional Nayana Pujari. The judgments are different for each of the cases, but the crime were the same. The confirmation of capital punishment is most likely not going to end rape because of patriarchy and misogyny nature of Indian society. The apex court was right in stating that, "Certain attitudinal change and change in the mindset is needed to respect women and to ensure gender justice". To bring about a change of such magnitude, it requires pooling of resources from all corners of the society. Frequent seminars, conferences, workshops, discussions, talks, are to be arranged and organized to create awareness among mass. The present paper is one such small effort towards the issue.

Literature Survey

Studies show that 28 per cent in Tanzania (Matasha, et al, 1998) , 40 per cent in South Africa (Buga, et al, 1996) , and 7 per cent of women in New Zealand (Dickson, et al 1998) , reported that their first sexual intercourse was forced. Research also suggests that the younger a woman is at first intercourse, the more likely it is that force was used. In the New Zealand study, 25 per cent of girls reporting first sex before age 14 years stated that it had been forced (Finkelhor, 1994). Population surveys done in various counties indicate (Heise et al, 1999) the nature of assaults and the agents committing them most often by the husband, partner, family member, friend etc.

In the United States (2003) the cost of intimate partner violence exceeds $5.8 billion each year, $4.1 billion of which is for direct medical and mental health services and also victims of intimate partner violence lost almost 8 million days of paid work because of the violence perpetrated against them. This loss is the equivalent of more than 32,000 full-time jobs and almost 5.6 million days of household productivity as a result of violence. According to National Institute of Justice and the Centers of Disease Control and Prevention, USA, the crimes committed under domestic violence "required as a result of the assault, is 21.1 physical therapy visits, 5.7 nights in a hospital, 4.4 dental visits, 3.2 physician visits, 3.1 outpatient visits, 1.9 emergency room visits and 1.1 paramedic visits." Corporate Alliance to End Partner Violence, 2005, stated that 64% of victims of domestic violence indicated that their ability to work was affected by the violence. Among key causes for their decline in productivity, victims noted "distraction" (57 per cent); "fear of discovery" (45 per cent); "harassment by intimate partner at work (either by phone or in person)" (40 per cent); fear of intimate partner's unexpected visits" (34 per cent); "inability to complete assignments on time" (24 per cent); and "job loss" (21 per cent).

Objectives

The paper focused on the various types of crimes against women in Odisha. The purpose of the paper is to study:

(a) The trend in crimes against women, in Odisha

(b) Make a comparative study between crimes committed by the family members with that of other categories, and

(c) Growth rate of crime against that of economic development.

Methodology

The UN Declaration on the Elimination of Violence Against Women defines violence against women as: ". . . any act of gender-based violence that results in, or is likely to result in, physical, sexual or psychological harm or suffering to women." So 'Crimes against women' in Indian context refers to those crimes which are specifically targeted towards women. Apart from these crimes, women may be victims of many of the general crimes such as 'murder', 'robbery', 'cheating', etc. The rate of crimes committed against women is calculated using only female population based on mid-year projected female population for that year. The paper is based on secondary data, collected from various National Crime Records Bureau Reports. The time period of the study is 15 years, which is from 2001 to 2015. The various types of crimes studied here are: rape, kidnapping and abduction, dowry deaths, assault on women with intent to outrage her modesty, insult to the modesty of women, cruelty by husband or his relatives, importation of girls from foreign country, immoral traffic, indecent representation of women, commission of sati. Simple tools of statistics are used to comprehend the data.

Data Interpretation

Crime against women is increasing at increasing rate in India. According to a report by National Crime Records Bureau (NCRB, 2013), a crime against women is recorded every 1.7 minutes in India. Every 16 minutes a rape case is recorded in this country and every 4.4 minutes a girl is subjected to domestic violence. According to the data of NCRB for the year 2000-2015 combined together, UP (17.73 per cent), Maharashtra (11.39 per cent) and Andhra Pradesh (9.48 per cent) have earned the dubious distinction of leading a list of states where crime against women is high. However, considering the rate of crime committed per lakh of female population, Eastern India scored higher points.

Time to say: NO MEANS NO

Odisha is on the higher end with 3.77 per cent contribution to total national crime against women. Among all the types of crimes the cases of assault has higher frequency in Odisha (46,606 in Odisha; 82,422 at all India level) unlike cruelty by husband and his family which tops in India and second in Odisha (28,208 in Odisha; 1,13,403 at all India level). Rape ranks third in occurrence. After the 2012 Delhi gang rape, or otherwise known as *NIRVAYA, the* Juvenile Justice (Care and Protection of Children) Act, 2000, was replaced by Juvenile Justice (Care and Protection of Children) Act, 2015. The Bill permits juveniles between the ages of 16-18 years to be tried as adults for heinous offences. After the amendment not only crime against women reduced at national level but also juvenile crime showed declining tendency. But unfortunately even a brutal case like Nirvaya or a much needed and appreciated change in Act failed to have any effect on crimes in Odisha.

Latest census report on district wise distribution of ST population shows that Khond concentrate in Kandhamal, Nayagarh, Baudh and Rayagada districts. Gond concentrate in Nabarangapur, Nuapada district, Santal and Kolha in Mayurbhanj district, Munda, Saora, Shabar and Bhottada are concentrated in Sundargarh, Bargarh, Gajapati and Nabarangapur districts respectively. If these tribal districts are clubbed together then 24 per cent of cases belong to these areas in 2015. The remaining 76 per cent were from non tribal districts. But the low percentage should not be seen as a good sign as non-reporting of such incidences due to social stigma strongly exist among the tribes.

Home Sweet (?) Home

How sweet can be the 'home', for someone facing domestic violence? Domestic violence affects men, women and children of any caste, race, or religion; rich or poor; teen, adult, or elderly. But most of its victims are women. It may arise because of jealousy, desire to control, or possessiveness. Money troubles and problems with drugs or alcohol may also lead to violence. The abuser may use fear, bullying, and threats to gain power and control over the other person. The paper pools together three categories of crime against women to highlight the violence caused by family members. They are cruelty by husband or his relatives, dowry deaths and cases falling under Dowry Prohibition Act, 1961. All the three crimes show an increasing tendency over the years. But their graphs are erratic. Except for dowry related deaths, which increases at slow pace, others keep fluctuating.

Crime and Development

The economic condition of a country plays a pivotal role in increasing or decreasing crime against women (Hossain, Imam and Khair, 2001). An increase in the rate of economic growth may reduce the crimes, but as can be seen from the census reports, Odisha's GSDP has increased drastically over the decade as also the crimes rate. Research on the impact of demographic features on crime show contradicting results. Some studies showed that area's crime rate was related in a consistently positive way with the area's population size (Blau & Blau, 1982; Gibbs & Erickson, 1976; Green, Strolovitch, & Wong, 1998; Schuessler, 1962; Tarling, 1986; Watts, 1931) whereas others found small, positive correlations between population size and crime rate (O'Brien, 1983; Ogburn, 1935; Skogan, 1974; Reiman, 2001). For Odisha the increase in crime against women has been triple the rate at which the total population increased. The result is same for rise in female population. Few researchers have explored the consequences of population sex ratios on crime rate (Dyson 2012; Hesketh and Xing 2006). An area where male outnumber female, crime is bound to increase (South and Messner 2000; Steffensmeier and Allan 1996; Hudson and Den Boer 2002, 2004). There has been a slight improvement in the sex ratio, but still male outnumbers female, so does the cases of crime against women. According to World Bank portal "men who live in poverty or are socially excluded are more at risk of perpetuating violence because they can't find jobs or earn an income, which can lead to anger, frustration and violence." Odisha has been able to reduce its poverty through various schemes. It should have reduced crimes, but the results are contradictory. Even though Odisha has developed economically over the past decade, yet the positive effect that the development should cast on crimes against women is not yet visible. The crimes are increasing at a faster rate as the following table shows.

Variable	2001	2011	Growth Rate	
Nominal GSDP(Rs)	46, 756	214,583	78.21076	↑
Actual Population	36,804,660	41,974,218	12.31603	↑
Female Population	18,144,090	20,762,082	12.60949	↑
Sex Ratio	972	979	0.715015	↑
Incidence of poverty	47.15	32.6	-44.6319	↓
Female Literacy%	50.51	64.01	21.09045	↑
Crime	5357	9433	43.21001	↑

Source: Author's calculation from Census data.

Initiatives

Many global bodies have started taking steps towards eliminating violence towards women. The World Bank has made its move by taking up Great Lakes Emergency Sexual and Gender

Based Violence & Women's Health Project. In 2015, it established the WE volve Global Initiative, to identify and address factors that lead men to use violence and protect the women. In India the state governments are asked on 5th May, 2004, (File No. 15011/21/2004-SC/ST Cell) to set up 'crime against women cell' in districts where they do not exist, providing adequate counseling centers and shelter homes for women who have been victimized, setting up of special women courts, and improving effectiveness of schemes developed for the welfare and rehabilitation of women who are victimized with greater emphasis on income generation to make the women more independent and self- reliant. The government on 05 February 2013 unveiled 27 measures to prevent crime against women. Prominent among them are setting up crisis response centres in 100 districts, introducing 'Women Only' buses in cities, removing jurisdiction boundaries for police in registering criminal cases, initiate strict action against police personnel found to be either displaying bias against women or neglecting their supervisory responsibilities while registering complaints of sexual offences, nationwide three-digit number 100, 911 or 990, launching a sustained media campaign to stop negative/indecent portrayal of women in movies, TV shows and advertisements etc.

Conclusion

Crime is a social barrier to economic development. The society needs to see the bare truth and accept that using violence is not going to solve any problem. Two things that rule the mind and heart of India and can effectively change the society's perception towards any misconception are - Cricket and Bollywood. The second one has mass coverage and tremendous psychological effect, that too for a comparatively long time period. In India, the commodification of women in the media is a very common thing. If the media becomes responsible in their portrayal of women and show them in a positive and realistic light, there would not be such ripple effects in society. Cinemas like Astitva (2000), No One Killed Jessica (2011), Pink (2016) are a good initiative in this line. Not only movies, even the advertisement sector has taken risk in breaking the stereotyping of women. Havells "She isn't a kitchen appliance!", "Sorry, my hand slipped" on eve teasing by AAJ TAK news channel, "Dekh Le" by Whistling Woods International, Docomo commercial titled "Make Yourself heard with Power Recharges!", 'Atithi Devo Bhava' campaign initiated by the Union Ministry of Tourism are good examples. The country needs more such bold, innovative and mass motivating initiatives to curtail the crimes against women. Violence against women is more a psychological and social issue, than an economic problem. But that does not mean that economic factors are not responsible for the crimes. Economic betterment must be well supplemented by social and psychological changes.

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Gender Perspective of Rural Livelihood in a Backward Village of Coastal Odisha

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Abstract

A person's livelihood consists of her/his abilities, assets and activities. These are required for a means of living. A gender analysis in the context of rural livelihood enables us to identify the different activities that men and women do. This paper intends to examine the role of gender in determining livelihood aspects like occupational structure and migration, and to investigate the role played by gender in determining employment, family income, and income distribution of individuals. Based on a census of 143 households of a village from the Bhadrak district of Odisha, the study observes that gender plays a significant role in work participation, occupation, migration and earning of households.

JEL Code: D12, J16, J82

Key words: rural livelihood, gender, household income, Odisha

Introduction

The status of women is intimately connected with their economic significance, which in turn, depends upon rights, roles and opportunity for livelihood and participation in economic activities. It is noteworthy that a person's livelihood comprises the abilities, assets and activities required for a means of living (Chambers and Conway 1992). A gender analysis in the context of rural livelihood enables us to identify the different activities that men and women do. On the one hand, gender analysis can help in ensuring the provision of appropriate services that are needed by both men and women workers. And on the other, it helps us to look at how power relations within the household interrelate with the wider public domain- the community, market and institutions of the state.

Mainstreaming a gender perspective depends on strengthening gendered access to sustainable livelihood. Realising this, the Government of India in 2015, under the DAY-NRLM[4] has made

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provision for bringing at least one woman member from each identified rural poor household under the Self Help Group (SHG) network in a time bound manner. Special emphasis is laid on the vulnerable communities. NRLM follows a demand driven strategy, the states have the flexibility to develop their livelihoods-based perspective plans and annual action plans for poverty reduction. It is noteworthy that Odisha, which is considered as backward, was the first state in the country to launch NRLM in its bid to bring down rural poverty by promoting diversified and gainful self-employment for the rural poor. In addition, the Government of Odisha has come out with a State Policy for Girls and Women in 2014 to ensure an enabling environment for equal opportunities.

The union government as well as the state government do run a good number of schemes like Indira Gandhi Matritva Sahyog Yojana, Conditional Maternity Benefit Plan, Sabla, Rashtriya Mahila Kosh, Mamata, etc. targeting the weaker section among women. In the existing welfare schemes also, women get certain extra attention. For example, the Mahatma Gandhi National Rural Employment Guarantee Act, 2005 guarantees 100 days of employment on a rural public works project to a member of rural households. The stipulation makes it mandatory that one third of the workers are women, which was not the case in any government-run scheme hitherto. However, questions arise that, despite implementation of all such schemes, has the ground reality witnessed any transformation? Is there any gender parity in economic participation especially in rural areas, where women have been historically voiceless? An investigation on the crucial issue of gender aspect of livelihood is therefore imperative.

The present paper attempts to analyse the livelihood related aspects like occupation structure, migration and income distribution between male and female. The following null hypotheses are examined in a village level study.

H_1. The occupation structure is independent of gender. In other words, there is no gender asymmetry in work participation in agriculture and non-farm activities.

H_2. Migration is independent of gender. That is, men and women do migrate equally.

H_3. The distribution of income is same across different categories of gender, and

H_4. Gender related variables play no role in determining the family income.

The paper is organised as follows. Section II presents a review of the relevant literature. Data and methods are outlined in Section III. The results of the study are discussed in Section IV, and Section V summarises.

Review of Literature

Studies on gender and rural livelihood mainly focus either on the macro level policy and institutions or the micro level (household level) analyses. While there is increased data on women's condition, there is still a lack of data required for sophisticated analysis of the changes in gender relations within the household (Agarwal 1994).

[4]*DAY-NRLM stands for Deendayal Antyodaya Yojana-National Rural Livelihood Mission. This is the new incarnation of the NRLM whose genesis is in the erstwhile Swarnajayanti Swarozgar Yojana, 1999, a flagship programme of the Ministry of Rural Development, Government of India.*

In recent years feminists have pointed out realities of poor women that have been researched focusing on women being able to earn and control their income/assets, and women's individualized welfare (Vera-Sanso 2009). Women's direct access to, and ownership of, land in India is affected by gender-bias inheritance laws, customary practices and land policies. Women mainly access and use agricultural land as sharecroppers, labourers, or de facto household heads due to male migration. In South Asia, about three to 10 per cent of the rural women own the land that they cultivate (Kelkar and Nathan 2005).

Ownership of land or formal land rights is critical for the rural poor since ownership or formal rights provides access to key markets and nonmarket institutions such as community power structures. Moreover, formal claims increase women's bargaining power within the household and increase household welfare (World Bank *et al.,* 2008). An inverse relationship exists between women's property ownership and domestic violence against women (UNRISD 2005). Agarwal's (1994) study conducted on 500 households in Kerala showed that only seven percent of women owning land and house reported experiencing violence compared to 49 percent in India.

Livelihood strategies are influenced by 'access to and control over assets, access to markets, information and organization, effective management of vulnerability and the interaction of these policies at the global, national and local levels' (World Bank *et al.,* 2008). A gender lens requires a focus on the following factors: a) assets (social, financial, human, physical, natural); b) markets; c) risk and vulnerability; and d) knowledge, information and organizations (World Bank *et al.,* 2008). Some of these are marked by gendered access, control, participation and/or have a gender differentiated impact. This is a useful framework for incorporating gender. However, this was developed to analyze gender issues in the agriculture sector. This needs to be modified if other relevant bodies of literature such as those on formal sector employment/labour markets need to be incorporated in this discussion.

In recent years, there has been focus on how migration affects household structure and the nature of the gender division of labour, etc. (Kabeer 2007). At the household level, men and women have different access to and control over land, monetary resources, own labour and labour of other household members. All of these influence the choice of work, the nature of engagement at the market and at community levels. Their access to and participation in labour markets is also different given the role they play within the household, social norms on mobility, gender segregation of occupation, etc.

According to Doane (2007), women prefer home-based work as it allows for flexibility to do reproductive work. An income and social hierarchy exists among informal workers, and the home-based workers are at the bottom of this hierarchy. They are not covered by social protection laws and are considered as supplementary earners. Their fall-back position is weak, as there is limited demand for their products, and they are vulnerable to market shocks. In rigid forms of patriarchal regions, such as South Asia, women home-based workers have limited access to raw materials, capital and market information. These barriers lead to production of low quality products (ibid).

The gender dimensions of rural livelihoods across different regions are diverse and complex. It is difficult to draw conclusions about existing and emerging trends. There is also no established synchrony in micro and macro level studies. When some literature is available on national and regional level analyses, there is very few literature on village/household level study. Insights from select rural areas which are very sluggish in responding to policy and regime changes are likely to throw some light in this complex area of research.

Data and Methods

The present paper is based on primary data collected from a village. The village Tentulia which is a medium size village in Bhandaripokhari block of Bhadrak district of Odisha was selected purposively. The village is situated at a distance of about 15 kilometres from the block headquarters. Manjuri Road is the nearby market, that too, located at a distance of about six kilometres. It is considered as a backward village in terms of income and education. However, from general conversation with different people and institutions, and personal observations, a perception developed that this is a village where participation of women in socio-cultural activities is more in comparison to its neighbouring villages, notwithstanding that economic participation is not visibly the same. This peculiarity in gender relation motivated us to take this village as a case study.

The study is done on the basis of *census* of all the households of the village. Data on different variables like livelihood, income, education, asset-base, etc. have been collected gender-wise through a structured schedule-cum-questionnaire. A pilot survey was conducted to finalise the questionnaire and the enumerators were properly trained before going for the field survey.

Per capita income has been considered as an outcome i.e. dependent variable, whereas all other variables are taken as independent variables. Per capita monthly family income (PCI) family size (FS), gender ratio (GR) i.e. female to male ration, overage education of family members (AE), average age of family members (AA), migration status (MGN), migration dummy (MGD), women income dummy (WID) and women education dummy (WED) are taken as the variables in the study. For MGN, the values are 0 - no migration, 1 - commuting within 20kms, and 3 - outmigration; for MGD, 1 if MGN = 3, 0 otherwise; for WID, 1 if a women has visible contribution to family income, 0 otherwise; and WED, 1 if a woman has education matriculation and above, 0 otherwise.

The variables are considered as the candidate variables. However, their final inclusion in the model is decided on the basis of regression through backward elimination. A linear multiple regression is attempted thereafter. The statistical software SPSS has been used for data analysis. The results have been analysed through simple statistical tools like cross tabulations, nonparametric tests and regression analysis. Chi-square test and likelihood ratio test are used to examine H1, H2 and H3, whereas multiple regression is attempted in order to test H4. The method of regression through backward elimination is used for selection of the variables. The final selection of the model was on the basis of adjusted R^2. In order to understand the relative importance of different gender related variables on per capita family income, the technique of categorical regression is used.

Results and Discussion

Demographic and Socioeconomic Status

According to Census 2011, the total geographical area of the village is 76 hectares. It had a total population of 610 people, out of which 310 were male and 300 female. However, as per census done by the present study in October 2015, total population has increased to 682, out of which 355 are male and 327 are female. The total number of households has increased from 129 (Census 2011) to 143 when this survey was conducted. The population in the age group 0-6 was 69 in 2011, which has decreased to 53 in 2015. This indicates that couples' adoption of voluntary family planning is on the rise. The child sex ratio[5] has, however, increased from 81.58 to 96.3 during the period of comparison. Improvement in child sex ratio indicates reduction in biasness against girls. In response to the question as to, whether they will look for the third child since they are yet to be blessed with a son, some respondent couples replied in the negative categorically. Rising cost of rearing a child was cited as the most important reason for their family planning decision.

The study observes that the child sex ratio of the Scheduled Caste people which was over 1000 in 2011, has fallen alarmingly to 864, much below the national and state figures. For the other categories, it has improved from 921 to 994. It is difficult to attempt any possible explanation within the framework of the present analysis. It is noticed that about 67 percent people are in the age group 16-59 which is the major source of supply of labour force in the village. However, it will be a major point to understand whether or not women who constitute about 48 percent of this age group are actually contributing to their family income!

As per Census 2011, the literacy rate of Tentulia village was 88.54 per cent compared to 72.87 per cent of Odisha. However, a more insightful attempt is made in this study to know what is actually the average education of the family members. The average years of schooling of the adult members above 15 years of age is estimated at 8 years and it seems to be a normal distribution with arithmetic mean around 8 years.

Out of the 143 households surveyed, the study observed existence of only seven *pucca* (good) houses in the village, four out of which were supported by *Indira Awas Yojna*, 13 houses were semi-pucca and the rest of the houses were *kutcha* houses. Only four households have latrine of any kind. The practice of open defecation is massive despite the fact that 73 percent households have at least one cell phone available in the family.

As regards drinking water, people basically use tube well available either in their premises or arranged from neighbouring households. For fuel, most of the households depend on crop residues and cow-dung. Only one household had an LPG connection at home. There was no use of biogas in any household. But the picture was a bit encouraging regarding use of electricity. Almost all the houses, whether they are officially consumers or not, are availing electricity for lighting. But in response to the question whether they have electric fans at home, only 26

[5] *Child sex ratio is defined as the number of girls per 100 boys in the age group 0-6 year.*

households said yes. In the time of power cut, which is a regular phenomenon in the locality, they use kerosene lamps. Some households also use kerosene for fuel purposes in rainy days. Thirty one percent households in the surveyed village have Television at home but only eight households (about 5.6 percent of the total household) are owning a two-wheeler.

Gender and Rural Livelihood

At the outset the paper makes an effort to identify the sources of livelihood, and analyse the gendered access to and control over assets, which determine livelihood status in the study area. Surprisingly, not a single plot of land in the village is recorded in the name of a woman. However, there has been a spurt in the bank account which is basically motivated to get some benefits from government schemes.

The gender aspect of livelihood and its link with occupation structure, migration, and income of the household are examined in this sectiion.

Gender and Occupation Structure

A six fold classification of occupations has been made viz.

a) Unemployed: anybody in the age group 15-65 who looks for an employment but has not got availed it; (b) Farmers: who devote more than 50 percent of working hours for cultivation in own as well as hired-in land and all cultivators; (c) Labourers: agricultural labourers who work in others' field; (d) Rural non-farm workers: rural small businesses and other forms of self-employment in nonfarm activities of the likes of insurance agents, artists, mechanics, independent contractors, blacksmiths, carpentry, masonry, migrant workers in industries involving non-manual work etc. involving both self employed and wage employed; and (e) Government Servants: people engaged in regular or contractual government jobs including retirement pensioners (not old-age pensioners).

All people below 15 years and elderly people above 65 are excluded from the labour force in the investigation. In addition, students above 15 years of age and housewives who are not looking for any kind of job are also excluded from this classification. The gender-wise classification in the village is presented in Table-1.

Table-1: Gender-wise Occupation Structure

Occupation	Sex		Total
	Female	Male	
Unemployed	82	48	130
Farmers	2	71	73
Labourers	2	47	49
Nonfarm Workers	5	68	73
Total	91	234	325

Source: Compiled from primary data with help of SPSS

The study finds a staggering reality that as many as 36 percent of housewives are willing to work in some gainful sectors along with their housekeeping activities but they are unable to get any opportunity. Poverty, lack of access to institutional credit, and marketing risks were cited as reasons for non-initiating a venture at home. On enquiry regarding the opportunity provided by MNREGA, some of the respondents said it is difficult to work away from home that too for consecutive hours. Similarly 48 out of 234 male were unemployed. This population largely comprises youth who have just completed education and are looking for job.

It is noticeable from the table that out of total 73 farmers only two are women. Similarly only two women are doing labour work. It was quite insightful to know that despite poverty why don't women work as wage labourers? It is observed that the villagers consider it as an insult if women are required to work in others' field. Rather they prefer to accept poverty. As far as government job is considered, in the entire village only five people are either government servants or pensioners. Lack of essential qualification is mainly responsible for getting a job in government sector. Literacy rate is actually a deceitful indicator of education. Despite a very high percent of literacy (88 percent), just 1.5 percent of the work force is employed in government job. Even the very few youth who are recently graduated do not seem to prepare for job owing to lack of self-confidence. The highest number of people are engaged in agriculture either as farmers or as agricultural labourers. Out of 193 employed people, 120 people, basically men, are engaged in agriculture: 73 are farmers and 48 are labourers, whereas 73 people are engaged in non-farm activities.

Test of H_1: *That, the occupation structure is independent of gender.*

Applying chi-square test, and likelihood ratio tests to verify H_1, the results obtained are presented in Table-2:

Table-2: Chi-Square Test for H_1

	Value	Df	p-value (2-sided)
Pearson Chi-Square	132.549[a]	3	.000
Likelihood Ratio	142.692	3	.000
N of Valid Cases	323		

Source: Primary Data

a.0 cells (0.0%) have expected count less than 5. The minimum expected count is 13.72.

The p-values in both the tests confirm the decision in favour of rejecting H_1. The finding is that the occupation structure is not independent of gender. If the person is a women, she is likely to be unemployed given the conditions of the surveyed village.

Gender and Migration

The gendered analysis on migration is detailed in large literature. The present study examines this issue by the individual level disaggregated data from the surveyed village. The study could not find even one instance of out-migration of women (Table-3). There was only one case of woman 'commuting within 20 kms'. So, migration in the village is absolutely a matter of interest for men only.

Table 6. Gender-wise Migration (persons)

	Values	Gender		Total
		Female	Male	
	0	90	151	241
	1	1	38	39
	2	0	15	15
	3	0	30	30
Total	91	234	325	325

Source: Compiled from primary data
Note: As per description under data and methods

Test of H_2: Migration is independent of gender, i.e. men and women do migration equally.

H_2 is tested in a similar way as H_1. The analysis rejects H_2 on the bases of Chi-square and likelihood ratio tests (Table-4). So gender plays an important role in migration which is considered as an important factor determining livelihood.

Table-4: Chi-Square Test for H_2

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	40.454[a]	3	.000
Likelihood Ratio	57.631	3	.000
N of Valid Cases	325		

a. 0 cells (12.5 per cent) have expected count less than 5. The minimum expected count is 4.20.

Gender and Income Distribution

Income is an important indicator of livelihood status. The present study has gathered information on BPL and APL status of families as per official records. However, given the fact that household income is a pooled income of both men and women, it is difficult to reflect on gender relation by analysing income distribution of households. On the contrary, disaggregated data on individual earning of family members are needed. The study has attempted to make an analysis of the distribution of income across gender on the basis of individual level data.

Test of H_3: That, the distribution of income is same across gender.

Quite similar to the way H_1 and H_2 have been tested, the null hypothesis H_3 is rejected on the basis of Chi-square and likelihood ratio test. It is noticeable that the p-value, i.e. the exact level of significance is almost 0 for both the tests. This implies there is severe skewness in the distribution of income between men and women of the village. This conclusion is also corroborated by Mann-Whitney U test result. The results are summarised in Table-5.

Table-5: Chi-Square Test for H_3

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	155.399[a]	31	.000
Likelihood Ratio	184.919	31	.000
N of Valid Cases	325		

a. 49 cells (76.6%) have expected count less than 5. The minimum expected count is .28.

If women work, they are likely to get some earning. In the surveyed village, apart from looking after the domestic cores, there was no instance of women working for any gainful employment.

Impact of Gender-related Variables on Household Income

The study has considered Gender Ratio (GR), Family Size(FS), Average Education of Family Members(AE), Average Age of Family Members(AA), Migration(MGD)[6], Women Education(WED), Women Income (WID) as exogenous variables influencing income of the family. The last three variables are taken as dummy variables, in which the presence of the character is marked as 1, otherwise 0. All these variables have gender connotations. PCI is the dependent variable. However, the decision on inclusion of these variables is taken with help of the technique of regression through backward elimination.

The results of the regression through elimination is presented in Table-6.

Table-6: Model Summary of Backward Regression

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.661[a]	.437	.407	823.518	1.854
2	**.660[b]**	**.436**	**.411**	**821.380**	**1.863**
3	.654[c]	.428	.407	823.928	1.867
4	.647[d]	.418	.401	827.931	1.894
5	.640[e]	.409	.396	831.230	1.874

a. Predictors: (Constant), AE, MGD, FS, GR, WID, AA, WED
b. Predictors: (Constant), AE,MGD, GR, WID, AA, WED
c. Predictors: (Constant), AE, MGD, WID, AA, WED
d. Predictors: (Constant), MGD, WID, AA, WED
e. Predictors: (Constant), MGD, WID, WED
f. Dependent Variable: PCI

[6] MGD=1, if there is an out-migration by any adult family member, 0,-otherwise. So, only the code 3 for MGN in Table 1 is labeled as 1.

On the basis of the adjusted R-square as reflected in the technique of 'regression by elimination', the paper has finalised the Model 2 for the analysis. Consequently, AE, MGD, GR, WID, AA and WED are taken as the predictors for the dependent variable PCI. The Durbin-Watson d-test confirms that there is no autocorrelation problem in the model. The model is also tested for possible multicollinearity. The TOL score confirms that multicollinearity is not actually a problem in this model. The R-square value of the final model shows that about 44 percent variation in income of households is explained by the six regressors collectively, which is significant at one percent level. The p-value of F, is about 0.(Table-7).

Table-7: ANOVA Results

	Sum of Squares	df	Mean Square	F	Sig.2
Regression	68362688.460	6	11393781.410	16.407	.000[b]
Residual	94446109.610	136	694456.688		
Total	162808798.070	142			

Dependent Variable: PCI

Predictors: (Constant), AE, MGD, GR, WID, AA, WED

The regression coefficients are presented in Table-8.

Table-8: Regression Coefficients

Regressor	Unstandardized Coefficients		t	p-values
	B	Std. Error		
(Constant)	344.75	367.084	.939	.349
AA	12.83	7.603	1.688	.094
WID	3164.05	444.720	7.115	.000
GR	-1.14	.839	-1.358	.177
MGD	791.73	186.924	4.236	.000
WED	332.41	167.396	1.986	.049
AE	46.43	28.191	1.647	.102

Source: Analysed from Primary data

Test of H_4: That, gender related variables play no role in determining the family income.

The overall impact is shown by the F-value stated in Table-7. The F-value is 16.407, which is highly significant. The impact of the individual variables on PCI is shown in Table-8. Except for the regression coefficient of PCI on GR, all other coefficients are positive, but the coefficients in relation to women income, women employment, and migration contributes significantly to monthly per capita family income. Thus the null hypothesis H_4 is summarily rejected. The conclusion is that gender plays a significant role in raising per capita family income. If women are educated, they start earning and they are not biased against migration, family income increase significantly. This is very much analogous to the expected line. Despite that, it is startling that the dynamics of power relations and attitude towards work in rural areas are not changing significantly.

Relative Importance

The paper examines the relative importance of the chosen regressors by running a categorical regression. The results are as follows:

The sum of the weights(w) is unity, out of which WID alone carries about 66 percent weight. This means that the monthly per capita family income increases significantly if women do engage in some gainful employment (Table-9). The correlation coefficient between PCI and WID is the highest in the entire correlation matrix. It is noticeable that female-male ratio in a household (GR) has negative correlation with monthly family per capita income (PCI). However it is not significant. GR has also received the least importance for determining PCI. This observation has a substantial bearing on the traditional mindset that male is the 'bread earner' which has been an important basis of gender discrimination through centuries.

Table-9: Correlations and Tolerance

	Correlations			Importance	Tolerance	
	Zero-Order	Partial	Part	(w)	After Transformation	Before Transformation
AA	.164	.191	.153	.067	.955	.927
WID	.508	.523	.482	.657	.953	.917
GR	-.085	-.084	-.066	.015	.983	.984
MGD	.219	.258	.210	.123	.959	.959
WED	.257	.152	.121	.086	.900	.806
AE	.200	.118	.093	.052	.894	.745

Dependent Variable: PCI

Categorical regression is run by grouping method

These conclusions are in line with changing perceptions towards gender in the modern perspective. The present study gives an empirical foundation to such perceptions.

Summary and Conclusion

The status of women basically depends upon rights, roles and opportunity for their participation in economic activities. Governments across countries and states have also implemented a good number of schemes. However, the question is, if implementation of all such schemes has brought a change in the ground reality? Is there any gender parity in economic participation especially in rural areas, where women have been historically voiceless? This study has been undertaken under this backdrop

The main findings of the study are as follows:

1. Neither a single house nor a single plot of land is registered in the name of women. In the absence of ownership, women as a lot are deprived from formal credit which necessitates mortgaging of some valued asset. This may be a reason why no formal credit, sans a few from the village SHG, was found in the name of any woman of the village. This is even more disappointing than the observation of Kelkar and Nathan (2005) that 'women own about 10 percent of assets in south Asia'. This is considered uneven in view of women constituting about fifty percent of the population of the village.

2. The study finds a staggering reality that as many as 42 percent of rural women are willing to work in some gainful sectors along with their housekeeping but over 90 percent of them are unemployed. Poverty, lack of technical know-how, access to institutional credit, and marketing risks were cited as reasons for non-initiating a venture at home. On enquiry regarding the opportunity provided by MNREGA, some of the respondents said it is difficult to work away from home that too for consecutive hours.

3. The work participation rate of women is very low. Only two out of 73 farmers are women. Similarly only two women are doing wage labour work. Despite poverty, women do not like to work as labourers. Their families also consider it as shameful if women are required to work in others' field. Rather they prefer to accept poverty.

4. In case of male the highest number of people are engaged agriculture either as farmers or as agricultural labourers. Private non-manual job is also an important sector in the occupation structure of the village. About 26 percent workers are in private non-manual job. However, participation of women in any occupation is staggeringly low. It follows that, gender is an important determinant of occupation structure, migration, distribtion of income and family income.

Policy Suggestions

On the basis of the above analysis, the study make the following three suggestions.

1. In order to break the patriarchal form of gender relation, there is a need for change in the property inheritance so that gender access to assets can be fair.

2. Women have very low access to institutional credit. Banks and other financial institutions cannot be compelled to extend loan to them due to their market considerations. However, there is a possible way out, that is, interest rate of loan from SHGs can be minimised so that micro enterprises through women entrepreneurship develops.

3. Since women do not prefer migration and wage employment, efforts should be made to promote self-employment where men and women can complement and supplement one another. Self employment sector can survive and prosper only with proper skill development measures and market development. Initiatives like Skill India Mission need to focus and specially target rural people especially women.

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Gender Digital Divide in Odisha

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Abstract

Gender Development used in the restrictive sense (male/female) symbolizes development of the capabilities of each gender. An improvement of capability entails increase in efficiency and reduction in inequalities. Evaluation of inequalities between men and women is well-researched from several fronts i.e. health, education, intake of food and other commodities etc. But an area seriously overlooked in India and more appropriately in Odisha, is the alarming gender digital divide which has serious consequences on socio-economic and political life. The study is an attempt to analyze the status of digital inclusion of Indian women in respect of global status and Odisha with regard to national status by considering the parameters of internet penetration, access to social net-working sites and ownership of mobile phones. It is high time the government takes genuine efforts in creation of sex-disaggregated district-level data and include it in Gender Budget Statement(GBS){a part of Gender Responsive Budgeting (GRB)}and thereby focus on eradicating this gender digital divide failing which "women empowerment "will be a misnomer!

Keywords:-Capability Approach, Gender Digital Divide, Women Empowerment

Introduction

"Gender Equality, does not imply all women and men must be same. Instead it entails equipping both with equal access to capabilities; so that they have the freedom to choose opportunities that improve their lives. It means that women have equal access to resources and rights as men, and vice versa." (2010, UNDP)

Economic development is no longer defined on the basis of 'economic prosperity' alone but also has to incorporate the richness of human life (quality of life) which is a matter of great complexity. The approach, popularly known in economic literature as "Sen's capability approach" sees human life as a set of "doings and beings" –we may call them as "functionings" and it relates to capability of a function.

A functioning is an achievement of a person what he or she manages to do or to be and reflects the state of a person, but capability of a person reflects various combinations of functioning (doings or beings), he and she can achieve. In other words capability reflects a person's freedom to choose between different ways of living-well captured by Marx's claim, what we need is –

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"replacing the dominions of circumstances and chance over individuals by the dominions of individualsover chance and circumstances."

Hence the dominion of individuals over "chance and circumstances' can be evaluated on the assessment of efficiency as well as inequality.

1 Efficiency is determined in terms of Pareto Optimality Criterion". A situation is Pareto efficient if and only if there is no alternative feasible solution in which someone is better off and no one worse off."

2 The usual inequality measures found in empirical literature concentrate on income and wealth inequality but to assess the quality of life, an evaluation of information more closely related to living standards is also essential.

One field of particular interest is to assess the gender inequalities (analysis restricted to male-female only) that exist between men and women in terms of food consumption, health care, education, literacy, job prospect etc. Researches concerned with these areas are galore. But one important inequality emerging in this area is the "unequal access of female to information technology and gadgets etc. which badly affects their capabilities to involve in production activities, institution building, family and social transformation, decision making process, political representation, entrepreneurship and leadership talents and so on.

This paper highlights the gender digital divide in international, national and state level (Odisha) and tries to identify some explanation and suggest some measures to overcome it. The paper is organized in four sections. Section 1 discusses concept and measurement of digital divide. Section 2 analyses status of gender digital divide. Section 3 deals with consequences of gender digital divide. Section-4 concludes with some policy suggestions.

I. Concept and measurement of digital divide

Digital divide and empirical contents of its components has been worked upon by various economists (Norris-2001, Cooper-2002, Chen and Wellman-2004) and the term refers to "A market gap in access to use of ICT devices". According to Compainie – "the digital divide refers to the perceived gap between those who have access to latest information technologies and those who do not". Such gaps have narrowed in some cases, even reversed over time but other disparities in their places have arisen, for example Television sets are more evenly distributed than 3G mobiles but multiple divides in access to latest technological gadgets have cropped up within countries, within regions, between men and women, young and old, rural and urban etc. While the main cause is disparities of income and wealth leading to it, in some instances like in India it is the conservative, patriarchal society that has encouraged the great gender digital divide.

Hanimann and Ruedin (2007) talks of "digital divide" under three heads viz;

a) A global divide between developed and underdeveloped world, b) A social divide between different classes (information rich and information poor) and c) An upgraded digital divide (between human and technology)

This study belongs to the 2nd category i.e. a social divide between male and female and tries to assess the gap emerging in the ability, capacity and permissibility to use modern technology.

II. Status of gender digital divide

Various studies confirm (Hubermann-2001) that the problem of digital divide is starker in developing countries like India and significant still between rural and urban India (Dasgupta, 2002; Nath, 2001; Singh 2001). Major metropolises are at par with developed countries but rural areas in states like Bihar and Odisha are worse off than several of least developed countries (Singh, 2007) and when we talk of gender digital disparity, it is worse still. The problem can be better understood by considering (a) access to social-networking sites, (b) mobile phone access and (c) access to internet facility between male and females in India as well as Odisha.

A report 'Women and Mobile: A Global Opportunity' Published by GSMA(Global System Mobile Association), on their survey 'Internet Usage and SIM Ownership Gender gap in Select Countries in Asia-Pacific, 2015'revealed that 1) over 1.7 billion females in low and middle income countries do not own a mobile phone. 2) women on average are 14 per cent more likely to own a phone and in South Asia 38 per cent are less likely to own a phone, and 3) Even if they own a mobile phone there is a great gender gap seen in mobile usage. Cost remains the greatest barrier to their usage as they are less financially independent than men, a phenomena prevalent worldwide. Security and Harassment, technical illiteracy and social norms also act as barriers to their ownership. A further revelation is that among women, mobile phone owners who reported never sending an SMS, India stood first (55 per cent), both from poorer households (69 per cent) and richer households (44 per cent).

State wise also in India regional disparities were traced i.e. states with low penetration of Face book (Social Networking site) among women were Bihar, Gujarat, Rajasthan (1 female per 4 males) whereas for states like Mizoram the gap narrows down to 1 female per 1.37 males. Moreover the survey found a negative correlation between Face book penetration and gender gap ratio, e.g. Mizoram and Sikkim had smallest gender gap ratio but high Face book penetration (23 per centper cent).The study concluded with the remarks- "With a population of over 1.3 billion and a gender gap of 36 per cent, the second highest of our focus countries, India has an estimated 114 million fewer women than men owning a mobile phone. Bridging the ownership gap should be made a priority and represents significant revenue opportunity……." Similarly, the IAMAI (Internet and Mobile Association of India) in its report "Internet in India, 2015" also revealed similar findings regarding access to Internet. When it comes to accessibility of Internet men account for 71 per cent and women 29% in India, the Gap is slightly lower in urban India men (62 per cent) and women (38 per cent) but quite stark for rural areas, men (88 per cent) and women (12 per cent).

State wise Internet penetration

According the IAMAI Report, India has second largest number of internet users, followed by China but in terms of penetration its position was 144th in 2014.i.e in India the penetration was 27 per cent while China (51 per cent) and U.S.A 87 per cent are having high penetration.

State wise also there was wide disparity regarding Internet penetration, Four northern states (Haryana, Punjab, Jammu and Kashmir, Himachal Pradesh) have highest penetration, where people like to keep in touch with their family members living abroad online or by video-chat and in the southern states (Kerala, Tamilnadu), where literacy rates are higher, online job-portals and education related searches were rampant. But states like Bihar (9%), Odisha (10%), West Bengal (11%) and Assam (12%) have low internet penetration.

The data given above show a huge gender gap in ownership of mobile phones as well as accessing in of internet through mobiles.

Statewise gender gap in mobile phone ownership

Data about usage of information technology and electronic gadgets are difficult to obtain for India and even more difficult for Odisha. However, an applied research for digital financial inclusion published by Financial Inclusion Insights (FII) conducted by Inter Media during October 2013 to January 2014 comprising 45,000 Indian adults aged 15 and above interested in tracing the financial behaviors revealed some interesting findings. The study intended to find out access to mobile gadgets, mobile money and digital literacy. Though the FII surveys selected sample population from different states on the basis of their total population and urban-rural divide, the socio-economic differences were not taken into account. Still then it can be considered as a good representation of the country's population. Data are given in Table-1.

Table-1: Gender Breakdown by mobile phone ownership in urban and rural India

Above poverty line	Urban	Male	91
		Female	63
	Rural	Male	86
		Female	47
Below poverty line	Urban	Male	75
		Female	41
	Rural	Male	61
		Female	23

Source:-FII Tracker Surveys 2013-14

Note: Figure are in percentages

The table clearly indicates existence of male dominance over mobile phone ownership both in richer as well as poorer sections as well as urban and rural areas. State-wise data are presented in Table-2.

Table-2:-Gender gap in mobile phone ownership across states

States	Male	Female	Gender-gap
Rajasthan	72	24	48
U.P	65	23	42
Jharkhand	56	21	35
Bihar	61	29	31
Odisha	**50**	**24**	**26**
Kerala	87	64	23
H.P	94	76	18

Source: FII tracker surveys, 2013-14 *Note: Figure are in percentages*

The survey categorises the states into three viz;

Category-1: High rates of mobile ownership and large gender gap:-Himachal Pradesh, Goa, Delhi, Kerala, Haryana, Tamil Nadu. Category-2: Moderate ownership and large gender gap:-Karnataka, North-eastern states, Punjab, Maharashtra etc.

Though much data about the status of Odisha could not be gathered, the 1690 sample population data surveyed by FII Tracker surveys is a clear indication that compared to other states, Odisha is a state which belongs to the lowest rung in terms of internet penetration and low rate of mobile phone ownership and a large gender digital divide, which is a factor contributing highly towards its underdevelopment status.

III. Consequences of such Gender Digital Divide

In this age of information access to internet and mobile phones and interlinking oneself with social networking sites may serve as a tool to eradicate gender inequality and promote empowerment. Access to digitization entails benefits in the form of improved job prospects, improved health-care services, increased skill development, improvement in agricultural productivity, contacts with family and friends etc., Due to the emergence of electronic gadgets the entire world has transformed into a global village.

Nowadays, smart phones have become a necessity to have access to online- banking, order train tickets, interact with government, get news immediately and many of the works can be handled by the tip of the finger. Offline options require freedom of movement not available for many women and can now be considered sheer wastage of time and energy involved in travelling, standing in queues and filling up forms. Cell phones would boost safety and security of girls and women as they might have effective communication during danger. The Commissionerate of police in different metropolis including Bhubaneswar and Cuttack (Odisha) also have adopted safety applications in whatsapp and otherwise which pressed upon would send danger signals to friends, family and the police.

Many MNCs have started offering leverage of performing office works sitting at home online. In countries like India, where women perform multitasks i.e. working at offices and simultaneously doing households works like cooking, looking after small children and old persons this would serve as a much needed boost to the economy as more and more women could enter the workforce. GSMA estimates that if women owned as many phones as men did, it could mean an additional $30 billion increase in revenue for phone companies around the world and $3.5 billion for India alone.

Women, the manager of the households, used to keep/hide a few currencies for the rainy days of the family. The recent move of Indian Government to demonetize high denominations currencies (Rs1000/Rs 500) on November 8th, 2016 snatched their long preserved wealth. In such a situation the sops offered by the Government for cashless/digital transactions would largely benefit the males (like concession in POL, train travel etc., automobile ownership is predominantly male), thanks to the skewness as shown by the data. Online banking, sitting at the home, would definitely benefit the women, but going by the statistics of India, it seems a far-fetched dream, and if we consider Odisha it appears even impossible in the near future.

III. Conclusion and Policy Prescriptions

The above analysis of facts clearly highlight the trend that gender digital divide is a worldwide phenomena and is of serious dimensions in countries like India and has assumed dangerous dimensions in states like Odisha. Though empirical analysis could not be done within different districts of Odisha due to non-availability of Sex-disaggregated data, but absolute figures of inter-state comparison reveal the pathetic position with regard to Internet penetration and mobile phone ownership divide between male and females.

To reduce gender inequality, the orientation of the government has changed from welfare-based approach to empowerment approach. And as a response to these challenges, India and a few states (including Odisha) have already adopted Gender Responsive Budgeting (GRB) with 100 per cent women centric schemes. Odisha has announced in budget (2016-17) incorporation of Gender Budget Statement (GBS).But in the absence of sex-disaggregated data at district level regarding the digital inclusion of women the term "women empowerment" seems to be a misnomer. It is high time the Government realize and evolve some kind of Gender Digital Empowerment ratio and gather and process data district-wise and incorporate this ratio while focusing on gender- development schemes for the states and evaluate women empowerment in the true sense.

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Socio-economic Causes of falling Child Sex Ratio in Odisha: An Exploration

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Abstract

Odisha, once known for its high sex ratio, is experiencing fall in the sex ratio and especially the child sex ratio (CSR). Some of its districts are in the 100 least CSR districts of India in 2011 census. This paper analyses fall in CSR of the districts from 2001 to 2011. In a socio-economic framework it tries to explore the causes of the fall in CSR. Falling worth of woman in terms of work-participation and the decline in fertility are found as the important factors responsible for the low CSR. Effective policy measures are essential to raise female participation and her empowerment.

Introduction

Falling child sex ratio (CSR) in the country and the states is a matter of serious concern. While right to life and right to equality of opportunity are the fundamental rights, they are denied to the girl child who, in spite of having good disease resistance power, fails to survive and dies a premature death due to the negligence and/or elimination by the parents. Such fall in CSR has serious implications on women trafficking, crime against women, violence, and social imbalance. Hence, the need for its control is essential. The policy makers have designed gender friendly policies to protect the girl child. Researchers have tried to find out the reasons/root causes of such low CSR. They reveal that economic transformation (Boserup, 1970;1975), mechanization of farming and the change in the cropping pattern, reduction of the worth of female, growth of formal insurance mechanism and the decline in the benefits of having more children, fall in the desired number of children arising from the rise in the cost of rearing children, rise in the marriage and ancillary cost under patriarchal family system have resulted in the fall in the CSR.

Odisha, rich in natural resources but poor in gross state domestic product (GSDP), high in the poverty ratio, high in the proportion of scheduled caste (SC) and scheduled tribe (ST) population is experiencing a fall in the CSR (from 967 in 1991 to 953 in 2001 and again to 941in 2011). Few

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decades back, this state enjoyed the recognition of gender friendly state with sex ratio above 1000. But in 2011 census in one of its district, (i.e. Nayagarh[3]) is among the 100 districts in the country with lowest CSR. It is a state where mortality rates are high; in fact it is one of the top states in infant mortality and child mortality. Only a few studies are conducted to explore the reasons of the fall in the CSR. This paper is an exploratory study in this regard.

The paper is designed as follows: It shows the falling CSR in the state over time. Instead of taking the overall data of the state, it uses the district level data to show difference in the CSR in different pockets and identify the problem pockets. It tries to explore whether there is any contiguity of such phenomenon. Then using the findings from available literature from other parts of the country it attempts to examine the validity of such reasons for the falling CSR in Odisha. Further, using the secondary data the problem is examined in terms of a model. Some suggestion for improvement of the situation are given at the end.

While there were only five (again contiguous) districts with CSR below 960 in 1991, it increased to 13 in 2001 and 17 in 2011. The latest census reveals that as high as 11 districts have CSR lower than 935, all these districts are contiguous, some of them are in central Odisha and others belong to the coastal region. In 2001 census only five districts, i.e. Nayagarh, Dhenkanal, Jagatsingpur Khorda, and Puri had CSR below 935. Districts like Cuttack, Ganjam, Kendrapada, Jajpur, even Angul, Debagarh are added to this list.

From a summary picture given in Table-1, it may be seen that Nayagarh is the worst district and Nabarangapur is the best district in CSR in both the censuses. Top five and bottom five districts in CSR in 2001 and 2011 are presented in Table-1. The best districts are from the under-developed, tribal dominated region of the western and southern parts of Odisha. The worst are from coastal and central Odisha; these are also the relatively developed districts. It is also noticed that among the three districts, viz. Angul, Dhenkanal and Nayagarh the ratio has fallen below 900, undoubtedly a serious problem.

Table-1: Top Five best and Worst Districts in CSR in 2001 and 2011

2011 census				2001 Census			
Bottom-5 Districts		**Top-5 Districts**		**Bottom-5 Districts**		**Top-5 Districts**	
Nayagarh	857	Boudh	979	Nayagarh	905.4	Malkangiri	982.5
Dhenkanal	876.7	Nuapada	982.9	Dhenkanal	926.3	Rayagada	984
Angul	898.4	Koraput	983.9	Jagatsingpur	927.6	Kalahandi	984.5
Ganjam	907.3	Malkangiri	994.9	Khorda	931.3	Koraput	986.8
Cuttack	918.9	Nabarangpur	999.1	Puri	932.2	Nabarangpur	1000

Source: Primary Census Abstract of Odisha, 2001 &2011.

3 *Nayagarh town, the district headquarter was in the news when hundreds of female foetus found dumped in an isolated pit at its outskirt in July, 2007 (see Female Foeticide rampant in Orissa's Nayagarh District available at http://hotnhitnews.com/female_foeticide_in_Orissa.htm).*

Data relating to fall in CSR during 2001-2011 is shown in Table-2. Fall in the CSR is substantial in Dhenkanal (49.60) which is marginally higher than that of Nayagarh (48.40) during the last decade. Angul district has experienced sharp fall in CSR (43.10). Even an under-developed district, Kalahandi has experienced a fall of 25.10. As high as 14 districts have experienced fall more than 10.00. Nine districts have experienced rise in CSR (some have experienced marginal rise of course). The districts that have experienced substantial rise in CSR are Nuapada (13.80), Malkangiri (12.40), Boudh (10.90), and Kendujhar (9.90). All these are tribal dominated and under-developed districts. Of course, Keonjhar is now experiencing some degree of transformation due to mining activities. However, Jagatsingpur, a developed district has improved its CSR from 927.60 to 932.60.

Table-2: Fall in CSR during 2001-11

District	Change	District	Change	District	Change
Nuapada	13.8	Jharsuguda	-0.1	Subarnapur	-14.5
Malkangiri	12.4	Baleshwar	-0.8	Sundargarh	-15.8
Boudh	10.9	Nabarangpur	-0.9	Rayagada	-17.7
Kendujhar	9.9	Koraput	-2.9	Cuttack	-19.8
Mayurbhanj	6.6	Kandhamal	-6.6	Kalahandi	-25.1
Gajapati	5.6	Khorda	-6.9	Debagarh	-29.2
Jagatsingpur	5	Balangir	-10.5	Ganjam	-35.9
Bhadrak	1.1	Jajpur	-11.3	Angul	-43.1
Bargarh	0.6	Sambalpur	-12.1	Nayagarh	-48.4
Puri	0.6	Kendrapada	-13.5	Dhenkanal	-49.6

Note: - indicates fall

Causes of Low CSR

CSR states the number of females per 1000 male in the age group of 0-6. This number is the outcome of number of births during last six years and the survival of these children. Both positively affect CSR. The relevant variable for analysis are the sex ratio at birth (SRB) and survival rate of male and female children of this age group. A high SRB would yield a high CSR and a higher survival rate of girl child also would result in a higher CSR. Since the 1980s, works like Rosenzweig and Schultz (1982) have examined the sex specific survival rates of children in India using the intra-family resource distribution (which is influenced by difference in adult earnings of male and female). In general SRB is less than 1000. Here the probability rule of statistics does not apply; rather the natural rule of the biological kingdom applies (the more vulnerable a specie is the more is its number of birth). As female specie is more resistant to disease the number of male child per 1000 female is found to be 1011-12; giving rise to the sex ratio to 988-989. If the SRB is less than this then something wrong/mischievous act may be presumed which is already stated by Jha *et. al.,* (2006) who from a (Fertility, mortality survey) study in 1998 found the adjusted sex ratio (ASR) at second birth when the preceding child was a girl as low as 759 and for the third birth as 719 when two previous children were girls. By contrast the ASR for the second and third births if the previous child/children were boys were 1102 and 1176 respectively. The prenatal sex determination with subsequent sex selective abortion of female fetuses might be the most plausible explanation of the low SRB in India (Jha *et. al.,* 2006). Based on NFHS (I and II) data Retherford and Roy (2003) have also found fall in SRB over time and with increase in the birth order of the children. It also found lower SRB in Punjab and Haryana as compared to the rest of India. In Odisha such types of studies are found. Mishra (2010) has shown very low SRB of children. Using the census data (2001) he presents the SRB of the children taking the birth order of the child. For the first two birth orders the SRB was far less than 800, even in case of third birth order SRB is quite low. Only from fourth birth order, there is normal or high order SRB. Even if all birth order children's cases are taken together, it will be less than 845 as number of children in the high birth order is low and these occur to households who do not consider children as liability and the households where female also participates in the economic activity and thus a female child is not considered as unwanted. The rich and educated households plan their optimum number (mostly to 2) of children and also their gender composition. The result is SRB is 777 and 743 for first and second order births (Mishra, 2010). The situation in 2011 would not be better; rather its chance to be worse is quite high with rise in the number of health clinics.

The difference in the survival rate[4] of the male and female child in the state is not high, it is only 8. The district wise difference is shown in Table-3. There is higher survival rate of male child and it is more in the coastal and developed districts. But these differences in survival are not so high to make the high CSR, rather the very low SRBs especially in the first and second order births appear to cause such a low CSR. Economic growth and increase in the health clinics in the towns might have caused the sex detection and elimination of female child before its birth causing the sharp fall in the SRB. Thus, it may be stated that the unnatural low SRB may be the outcome of the intervention of the parents with the help of health personnel.

Table-3: District-Wise Difference in Sex-wise Difference in Survival Rate (SDSR)

Sl.No	District	SDSR	Sl.No	District	SDSR	Sl.No	District	SDSR
1	Sambalpur	-1	11	Koraput	3	21	Baleshwar	12
2	Nabarangpur	-1	12	Kendujhar	4	22	Ganjam	12
3	Gajapati	-1	13	Kalahandi	4	23	Cuttack	12
4	Bargarh	0	14	Subarnapur	5	24	Jagatsingpur	12
5	Boudh	1	15	Mayurbhanj	6	25	Dhenkanal	13
6	Jharsuguda	1	16	Sundargarh	6	26	Khordha	14
7	Nuapada	1	17	Malkangiri	8	27	Nayagarh	15
8	Balangir	2	18	Debagarh	9	28	Jajapur	17
9	Rayagada	2	19	Kendrapada	10	29	Anugul	17
10	Kandhamal	3	20	Puri	11	30	Bhadrak	19

Source: Adopted from Mishra, D. (2010)

4 *Survival rate of say a male (female) is the number male children survived per 1000 male (female) born. Difference is obtained by deducting female survival rate from the male survival rate.*

Following the news of large number of female foetus dumping in a pit in Nayagarh in 2007, the Health Department became active and inspected the health clinics of the towns of Odisha[5]. In 2012-13, as many as 35 clinics were inspected by the Health Department teams to enquire the practice of sex detection and female foeticide and 22 of them were sealed while cases were registered against 13 (PTI)[6]. Female foeticide is high in as many as 13 districts of Odisha (Jena, 2008).

The possibility of female foeticide and the possible economic rationality of such interventionis explored. Based on available literature, the reasons of abortion of female foetus may be attributed to (a) decline in fertility (Leibenstein, 1957, 1974; Becker, 1960, 1965, Mincer, 1967; Smith *et. al.,* 2008); (b) persistence of patriarchy (Miller, 1981; Das Gupta, 1987; Malhotra *et al.,* 1995 George, 1997; Arnold *et. al.,* 1998; Basu, 1999; Das Gupta *et al.,* 2003; Srinivasan, 2005; Larsen *et al.,* 2008; Sekhar and Hatti, 2010); and (c) availability of affordable and safe technology for sex detection and foeticide (Chhabra, 1996; Ganatara, 2000; Arnold *et al.,* 2002; Bandeswar, 2003; Visaria, 2007; Sangeri, 2012; Bhalotra *et al.,* 2016).

CSR in Odisha - Some explanations of fertility decline

In the post-independence period, Odisha has also experienced rise in industrialization, urbanization and rural-urban migration. This has resulted in the societal transformation like break down of the joint family system when young couples have moved to the urban areas with their children for their better livelihood and children's education. To the nuclear families assistance during child birth/care by the extended family members is less. This is required more when mother also works. Availability of reliable and efficient cares for this work through market has not developed yet. Mothers have to take long leave or have to withdraw from work to rear the child as child care is the responsibility of the mother. Government jobs provide some days of leaves for this purpose and in some of these jobs the working hours are somewhat compatible to care work. But in the private sector employments the worker is subject to higher risk of losing the job. In the post reform period the state has experienced more transformation: more urbanization, prominence of the private sector in the manufacturing and service sector. The distance between the residence and work place has increased increasing the travel time. Travel time and working hours together constitute a long hour, even stretching to the evening, making quality child-care very difficult. Thus, opportunity cost of child care becomes very high and encourages fertility decline.

Economic transformation is requiring skilled labour where females are unable to get employment as families have not invested in them adequately compared to the investment in their brothers. Some skilled women are also withdrawing themselves from work voluntarily or as compulsion to perform their gender role of care work. Examples of women IT professionals withdrawing

5 *http://www.frontline.in/static/html/fl2415/stories/20070810503402700.htm*

6 *http://www.thehindu.com/todays-paper/tp-national/tp-otherstates/state-steps-up-efforts-to-check-female-foeticide/article5091841.ece*

from jobs (after their child birth) are not rare. Thus, lack of investment in girls and assignment of household care work exclude girls from participating in the economic development, thus reducing their relative worth.

Rapid growth of manufacturing and service sector of this state in the post reform period attracts people to shift to these occupations from farming. Decline in the profit from agriculture due to the labour problem and fall in the demand for rice (arising from change indietary pattern, MGNREGA and PDS rice at Rs one as cited by farmers) is pushing farmers away from cultivation. Farming in general, as an occupation is not a choice but a compulsion now, opine many farmers in Odisha. Parents no more aspire that their children would be farmers, rather they invest in them heavily so that they will switch over to the service sector. Growth of a number of technical institutions in the state which are providing market oriented education (of course with high cost) provides the scope for that. But the high cost of such facilities forces parents to reduce the number of children as with more number of children this is not affordable.

Rise in the wage rate[7] and the non-availability of labour for agriculture has forced farmers to invest in machines like tractor etc. Even the small farmers are using the machine on lease. This mechanization in farming has reduced the demand for labour in agriculture. The labour households desire that their children will work in the urban or semi-urban areas and in the non-agricultural sector. The landless or small land holders who consider cultivation (may be through leasing in other's land) as a better occupation also are influenced by the Government's incentive measures to reduce fertility. They are also influenced by the fertility behavior of upper caste/rich households in their area who try to reduce fertility owing to the high cost of market oriented education which they want for their children.

Economic transformation has not only raised the cost of (desired) education but also the health care cost. People are now interested for good health care. The number of private nursing homes and hospitals has increased exponentially where health care cost is very high. The cost of delivery care in such institutions is as high as Rs.20000 for even the normal delivery cases. Non-availability of maternity/paternity benefits makes the prenatal, delivery care and post-natal care costs high. Even government provided facilities under national health mission (NHM) are available up to the second child. All these factors encourage fertility decline.

Children are no longer considered as insurance against old age, especially in the rich households where even sons are not expected to stay with the parents; they are cherished to stay abroad or at least in the metropolitan cities. Children find it difficult to keep the parents with them in such places, especially when females are also working outside home. Parents desire to stay (with the servants independently) in their own places or at best in good places, but separately and independently. Rise in the old-age homes, care houses, even costly flats in Bhubaneswar (where NRIs want to keep their parents) are the proof of this.

7 MGNREGA has a positive role (on equity ground), in raising the wage rate of the casual labourers.

Progress in literacy and education along with the economic development has not been able to change the patriarchal son preference. Marriage cost is rising in the state day by day. With new facilities, new costs are added; video recording, use of D.J. are some of the examples. The procession cost of the groom will be borne by bride's family. Further drain of wealth (in the form of gift) after marriage to the groom's family is higher in the coastal districts than others. Such expenditure, once incurred to make a show off the status of the family ultimately reduces its status, especially when parents sell assets or borrow heavily to meet such expense. This in turn makes the daughter a burden for the family, which increases family liability and hence, are considered as unwanted.

Rise in the crime against women especially in the urban areas is increasing the risk of girl's vulnerability and their parents' worry. Concern is more when loss is amplified through social pressure. Woman's and her family's honour is at stake when she is harassed/raped. There is no such stigma for the culprit. Parents do not have a culture of teaching sons to restrain from harassing girls, but definitely have a culture of teaching girls to avoid such unwanted occurrences. Hence, parents prefer a male child; a daughter is not wanted. The feeling of 'girls as unwanted' of course is in higher degree in the coastal and central region. Contiguous nature of the districts with low CSR also indicates the impact of culture.

Socio-economic cost of (unwanted) girls influence the parents to get rid of them. Economic development and growing urbanization has created more facilities of health care and sex detection of fetus in the state. Economics of abortion for parents and health personnel together eliminate the girl fetus. This is the story of Nayagarh, Dhenkanal, Kendrapara, Ganjam districts where CSR is substantially low.

The Model

From the above discussion we find two factors, fertility decline and the lower worth of woman reflected through the high marriage cost, are important in making daughters unwanted which is actualized through the medical practitioners. However, it is difficult to model the role of the health personnel in the inter-district study. Using data from the Primary Census Abstract of 2001 and 2011 census. We compute the number of children (0-6) in the district per household in each district area computed. This is taken as a proxy measure of fertility of the district is designated as children per household (CPH). Lower the CPH, lower is the fertility of the district. Female's work participation ratio (FWPR) is taken as a proxy of female's worth; high FWPR means high worth of female and so on. The model is expressed as:

$$CSR = \alpha + b_1 FWPR + b_2 CPH + e$$

Where, e is the error term.

However, before doing the regression analysis, an attempt is made to see the association of these variables with CSR. For 2001 and 2011 the values of correlation coefficients are given in Table- 4 (a) and (b) which shows that they are significantly associated. The degree of association of CPH with CSR has increased from 2001 to 2011.

Table-4: Correlation coefficient (r) of CSR with female work Participation ratio and family size

(a) 2001 census data				
		CSR01	FWPR01	CPH01
CSR01	Pearson Correlation	1	0.837071**	0.456589*
	Sig. (2-tailed)	8.16E-09	0.011204	
(b) 2011 census data				
		CSR11	FWPR11	CPH 11
CSR11	Pearson Correlation	1	0.684468**	0.606128**
	Sig. (2-tailed)	3.03E-05	0.000385	

** Correlation is significant at the 0.05 level (2-tailed). ** Correlation is significant at the 0.01 level (2-tailed).*

The regression results are presented in Table-5 (a) and (b) which show that in 2011 if FWPR rises by 1, the CSR rises by 1.142; and a one point decline in CPH reduces the CSR by 1.092. If we compare these two censuses we find higher value of constant (a) in 2001compared to 2011, implying the rise in the importance of these variables in affecting CSR.

Table-5: Regression Coefficients of CSR

(a) 2001 census data

	Unstandardized Coefficients	Std. Error	Standardized Coefficients	t	Sig.
(Constant)	908.4045	22.62651		40.14779	1.30E-25
FWPR01	1.232606	0.183593	0.807303	6.7138	3.30E-07
AHS01	0.175175	0.346998	0.060703	0.50483	0.617774
Dependent Variable: CSR01; Adj R^2=0.682					

(b) 2011 census data

	Unstandardized Coefficients	Std. Error	Standardized Coefficients	t	Sig.
(Constant)	848.8981	24.62745		34.46959	7.37E-24
FWPR11	1.141793	0.349901	0.503887	3.26319	0.002986
AHS11	1.092185	0.507509	0.33231	2.152051	0.040495
Dependent Variable: CSR11; Adj R^2=0.513					

Secondly, it is also found that coefficient of CPH has increased substantially during this period, indicating the increased role of fertility decline on the fall in CSR. The coefficient of FWPR in both census is higher compared to CPH (means its higher importance), though the coefficient value has declined over time, implying that its relative importance has declined while CPH is becoming relatively more important.

Conclusion

Our model predicts further fall in CSR in future as Odisha is experiencing economic growth and progress in literacy and education. Economic development will be accompanied by the rise in dowry and inflated marriage expense to show off the status. With fall in fertility (due to market factors as well as the Government incentives) will influence the parents to go for opting the desired (male) child. Strict policy measures to check foeticide will fail to prevent it as it happened in other parts of the country as long as patriarchal attitude of son preference is not given up. Hence, comprehensive measures are required to improve the worth of girl child (may be through more reservation for women in jobs and other high yielding activities). This may gradually lead to improvement of the situation.

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Appendix

A Table-1: District-wise survival rate of Male and Female with Female Literacy and Work Participation rate

Sl.No	Area Name	Male survival Rate	Female survival rate	SDSR	Female literacy rate	Female work participation rate
	Odisha	857	849	8	50.51	24.66
1	Bargarh	874	874	0	50.26	31.26
2	Jharsuguda	891	890	1	58.48	22.64
3	Sambalpur	867	868	-1	55.16	35.64
4	Debagarh	839	829	9	47.18	38.57
5	Sundargarh	880	874	6	53.88	28.88
6	Kendujhar	861	857	4	46.22	28.05
7	Mayurbhanj	896	890	6	37.84	39.88
8	Baleshwar	858	846	12	58.9	11.44
9	Bhadrak	847	827	19	62.85	8.65
10	Kendrapara	841	831	10	66.76	9.99
11	Jagatsinghapur	865	853	12	69.28	11.49
12	Cuttack	848	837	12	66.9	13.76
13	Jajapur	857	840	17	60.76	6.83
14	Dhenkanal	844	831	13	57.89	15.1
15	Anugul	872	854	17	55.37	26.65
16	Nayagarh	851	836	15	57.64	11.01
17	Khordha	875	861	14	70.36	8.81
18	Puri	852	841	11	67.57	7.66
19	Ganjam	859	847	12	46.44	30.91
20	Gajapati	820	822	-1	28.42	49.72
21	Kandhamal	800	803	-3	35.86	42.19
22	Baudh	842	841	1	39.02	35.54
23	Sonapur	870	865	5	46.17	32.75
24	Balangir	861	859	2	39.51	28.39
25	Nuapada	843	842	1	25.79	36.79
26	Kalahandi	830	834	-4	29.28	35.85
27	Rayagada	840	837	2	24.56	41.25
28	Nabarangapur	838	839	-1	20.67	42.43
29	Koraput	846	843	3	24.26	40.41
30	Malkangiri	841	833	8	20.91	42.28

Source: Adopted from Mishra, D. (2010)

Self Help Groups and Socio Economic Empowerment of Women in Keonjhar District of Odisha - A Case Study

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Abstract

In a patriarchal society like that in India gender bias against women is widespread in almost every walk of life. The major reason is being their lack of ownership over resources which makes them dependents on others stealing away the rights over opportunities and increasing the incidence of deprivation among them. Self Help Groups (SHGs) came out to be one of the important means for empowerment of poor women making them self dependent and self employed. The promotion of SHGs in India began in 1992 with the launch of SHG-Bank linkage Programme by NABARD as an active and efficient delivery system of micro credit with a broad objective of poverty alleviation through employment and income generation.

The present study covers 185 members of 37 SHGs operating in 7 different villages under Dimbo Grama Panchayat of Keonjhar district of Odisha. Using a five point scoring technique it is observed that almost all the members are of the opinion that there is an improvement in their income, expenditure and savings. They are enjoying higher status in and outside the family and now can lead a dignified, respectable life. The significance of the relationship between the members' association with the group and their views regarding the socio- economic and political impact of SHGs is tested by using x^2 test and it is found to be significant. More government intervention is necessary for better preservation and marketing of group produce so that the members can have higher income and also feel encouraged to devote more time towards these productive activities and set examples for other women in their community.

Key Words: Women, Empowerment, SHGs,

JEL: Z13. C42, J16

Introduction

The first Prime Minister of India, Pandit Jawaharlal Nehru, has once said "the women of India should play a vital role in building a strong nation. To awaken the people, it is women who must

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be awakened. Once she is on the move, the family moves, the village moves and nation moves." Such is the importance of women in the society. Since women constitute 48.46 percent of total population in India as per census 2011, it is very essential to employ this resource optimally in the interest of the nation in general and family in particular. In a patriarchal society like that in India gender bias against women is widespread in almost every walk of life. The major reason is their lack of ownership over resources which makes them dependents on others stealing away the rights over opportunities and increasing the incidence of deprivation among them.

Self Help Groups (SHGs) came out to be one of the important means for empowerment of poor women making them self dependent and self employed. The promotion of SHGs in India began in 1992 with the launch of SHG-Bank linkage Programme by NABARD as an active and efficient delivery system of micro credit with a broad objective of poverty alleviation through employment and income generation. The SHG-Bank linkage programme has significantly improved the access to financial services for the rural poor and has positive impact on the socio-economic conditions and the reduction of poverty of SHG members and their households. It has also empowered women members substantially and contributed to increased self-confidence and positive behavioural changes in the post- SHG period as compared to the pre-SHG period. (Mehta *et. al.,* 2011). In reality the women SHGs are found to be performing better as compared to men SHGs with respect to borrowing, repayment, loan utilization, investment, consumption pattern, and income and employment generation. (Nalini *et. al.,* 2013). The association of women with SHGs have benefited them economically, socially and politically. (Sahoo, 2013; Jain and Nai, 2013). The micro-finance system is playing a significant role in empowerment of women through SHGs (Borah, 2014).

SHGs have tremendous potential to empower rural poor women. They help them in utilising their small savings, leisure time to carry out productive activities that leads to increase in their income and hence promote both economic and social empowerment. It gives them a chance to actively participate in decision making both inside and outside family and lead a dignified life in the society. SHGs bring confidence among women to face the problem of poverty and develop their individual skills as well as increase their living standard and social relation which could lead to enhanced leadership qualities. Women empowerment is a process in which women challenge the existing norms and cultural rigidities to effectively promote their well-being. The participation of women in SHGs has helped poor rural women significantly in achieving the socio-economic empowerment. (Saravanan, 2016)

With this backdrop an attempt has been made in this paper to study the role of SHGs in bringing about the socio-economic empowerment of rural women. This paper is organized in the following manner. Section-II deals with methodology while data analysis is presented in section-III followed by the concluding section.

Methodology

The present study makes use of primary data collected using a pre-tested questionnaire covering 37 SHGs spread over 7 villages under Dimbo Gramapanchayat of Kendujhar district of Odisha.

The selection of the GP and the SHGs is done purposively considering the performance of SHGs and the time constraint that the researcher has. However, the respondents are selected randomly as they hail from the same socio economic background. Even though the total number of members of these SHGs counts to be 420, only 370(10 from each group) members are considered among whom questionnaires were distributed. Out of these, 185 filled in questionnaires were found to be complete in all respects and were hence considered for the study. Simple statistical tools like frequency and percentages are used for data analysis. Chi-square test is applied to find the relation between members' association and their responses.

Data Analysis

In thirty districts of Odisha a total of 295743 SHGs are there with 3302967 of members. In Kendujhar district itself, 12030 SHGs are working with 134275 members spread over 13 blocks. 974 SHGs are working in Kendujhar Sadar having 10732 members. The distribution of SHGs in the panchayat selected for the study is presented in Table-1.

Table-1: Distribution of the SHGs in Dimbo Panchayat

Sl.No.	Name of the Village	No. of SHGs	Percentage
1	Dimbo	12	32.43
2	Tentulinanda	08	21.62
3	Dhenkikote	01	0.027
4	Dimirimunda	05	13.51
5	Guhalachatua	04	10.81
6	Kholapa	03	0.081
7	Chaka	04	10.81
	Total	37	100

Source: NRLM Data

The table clearly shows that 12 out of 37 SHGs in the panchayat are formed in Dimbo village itself followed by Tentulinanda (08). There is only one SHG working in Dhenkikote village. Guhalachatua and Chaka have 4 SHGs each and Dimirimunda has a total number of 5 SHGs. of 37 SHGs, the maximum number 13 (35.14 per cent) were formed during 2013-16, followed by 10 (27.02 per cent) during 2007-09, 6 (16.21 per cent) during 2000-03, 5 (13.52 per cent) during 2010-12 and 3 (8.11 per cent) during 2004-06.

It is revealed that 89.19 per cent of the woman were married, maximum were between the age group of 30-40 years and they constitute around 39.45 per cent of members of SHG. Most of them were from nuclear families (63.25%) with the spouse as the head of the family and having 4 members. All belong to single person earning families. 69.19 per cent of the families were associated with SHGs for more than 3 years. 38.92 per cent families had monthly saving between Rs 100-500. 56.75 per cent of the families were such who had borrowed a sum of Rs 5000-10000. All members belong to Hindu religion.

Selection of economic activities: The field survey revealed that the SHG members have chosen economic activities like badi making, vegetables cultivation, goatery, rice preparation, money lending, farming and cultivation, etc.

Kendujhar Badi has earned international acclaim. 54.06 per cent of SHGs have adopted Badi making activities. Money lending activities are done by 8 SHGs members. 16.22 per cent have adopted rice preparation activities while 10.82 per cent have adopted farming and cultivation activities, 8.10 per cent have adopted vegetables cultivation. The lowest i.e. 5.40 per cent are involved in goatery.

The membership of a SHG had benefited the women members a lot. Most of them agreed that there is a significant reduction in poverty. They feel self- dependent after joining SHGs. There was a significant increase in their standard of living also. The women found it easier to repay the principal amount along with the interest after joining SHGs and further the women members are also satisfied with the interest rates charged by the SHGs. Not a single woman even disagree that there is no benefit after becoming a member of SHGs. The details are in Table-1.

Table-1: Distribution of respondents as per their views on benefits received

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Total
You feel there is reduction in povertyafter joining the SHG		6 (3.25)	15 (8.10)	114 (61.63)	50 (27.03)	185 (100)
Do you feel self dependent after joining SHG		12 (6.49)	9 (4.86)	104 (56.22)	55 (29.73)	185 (100)
Increase in the living standard of woman after joining SHG		7 (3.78)	13 (7.02)	115 (62.16)	50 (27.02)	185 (100)
Is it easy to repay the principal amount plus interest			5 (2.70)	135 (72.97)	45 (24.33)	185 (100)
You are satisfied withthe interest rate	4 (2.16)	6 (3.25)	5 (2.70)	140 (75.67)	30 (16.22)	185 (100)

Source: Field data

Group-Related Problems Faced by Members

Various problems related to group are analysed. Barriers in activities, drop-outs, conflicts, non-transparency etc. can be the main reasons. Group-related problems were reported to be low. (Table 6). Among the problems that were existent, conflicts between members and absenteeism from meetings were reported by nearly 3 per cent of the members. Irregular meetings, improper records, non-accessibility to records, no internal audit and pressure groups were testified to be non significant.

Personal problems, in addition to group-related ones, faced by the SHG members are enquired into. Family and job responsibilities can cause difficulties for active participation in group activities. Low levels of motivation and family support can also act as a deterrent. Low economic status and poor benefits form group can shun members from reaping the benefits of being in the group. Family responsibilities proved to be the major difficulty faced by the members in their group activities. Job responsibilities do not cause difficulties due to the fact that majority were unemployed. Low economic status and low motivation are opined to be causing moderate problems. One very important problem has been low family support. Among the respondents, 21 per cent experienced poor family support. Overall perusal of problems faced by group members reveal that conflicts among members, absenteeism, family responsibilities and lack of family support were the major ones that can potentially impede the attainment of group objectives.

Benefits Received by SHG Members

a. Economic Benefits

The views of the SHG members regarding the increase in their income as related to their association with SHG is studied using chi square test. It is found that the value is significant at 5 per cent level clearly depicting the fact that longer the association of the members with SHGs higher is their income. Same is the result in case of increase in savings, employment and expenditure. On an average there is an improvement in their living standard as depicted in Table-2.

Table-2: Increase in Income Saving, Self employment, Living standard, Expenditure and Economic Empowerment

	Time of association with SHGs	Increase	No increase	Total
Income	<1 Years	7	3	10
	1-3 Years	36	2	38
	>3 Years	137	0	137
	Total	170	5	185
	Results	$\chi^2 = 33.089$	Significant at 5% level	P-value=0.00001

Saving	<1 Years	16	8	24
	1-3 Years	34	3	37
	>3 Years	122	2	124
	Total	172	13	185
	Results	χ^2 =31.0513	Significant at 5% level	P-value=0.00001
Self Employment	<1 Years	10	5	15
	1-3 Years	44	3	47
	>3 Years	121	2	123
	Total	175	10	185
	Results	χ^2=26.4048	Significant at 5% level	P-value=0.00001
Living Standard	<1 Years	9	4	13
	1-3 Years	32	2	34
	>3 Years	138	0	138
	Total	179	6	185
	Results	χ^2=36.7687	Significant at 5% level	P-value=0.00001
Expenditure	<1 Years	6	2	8
	1-3 Years	37	1	38
	>3 Years	139	0	139
	Total	182	3	185
	Results	χ^2=29.9417	Significant at 5% level	P-value=0.00001
Economic Empowerment	<1 Years	6	2	8
	1-3 Years	37	1	38
	>3 Years	139	0	139
	Total	182	3	185
	Results	χ^2=47.2914	Significant at 5% level	P-value=0.00001

Promotion of Economic empowerment is most probably the greatest achievement of the SHGs working at the grass root levels. As can be seen from the table, 139 members out of 182 agree that they are now enjoying the benefit of ownership over resources as they are able to earn and supplement their family income. Longer the association with SHGs stronger is their view on economic empowerment.

b. Social Benefits

The involvement in SHGs has ensured the members' economic independence through their engagement in productive activities. This has increased their participation in decision making both inside home and outside. It has improved their status in the society and their participation in social activities has improved along with their association with the SHGs. The chi square values measuring the length of the association of members with SHGs and their views on increase in their social security, participation in social activities, social awareness and access to the financial resources are found to be significant at 5 per cent level as shown Table-3.

Table-3: Increase in Social Security, Social Activities, Access to Financial Service, Social Awareness and Social Relation

	Time of association with SHGs	Increase	No increase	Total
Social Security	<1 Years	7	7	14
	1-3 Years	32	3	35
	>3 Years	135	1	138
	Total	174	11	185
	Results	χ^2=55.6191	Significant at 5% level	P-value=0.00001
Social Activities	<1 Years	17	2	19
	1-3 Years	42	1	43
	>3 Years	123	0	123
	Total	182	3	185
	Results	χ^2=11.6047	Significant at 5% level	P-value=0.00001
Access to Financial Service	<1 Years	2	19	21
	1-3 Years	29	7	36
	>3 Years	125	3	128
	Total	156	29	185
	Results	χ^2=106.4875	Significant at 5% level	P-value=0.00001
Social Awareness	<1 Years	7	12	19
	1-3 Years	23	10	33
	>3 Years	127	6	133
	Total	157	28	185
	Results	χ^2=51.7119	Significant at 5% level	P-value=0.00001

Saving	<1 Years	12	12	24
	1-3 Years	22	5	27
	>3 Years	132	2	134
	Total	166	19	185
	Results	χ^2=54.3045	Significant at 5% level	P-value=0.00001

c. Political Benefits

The results of the chi-square tests done to find out the relation between the length of association of the members with SHGs and their political empowerment have been presented in Tables-4 to 21. It is found that with the increase in the years of association with SHGs the members are enjoying greater empowerment in the political field. Mostly they are actively participating in the local bodies as ward members. They are now having knowledge on the election procedures and the functioning of local bodies. Their economic self dependence has inculcated in them confidence and has developed leadership qualities among them.

Table-4: Increase in Participation in Local Bodies, Political Awareness, Leadership Qualities

	Time of association with SHGs	Increase	No increase	Total
Participation in Local Bodies	<1 Years	12	11	23
	1-3 Years	29	8	37
	>3 Years	123	2	125
	Total	164	21	185
	Results	χ^2=46.0986	Significant at 5% level	P-value=0.00001
Political Awareness	<1 Years	7	12	19
	1-3 Years	23	6	29
	>3 Years	137	0	137
	Total	167	18	185
	Results	χ^2=80.4843	Significant at 5% level	P-value=0.00001
Leadership Qualities	<1 Years	17	12	29
	1-3 Years	24	8	32
	>3 Years	122	2	124
	Total	163	22	185
	Results	χ^2=41.8179	Significant at 5% level	P-value=0.00001

Conclusion

The study reveals that the length of association of the members with SHGs has got a significant impact on the benefit derived from SHGs. Longer the association greater are the benefits derived. Joining SHGs has helped in the significant reduction of poverty, has made the women members feel more independent and has increased their standard of living. The women have found it easier to repay the principal amount along with the interest and further more the women members were also satisfied with one per cent interest-rates charged on the loans taken from SHGs. All of them agreed that there was an increase in the monthly savings after joining SHGs and longer the time of association greater was the monthly savings and increase in the living standard. All the members accepted that they have been economically, socially and politically empowered after joining SHGs. And these benefits increase with the length of their association. Though there was a difference in the perception regarding the social benefits derived from the membership of SHGs, most of them did agree that with increase in duration of association with SHGs the sense of social security and social awareness among the women members increases. It can be inferred from the discussion that women are taking interest in the SHGs programs and coming forward to carry out different income generating activities and are becoming self dependent and self employed which has ensured their well being. They have also learnt to participate in decision making both within the home and outside.

In the present environment women empowerment though SHG is one of the best alternatives. Basing on the observations it can be suggested that attention should be given to provide proper training to the members so as to enhance their efficiency and productivity. Marketing facilities for the products that the SHG members are producing should be provided to ensure them good income. Bank linkage is also very important to provide financial support. Lastly, proper knowledge and training about the quality improvement of the product suitable to the requirements of the customers both at home and abroad is important to ensure good income and a better standard of living as also contributing to its sustainability.

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Gender Inquality and Economic Development in Odisha – An Inter- District Analysis

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Abstract

This study is an attempt to examine gender inequality across districts of Odisha and relate them to their economic development by using Human Development Index (HDI) and Gender Equality Index data. Findings of the study show that human development is necessary, but not a sufficient condition to ensure gender development. So far as gender equality is concerned, it is a matter of social response and traditional prejudices which move against the women. An increase in women literacy, work participation rate and engagement in economic activity measured by per capita income have not translated effectively in to containing women sustenance and providing a status to women equal to that of male in the society.

Keywords:- Gender Inequality, Human Development Index, Gender Development Index.

Introduction

All human beings are free to develop their personal abilities and make choices without limitations. If behaviour, aspirations and needs of women and men are considered, they are to be valued and favoured equally. It does not mean that women and men have to become the same, but their rights, responsibilities and opportunities will not depend on whether they are born male or female (ILO, 2000)[1]. But in existing society, women spend more time on housework, have more responsibility for child rearing, have less access to many social and material resources, and public spaces and public powers. In most part of their life time they face resistance from all sides. They serve others' welfare than their own, they earn more and they spend more for the family. We educate a woman because she will send girls to school, she will reduce fertility and she will use her earnings to promote family welfare. So, women are good investment for development and gender equity is an essential dimension of human development. If women do not enjoy freedom and opportunities that males have, this is not consistent with human development. Gender equality also has instrumental value for human development - there is much country level evidence showing how investment in women and girls can be a vehicle to

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promote long-term prospects for growth and human development (Permanyer, 2009). According to the UN (2002), "gender equality is the cornerstone of every democratic society that aspires to ensure social justice and human rights." It often means female have opportunities and access to resources in life as male. When they face discrimination in all walks of life, may it be health, education, employment, control over services and resources in the economy, development will be hampered. Thus gender inequality has adverse impact on development. In this context, it is very relevant to study gender inequality across the districts of Odisha and relate them with their per capita district domestic product to ascertain whether any relationship exists between them or not.

Rest of the paper is organized as follows. Section –II discusses the literature on gender inequality and economic growth. This is relevant in understanding the relationships examined and the role of gender. Data and methodology are outlined in section-III. The findings of the study are discussed subsequently in section-IV. This section examines gender inequality among districts of Odisha with their human development by using Human Development Index (HID) and Gender Equality Index (GEI). In section V, the study concludes.

I. Relationship Between Gender Inequality and Economic Development

Economists have long tried to understand why some countries are poor and some rich, some develop and grow, while others are stagnant. As the research has moved from Solow's growth theory to the endogenous growth model we are still unable to explain the huge difference in GDP per capita that exists between the many developing countries and the developed world. The growth theory explanations such as faster technological progress, the higher rate of investment and savings, better education, skill levels and infrastructure in advanced countres leave unanswered where these differences come from (Weil,2005). The macroeconomic theories have influenced the World Bank and the IMF policies over the decades as these institutions attempted to help the developing countries towards economic growth and development. Easterly (2001) discusses the history of 'solution attempts' that have repeatedly turned out to be disappointments. He explains this by the lack of attention to the incentives that people face. The literature and its prominent authors are currently moving towards explaining the growth discrepancy between the poor and the rich nations by factors like social infrastructure (Hall and Jones,1999), values (Guiso *et. al.;* 2002), trust (Knack and Keefer, 1997), religion (Barro, 2002; Dollar and Gatti, 1999) or other aspects of the culture (Weil, 2005). Interestingly in these latest explanations the role and status of woman becomes more visible.

The theory of Arthur Lewis (2003) about development with unlimited supply of labour acknowledges women's untapped potential labour supply for growth. In his own words, "The transfer of women's work is one of the most notable features of economic development. It is not by all means all gain, but the gain is substantial because what women otherwise do in the household can in fact be done much better and cheaply outside, due to the scale economies and specialization and also use of capital and drudgery reducing machines. One of the surest ways of increasing national income, therefore, is to create new sources of employment for women outside the home."

Dollar and Gatti (1999) examined the relationship between economic growth and gender inequality and found that gender inequality is higher in poorer and developing countries than the developed countries. Gender inequality is also high in certain regions. Besides, high gender inequality in terms of poor access to education by women also contributes to low economic growth and income. The study argued that increase in economic growth leads to reduction in gender inequality and suggested that growth is "good for women". These findings are also supported by studies done by Stotsky (2006) and Guembel (2004).

There are considerable amount of studies (Anne, 2005; Lagerlof, 2003) on the effect of economic development on gender equality. These studies have explored the positive effect of economic development on gender equality. In this line Largerlof (2003) found a positive correlation between countries' growth rates or GDP levels and gender equality measured e.g. by the ratio of female to male education. The studies also have revealed the fact that along with economic development it is vital to make change in the social, political, and economic structures and the technological level of the society in such a way to make educated persons to use their accumulated knowledge. It is also necessary to make change in the roles and family responsibilities of males to raise the status of females and also for their genuine development (Anne, 2005).

Morrison, Raju and Sinha (2007) argued that gender equality occurs through greater access of women to land and credit market and their enhanced decision making power within households. This leads to increased women's empowerment, reduction in poverty and increase in economic growth.

The review of literature thus, by and large, shows that at the national or cross country level while the impact of high economic growth and increase in per capita income has been positive for reducing gender inequality, this may not hold true in case of inter-district analysis. This study is a right step in this direction.

Data and Methodology

Gender Development Index (GDI) and Gender Empowerment Measure (GEM) were developed by United Nations Development programme (UNDP) primarily with a view to drawing the attention of researchers and policy makers to gender related issues (Schiller, 2006). Gender Development Index (GDI) was first introduced by UNDP in its Human Development Report for the year 1995. GDI, similar to the HDI, takes into account life expectancy, education and GDP per capita disaggregated by gender. The gender empowerment measure (GEM) examined whether women and men are able to actively participate in economic and political life and take part in decision making. Gender inequality has also been measured by studies (Breitenbach, 2007). Dollar and Gatti (1999) used four measures of gender inequality which are ; (i) access to education; ii) health facility, iii) legal and economic equality of women in society and marriage and iv) women's empowerment measured by right to vote.

But, in this study Human Development Index (HDI) and Gender Development Index (GVI) used by Human Development Report, 2005 basing on Infant Mortality Rate (IMR) for health index, overall literacy and gross enrolment ratio for education index and per capita district domestic product at constant price for income index of districts of Odisha have been used. For analytical convenience and clarity, the Gender Developments Index (GDI) rankings of districts of Odisha have been further grouped into three categories:

Districts	GDI rate
Developed	0.6
Moderately Developed	> 0.5 and < 0.6
Less developed	0.5

Human development index:

The Human Development Index represents a suitable synthesis between economic valuation of people seen in terms of per capita income on consumption expenditure on the one hand and social valuation as seen in terms of health status measured through life expectancy at age one along with infant mortality rate and educational status assessed through literacy combined with intensity of formal education on the other hand (Human Development Report, 2005). In the present study HDI is calculated on the basis of infant mortality rate, literacy rate and gross enrolment ratio and district domestic (DPP) per capita at 1993-94 prices.

Table-1: Inter district Human Development Index

Sl. No.	Districts	Educational Index	Health Index	Income Index	HDI	HDI Rank
	Odisha	0.723	0.468	0.545	0.579	
1.	Angul	0.760	0.481	0.748	0.663	6
2.	Balasore	0.770	0.442	0.466	0.559	18
3.	Bargarh	0.727	0.449	0.517	0.565	17
4.	Bhadrak	0.803	0.673	0.463	0.646	8
5.	Balangir	0.666	0.468	0.505	0.546	21
6.	Boudh	0.688	0.423	0.497	0.536	23
7.	Cuttack	0.813	0.686	0.587	0.695	3
8.	Deogarh	0.698	0.776	0.532	0.669	5
9.	Dhenkanal	0.773	0.468	0.534	0.591	12
10.	Gajpati	0.561	0.173	0.558	0.431	28
11.	Ganjam	0.718	0.404	0.532	0.551	20
12.	Jagatsinghpur	0.833	0.288	0.549	0.557	19
13.	Jajpur	0.786	0.333	0.499	0.540	22
14.	Jharsuguda	0.773	0.635	0.757	0.722	2
15.	Kalahandi	0.585	0.763	0.471	0.606	11

16.	Kandhamal	0.645	0.006	0.516	0.389	29
17.	Kendrapara	0.815	0.596	0.466	0.626	10
18.	Keonjhar	0.704	0.340	0.547	0.530	24
19.	Khordha	0.845	0.724	0.639	0.736	1
20.	Koraput	0.535	0.218	0.539	0.431	27
21.	Malkangiri	0.491	0.122	0.497	0.370	30
22.	Mayurbhanj	0.647	0.782	0.489	0.639	9
23.	Nabarangpur	0.516	0.340	0.543	0.436	26
24.	Nayagarh	0.766	0.462	0.485	0.571	15
25.	Nuapada	0.582	0.692	0.470	0.581	14
26.	Puri	0.823	0.622	0.527	0.657	7
27.	Rayagarh	0.531	0.250	0.547	0.443	25
28.	Sambalpur	0.742	0.436	0.590	0.589	13
29.	Sonepur	0.731	0.474	0.492	0.466	16
30.	Sundergarh	0.740	0.692	0.618	0.683	4

Source: Human Development Report, Odisha (2005)

Among the top five districts in terms of HDI value, Jharsuguda (at 2) and Sundergarh (at 4) are fairly industrialized districts and therefore, have a very high income index. They also have a very high health index relative to the state average and on education index close to the state average. Cuttack (at 3) which is regarded as developed according to many indicators, has a relatively high education index and health index, but has an average income index. The appearance of Deogarh (at 5) among the top five is somewhat a surprise and this is mainly due to a very high health index (because of a low infant mortality rate of 49 as against an IMR of 102 of its mother district Sambalpur). Its income and education indices are close to the state average. Khordha (at 1) has all the indices with values well above the state average and the fact is that the state capital Bhubaneswar is in this district.

The lowest five positions are occupied by districts (Table 1) that are known to be backward on all counts, three of these districts are from the KBK region. It is worth noting that the HDI values of these districts are pulled down particularly by their very low health indices more than by their income or education indices. It is observed that 13 districts with lower per capita district domestic product (DPP) have relatively higher HDI values. On the other hand, in case of 12 districts with relatively higher per capita DDP relatively lower HDI values is associated, implying the correlation between them is just less than average.

In order to know gender inequality in districts of Odisha, there is necessity of discussion on Gender Development Index.

Gender development index

Gender Development Index (GDI) is an analytical tool which is like HDI based on income, health and educational attainment parameters, but aims at capturing the gender dimension of human development. As regards the individual parameters, it is noteworthy that gender inequality is much less with respect to education compared to health and income. This is consistent with the observed decrease in gender disparity in terms of literacy. Relatively high level of inequality in case of the health parameter perhaps implies a higher illness burden as well as differential access to and utilization of health care facilities. Finally, relatively high level of inequality in respect of income index implies restricted employment opportunities for women and discrimination practices against them in the labour market.

Table-2: Inter District Gender Development Index of Odisha

Sl. No.	Districts	Equally Distributed Education Index	Equally Distributed Health Index	Equally Distributed Income Index	GDI	GDI Rank	HDI	HDI Rank
	Odisha	0.713	0.471	0.455	0.546		0.579	
1.	Angul	0.750	0.484	0.678	0.637	4	0.663	6
2.	Balasore	0.763	0.415	0.380	0.519	14	0.559	18
3.	Bargarh	0.716	0.414	0.454	0.528	13	0.565	17
4.	Bhadrak	0.797	0.669	0.028	0.497	21	0.646	8
5.	Balangir	0.650	0.468	0.436	0.518	16	0.546	21
6.	Boudh	0.666	0.423	0.438	0.509	19	0.536	23
7.	Cuttack	0.808	0.686	0.362	0.618	7	0.695	3
8.	Deogarh	0.687	0.765	0.489	0.647	3	0.669	5
9.	Dhenkanal	0.766	0.471	0.356	0.531	12	0.591	12
10.	Gajpati	0.548	0.129	0.525	0.401	27	0.431	28
11.	Ganjam	0.704	0.378	0.473	0.518	15	0.551	20
12.	Jagatsinghpur	0.829	0.288	0.356	0.491	22	0.557	19
13.	Jajpur	0.780	0.333	0.046	0.386	28	0.540	22
14.	Jharsuguda	0.765	0.615	0.681	0.687	1	0.722	2
15.	Kalahandi	0.565	0.762	0.410	0.579	8	0.606	11
16.	Kandhamal	0.626	0.006	0.483	0.372	29	0.389	29
17.	Kendrapara	0.810	0.596	0.141	0.516	18	0.626	16
18.	Keonjhar	0.694	0.343	0.476	0.504	20	0.530	24

19.	Khordha	0.841	0.725	0.381	0.632	5	0.736	1
20.	Koraput	0.525	0.221	0.498	0.415	26	0.431	27
21.	Malkangiri	0.482	0.125	0.428	0.362	30	0.370	30
22.	Mayurbhanj	0.634	0.781	0.447	0.621	6	0.639	9
23.	Nabarangpur	0.502	0.343	0.422	0.422	75	0.436	26
24.	Nayagarh	0.757	0.429	0.169	0.452	23	0.571	15
25.	Nuapada	0.563	0.691	0.428	0.561	9	0.581	14
26.	Puri	0.817	0.625	0.108	0.516	17	0.657	7
27.	Rayagarh	0.521	0.253	0.510	0.428	24	0.443	25
28.	Sambalpur	0.734	0.494	0.543	0.560	10	0.589	13
29.	Sonepur	0.715	0.481	0.441	0.543	11	0.566	16
30.	Sundergarh	0.733	0.699	0.552	0.659	2	0.683	4

Source: Human Development Report, Odisha (2005)

Table-3: Distribution of districts by range of GDI values

District	d" 0.5	District	e" 0.5 & <0.6	District	e" 0.6
Malkangiri	0.362	Keonjhar	0.504	Cuttack	0.618
Kandhamal	0.372	Boudh	0.509	Mayurbhanj	0.621
Jajpur	0.386	Kendrapara	0.516	Khordha	0.632
Gajpati	0.401	Puri	0.516	Angul	0.637
Koraput	0.415	Balangir	0.518	Deogarh	0.647
Nabarangpur	0.422	Ganjam	0.518	Sundergarh	0.659
Rayagarh	0.428	Balasore	0.519	Jharsuguda	0.687
Nayagarh	0.452	Bargarh	0.528		
Jagatsinghpur	0.491	Dhenkanal	0.531		
Bhadrak	0.497	Sonepur	0.543		
		Sambalpur	0.560		
		Nuapara	0.561		
		Kalahandi	0.579		

Source: Human Development Report, Odisha (2006)

The value of GDI for the state as a whole is seen to be 0.546 which is at moderate level gender development. Here, the equality distributed education index has a much greater weight than either the health or income index. Now, since both HDI and GDI are based on the same basic parameters and GDI value is always less than HDI value, the highest five and the lowest five districts in terms of GDI values except that at the higher end, Angul takes the place of Cuttack and at the lowest end, Jajpur takes the place of Nabarangpur. As in the case of HDI, inter-district disparity in GDI values is low and this is again because of bunching of the GDI value of 13 districts (lying between 0.5 and 0.6) around the state mean value of GDI (0.546).

However, it is striking that eight districts for which the GDI rank is lower than the HDI rank are in the coastal region, which are generally regarded as developed by conventional indicators. In fact, the per cent difference between HDI and GDI values is relatively more pronounced in the case of the coastal districts, while the difference is much less in the case of the districts that are known to be backward in terms of conventional indicators. However, the overall correlation between HDI and GDI is high at 0.89, suggesting that the average degree of gender disparity in the state is relatively low (a simple indicator of this is the fact that the mean values of HDI and GDI for the state are close to each other at 0.57 & 0.52 respectively). But, then the level of human development itself is relatively low.

Conclusion

This paper throws light on various aspects of gender bias with inter-district variations. In order to trace the effect of economic as well as social prosperity inter- district HDI and GDI have been compared and observed that human development is a necessary, but not a sufficient condition to ensure gender development. So far as gender equality is concerned, it is more a matter of social response and traditional prejudices which move against the women. An increase in women literacy, work participation rate and engagement in economic activities measured by per capita income have not translated effectively in terms of containing women sustenance and providing a status to women equal to that of male in the society.

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Gender Disparity in School Education in Odisha

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Abstract

Gender disparity has been a major issue in India's pursuit for achieving the goal of universal elementary education. Education for women is the best way to improve the health, nutrition and economic status of a household that constitute a micro unit of a nation's economy. In this context, it can be argued that lack of women's education can be an obstruction to the country's economic development. However, despite this significance of education, the participation of women in the field of education is not very satisfactory. The present paper is based on secondary data obtained from various sources like Census of India, MHRD and OPEPA. Female population of the state of Odisha have low literacy rate, show low enrolment ratio and exhibit high dropout ratio. There is no doubt that both government and NGOs are making serious attempts at resolving gender inequality in education in Odisha, but there is still the need to make efforts to reduce the disparity. This paper surveys the trends in gender gaps in education, their causes and policy implications. It shows that the gender disparity is more in case of secondary education level than in primary or upper primary level across the districts of Odisha with the help of a Gender Disparity Index.

Key Words: Dropout Ratio, Enrolment Ratio, Gender Disparity,

Introduction

Gender disparity has been a major issue in India's pursuit for achieving the goal of universal elementary education. Education for women is the best way to improve the health, nutrition and economic status of a household that constitute a micro unit of a nation's economy. In this context, it may be argued that lack of women's education can be an obstruction to the country's economic development. However, despite this significance of education the participation of women in the field of education is not very satisfactory. The present paper is based on secondary data obtained from various sources like Census of India, MHRD and OPEPA. Female population of the state of Odisha have low literacy rate, show low enrolment ratio and exhibit high dropout ratio. There is no doubt that both government and NGOs are making serious attempts at resolving gender inequality in education in Odisha, but there is still the need to make frantic efforts like implementation of Right to Education Act. This paper surveys the trends in gender gaps in

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education, their causes and policy implications. It shows that the gender disparity is more in case of secondary education than in primary or upper primary education.

Gender disparity refers to unequal treatment or perceptions of individuals based on their *gender.* More specifically, gender disparity means not having equality in terms of gender, either in language use, equal participation in educational program or in any other aspect. Thus in simple language gender disparity refers to differential attitude of people towards male and female in society with respect to health, religion ,educational opportunities etc.(Arora, 2012)

Although gender disparity and discrimination are present in different spheres, this paper focuses specifically on education because of its importance in human development and as a determinant of the quality of life. The importance of education in economic growth and human development has been widely recognized. Recently, the Government of India has made the right to education a fundamental right of every child, under its Constitution. However, the focus of policy makers and researchers generally has been on the primary level. The five years of education imparted as primary education is undoubtedly useful in ensuring the functional literacy of recipients of such education.

Classical economists from Adam Smith to Alfred Marshall realized the importance of education as an investment for human capital formation. When the concept of inequality in education is taken, the first thing that strikes one's mind is gender discrimination in education. According to Tilak (1983) the origin of the concept of inequality in education dates back to 16^{th} and 17^{th} centuries.

Disparity simply refers to differences in the outcome under consideration (wages, mortality rates, educational attainments, or any such indicator). Such disparities may be caused by differences in socio-economic characteristics. Sprawling inequalities persist in women's access to education, health care, physical and financial resources and opportunities in the political economic, social and cultural spheres. The educational system of India is characterized by inequalities in various dimensions. The most obvious forms of disparities as well as inequalities have appeared as between regions, between rural and urban, between male and female, between Scheduled Castes and non- Scheduled Castes (Tilak 1979).

Objectives

i. To find out the trend of gender inequality in education in Odisha over a period of time.

ii. To assess the extent of gender disparity in education at primary, secondary level of education.

Database and Methodology

The paper is based on secondary data from various sources like Census, Ministry of Human Resource Development (MHRD) and Odisha Primary Education Programme Authority (OPEPA). It intends to analyze the gender disparity in educational achievement, rural-urban composition of literacy, and causes of such disparity in primary, secondary and higher levels of education based on secondary sources of data. For the measurement of male-female disparity in literacy, Gender Parity Index and Sophers' Disparity Index (1974) have been employed. Gender Parity Index is the ratio of female enrolment ratio to male enrollment ratio. Here Sophers' Disparity Index can be used, where X2 is boys' enrolment and X1 is girls' enrolment. Then the formula will be applied Log(x2/x1) +Log ({q-x1}/{q-x2}) where x2 > or=X1, q=100, if D value i.e. Sophers index value is high, than disparity is greater and vice versa.

The paper is divided into three sections. The first section deals with the trend of gender inequality in education in Odisha. Second section deals with the extent of gender disparity in education at primary, secondary level of education in Odisha.

Trend of gender inequality in education in Odisha

Gender disparity in education refers to difference in opportunity of education between girls and boys due to various factors such as poverty, age, infrastructural facilities and distance from school. Disparity is high among the rural people who are economically backward. In India the male literacy rate stands at 82.14 per cent and female literacy rate is 65.46 per cent (Census, 2011). There exists a huge gap between male and female literacy rate. If we take the case of Odisha the condition is more alarming. The male literacy rate of Odisha stands at 79.6 per cent while female literacy rate is 60.7 per cent (Census, 2011). So, gender inequality in educational opportunity is quite evident from the figures cited above.

The trend of gender disparity in Odisha can be studied with the help of literacy rate, enrollment, and dropout data of boys and girls of all schools. Decadal literacy data from the year 1951-2011 has been taken to show the trend in gender disparity in educationas shown in Table-1

TABLE-1: Trend of literacy rate in Odisha (1951-2011)

Year	Male	Female	Gap
1951	27.32	4.52	22.80
1961	34.68	8.65	26.03
1971	38.29	13.92	24.27
1981	46.39	20.60	25.79
1991	63.09	34.68	28.41
2001	75.35	50.51	24.84
2011	82.40	64.36	18.04

Source: *Census of India 1951-2011*

The table shows that the percentage of male literacy is higher than female literacy level. In the year 1951 the male literacy rate was 27.32 per cent and female literacy was 4.52 per cent. The male female gap stood at 22.80 per cent. With the continuous increase in literacy rates of both male and female population gender disparity in education has substantially lowered over the years. In the year 2011 the male literacy is 82.4 per cent and female literacy is 64.36 per cent and the difference between male female literacy is 18.04 per cent.

Table-2 shows the decadal data on male and female literacy gap in rural and urban area for the districts of Odisha. The literacy rate is high in urban areas than rural areas and high among male than among female population. As a result a remarkable gap exists in male-female literacy literacy and the gap is invariably higher in rural than in urban areas. Further, there are also gender differences in enrollment in schools.

Table-2: Male female gap in literacy rate in rural and urban area (2001 and 2011)

Year	2001Rural	2001Urban	2011Rural	2011Urban
District	m-f Gap	m-f Gap	m-f Gap	m-f Gap
Bargarh	27.9	17.8	19.0	11.8
Jharsuguda	25.9	19.2	17.7	14.3
Sambalpur	26.3	16.3	18.4	11.1
Debgarh	26.5	16.4	19.3	13.0
Sundargarh	24.3	14	17.9	9.1
Kendujhar	26.6	19.2	20.5	19.4
Mayurbhanj	20.2	25.5	15.9	15.0
Baleswar	46.2	10.6	36.4	10.0
Kendrapara	24.0	28.2	14.2	15.2
Jagatsinhgpur	19.8	13.6	11.0	2.2
Cuttack	21.8	10.8	15.5	11.5
Jajpur	21.5	14.0	17.4	10.4
Dhenkanal	23.4	14.1	17.0	8.8
Anugul	27.7	13.9	19.1	9.7
Nayagarh	25.5	14.2	14.7	11.1
Khordha	22.0	10.5	11.4	4.5
Puri	21.9	11.6	12.1	9.4
Ganjam	30.9	17.6	21.7	17.1
Gajpati	26.9	20.1	22.0	18.4
Kandhamal	35.0	17	26.2	4.8
Baudh	37.9	22.4	24.0	13.4
Subarnapur	33.4	23.6	20.7	18.4
Balangir	33.7	18.9	23.5	14.0
Nuapada	33.2	22.6	26.1	18.6
Kalahandi	34.2	21.2	26.1	12.1
Rayagada	23.8	19.4	22.7	18
Navrangpur	26.6	19.6	22	14.9
Koraput	23.6	17.5	22.8	10
Malkangiri	19	20	20.7	23.6

Source:*Census of Odisha*

The state of women education in Odisha is far from satisfactory at all levels, i.e., primary, upper primary and secondary.

Gender Parity Index (GPI) and Sophers' Disparity Index

Gender Parity Index for primary, upper primary and secondary level education is presented in Table-3.

Table-3: Gender parity index of primary, upper primary and secondary level of education

Year	GPI Primary	GPIUpper Primary	GPI Secondary
2000-01	0.77	0.69	0.63
2001-02	0.77	0.70	0.64
2002-03	0.79	0.73	0.67
2003-04	0.81	0.74	0.67
2004-05	0.87	0.76	0.71
2005-06	0.88	0.80	0.72
2006-07	0.90	0.82	0.73
2007-08	0.91	0.84	0.77
2008-09	0.91	0.85	0.78
2009-10	0.92	0.87	0.81
2010-11	0.93	0.89	0.83
2011-12	0.93	0.91	0.89
2012-13	0.93	0.95	0.89
2013-14	0.93	0.94	0.89
2014-15	0.94	0.94	0.90

Source: MHRD, 2013-14

Table-3 shows that disparity is high for girls at primary and secondary education levels. The GPI value lies between 0 and 1. The closer the value is to one, the less is disparity. The table shows that the GPI level in 2000-01 for primary level is 0.77 upper primary0.69 and secondary level is 0.63. The data shows that though the enrollment of girls have been increasing over the years from 2000 to 2014, disparity level in education still exists and the level of gender disparity in education gradually increases from primary to upper primary but is lower at secondary level. On the whole gender disparity remains high at all levels of education.

The second method used for calculating disparity in education is Sophers' disparity index. This is a better method in comparison to the gender parity index. In the gender parity index the level of parity in availing educational facilities between boys and girl is shown. But in the Sophers' disparity index we show the level of disparity in education between boys and girls is shown. In the first method the value of GPI ranges between 0 and 1, the nearer the value to shows more parity. Whereas in Sophers' Disparity Index, higher value indicates that there is more gender disparity in education. In this section gender disparity in education is shown with the help of Sophers' Disparity Index for primary, upper primary and secondary level of education. Relevant data are given in Table-4.

Table-4: Sophers' disparity index in primary, upper primary and secondary education

Year	Primary	Upper Primary	Secondary
2000-01	0.22	0.32	0.39
2001-02	0.22	0.31	0.38
2002-03	0.25	0.18	0.34
2003-04	0.20	0.19	0.34
2004-05	0.19	0.19	0.29
2005-06	0.14	0.17	0.28
2006-07	0.11	0.15	0.26
2007-08	0.08	0.15	0.22
2008-09	0.08	0.13	0.21
2009-10	0.08	0.11	0.18
2010-11	0.07	0.10	0.17
2011-12	0.07	0.07	0.16
2012-13	0.06	0.05	0.10
2013-14	0.06	0.05	0.07
2014-15	0.06	0.05	0.07

Source: MHRD, 2014-15

The enrolment of girls and boys are taken into account to calculate the sophers disparity index. It can be observed that from 2000-01 onwards gender disparity in education increases from primary to secondary level. The index value is 0.22 in primary level at upper primary level it is higher at 0.32 and at secondary level it is the highest at 0.39. This situation continues through all the years and the gender disparity in education increases as one moves from primary towards upper primary and secondary level of education because the enrolment of boys remains higher than girls in all the levels of education. During the years 2011-12 to 2014-15 the gender disparity have lowered but are still very high at all level of education.

Another indicator of disparity is dropout rates of boys and girls at different levels of school education. Data are given in Table-5.

Table-5: Dropout of primary, upper primary and secondary levelas percentage

Year	Boys Primary	Girls Primary	Boys Upper Primary	Girls Upper Primary	Boys Secondary	Girls Secondary
2000-01	39.7	41.9	50.3	57.7	66.4	71.5
2001-02	37.5	39.2	48.1	50.1	65.3	69.2
2002-03	34.6	37.1	45.7	51.5	64.5	67.4
2003-04	32.3	31.2	46.2	53.2	64.3	64.9
2004-05	30.5	25.3	47.5	55.5	62.1	67.1
2005-06	28.7	21.8	48.7	49.0	60.1	63.6
2006-07	24.6	26.8	46.4	45.2	58.6	61.5
2007-08	25.7	24.4	43.7	41.3	56.6	57.3
2008-09	29.6	25.8	41.1	36.9	54	54.5
2009-10	31.8	28.5	41.1	44.2	53.3	51.8
2010-11	29.0	24.5	40.6	41.2	50.2	47.7
2011-12	23.4	21.0	41.5	40.0	48.6	52.2
2012-13	23	19.4	41.8	35.7	50.4	50.3
2013-14	21.2	18.3	39.2	32.9	48.1	46.7

Source: MHRD, 2014-15

The table shows that the dropout level of girls is increasing as on goes from primary to secondary level of education. In the year 2000-01 the dropout level of girls was higher than that for boys and the rate are high at primary, higher at uppper primary and the highest for secondary level of education. In the year 2013-14 dropout rate of boys is 21.2 for primary, 39.2 for upper primary and 48.1 for secondary level of education whereas for girls it is 18.3 at primary level, 32.9 for upper primary level and 46.7 in secondary level of education respectively. The rate of dropout of girls has reduced from 2000-01 to 2014-15 for all levels of education, primary, upper primary and secondary levels. This means that gender disparity in education has lowered over the years.

The trend and extent of disparity in different stages of school education shows that there exist gender disparity in education. The trend and pattern of gender disparities in primary and upper primary levels of education of education across the districts in Odisha as per Sophers' disparity index are presented in Table-6.

Table-6: Comparison of sophers disparity index in between 2007-08 and 2014-15

	2007-08		2014-15	
District	Primary	Upper Primary	Primary	Upper Primary
Anugul	0.499	0.088	0.040	0.062
Balasore	0.057	0.067	0.436	0.044
Bargarh	0.055	0.041	0.050	0.043
Bhadrak	0.051	0.044	0.055	0.017
Bolangir	0.034	0.119	0.055	0.311
Boudh	0.032	1.276	0.012	1.100
Cuttack	0.051	0.056	0.072	1.100
Deogarh	0.023	0.057	0.085	0.039
Dhenkanal	0.049	2.394	0.092	0.069
Gajapati	0.081	0.125	0.052	0.088
Ganjam	0.048	0.478	0.081	0.046
Jagatsingpur	0.074	0.043	0.081	0.044
Jajpur	0.056	0.057	0.085	0.084
Jharsuguda	0.0506	0.060	0.054	0.054
Kalahandi	0.0214	0.256	0.045	0.019
Kandhamal	0.024	0.156	0.049	0.064
Kendrapara	0.046	0.046	0.0703	0.070
Keonjhar	0.058	0.058	0.053	0.053
Khorda	0.0568	0.057	0.077	0.077
Koraput	0.029	0.029	0.048	0.048
Malkangiri	0.013	0.255	0.087	0.054
Mayurhanj	0.012	1.149	0.956	1.004
Navrangpur	0.010	2.78	0.025	0.057
Nayagarh	0.079	0.079	0.139	0.099
Nuapada	0.009	0.024	0.035	0.059
Puri	0.056	1.313	0.062	0.065
Rayagada	0.077	0.212	0.091	0.085
Sambalpur	0.026	0.018	0.073	0.069
Sonepur	0.029	0.014	0.047	0.045
Sundargarh	0.027	0.041	0.964	0.161

Source:OPEPA 2014-15

The comparison of Sophers' Disparity Index shows the dynamics of gender disparity in education among the districts. In the district of Angul the value of 'D' in 2007-08 is 0.498 for primary level which came down to 0.040 in 2014-15 showing that gender disparity in primary education has reduced. Again for upper primary level the value of 'D, fell from 0.088 in 2007-08 and to 0.062 in 2014-15 indicating a reduction in gender disparity in upper primary education. In the Cuttack district gender disparity in education at the upper primary level seems to have increased from 0.056 in 2007-08 to 1.100 in 2014-15. For the district of Kandhamal the value of 'D' in 2007-08 is 0.024 at primary level increased to 0.049 in 2014-15 while at the upper primary level it rose from 0.809 in 2007 to 1.069 in 2014-15 showing high degree of gender disparity in education.

Policy implications

It can be observed that though the disparity in education between boys and girls has reduced to some extent but it is still found in many areas of the state. It is observed that discrimination is against the girls. Different programs are being implemented for encouraging girls to attend school and get education.

To conclude it can be said that Difficulties of accessibility, lack of resources and low teacher quality are widespread. In particular the lack of female primary teachers in rural areas is a real problem. Parents, in some regions are very reluctant to send daughters to school if there is no female teacher. The curriculum is often unattractive. At secondary level, in addition to the distance factor, problems of cost, are acute, and there is a need for more single-sex (girls) schools, some with secure boarding facilities and scholarship schemes to enable participation (Yousouf Zai, 2013).

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Gender Inequalities in Agriculture: A Study of Mayurbhanj District in Odisha

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Abstract

Gender issues have become the central focus in the arena of economic policy and strategy for eradicating poverty and human misery. The policy makers strongly believe that a positive commitment towards gender equality will strengthen every area of action to reduce poverty because women can bring new energy and insights. The present study assesses gender inequalities in agriculture activities to find out the various ways and means to reduce them as also to improve and strengthen the role of women in agricultural sector. Both primary and secondary data are used for the purpose. Mayurbhanj, the largest district of Odisha, is selected as the sample district because of higher participation of women in agricultural and allied activities. For the study a total of 100 respondents are selected from five villages following purposive random sampling technique.

Regression and T-test are used for analyzing the data. The study revealed that gender discrimination, especially with regard to ownership over land, wage and decision making exits against the womenfolk in agriculture and allied activities. It is time to redesign and redevelop the structure of land policies to make it more gender sensitive and inclusive. Equal pay for equal work is the legal right of women and it should be the focus.

Key words: Gender, Inequalities, Agriculture, Participation.

JEL Classification: J710, Q10

Introduction

Gender discrimination in agriculture is continuing as one of the growing issues confronted by the workers within the boundaries of informal sectors. Despite all the developmental efforts, 96 percent of the women workers in the country are reportedly employed in the unorganised sector (Deshpande and Deshpande,1999) characterised by low wages, high levels of insecurity of employment and appallingly poor conditions of work. Gender issues have become the central

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focus in the arena of economic policy and strategy for eradicating poverty and human misery. UN-Habitat (2003) asserted that in almost all societies women and men differ in their activities and undertakings regarding access to and control over resources and participating in decision-making. The policy makers strongly believe that a positive commitment towards gender equality will strengthen every area of action to reduce poverty because women can bring new energy and insight. There is a gender difference in access to land and factors like age, marital status, farm size, farming experience, access to credit facility and cultural beliefs which determine accessibility to agricultural land affect women more than their male counterparts (Adekola1, *et.al.*, 2013). There is therefore the need for an intensive effort for mainstreaming gender in agricultural programmes. Odisha is primarily an agrarian State where 61.8 per cent of total workers are engaged in agriculture and out of the total 57.8 percent are female (Census 2011). It provides employment and livelihood opportunities both direct and indirect to about 60 per cent of the total workforce. Therefore, the economic advancement of the state is dependant to a large extent on the development of the agriculture and allied sector. In the district of Mayurbhanj, again the male and female participation in agriculture is 52.7 and 42 percent of total workforce respectively.

In this backdrop the present paper makes an attempt to examine the gender inequalities in agriculture in Mayurbhanj district of Odisha and is organized as follows. Data and methodology are presented in section-II while section–III contains results and discussion followed by the concluding section.

Data and Methodology

The study is based on both primary and secondary data. Mayurbhanj, the largest district of Odisha is selected for the study as it has a total number of 2, 38,772 cultivators and agricultural labourers are 5,68,755. Out of 26 blocks in the district, one block named Bangriposi has been selected through purposive random sampling technique because of the higher participation of women in agricultural and allied activities here. Two Panchayats i.e. 10 per cent of a total 18 Panchayats of the block have been selected. These are Bangriposi and Nischinta covering 8 and 14 villages respectively. 20 per cent of the villages in each Panchayat have been selected for the study. Thus, 2 villages namely Kaliami and Sikadbhanga are chosen from Bangriposi and 3 villages i.e. Dasisole village, Gohirapal village and Pindargadia are selected from Nichinta. Twenty farm families from each village are selected randomly with an aim to cover all total 100 farm households and as both males and female are actively participating in agricultural and allied activities, the sample size is 166 (76 are male and 90 are female). A well designed and pre-tested interview schedule has been used to elicit necessary information from the respondents.

The paper also makes use of secondary data collected from Census Report, Report of National Sample Survey Organisation 55th round (NSSO), Registrar General of India, Odisha Agricultural Statistics and Economic Survey of Odisha.

Simple statistical tools like percentage and frequency distribution, ‘t’test and regression are used to analyse data. In order to measure the extent of participation of the respondents in different agricultural and allied activities the work participation index is calculated and the later is used as a dependent variable in the multiple regression models. Participating each time in a particular activity is considered as regular and participating comparatively less number of times is categorised as occasional. Accordingly the weights are decided.

The formula used to construct the work participation index is as follows.

Work Participation Index= Regularly (X_2)+ Occasionally (X_1) + Never (X_0)

Multiple regression model takes the following form.

$Y= \alpha+\beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 +\beta_4 X_4 + e$

Where Y=Work Participation Index, X_1= Age (in Years), X_2= Level of Education, X_3= Family Income, X_4= Land Holding and e=errorterm

Result and Discussion

Socio-Economic Characteristics of Agricultural labourers

The socio economic characteristics of the 166 respondents from five villages have been presented in Table-1.

Table-1: Socio-Economic Characteristics of Male and female Agricultural Labourers

Characteristics	Male			Female		
	Observed Score	Mean	Standard Deviation	Observed Score	Mean	Standard Deviation
Age	18-60	39.28	10.90	18-60	37.01	11.40
Education	Primary to P.G. & Illiterate	1.47	1.57	Primary to P.G. & lliterate	1.41	1.56
Annual Income (000 Rupees)	Nov 2016	25805.28	9039.47	Nov 2016	26562.23	9934.04
Land Holdings (Acre)	Upto 1 Acre to 10 Acre & No land	2.59	2.45	Upto 1 Acre to 10 Acre & No land	1.75	2.14

Source: Field Survey

A cursory glance at table-1 makes it clear that on an average, there is virtually no difference between men and women agricultural workers with regard to their age, educational level and annual income but the average area of land holdings is higher for men than for women. This indicates inequalities in the ownership of land resources.

The distribution of respondents in different age groups is shown in the Table-2. It is found that highest percentage (32.22 per cent) of female in agriculture are in the age group of 18-30 years followed by the age group 41-50 i.e. 27.77 per cent with a very marginal difference from those in the 31-40 age group. This indicates that young women in their twenties are very actively engaged in agriculture and allied activities. Their participation slows down after they reach the age of 50. Whereas, in case of male respondents, 32 .89 per cent are in the age group of 41-50 followed by31-40 age group. Out of the total male respondents 15.78 and 21 per cent are in the age group of 51 above and 18-30 respectively.

Table-2: Age-Wise Distribution of Respondents

Age in years	Male	Female	Percentage of Male	Percentage of Female
18-30	16	29	21.05	32.22
31-40	23	24	30.26	26.66
41-50	25	25	32.89	27.77
51 & Above	12	12	15.78	13.33
Total	76	90	100	100

Source: Field Survey

Table-3 represents the educational status of the respondents. It reveals that out of 166 respondents, 42 women and 43 men are literate. 23.68 percent female have high school level education as compared to 23 per cent among male. High school is the highest qualification achieved by both male and female engaged in agriculture. A very high i.e. 53.33 and 43.42 percent of female and male respectively are illiterate.

Table-3: Educational Status of Respondents

Education	Male	Female	Percentage of Male	Percentage of Female
Primary	10	10	13.15	11.11
Upper Primary	8	3	10.52	3.33
High School	18	23	23.68	25.55
Intermediate	3	3	3.94	3.33
Graduate	4	3	5.26	3.33
Illiterate	33	48	43.42	53.33
Total	76	90	100	100

Source: Field Survey

The annual family income of agricultural workers in the study area is shown in Table-4. A cursory glance at the table reveals that annual family income from agriculture is very low in case of both male and female. There is a clear cut difference between family income of male and female respondents as depicted in the table i.e. 42.10 percent of male have an income between Rs.20000 and Rs.30000 while a maximum of 34.44 per cent of women fall in the income group of Rs.10,000-20.000.

Table-4: Annual family Income of Respondents (In Rupees)

Annual Income	Male	Female	Percentage of Male	Percentage of Female
10001-20,000	23	31	30.26	34.44
20,001-30,000	32	27	42.10	30
30,001-40,000	16	25	21.05	27.77
40001 & Above	5	7	6.57	7.77
Total	76	90	100	100

Source: Field Survey

Table-5 shows the land holding pattern of agricultural labourers. From the table it is evident that most of the women agricultural labourers are land less (41.11 percent) as compared to the male (18.42 percent). 12.22 per cent of the women are having land up to one acre whereas 13.15 percent of the men are having land up to one acre. 26.31 per cent of the male and 16.66 percent of female respondents are having 1 to 2 acre of land holdings. For the female workers only 21.11 percent and 8.88 percent are having 2 to 4 acres and 4 to 10 acres of land as compared to the male agricultural labourers which mans 28.94 percent and 13.15 percent are having 2 to 4 acres and 4 to 10 acres of land.

This clearly depicts the gender disparity existing in the agrarian society where women are lagging in land ownership.

Table-5: Land holding Pattern of Respondents

Area	Male	Female	Percentage of Male	Percentage of Female
Upto 1 Acre	10	11	13.15	12.22
1 – 2 Acre	20	15	26.31	16.66
2 – 4 Acre	22	19	28.94	21.11
4 - 10 Acre	10	8	13.15	8.88
No Land	14	37	18.42	41.11
Total	76	90	100	100

Source: Field Survey

Gender wise distribution of respondents in decision making in respect of different activities in agricultural sector in the study areas is presented in Table-6. As can be seen from the table, men are found to be participating more in decision making as compared to women. It is because more of women are illiterate. They do not have the knowledge about the latest techniques of farming and have restricted mobility. The National Commission of Women (2004) in their report have shown that male members of the family only ask for the consent of female members, even though their suggestions or objections are not taken in to account. Women take decision only about changing of crops and purchase of animals. Thus, there is a hesitation to come out and interact. Women according to FAO (2004) are dramatically under-represented in decision-making bodies (from household-level up) because of their poorer education, lack of confidence and greater workload.

Table-6: Decision Making in Agricultural Activities in the study region

(Yes=1 and No=0)

Decision Making Areas	Male	Female
Selection of Seeds	1	0
Purchase of Fertilizers	1	0
Purchase of Animals	1	1
Purchase of Agricultural Equipments	1	0
Changing of Crops	1	1
Purchase of Seeds	1	0
Selling of Crops and Vegetables	1	0

Source: Field Survey

Table-7 shows wage discrimination across sex in different agricultural activities in the study region. Even for the same work women are getting half the wage than men are getting.

Table-7: Wage Discrimination in Agriculture

Sl. No	Agricultural Activities	Male	Female	Wage Differences
1	Ploughing	280	100	180
2	Levelling	150	80	170
3	Application of Manure	120	70	50
4	Sowing & Seed Cleaning	80	60	20
5	Uprooting of seedlings	180	100	80
6	Transplanting	180	100	80
7	Weeding	150	90	60
8	Irrigation	150	100	50
9	Fertilizer Application	200	50	150
10	Pesticides Applications	200	50	150
11	Winnowing	100	80	20
12	Drying	180	100	80
13	Cleaning	120	100	20
14	Storage	120	80	40

Source: Field Survey

The socio economic characteristics of both men and women agricultural workers as presented above give a vivid picture of gender disparity existing in agricultural sector of the study area. The features are reflected in the nature of their work participation. It is seen that women are mostly involved in unskilled work having no or very less access to time saving technologies. In order to study the extent of participation of women in agricultural and allied activities as compared to men, the work participation index is calculated.

b. Participation refers to taking part in activities in various types of work, often with others. If there is a need, there is participation. Rural women have very hectic life. Their work starts from dawn and ends at mid- night and in addition to this they take part in various agricultural activities. The distribution of respondents according to their participation in various agricultural activities has been shown in Table-8 along with participation indices and ranks. Work participation is classified into three categories i.e. Regular, Occasional and Never. These categories have been assigned the score of 2, 1 and 0 respectively. The regularity in participation is judged on the basis of the frequency of participation in the same work. Those who participate in a category of work whenever it is executed are considered as regular.

Table-8: Work Participation Index of Women in Agriculture

Sl No	Agricultural Activities	Extent of Participation				
		X_2	X_1	X_0	Participation Indices	Ranks
1	Ploughing	0	12	78	12	
2	Levelling	0	8	82	8	
3	Application of Manure	38	33	19	109	X
4	Sowing & Seed Cleaning	52	38	0	142	VI
5	Uprooting of seedlings	55	35	0	139	VII
6	Transplanting	62	28	0	152	III
7	Weeding	47	39	4	133	VIII
8	Irrigation	35	43	12	113	IX
9	Fertilizer Application	30	40	20	100	
10	Pesticides Applications	17	41	32	75	
11	Winnowing	55	35	0	145	V
12	Drying	60	30	0	150	IV
13	Cleaning	72	18	0	162	II
14	Storage	90	0	0	180	I

Source: Field Survey

Table-8 shows that women participate in almost all type of agricultural activities. Except ploughing and levelling of land where their participation is very occasional, in other activities their involvement is well felt most importantly in storage, cleaning, and transplanting and their ranks in these activities are I, II and III respectively. After harvest, it is very important to handle the crop with utmost care so that it does not get damaged. These operations include cooling, cleaning, sorting and packing of the produce properly to protect it from moisture. All 90 women respondents are regularly involved in storage activity. Cleaning is the second most participated activity of women agricultural workers in the study area. 72 women are regularly engaged in cleaning activities like cutting, crushing or bruising. This post harvest treatment largely determines the quality of the produce. This shows that women play a crucial role in maintaining the quality of food crops. The third highest participated activity by the women is transplanting. Engagement in transplanting gives women a good income and supports their livelihood. From among 90 women contacted, 62 regularly and 28 are occasionally involved in transplanting operations. 60 women are regularly engaged in drying activities while 30 are engaged occasionally. Drying of grains depends upon the weather and atmospheric conditions. On the other hand, if grain is not dry enough, it is vulnerable to mould and can rot during storage. If grain is too dry, this means a loss of weight and hence a loss of money at the time of sale. This indicates how important the work is. Winnowing is the fifth activity in which women are more active in the study region. 55 respondents are regularly participating and 35 occasionally. During winnowing, broken grain can be removed with the husks and is also more susceptible to certain insects such as flour beetles and weevils. Sowing and uprooting are in the sixth and seventh position of the most participated works of women. It is found that 52 respondents are regularly and 38 are occasionally participating in the sowing and seed cleaning activities. Uprooting is again another important activity in which women are actively involved. 55 women are regularly and 35 are occasionally participating in this activity. 47 and 39 of the respondents are involved in weeding on regular and occasional basis respectively. It is important to control the weed growth failing which it may hamper the growth of productive crops or reduce the crop quality by contaminating the product. Women workers also play an important role in plucking the annual weeds to secure the growth of the plants. Thus except ploughing and levelling, all other agricultural activities including livestock management are predominantly performed by females. However, there are some other works in which their participation is not up to the mark. Women workers are not actively involved in works like application of manure, irrigation, fertilizer and pesticides.

Table-10: Work Participation Index of Men in Agriculture

Sl No	Agricultural Activities	Extent of Participation				
		X_2	X1	X0	Participation Indices	Ranks
1	Ploughing	57	19	0	133	III
2	Levelling	66	10	0	142	II

3	Application of Manure	29	31	16	89	
4	Sowing & Seed Cleaning	15	22	39	52	
5	Uprooting	12	25	39	49	
6	Transplanting	33	28	15	93	
7	Weeding	19	41	16	79	
8	Irrigation	70	6	0	146	I
9	Fertilizer Application	61	6	9	128	IV
10	Pesticides Applications	57	10	9	124	V
11	Winnowing	22	12	32	56	
12	Drying	0	17	59	17	
13	Cleaning	5	51	20	61	
14	Storage	20	33	13	75	

Source: Field Survey

The Table-9 shows that irrigation, levelling and ploughing are the important works in agriculture where male actively participate.70 out of 76 male respondents are regularly involved and 6 respondents are occasionally involved in irrigation activity. Irrigation is the method in which a controlled amount of water is supplied to plants at regular intervals for agriculture. It is used to assist in the growing of agricultural crops, maintenance of landscapes, and re-vegetation of disturbed soils in dry areas and during periods of inadequate rainfall. The farmers in the study region have to irrigate before transplanting as the district is a hilly one and farming is just dry land farming. Levelling is the second most participated activity of men agricultural labourers in the study area. Men are more active in decision making in levelling activities. They are participating in fields at the time of land preparation, levelling is their sole domain and they do it with oxen. About 66 men agricultural labourers are involved in levelling regularly and 10 respondents do it occasionally. The third highest participated activity is ploughing. 57 respondents are regularly involved and 19 are occasionally involved in ploughing operation. Ploughing is required for preparation of fields for planting. Tasks considered physically demanding require male labourers, hence a greater value is reflected in higher wages for male labourers. Fourth and fifth important participated activities by male workers are application of fertilizers and pesticides. 61 respondents are involved regularly and 6 are doing it occasionally in fertilizers activity. While 57 labourers involved regularly and 10 occasionally participating in pesticide activities. It is evident that men are playing a dominant role in the application of fertilizers and pesticides activities. Before harvest, it is very important to handle the quantities of inputs like fertilizers, pesticides, seeds, application of manure and irrigation facilities etc. with utmost care so that they do not get damaged. This pre harvest treatment largely determines the quality of the produce. It is thus clear that men's labour play a crucial role in maintaining the quality of food crops.

c. Regression Analysis

To explore the relationship between various socio economic characteristics of the respondents (male and female) and the extent of their participation in agricultural activities, a regression model is used. A multiple regression analysis has been done by taking Work Participation Index of men and women agriculture labourers as dependent variable and age (years), education, annual family income and land holding as independent variables to find out the important determining factor of men and women work participation in agriculture and allied activities. The work participation index is calculated by summing up all the activities done by the respondents only on regular basis by giving a value of 2 for regularity. Here, there are two regression lines- one is for male other is for female respondents. The result of the regression is presented in Table- 10

Table-10: Determinants of Work Participation of Women and Men in Agriculture

Variables	Coefficient	Standard Error	T value	Coefficient	Standard Error	T value
Age	.339	.616	.551	-3.096	1.179	-2.625**
Education Level	-6.137	3.852	-1.593**	6.623	15.901	.417
Annual Family Income	.000	.001	-.620**	-.002	.001	-1.363**
Land holdings	13.279	6.769	1.962**	4.222	4.107	1.028
R= 0.678	R^2= 0.460			R= 0.666		

** Significant at 5 percent level.

The results obtained from the above regression analysis shows that the significant factors which influence the work participation of women labourers is education, annual family income and size of land holdings. An increase in educational level results in less participation by women in farm activities. Similarly, higher the family income, lower is the participation of women in agriculture and allied activities and vice versa. Low family income indicates women to work in others' field to supplement the family income. It has been found out that the size of land holdings has a positive impact on the participation of women in agriculture and it is significant at 5 percent level. Age and work participation are positively related but it does not influence the later significantly. For male workers, age and annual family income are statistically significant at 5 percent level. It means higher the age and family income lower is the participation of men in agricultural activities and vice versa. Here, education and land holdings are not statistically significant though they do have a positive relationship with the level of participation of men in agriculture.Comparing both the cases it may be said that the size of land holdings has a significant contribution to participation of women in agriculture in comparison to male but the matter of concern is that majority of women go without a land holding.

Problems faced by Women Agricultural Workers

The problems of women agricultural workers can be classified into two groups viz., social and economic. Social problems stem from the low status of women agricultural workers in the rural hierarchy and the economic problems are due to inadequacy of employment opportunities, poor security of tenure, low income and inadequate diversification of economic activity in rural areas. They face wide discrimination in every sphere of their life including the field of agriculture which is their main occupation. All these problems have made women to stay at subsistence level and lead a low status life. These problems are mentioned below.

Land: Land and labour are two basic factors available with rural people. Most of the women agricultural labourers do not have ownership over land. Lack of entitlement to land is a strong barrier to empowerment of women cultivators because ownership is required for availing credit and as a basis for entitlement to irrigation and other inputs, especially technology.

Credit: Lower capacity to avail credit is another important obstacle women face in agriculture. 'No land no credit' has been a common saying in the complex network of credit institutions towards agricultural lending. Due to lack of ownership over land and other property, women do not have the accessibility to credit from formal and informal institutions.

Technology and Extension: This is another important constraint that women face. Technology is not designed keeping women in mind. They are rarely considered as clients for agricultural research and development. According to NCW Report, depressed production of subsistence food crops, often known as women's crops, in comparison to increased production of cash crops, known as men's crops, result in degradation of family nutrition. Women and girl children are the first casualties.

Marketing: It is another constraint in economic empowerment of women in agriculture. Despite their active participation in most of the agricultural activities, women have little access to sales proceeds as most of the marketing is done by the male members of the family. The women workers are dispersed, unorganized and generally have poor bargaining power. This is because of illiteracy and lack of knowledge of marketing. They have no representation in agricultural marketing committees.

Unequal wages: Women earn lower wages as compared to their male counterparts in almost all type of agricultural activities, sometimes even half of what a male gets for same work stretched and for the same time period.

Literacy, Education and Skills: Educational attainment of agricultural women workers is shockingly low (70 per cent are illiterate). They lack access to basic education, training for skill development and computer knowledge. This keeps their productivity low making them economically backward.

Decision making: Women are not associated with the decision-making process, either inside or outside home. It is because the gender roles are socially and culturally fixed. Rural illiterate women are not aware of their legal rights.

Conclusion

Major findings of the study are as follows.

Participation of women is apparent in diverse areasof agricultural activities. Women labourers are mainly involved in harvesting and post-harvesting operations. They are engaged in storage, cleaning, transplanting, drying and winnowing. They are also responsible for seed cleaning, uprooting and weeding. Rural women are involved in almost all livestock related activities. On the other hand, men are mainly involved in land preparation before sowing or transplanting. They also participate in other inter-cultivation activities. Female agricultural labourers are usually landless as compared to the male counterparts. They hardly participate in decision making process. Decision about all agricultural activities is taken by the male member in the family.

The most significant factor which influences the work participation of women is low education level and low annual family income. Another factor like land holdings is negatively associated with the overall participation index but it is not significant. Wide wage discrimination between men and women is found in the study area as elsewhere in agriculture. Even for same work women are getting half the wage men are getting.

It follows that women in agriculture face variety of problems. It is very important for a state like Odisha to address the problems faced by rural agricultural women. They work hard without having any right over land, access to agricultural income, involvement in decision making. This is the greatest challenge. Equal right, equal participation can only help in achieving inclusive growth. To improve the condition of women in agriculture the following suggestions are made,

Women should have effective right to property (land). Framing of laws merely will not do, its proper implementation is required. This will not only enhance women's access to credit and revenue but also increase their participation in decision making. Women's unpaid work and contribution to on-farm and off-farm production should be recorded in national accounts. Training on modern methods of cultivation should be imparted to women extensively. With proper training their participation and productivity can be increased. The modern farm implements should be women friendly. These must be designed keeping women farmers and female agricultural labourers in view. Literacy rate among farm women should be increased through increase in their access to education. Evening schools will be better for them as they remain busy throughout the day. Awareness about their legal rights, the importance of their role in agriculture, facilities that can be availed by them need be imparted. NGOs may be involved in this task. Above all the women's contribution need be well recognised. Equal pay for equal work is the legal right of women. Agriculture being an informal sector the wide wage discrimination is going unnoticed. Eradication of discrimination shall help women live a dignified life.

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Role of Women and their Involvement in Indian Agriculture: A Comparative Study among Different Districts of Odisha

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Abstract

India is a developing country. The main occupation the people is agriculture. Many women in developing countries are engaged in agriculture. Over the years, there is a gradual realization of the key role of women in agricultural development and their contribution in the field of agriculture, food security, horticulture, dairy, nutrition, sericulture, fisheries, and other allied sectors. Swaminathan rightly pointed out that it was woman who first domesticated crop plants and thereby initiated the art and science of farming. The nature and extent of women's involvement in agriculture varies greatly from region to region. Women's participation in agriculture in low income countries in Asia is between 60-80 per cent. Women faced long standing obstacles in terms of limited access to land, credit, transport, technical assistance etc. that prevent them from adopting new technologies. Women's lower education level compel them to remain in subsistence agriculture only. This paper tries to explore the status of women in the agricultural economy through their participation. It mirrors the various schemes of government of India towards improving the status of women in agriculture. The secondary data collected for the research is used to study the work participation of women in agriculture from NSSO, census data and also by referring some of the reports.

Keywords: agriculture, status of women, women empowerment, government schemes

Introduction

Agriculture is the backbone of Indian economy. Agricultural production in India encompasses field crops, fruit crops, plantation crops, livestock, forestry, fishery etc. Overall, it is a huge industry which engages 52 per cent of manpower of India. The rural population of our country is mostly dependent on agricultural activity. Despite the fact that there has been a steady decline in the contribution of agriculture to GDP, Indian agriculture continues to remain the major livelihood provider and employer.

Swaminathan, the famous agricultural scientist, proclaimed that it was woman who first domesticated crop plants and thereby initiated the art and science of farming. While men went

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out hunting in search of food, women started gathering seeds from the native flora and began cultivating those of interest from the point of view of food, feed, fodder, fibre and fuel. Women have played and continue to play a key role in the conservation of basic life support systems such as land, water, flora and fauna. Over the years, there is a gradual realization of the key role of women in agricultural development and their contribution in the field of agriculture, food security, horticulture, dairy, nutrition, sericulture, fisheries, and other allied sectors. The nature and extent of women's involvement in agriculture, no doubt varies greatly from region to region. Even within a region, their involvement varies widely among different ecological sub-zones, farming systems, castes, classes and stages in the family cycle. But regardless of these variations, there is hardly any activity in agricultural production, except land preparation and ploughing in which women are not actively involved.

Review of Literature

There is a vast body of literature explaining the role of women in agriculture and allied fields. A brief review of some of the recent works is presented below.

Damisa *et al.* (2007) highlighted that despite various social, economic and other constraints women have high level of participation in agriculture and they are very committed to their agricultural activity. However, participation of women in decision making is found to be medium (Unnati *et al.,* 2011) and discrimination in wages is widespread (Bala, 2010).

Doss *et al.* (2011) observed that, the agriculture sector is underperforming in many countries because women, who are often a vital resource in agriculture and the rural economy, face constraints that reduce their productivity. With the help of time-use surveys, they have found that there is substantial heterogeneity among countries and within countries in women's contribution to agriculture. Lal and Khurana (2011) have linked the role played by women in agriculture and gender discrimination, the later having a negative impact on socio-economic status of women. According to Satyavathi *et al.* (2010), the advent of green revolution and mechanization of agriculture in India has further deteriorated the condition of rural farm women. Though green revolution resulted in an increase in the cash incomes in rural households, to cover the costs of technological inputs women are forced to work as agricultural labourers and unpaid labourers that augmented women's high labour burden. Sharma (1984) has mirrored caste and class position towards participation of women in production activities. She has viewed that the position of Indian women under capitalistic development policy has worsened. The proportion of women workforce in the agricultural sector has increased. However, the number of women cultivators have declined and they are pushed to the class of extremely casual unskilled labour. Mazumdar *et al.* (2009) have observed that, in case of agricultural activities women labourers are mainly involved in homestead gardening, harvesting and post-harvesting operations. The most important factor for seeking employment or involvement in various activities by the women is to meet family needs followed by increasing family income. Mishra (2009) has found that it is the wage, which affects mostly the efficiency of women agricultural labourers. The other major factors affecting the efficiency were use of leisure time, family pressure, age, family support, distance, health, use of labour saving devices and inter-personal relationships.

She has viewed that empowerment should aim at changing the nature and direction of the power structures, which marginalizes women labourers. Odisha economy is agro-based with about 62 per cent of the total workforce directly engaged in agriculture and a major proportion of women in the labour force work in agriculture. They are employed on small and medium sized farms as well as large industrialized farms and plantations and most of them are marginal workers i.e. they work for less than 6 months a year. Majority of them are employed on a seasonal and often a casual or temporary basis with no social security or unemployment benefit. This paper is a modest attempt to examine the role of women workers in agriculture in Odisha.

Objectives

a) To show the importance of women in agriculture and its allied activities, b) To grade women participation in agriculture among different districts of Odisha in accordance to their socio-economic profile, and c) To discover the schemes and programmes related to empowerment of women in agriculture and other activities.

Methodology

The study is based on secondary data. The necessary data pertaining to the women work participation rate and occupational distribution of women labourer in agriculture are collected from various issues of Odisha Agriculture Statistics, Census of India, NSSO and Odisha Economic Survey.

Women Work Participation in Agriculture in districts of Odisha

According to Census 2011 figures, among the women workers in Odisha, majority i.e. 66.07 per cent are marginal workers and only 33.93 per cent are main workers. Of the women main workers, 35.22 per cent are agricultural labourers and 18.57 per cent are cultivators.

Beyond the conventional market-oriented narrower definition of 'productive workers', almost all women in rural areas can be considered as 'farmers' in some sense, working as agricultural labour, unpaid workers in the family farm enterprise, or combination of the two. The rural economy is characterised by a scenario which could be described as Feminization of Agriculture. On the basis of number of total agricultural workers, Ganjam district tops the list followed by Balasore, Bargarh, Mayurbhanj and Kalahandi. From the bottom, Jharsuguda district has the lowest number of workers engaged in agriculture with Malkangiri, Deogarh, Boudh and Nuapada ranking second, third, fourth and fifth from below. In terms of number of female workers engaged in agriculture, Ganjam is at the peak. Mayurbhanj, Bargarh, Kalahandi and Koraput fall next in that order. Kendrapara is at the lowest rung of the ladder with Nayagarh at the rank-two from below. Bhadrak, Jharsuguda and Jajpur are respctively at third, fourth and fifth positions from the lower end.

Schemes and programmes related to Women in Agriculture

There are various schemes implemented by government for upliftment of women agricultural workers. Some of them are: 1. Grant-in-aid Scheme for the welfare of women labour, 2. Mahila

E-haat, 3. Nai Roshni Scheme for leadership development of Minority Women, 4. Support to Training and Employment Programme for Women and 5. Biju Krushak Kalyan Yojana

Conclusion

The condition of female workers in Odisha is more or less the same as in the country. Particularly in case of agriculture and allied activities, their involvement is significant and they play a major role. Women workers are more marginalised.

Since women are said to have basic indigenous knowledge, skill, potential and resources to establish and manage agriculture and allied activities, their participation must be considered and respected for a holistic and equitable growth.

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Issues and concerns of Gender Discrimination in Irrigated Agriculture: An Analysis

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Abstract

The importance of irrigated agriculture is getting its momentum since the late 1960s of last century. Women agricultural workers are contributing a lot in overall development of farm and farm household economy. Their role is realized at greater extent in irrigated agriculture due to labour requirement throughout the year. This paper attempts to examine the role of women agricultural workers in farming activities in Kalahandi district of Odisha. It also probes to find out if there is any discrimination in wage rate, nature of work, hours of work, handling of farm equipments and assigning responsibility at work place on basis of gender. The study found that women workers are now contributing immensely in both on and off farm activities as it is less risky, and training and expertise are available in local area. The discrimination of wage rate, nature of work to do and responsibilities to shoulder are found to be gender based. However, no such discrimination is found in hours of work.

Key words: Discrimination, farm mechanization, irrigated agriculture, women workers

Introduction

Women satisfy more than half of agricultural labour force demanded in developing economies. In the American continent agriculture is mostly dominated by the male workers whereas in African countries the women contribute around 80 per cent share of agricultural produce (Bastidas, 1999). The demand for women agricultural workers is growing along with the rise in agricultural activities. Mostly, women workers are needed due to greater mobility of male workers to other occupations, woman basically forms lower income strata of society and is willing to contribute to her family's income by helping in farm activities. The growing importance of women workers is felt in irrigated agriculture due its intensive farming practice round the year. The use of chemical fertilizers and frequent cultivation of same crops in same land increases the weeding rate on agricultural fields. To weed out, women workers are demanded as it involves less risk and the women prefer to do this work than the male workers. The burden of land preparation and leveling during sowing time and harvesting of crops are meted out by the women workers. The most familiar impact of irrigation now a days is the increase in both male and female labour demand. But the demand for women workers is exceedingly higher as they

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can provide their labour both for unpaid work in their own land and paid work as hired labour in others' agricultural field (Ahmed 2004).

Women's importance in agriculture is felt from time immemorial as both men and women are used to do agricultural work together to feed their family. Women are engaged in agricultural activities either as paid labourer or unpaid labourer. The agricultural activities are more volatile to natural calamities and need quick action to minimise loss owing to natural disaster. During sowing season quick transplanting of saplings are required to avoid damage due to flood, scanty rainfall or torrential rain. Therefore both husband and wife even the children are engaged in sowing activities. Similarly instantaneous response to pest attacks is needed during harvesting time. That's why the need of female workers is required to avoid the labour scarcity at that time and minimise loss to agriculture. This is very common among marginal and small farmers in developing economies. In India, the women workers in irrigated agriculture are demanded more in both traditional and modern farming practices especially after green revolution. Irrigation is a strategic input to accelerate the multiple agricultural activities round the year. Therefore the demand for agricultural workers rises and hence the women workers fulfil the rising demand in agriculture sector. Another advantage of rising demand for women worker is that they are available at lower wage rate. Discrimination on the basis of gender in paying wages, engaging works and work places are commonly seen in many countries of world. Despite their equal efficiency in many agricultural activities (transplanting, uprooting of saplings, harvesting of crops and weeding out), the employer pays 20 to 30 percent less wages to the women workers than their male counterparts. This paper is an attempt to address the questions as to whether there is any gender discrimination in agriculture and if so, what are the determinants and what specific policies are required to correct them.

Review of Literature

The involvement of women in agriculture will help to empower women and bridge the existing gender gap in this sector. It will directly address the Millennium Development Goal (MDG) 3 by ensuring gender equality in the economy (FAO 2011). Women are forced to work at lower wages in local surroundings because of over supply (Lal *et al.*2011). Men workers have upper hand in ploughing as it is advantageous to them because the plough requires significant upper body strength, which are needed to either pull the plough or control the animal that pulls it. The women are lacking such stamina and technique so they are normally excluded (Murdock and Catrenina 1973). Some researchers attribute the upper role of male to culture and belief in fixing and making it rigid for performing plough work particularly. In fact the societal tradition, customs and beliefs count a lot in division of labour particularly in agricultural work (Alesina and Guiliano, 2010; Fernandez, 2007; Fernandez and Fogli, 2009; Fortin, 2005, 2009).

Background of Study Area

The study area is Kalahandi district of Odisha which is located to the south western part of the state. The average rainfall of this district is 1365 mm which is generally distributed over 59-61 days. Nearly half (48.28 per cent) of its population are belonging to scheduled castes (SC) and Scheduled tribes (ST). The district economy is dominated by primary sector that contributes

49.44 per cent of the Gross District Domestic Product (GDDP). The GDDP and per capita district income have been growing at much slower rate i.e.1.27 per cent in comparison to the state level i.e. 3.95 per cent. The share agricultural workers total workers increased from 41.1 per cent in1991 to 50.32 per cent in 2001. It further increased to 55.12 per cent in 2011 but the share of cultivators is gradually declining during these periods (District at glance Odisha, 2014). The Upper Indravati Irrigation Project is providing irrigation facilities to 1,01,760 ha of cultivable land, the Uttei Medium Irrigation Project (9626 ha Kharif irrigation potential till 2014-15) and Ret Medium Irrigation Project (8500 ha Kharif and 2250ha Rabi irrigation potential till 2014-15), 172 minor irrigation projects (MIPs) with irrigation potential of 23382 ha during Kharif and 4796 ha during Rabi crops are also there. The total irrigation potential amounts to about two lakh ha. or 33.4 per cent of total cropped area 5.98 lakh ha.

Objectives

The objectives of the paper are to: a) examine the nature of works done by women workers in agriculture in the area of study, b) analyze the nature and extent of gender discrimination in wage rate and division of labour in agriculture, c) study the factors contributing for gender based discrimination in agriculture if any, and d) make a comparative analysis of gender issues in irrigated and non irrigated agriculture in study area.

Methodology

The study is a descriptive one based on 'with irrigation' and 'without irrigation' approach. Data are collected from primary sources by means of a structured questionnaire designed for both the areas with slight differences. The sample size (100 HHs) is selected by applying multistage random sampling technique. The two blocks namely Golamunda Block from unirrigated settings and Jaipatna Block from irrigation settings are randomly selected for the study. Qualitative data were elicited by conducting focus group discussions (FGD) and collecting information from key informants to supplement the findings. Women workers are paid agricultural labourers who work in others' fields. The women household workers are also included in the sample size as they are rendering unpaid work. The collected data are analysed by using simple statistical tools like tables, diagrams and averages and standard deviation.

Results and discussion: Tabl-1 presents data on average daily agricultural wages.

Table-1: Average daily wages of agricultural labourers in Kalahandi district

Types of agricultural labourers	Average daily wages per man day (in Rs.) 2008-09	2009-10	2010-11
A.	**Agricultural field labourers**		
Men	57.88	69.44	98.00
Women	46.68	60.83	72.94
B.	**Other agricultural labourers**		
Men	60.17	85.67	111.24
Women	45.57	65.95	81.00

Source: District Statistical Handbook, Kalahandi-2011

The table highlights the existing gender wage differentials among agricultural labourers in Kalahandi district of Odisha from 2008-09 to 2010-11. Time was when women's role in irrigated agriculture was confined to preparation of food and carrying food to agricultural field for their husbands or male family members or hired labourers . Gone are those days. Now women are directly and actively participating in farm activities. It is found that the wage discrimination exists among the agricultural workers in different time period. It is also a matter of concern that the wage gap is rising both in case of agricultural field labourers and other agricultural labourers involved in crop transporting, winnowing, threshing and plantation activities. In FGD and through direct contact with different stake holders, it is concluded that the male workers are migrating to other states with a view to earning higher incomes by engaging themselves especially in brick kilns and industries in metro cities. The young labourers prefer to migrate to Bengaluru, Raipur, Chennai and New Delhi for better income. Therefore the shortage of male workers arises in the district and hence the employers pay higher wages to male workers than female workers. Besides, the female workers are unable to migrate with their male members due to several social taboos like culture, language, distance, caring older members of family and children's education etc. The health hazards and accommodation problem at destination also account for their non-migration. Within a decade the rampant use of farm equipments like tractors, threshers, weeders, transplanters and other machines have replaced the female workers in agriculture. As a result the supply of female workers becomes more than their demand resulting in lower wage rate. This wage gap trend is rising. The following figures show the existing wage gap on the basis of gender from 2008-09 to 2010-11.

Fig.1: Agricultural Field Labourers

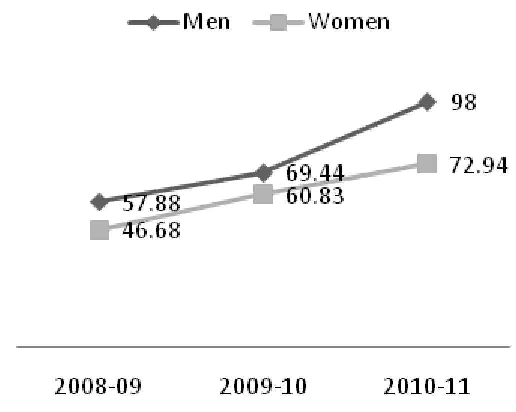

Fig.2: Other Agricultural Labourers

The educated rural youth do not prefer to work as agricultural workers in their own locality rather they prefer to work outside as migrant workers and earn better income. The rural agriculture sector loses the educated youth who can operate modern farm equipments in a better and more efficient manner and would have brought change in existing agricultural practices. Table-2 contains data on participation of women workers in defferent agricultural activities.

Table-2: Participation of Female Workers in Agricultural activities

Types of participation	Percentage share of female workers in agriculture	
	Irrigated	Non irrigated
No direct participation but indirect participation	15%	25%
Temporary help to male members in planting, harvesting during peak crop seasons	55%	49%
Full participation in agricultural activities as paid or unpaid or both as agricultural workers	30%	26%

Source: Field Study

The above table reveals the nature of participation of women agricultural workers and their percentage share. It is found that 15 per cent of women are not directly involved in agricultural activities but they indirectly help in preparing food and carrying it to field for either family members or hired labourers in irrigated settings. They also carry and accompany bullocks and sometimes the small farm equipments to the field. Besides, they watch the grains against domestic animals, bulls and from wild animals during day time in grain harvesting points. Apparently the same types of works are done by the female workers in unirrigated block. But their share is 25 per cent. Around 55 per cent of female respondents opined that they temporarily help their male members in transplanting, uprooting the saplings, harvesting the crops, preparing seed bed, vegetable cultivation, watering in vegetable fields and irrigation activities. These works are done by small and medium farmers of OBCs, SCs and STs category women. They do not prefer to work in others' field as paid agricultural workers due to their better family status. Only 30 per cent women respondents reported to work as daily agricultural labourers in other farmers' fields. They belong to mostly the SCs and STs female workers who are either landless or below the poverty line category. The study found that this type of workers is more in irrigation settings than in non irrigated settings. The status of wages to agricultural workers is shown in Table-3.

Table-3: Gender wise wages (Rupees)

Blocks	Nature of Farm activities	Male	Female	Wage gap
Golamunda	Ploughing	150	-	-
	Sapling	150	150	-
	Weeding out	150	150	-
	Harvesting	150	150	-
Jaipatna	Ploughing	150	100 (120*)	50 (30*)
	Sapling	150	100 (120*)	50 (30)
	Weeding out	150	100 (120*)	50 (30)
	Harvesting	150	100 (120*)	50 (30)

Source: Field Survey ** winter crop agricultural activities*

The table gives a paradoxical picture on prevalence of wage rates in irrigated and unirrigated agriculture. It is common that the wage rate in irrigated agriculture should be higher than the rainfed agriculture. The reason is that round the year farming practices make the demand for agricultural workers always higher in comparison to farm activitiesin unirrigated areas. The table shows that there is no wage gap on basis of gender in Golamunda block which is mostly a rainfed area. But the gender based wage gap is wide in irrigation settings block i.e. Jaipatna. The women workers are not at all satisfied due to the existing wage gap in irrigated settings. The only solace to them is that they are able to get some wage work round the year which is not possible in Golamunda block. The factors for prevailing lower wage rate are mainly influx of migrant agricultural workers from neighboring Nabarangapur and Rayagada districts to this block. Besides the female workers from other blocks of Kalahandi district are also migrating to the Jaipatna block in all (rainy, winter and summer) crop seasons. The migrant workers are ready to do work even at Rs.100/- per day during rainy season and Rs120/- per day in winter and summer crop seasons. The same wage is also paid to the local female workers. The local male workers are dissatisfied with existing wage rate and they are demanding Rs180/- per day. But this is not materialized due to arrival of male migrant workers from adjacent districts. Awarding of minimum wages to workers and equal pay for equal work legislation of the government are grossly violated in the study area. The District Labour (Welfare) officer is silent about such practice.

The division of agricultural activities among male and female workers is such that gender gap exists in ploughing and weeding out activities in the sample blocks. Sapling and harvesting works are performed by both male and female workers.

The ploughing of land either by tractor, power tiller or by oxen is exclusively reserved for the male workers. The reason is that the plough work needs extra physical strength, technique and risk which do not suit the women workers. Besides the religious belief plays a vital aspect in not allowing the women to plough the land. Plough is associated with the name of Lord Balaram and hence women are not allowed to hold the plough and till the land. Therefore, gender gap exists in ploughing activity. The weeding out work is normally done by the female workers in both irrigated and unirrigated area as it involves less risk and the scarce male workers are not put into this activity, their services are rather utilised in irrigation, transporting agricultural produce etc. the sapling/transplanting and harvesting works are done by both male and female members. Since both the blocks are coming under same socio-cultural settings, no significant difference is found on gender based discrimination in performing agricultural activities. However the members of FGD viewed that now few women agricultural workers are operating power tiller for tilling land of their employer. The study reveals that the women farmers/workers are less sensitive unlike male farmers/workers to use modern farm equipments due to their physical and mental inability to handle these machines (FAO 2011). The modern farm equipments have increased the gender discrimination in operating agricultural activities. In fact, the present mechanised farming practice in irrigated agriculture brings mixed response from women workers. For example, in case of operating power tillers, electric pump sets, sprayers and power threshers, the young female workers (< 30 years) show greater interest to do the agricultural work by handling these machines after acquiring a few hours/days training either from employer or from co-male workers. But women hesitate to operate tractor, harvester and even diesel pump sets, as these require more training. In some cases, wage differences are noted across crops. This is shown in Table-4.

Table-4: Crop and gender wise wage rate (in Rs.)

Crops	Male wage rate		Female wage rate		Wage gap
	Irrigated	Non-irrigated	irrigated	Non-irrigated	
Paddy	150	150	100-120	150	30-50
Pulses	150	150	120	150	30
Maize	150	150	120	150	30
Cotton	150	150	150	150	0
Sugarcane	150	150	150	150	0
horticulture	150	150	130	150	20
vegetables	150	150	100	150	50
S.D.	0	0	19.41	0	

Source: Field Survey

The standard deviation between the wage rates of female workers is zero in non-irrigated area and it is 19.41 in case of irrigated area. It highlights that wage discrimination is found in irrigated areas. In case of vegetable production, the women workers are engaged in seedling, irrigation, manuring, weeding out, applying even pesticides and harvesting vegetables as they are befitting to this work. In FGD, it becomes clear that as the women are expert in kitchen gardening they become careful in every stage of vegetable cultivation. But while women are efficiently rendering their manual works for better vegetable production, they are paid around 33 percent (Rs.100 against Rs.150 in case of male wage rate) less than the wages paid to male workers. Around 69 percent of employer members present in FGD revealed that lower wages to female workers are socially accepted for which they are paying a lower amount. They also clearly said that lower wages should be paid to women workers in case of land preparation and land levelling as it requires more physical stamina and strength that the women workers are normally lacking in. Besides they also opined that occasionally a male worker contributes 20-30 minutes extra work on request whereas the female workers are unable to do so as they have to return their home quickly to do the household chores. The members further viewed that women workers are physically weak and prefer to do the less strenuous work in agriculture than the male workers. Most importantly the female workers are not rigid in demanding higher wages or bargain for higher wage rate whereas the male workers even prefer to remain unemployed but will be rigid in demanding higher wages. Regarding the knowledge of equal wage for equal works legislation of the governments, only 15 percent employers present said they know the provision but all present in the FGD and all male workers strongly voiced in favour of low wages to women workers.

Suggestions

On the basis of the above, the following suggestions may be made.

a) The government should take steps for effective implementation of equal pay for equal work rules in agriculture sector, b) Special training programmes should be conducted at gram panchayat level in imparting training to women agricultural workers on operating different farm equipments, c) Women friendly farm equipments should be provided at subsidized rate to farmers to enable the women agricultural workers to operate them easily, and d) Steps also be taken for proper implementation of minimum wages in field of agriculture.

Conclusion

The world economy is changing very fast but women, irrespective of caste, religion and race, are unable to cope up with this change. The existing gender gap in agriculture should be eliminated because it largely hinders their efficiency, reduces their part and obstructs achieving the broader socio-economic-cultural-human development goals. The minimization of the gender gap/ discrimination will definitely generate significant gains for the society for boosting up agricultural productivity, lessening rural poverty and hunger and importantly, enhancing economic growth. Gender based wage and work discrimination in agriculture in fact is socially determined and it can be rooted out by conscious social efforts and action and well designed public policy. The women are the change setters in household and society. If more wages are paid and wide agricultural job opportunities are provided to them at par with the male workers, it helps them to save more and spent in a wise manner for betterment of family. Therefore, from societal point of view more jobs and better wages would prove as boon for the family and the economy. The government, non governmental organizations and civil society should work forward in their respective capacity for ensuring both minimum wages and equal wages to all workers for same work for agricultural workers in rural backward areas.

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Gender Inconsistency in Employment: Performance of Odisha

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Abstract

It is a well-established fact that human resources are most vital of all resources. Human resources comprise both male and female population. Rapid economic progress is possible if both of them participate equally in the development process, as they are equal partners in the social life. Unfortunately in our country the status of women is very low and Odisha is no exception to this. There is wide discrimination against women.

Women are about half of the population, in some regions more than half of the population. In the Hindu society, from time immemorial the women have been assigned certain duties in the society different from male members. After ages of social reforms even though the female folk are now able to come closer to the work participation in the society, they are still far from the equal status in every walk of life.

Growth of Female Population

There are differences in growth of population of male and female in a region. It also differs in rural and urban areas according to the social system. In Odisha the growth of female population in the rural sector is close to male population growth. During the years 1951 to 1981 the growth of female population was a little higher or similar to that of male but thereafter it remained lower to the growth of male population up to 2011.

In urban Odisha the growth rate of population across sexes gives a different picture. Throughout the post-independence decades growth of male population remained higher to female population. In certain societies there are certain bias for male children and in those societies the parents go as far to destroy their female children before or after the birth of a girl child. With the growth of medical science new devices to prevent the girl child from birth is being practiced even though more consciousness is now created to prevent it by social scientists and activists.

The growth of male and female population in Odisha from 1951 to 2011 is shown in Table-1.

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Table - 1: Growth of Male and Female population in Odisha, 1951- 2011 (Population in Lakh)

Year	Rural		Urban	
	Female	Male	Female	Male
1951	71.24	69.27	2.78	3.15
1961	82.82	81.56	4.95	6.13
1971	100.58	100.41	8.45	10.00
1981	116.23	116.36	14.36	16.73
1991	136.29	137.94	19.65	22.69
2001	155.38	157.48	20.05	29.11
2011	168.61	170.58	32.87	35.44

Source: Economic Survey, 2016, Govt. of Odisha

The highest concentration of female population is found in Ganjam district. The five districts next to Ganjam are, Cuttack, Khordha, Balasore, Mayurbhanj, Sundargarh in that order. The lowest concentration of female population are in Korput, Nabrangpur, Kalahandi, Bolangir, Puri, Baragarh Jagathsingpur, Kendrapara, Bhadrak, Keonjhar,Jajpur, Dhenkanal and Angul. The highest sex ratio is noted for Malkangiri and the lowest in Khordha district.

Girl children are far behind boys in enrollment. Enrolment of student in this century from 2001-02 to 2014-15, which was 43.70 lakhs in 2001-02 in Odisha increased to 63.85 lakhs in the year 2014-15, a growth rate of 46.13 percent in fourteen years at the rate of 3.31 percent per annum. The enrolment is just 1.91 percent higher to the growth of population in the state in the first decade of this century.

The growth rate of enrolment in primary education in case of girls shows an encouraging trend. It is estimated at 48.28 per cent against 44.28 per cent for boys. But except in two years at the beginning of the decade, i.e. 2003-04 and 2004-05, the enrolment of girl students in the primary classes remained lower than that of boys.

The enrolment at middle school level have increased from 10.55 lakh in 2001-02 to 21.63 lakh in the year 2014-15. In 2014-15 the enrolment of girls in middle schools formed 47.98 per cent, almost same as that in primary schools. Enrollment in secondary schools is estimated at 4.65 lakh for girls in 2001-02 which constituted 41 per cent of total enrollment in that year. It increased to 4.91 lakh i.e. 44.96 per cent in 2014-15.

Work-Force in Odisha

In the rural areas, as per 2011 census, 56.72 per cent of female workers are main workers and 43.28 per cent are marginal workers. For the male category, the respective figures are 98.15

per cent and 1.85 per cent. In the case of urban areas, 97.04 per cent of women workers and 86.82 per cent of male workers are main workers. This means that only 2.96 per cent of women workers and 13.18 per cent of male workers are marginal workers in the urban areas. Thus, while male workers are a predominant category of main workers in rural areas, in the urban areas, women main workers dominate the scene.

Work Participation Rate (WPR)

WPR is the ratio of workers to the total population. It indicates the relative economic empowerment of men and women in the society. The WPR of Odisha shows that men's ratio always remained above the ratio for females. The mean decadal growth rate of WPR from 1951 to 2011 in case of female has remained 21.06 percent while in case of males it remained substantially higher at 48.70 percent, that is more than double the former. The decadal trend of work participation by male and femaleWPR in Odisha is shown in Table-2. A good thing is that gap between male and female WPR is reducing in the record decades since 1981-91.

Table-2: WPR for Male and Female in Odisha: 1961 – 2011

Year	**Female**	**Male**	**Gap**
1961	26.58	60.75	34.17
1971	10.47	55.62	45.15
1981	19.81	55.86	46.05
1991	40.11	18.11	32.00
2001	24.66	52.52	27.86
2011	28.53	51.28	22.75
Mean	**21.06**	**48.70**	27.70

Source: Census of India

Employment Scenario

Organised Sector

In the year 2013, the total employment was 7.95 thousand in the organised sector of Odisha, the public sector was dominant with 6.78 thousand and private sector employment was 1.17 thousand.

In the public sector the share of women employment was just one thousand or 14.75 per cent and in private sector their employment was 120 or 9.75 per cent. In the total organised sector women employment is 1.12 thousand in the year 2013 which forms 14.09 per cent of the total employment in the organised sector. Employment in the organised sector, public and private, of Odisha and employment of women from the year 2002 to 2013 are presented in Table-3.

Table-3 : Female Employments in organised sector of Orissa (Figures in Thousands)

	Public Sector		Private Sector		State
	Total	**Female**	**Total**	**Female**	**Total Female**
2002	6.92	0.93	0.79	0.10	1.03
2003	6.80	0.96	0.87	0.10	1.06
2004	6.57	0.96	0.89	0.11	1.96
2005	6.55	1.00	0.90	0.11	1.00
2006	6.27	1.00	0.89	0.11	1.00
2007	5.98	0.92	0.90	0.10	10.2
2008	5.98	1.03	1.02	0.09	1.12
2009	6.19	1.03	1.16	0.11	1.11
2010	6.08	1.06	1.23	0.12	1.18
2011	6.05	1.09	1.17	0.12	1.21
2012	5.88	1.04	1.25	0.14	1.18
2013	6.78	1.00	1.17	0.12	1.12

Source: Odisha Economic Survey, 2015-16

Employment in Un-organised Sector

In the un-organised sector too, women's participation in work is far from satisfactory. In the rural areas where the agricultural operations are dominant, there also the female's share is lower than the males. Of course the difference is not considerable. There the males constitute 1.85 lakh while the females constitute 1.08 lakhs, the latter forming 36.86 percent of total engagement of all workers in the agriculture sector.

In non-agriculture employment the males are again dominant. The males engaged in non-agricaltural work are 17.57 lakhs while the females are 5.10 lakhs, a 22.52 percent of the total engaged in non agricultural work in the rural sector. In the urban areas women's participation remained marginal. Out of 25 thousand males engaged, women's participation is only 4 thousand, i.e. 19 percent. Employment of men and women in the un-organised sector of Odisha in rural and urban areas is given in Table-4.

Table-4 :Employment in Un-organised Sector, 2005 (Lakhs)

	Rural		Urban		Combined	
	Male	Female	Male	Female	Male	Female
Agriculture	1.85	1.08	0.21	0.04	2.06	1.12
Non-agri.	17.54	5.10	8.85	0.97	26.39	6.07
Total	19.39	6.18	9.06	1.01	28.45	7.19

Conclusion

The work participation ratio remains lower in Odisha for the females; it is 28.53 for females as against 51.25 percent for males. Actual employment of females in both organised and un-organised sector of Odisha is far from satisfactory. In organised sector, both private and public organisations, 7.85 lakh females are working in the year 2014, which forms only 14 percent of total employment. In the un-organised rural sector to some extent the female workers are at about same level, but not at par with males. About 1.85 lakh males are engaged in agricultural activity as against 1.08 lakhs of females. In non-agricultural activates the females are far behind the male workers.

Inconsistency in gender employment presents critical situation in Odisha. The situation is not improving as expected. In order to increase women employment priority should be given to literacy and education of women.

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Women Empowerment and Gender Equality through SHGs – A Case Study

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Introduction

Women play a critical and transformative role in overall growth of an economy and there is a link between gender empowerment and economic development. Countries with high HDI rankings are the ones that have higher gender equality. By promoting gender equality, a nation can reap rich dividends in all fields. So what is necessary for sustainable development is to ensure an enabling political, social and economic environment based on effective participation of women.

The approach of the present government is more based upon empowering the people and the main attention is on empowering the rural people who constitute 65 per cent of the total population of the country. Women constitute a major section of the society. The last two decades have seen a sea change in the status of women in rural areas. In order to improve the condition of women, Government has taken a number of initiatives like – Beti Bachao Beti Padhao (BBBP), Sukanya Samridhi Yojana (SSY), Mobile APP Himat, panic Button in Mobile phones, one stop centre for violence affected women. The Ministry of rural development is implementing various poverty alleviation programmes having special components for women. Some of the major schemes are MGNREGA, SGSY, NLM, IAY, MKSP, NFSA etc. All these are intended to support and access of women for promoting their empowerment. Supporting SHGs, rural cooperatives, micro finance institutions (MFIs) and various other savings and credit associations can help empower women, enable them accessing credit and promote gender equality. The Gram panchayats which are the smallest units of local self government have a prominent role to play in making the benefits of development available to the grassroots level.

Poverty, illiteracy and disempowerment of Women go hand in hand. When a woman is illiterate and poor and unable to meet her basic needs of life, she always depends on others for her survival. She is certainly not capable enough to have powerful and meaningful choices. Hence, it affects her empowerment and intensifies gender inequality. There are many studies that suggest that access to education and ability to earn have greater significance matters of gender equality. Formation of Self-Help Groups (SHGs) among women is one of the major schemes having special components for women that can empower them and ensure their access to

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financial and credit markets. SHG is a homogenous group of rural poor voluntarily formed to save whatever amount they can conveniently save out of their earning and mutually agree to contribute to a common fund to be lent to the members for meeting their production and emergent credit needs. The group operates a group account to which the balance amount left with the groups after disbursing loans to its members is deposited. SHGs are the own organisation of the poor in which they participate fully and directly and take decisions in all issues concerning poverty eradication, thereby can empower women.

Objectives of Study

The present paper is an attempt to study 20 women SHGs functioning in two fishing villages of A.Nuagaon Panchayat of Chatrapur Block. The study intends to find out the impact of these women SHGs on the socio-economic development of the women of sample SHGs in particular and their families in general. It attempts to ascertain whether the SHG scheme implemented for the rural women has had positive impact on the living conditions of the women in the said villages and improved their economic status through gainful employment, the extent to which the scheme has ensured the active participation of rural women in the development process and contributed to empowerment of fisher women.

Scope of the Study

The study limits to only two villages of fishing community of A.Nuagaon panchayat namely Sana Nolia Nuagaon and Bada Nolia Nuagaon. 13 SHGs of Sana Nolia Nuagaon and 7 SHGs of Bada Nolianuagaon are taken for our study. Those SHGs are taken for study which are being promoted by a state level federation of Women Marine Fish Worker's Orgaisation named SAMUDRAM that is playing a pioneering role in supporting 247 women SHGs in the state for the development of marine fishing community with greater efficiency, zeal and skill.

Methodology

Both primary and secondary data have been used in the study. Secondary data are obtained from SAMUDRAM and United Artists' Association, a development organization headquartered at Ganjam devoted to empowerment of the poor with focus on women and children. Primary data have been collected from all the members of the selected SHGs.

Profile of Groups

The comparative profile of SHGs of S.Nuagaon and B.Nuagaon is presented in Table-1. It shows that the number of fishing families over the study period of 12 years in both the villages have increased from 550 to 700 in S.Nuagaon and 220 to 300 in B.Nuagaon. Similarly, the number of fishing population during the period has increased from 2200 to 3000 in S.Nuagaon and 1000 to 2000 in B.Nuagaon. Another change noticed is that while the SHGs in both the villages were linked to Rushikulya Gramya Bank, now some of the SHGs are linked to SBI at Chatrapur. Another important change noticed among the members of both the villages is that rate of literacy among members has increased though marginally, i.e. 20 per cent to 25 per cent. The contribution of minimum amount of each member to the group fund per month has also increased from Rs.30 to Rs.50. This feature of SHG clearly indicates that there has been positive changes in women's lives. The interest earnings on the savings amount is kept in the bank. The groups meet atleast once in a month. As all the members belong to the same fishing community it is convenient for them to have meeting during late evening when the fisherwomen return home after their work. It is observed that all the groups maintain their minutes book regularly. The literate members are found to be selected as the leaders of the group i.e. as the President and Secretary. However, all the members contribute to the decision making process of the group. It clearly indicates active participation of group members in the development process.

Table-2 indicates that the women forming SHGs are mainly involved in savings and credit services. The minimum contribution of members has increased from Rs.10 to Rs.50 and maximum from Rs.30 to Rs.100. Initial loan size taken by members has also increased from Rs.500-Rs.800 to Rs.2,000 – Rs.10,000. The relatively high interest rate fixed i.e. 22 per cent to 24 per cent helps the group funds to accumulate and at the same time the members are able to get a large amount of loan at the time of their need as and when they require.

Table-3 exhibits the number and names of SHGs in both the villages promoted by SAMUDRAM. Though the number of members in each SHG is same i.e. 20, the number of groups formed in S.Nuagaon is nearly double the number of B.Nuagaon. It is because the number of fishing families and fishing population in S.Nuagaon are double that of B.Nuagaon during the period. Therefore, the total loan outstanding against the members in S.Nuagaon is comparatively higher as well as savings are higher.

Value-added products by SHGs

The SHGs of the two sample villages, in addition to savings and credit services, are also engaged in production of value – added products out of the commercial species of fish. The products are- a) Fish pickle, b) Prawn pickle, c) Fish papad, d) Fish jhuribhaja, e) Chatni powder, f) Prawn curry, g) Dried Fish and h) Fish oil.

The members sell these value-added products at (i) State level Surasamela held during winter season, (ii) National, State, District level Pallishree Mela, (iii) Bela Bhumi Mahotsav, (iv) Exhibitions held inside the state and outside the state like West Bengal, Andhra Pradesh and (v) On-line customers.

Thus the women forming SHGs in the sample village are hard working and very active and sincerely engaging themselves to enhance their economic power with the support of SAMUDRAM. They are also taking training on marketing, gender equality, negotiation skill development, book keeping, exposure visit to different institutions etc. under the supervision of SAMUDRAM.

Conclusion

The above study indicates that the rural women forming SHGs in the sample villages of Chatrapur block are playing multiple roles and undertaking different activities with great responsibility which is nothing but a steping stone towards promotion of women's empowerment. The groups, though not potentially rich, new depend less on the formal banking sector for the credit. Saving habits among women have been improved. The fisher women forming SHGs are also not depending on village money lenders for credit. Their banking habits have improved. All the SHG members have opened their accounts only after joining the SHG. It indicates the financial as well as social inclusion of rural women. The male members of the family net fishes, 70 per cent of which consists of low priced fishes which include crockers, ribbon fishes, lesser sardines, lizard fishes, pink pearches etc. The substance of these fishes is nutritionally and chemically equal to the commercially important fish species. The women forming SHGs produce diversified value added fish products from these low priced fishes, as well as preparation of by-products from their wastes. SAMUDRAM is taking initiative to provide the know how for preparation of value-added products which definitely go a long way in empowering rural fishing women forming Self Help Groups.

Suggestions

In an educationally & socially backward district like Ganjam where number of poverty stricken people is quite visible, it is the N.G.O. promoted SHGs which are more relevant than the Government promoted SHGs in order to eradicate rural poverty in general and achievement of women empowerment in particular. Under government – promoted SHGs there is need of many paper works, plan and estimate of the project, margin money requirements etc. which the poor and illiterate community can never satisfy at all, while under NGO-promoted SHGs these formalities are absent. Women find all the services at their door step provided by NGOs. The NGOs can provide any time service & for any purpose. Hence promotion of more & more women SHGs among the fishing community by NGOs with greater efficiency, zeal and skill would certainly achieve women empowerment.

The basic services available in the sample village are not adequate for empowering women. The level of malnutrition among women their rate of literacy, availability of health services for women is very much deplorable. Though many rural villages have no schools, the villages under study possess facilities of studying upto secondary education. However, for ensuring gender equality what is necessary is that steps be taken for cent percent female literacy , more of health services , appointment of health workers, trained TBAs, appointment of more of teachers, anganwadi workers etc.

The members of SHgs are finding marketing problems of their value added products. The production of the value added products is not cost effective due to less quantity of output produced and due to high cost of raw materials like high price of fish, high price of oil used in the production process, high cost of labour. Besides there are packaging cost and cost of selling product. Because of high cost of production of value added products, their prices are becoming high resulting in falling demand. Hence, a subsidy from the side of government is necessary which will enable the members of SHGs to produce and earn a higher dividend, and strengthen the economic power of rural women.

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Table-1: A Profile of S.Nuagaon and B.Nuagaon

Sl. No.	Subjects	S. Nuagaon		B.Nuagaon	
		2005	**2017**	**2005**	**2017**
1	No. of fishing families	550	700	220	300
2	No. of fishing population	2200	3000	1000	2000
3	No. of fishing families under BPL List	336		100	
4	No . of SHG formed	13	13	7	
5	Maximum number of female members in SHG	23	20	23	20
6	Location of villages	Rural		Rural	
7	Caste composition	OBC		OBC	
8	SHGs existed from the year	1995		1995	
9	Bank linked to SHG	RGB Chatrapur	S.B.I.	RGB Chatrapur	S.B.I. Chatrapur
10	SHGs in villages developed by	NGO		NGO	
11	Literate members in each group (Average)	20%	25%	15%	20%
12	Leaders of the group	Selected	Selected		
13	Credit distributed by	SAMUDRAM	SAMUDRAM		
14	No. of potential groups	Nil	Nil		
15	Repayment of loan made	With hard ship	With hard ship		
16	Proportion of member defaulters or drop out	Very rare		Very rare	
17	Minimum amount of each members contribution in the group fund per month	Rs.30/-	Rs.50	Rs.30/-	Rs.50/-
18	The periodicity of contribution	Monthly	Monthly		
19	Amount of fine	Rs.1	Rs.1		

Table – 2 : Operational Features of Micro Credit SHGs

Sl. No.	Operational Features	Self Help Group (SHG)
1	Clients	Women
2	Groups	13 to 22 per group
3	Service locous	Savings and credit
4	Fole of NGO	Guide, facilitator and financer
5	Meetings	Monthly
6	Savings deposits	Rs.10/- to Rs.30/-
7	Interest on savings	Bank rate (6% + profit share)
8	Initial loan size	Rs.500/- to Rs.800/- (2017) 2000, 10000
9	Effective interest rate	22% to 24%
10	Total savings	Rs.210/- to Rs.27805/-
11	Total outstanding loan	Rs.11,840/- to Rs.91,242/-
12	Development services	Some associated programmes

Table – 3 : Outstanding Loans And Savings of Sample Self Help Groups

BADA NOLIA NUAGAON

Sl. No.	Name of SHGs	SHG Members	
		2005	2017
1	Gangadevi	21	20
2	Harachandi	20	20
3	Jaya Maa Santoshi	21	20
4	Kalimukhi	15	20
5	Laxmi Nursingha	23	20
6	Rajama	18	20
7	Bhagabati	13	20
	Total	131	20

Ernamma NSS:RGB Chatrapur A/c.4615

SANA NOLIA NUAGAON

Sl. No.	Name of SHGs	SHG Members	
		2005	2017
1	Garama	20	20
2	Harachandi	22	20
3	Jay Chandi	22	20
4	Jay Maa Mangala	21	20
5	Jay Maa Bhabani	20	20
6	Kalamma	23	20
7	Maa Santoshi	20	20
8	Maa Polama	21	20
9	Rajama	20	20
10	Ramchandi	20	20
11	Rameswar	22	20
12	Sidhabhairabi	20	20
13	Thakurani	20	20
		271	

Budhima NSS A/c.4616 at RGB Chatrapur

Addressing Gender Inequality through Women Empowerment: An overview

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Abstract

Women suffer from diverse deprivations which compel them to live a life with uncomfortable feelings of frustration, of missed opportunities and challenges. Wide spread discrimination against women is structural and entrenched, reflected in the persistent pattern of under representation in legislature, administration, management and professional and technical work and disproportionate share in earned income. Gender disparity can be tackled only through proactive intervention in areas such as economic empowerment of women, building of social and physical infrastructure and improving women's role in governance. Rural backwardness can be addressed only through concerted efforts to create equality in access and unearth the potentialities hidden in the people. India is characterized by an adverse sex ratio, low female literacy and maternal mortality rates and high incidence of violence against women. With this backdrop, the present paper is an attempt to highlight the imperative of intervention targeting education, training, child care, health, nutrition, credit, employment, welfare services support and legal safeguards to address gender inequality. Special Women budget may be the surest way for women empowerment and reducing gender disparity.

Key Words: gender disparity, health, education, nutrition and empowerment

Introduction

Empowerment of women is a multi faceted, multi dimensional and multi layered concept. Women empowerment is a process in which women gain greater share of control of resources – material ,human and intellectual like knowledge ,information ,ideas and financial resources like money and access to money and control over decision making at home ,community ,society and nation and to gain power. Limited access to resources (land), input and credit, inadequate technical competency, poor participation in decision making, poor existing research and extension system are the major lacuna of women (Venkadesh, 2012). All the life span of women requires strength and power in external and internal qualities. Their health, work ,education or awareness

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all are in the hands of male since childhood to old age ,even the internal qualities as self confidence and self consciousness are dependent on some others whether in family or in society (Haq, 2000).

Women and Education

It is a widely acknowledged fact that improvements in the quality of women's education will bring about gender development to a certain extent. Although literacy alone is not sufficient to subdue the existing levels of discrimination, still one cannot rule out its potential benefit for women's empowerment. Hence, female education had always been given priority in the Plans. The National Policy on Education in its Resolution in 1968, laid emphasis on improving the quality of education and the need to focus on the education of girls. The NPE -1986 provided for a comprehensive policy framework for educational upliftment and in 1992 a Plan of Action (PoA), assigned specific responsibilities for organizing, implementing and financing its proposals. Very few girls get the opportunity to pursue secondary or higher levels of education. This further indicates low human development; lack of trained or skilled people to meet the demands in the market. It also lowers the probability of women joining the labor force, except being employed in the informal sector. Lower literacy rates have a detrimental effect on the awareness of women regarding their health needs. This forecloses the possibility of their access to services available for their well-being. (Mukherjee, 2006)

Impediments to women empowerment in India

India is a country having an old societal structure with impact of religion, customs and traditions on progress of society thereby affecting women empowerment policy in a negative way. Some of the major constraints are, 1)The society is more biased in favour of male child in respect of education, nutrition and health facility, 2)Poverty is the root cause of deficiency in opportunities and sources for growth of women, 3)Lack of awareness about legal and all constitutional rights, 4)Poor education and increased household work load on girls in the family, lack of facilities of education in school and colleges and 5)Little access to economic independence due to less employment.

Women, SHG and Bank Credit

Among the real and potential clients of micro-finance, women are seen as the most reliable in terms of repayment and utilisation of loans. The gender dimension of micro-finance is based on the understanding that the entire household benefits when the loans are given to women. The very existence of SHGs is highly relevant to make the people below poverty line hopeful and self-reliant. SHGs enable them to increase their income, improve their standard of living and status in society. It acts as a catalyst for bringing this section of society to the mainstream.

Gender deprivation in access to resources

Social conventions and gender ideology deprive them of the access to, and control over, the resources which would enable them to increase their productivity. Women form the backbone of agricultural operations as majority of agricultural labourers are women. Seventy to eighty percent of the field work is done by women. Most post-harvest and processing tasks are their sole responsibility. They are heavily involved in animal husbandry, particularly small livestock. About 85 percent of persons engaged in dairy production are women. Indian economy suffers a lot because of the unequal opportunity for women at workplaces.

Legal foundation of Women Empowerment

The Preamble of Constitution guarantees justice – social, economic and political. Article 14 states that, ''the state shall not deny to any person equality before the law or the equal protection of laws within the territory of India. It implies that among equals the law should be equal and equally administered, that the like should be treated alike without distinction of race, religion, wealth, social status or political influence."

Article 15(3) provides for power to state government that "Nothing in this Article shall prevent the state from making any special provision for women and children." The expression 'special provision for' is used to mean 'in favour of'. It is clear that the intention of framer's of constitution was to protect the interests of women and children. [Dattatraya Motiram vs state of Bombay (55 B.L.R. 323)] where Justice Chagla held that the state could discriminate in favour of women against men, but it could not discriminate in favour of men against women.

Similarly Article 16 (1) states that:- a) "There shall be equality of opportunity for all citizens in matters relating to employment or appointment to any office under the state." b) No citizen shall on grounds of religion, race, sex decent, place of birth, residence or any of them, be ineligible for, any employment or office under the state. "Article 39 (a) lays down that the state shall direct its policy towards securing all citizens men and women equally the rights to means of livelihood, together with Article 39(d) emphasize on equal pay for equal work." Another direction for state policy is in Article 42 where provisions for first and humane conditions of work and maternity shall be made The Constitution (Forty Second) Amendment Act, 1976 introduced innovative concept of fundamental duties. Article 51 A (e) directs state to promote harmony and the spirit of common brotherhood amongst all the people of India transcending religious, linguistic, and regional diversities, to renounce practices derogatory to the dignity of women; All beneficial law and directions given by constitution leads to create a social mechanism for uplifting the subordinate position of women in India.

In India there has been over a decade of feminist engagement with the law on the issue of violence against women by demanding legislative action. These efforts have been successful in that every campaign resulted in legislative changes such as the Dowry Prohibition (Amendment) Act, 1984, The Indecent Representation of Women (Prohibition)Act, 1986, The Commission of Sati (Prevention) Act, 1987, The Immoral Trafficking(Prevention) Act, The Hindu Widow Re-Marriage Act 1856;The Indian Christian Marriage Act, 1872;The Medical Termination of Pregnancy Act, 1971, Criminal Law Amendment Act, 1983,The Family Court Act, 1984; The

Indecent Representation(Prohibition) Act, 1986; The Pre-Conception and Pre- Natal Diagnostic Techniques(Prohibition of Sex Selection) Act, 1994; The Immoral Traffic (Prevention) Act, 1956;TheProtection of Women from Domestic Violence Act, 2005; The Hindu Succession Act,2005. Development of women has been receiving attention of the government right from the very first plan (1951-56). But the same has been treated as a subject to welfare. The shift in the approach from welfare to development of women could take place only in the sixth plan (1980-85). (Pathan, 2012)

The word 'Status' means importance or position or legal identity of a person, or a body or position in society. The phrase status of women denotes position of women in society or their legal identity. At international level, 'Equality of status is granted to women by International convention on Economics, social & cultural Rights in 1966. Equality is the basis of social justice. The 'Fourth World Conference on Women' Held in Beijing confirms equality. "As a fundamental pre requisite for social justice." Main foundation of women's right is the convention on the Elimination of All Forms of Discrimination against Women (CEDWA) to which 166 countries are members till date including India effective since 1981 to provide equal right on both sexes. According to Justice A.S. Anand, "Gender equality concerns each and every member of the society and forms the very basis of a just society. It is an established fact that women represent very kernel of the human society around which social change must take peace." In a 1980 UN Report, it was reported that: "Women constitute half the World's Population, perform equally but two thirds of its work hours, receive one tenth of the world's income and less than one hundredth of the world's property. Women comprise sixty six percent of the world's illiterates and seventy percent of the world's poor. No law, custom, tradition, culture, or religious consideration should be involved to excuse discrimination against woman.[3]

After the declaration of Women's Year and Women's Decade in 1975 and the Nairobi Conference in 1985, media have started laying much emphasis upon women's problems like gender discrimination, their role and importance, health and education and the like. Several legal and policy efforts over the years have definitely improved the status of women in India. However, the process of women's emancipation is not yet complete because of the prevalence of patriarchal values in the system which have restrained them from becoming more mobile, autonomous and independent economically, socially and politically.[4]

Discussion and Result

There has been a gradual decline in both infant mortality rate and child mortality rate across the country. While there is an overall decline in child mortality, some regions in India still lag behind

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[3] *Justice A.S. Anand speech on, 'Dynamics of Gender Justice: Crimes against women' (At Bodhraj Sawhny Memorial Oration at New Delhi on 2nd Dec. 2000)*

[4] *Ashok Kumar N, "Do Women have Efficiency to Run the Urban Administration?" in U.B.Singh, (ed.) Empowerment of women in Urban Administration, New Delhi: Serials Publications, 2006,p.110.*

not just high income states but also behind the many low and middle income states. For example, Sri Lanka's child mortality rate is 10 in 2015. The countries which faced natural calamities, internal wars, and political upheaval have done better than India. But India with its economic reforms since 1991 is yet to improve in social parameters. A brief summary of women's empowerment in India is given in Table-1.

Table-1: Women's Empowerment and Gender based violence (Age 15-49) Years in India (2015-16

Location	Currently married women who usually participate in household dcisions (%)	Women who worked in the last 12 months who were paid in cash (%)	Ever-married women who have ever experienced spousal violence (%)	Ever-maried women who have experienced violence during any pregnancy (%)	Women owning a house and/ or land (alone or jointly with others) (%)	Women having a bank or savings account that they themselves use (%)	Women having a mobile phone that they themslves use (%)	Women age 15-24 years who use hygienic methods of protection during their menstrual period 18 (%)
Urban	84.6	19.7	24.8	0.9	56.8	65.9	64.7	70
Rural	81.1	23.2	37.9	3.8	65.2	53.7	32.5	42.8
Total	81.8	22.5	35.2	3.2	63.5	56.2	39.2	47.4

The data on sex ratio at birth (females per 1,000 males) shows mixed trends. While the earlier worse performing states like Haryana, Tamil Nadu, and Bihar have showed significant improvement, the states like MP, Karnataka and West Bengal, which performed better earlier, have declining sex ratios. This is a worrying factor as killing of unborn girl child might have spread to newer areas. Only in Uttarakhand, sex ratio increased from 996 to 1,015 females per 1,000 males. Meghalaya saw its sex ratio stabilise at 1,005 females per 1,000 males. All other states saw a disturbing fall in sex ratio.

In all the states (except Goa) more than 50 per cent of children and women are anaemic. To be more precise 50 per cent of the children under five are anaemic in 10 states. Anaemia is usually associated with factors related to diet, nutrition and cultural practices, which are in turn linked to education and socio-economic backgrounds. It was also found that 50 per cent of the women are anaemic in 11 of the 15 states surveyed in the first phase. In the past 10 years, the number of obese people has doubled in the country. Among women, obesity levels increased from 13.92 per cent in 2005-06 to 19.56 per cent in 2015-16. The status of malnutrition among women as revealed by NFHS-4 is presented in Table-2.

Table-2: Malnutrition among women

Particulars	Lower Bound	Upper Bound	Minimum	Maximum
Non-pregnant women age 15-49 years who are anaemic (<12.0 g/dl) (%)	46.3609	55.3936	26.40	65.80
Pregnant women age 15-49 years who are anaemic (<11.0 g/dl) (%)	42.3000	51.2272	23.60	61.40
All women age 15-49 years who are anaemic (%)	46.2352	55.2193	26.40	65.70
Blood sugar level of adult women (15-49 Years)- high (>140 mg/dl) (%)	5.6400	7.0055	3.50	9.30
Blood sugar level of adult women (15-49 Years)- very high (>160 mg/dl) (%)	2.5524	3.5386	1.20	5.20
Hypertension of adult women suffer from slightly above normal of adult women (Systolic 140-159 mm of Hg and/or Diastolic 90-99 mm of Hg) (%)	6.8172	8.4374	4.40	11.70
Hypertension of adult women moderately high (Systolic 160-179 mm of Hg and/or Diastolic 100-109 mm of Hg) (%)	1.4156	1.9026	.90	3.10
Hypertension of adult women suffer from Very high (Systolic and/or Diastolic) (%)	.6185	.9088	.00	1.70

Determinants of Malnutrition gives a poor picture of the women health over their male counterparts with regard to the incidence of anemia, level of blood sugar and hypertension in different states. Descriptive statistics and the mean plot reveals Non-pregnant women aged 15-49 years who are anemic (<12.0 g/dl) is higher than that of pregnant women indicating thereby that pregnant women are receiving more medical attention against anemia. Also incidence of anemia is more in case of women than that of men indicating a poor nutritional status of women. It is observed that there exists a significant difference between various groups (states) with regard to the determinants of malnutrition.

Conclusion

Women are a vital part of the economy, both at the national and the household levels. They make one-third of the national labour force. Compared with men folk, Indian women contribute a much larger share of their earnings to basic family maintenance with the result that women's earnings positively and immediately affect the incidence of poverty. Women should be allowed to go for higher studies as it encourages them to show their talents which will benefit them not only individually but also the society at large. The money that women earn and women empowerment tend to strengthen them and their family economically, lessen the incidence of domestic violence, raise awareness about their rights and duties and hence can reduce corruption and help the family to come out of poverty trap. The policy implications is that special women budget may be an important measure for women empowerment and reducing gender disparity.

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MGNREGS and Economic Status of Rural Women - A case study

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Abstract

This paper is an attempt to assess the importance of Mahatma Gandhi National Rural Employment Guarantee Scheme(MGNREGS) for rural women. Based on a survey in Raghunathpur, Narendrapur and Jagannathpur villages under Narendrapur Grampanchayat of Ganjam district, it was found that the scheme has enhanced empowerment of rural women and that organising massive awareness programmes at block level the utility of the scheme can be augmented further.

Introduction

Although women constitute 50 percent of the world population, they lag behind in all aspects. In particular rural women are extensively involved in domestic work and enjoy relatively less access to economic opportunities, health and education than urban women and men. They are the worst sufferers in the society due to ill health, illiteracy, humiliation and unemployment. They get less chance to participate in development and decision making process. MGNREGs is playing a major role in improving the situation by engaging them in various activities. The scheme provides supplementary means of livelihood to thousands of rural women, contributes to the promotion of their economic security, and empowers them as also facilitates creation of rural assets. It acts as a social security measure for the aged women, widows, divorced/deserted women and promotes inclusive growth. In this way rural women get special attention through this programme. As per Rural Development Ministry in India the percentage share of employment availed by women during 2006-07 was 40 per cent, which increased to 48 per cent in 2010-11 and 51 percent in 2015-16. These figures are much above the statutory minimum requirement of 33 percent. The increasing trend of employment of women shows that they are getting empowered and taking a leading role in the society.

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MGNREGS and Women Empowerment

Women empowerment is a complex issue which can be achieved only when there is improvement in the condition of their health, education, safety and financial security. They can gain power only when both men and women begin to respect each other. Women who have some level of education and earning capacity have higher decision making power in the households and the community. Implementation of MGNREGS has enhanced empowerment of rural women in many aspects. For the first time equal wages are paid to men and women in this programme and this has increased the earnings of women. This is a move towards greater gender equality and equal status of women in the family as well as in the society. As the wages are paid through banks or post office, withdrawal are made as per her decision. As a result women get economic independence in the family . The provision like crèches for the children of women workers is a positive element of the scheme. Provisions like work within a radius of five kilometres from the house, absence of supervisor and contractor help the rural women to join in the work. But there is a variation in work participation rate across states. During the year 2015-16, highest level of women participation is found in Puducherry i.e.85.07 per cent.

Methodology and Objectives

The study is based on both primary and secondary data. The secondary survey of information Secondary data are obtained from District Lead Bank office, DRDA Chatrapur, Grampanchayat office Narendrapur and different websites. For the collection of primary data, a schedule was framed with focus on socio-economic status, income, employment, saving position etc. of the women workers engaged under MGNREG scheme. A field study was undertaken in the month of August and September, 2016 in the three sample villages. From each village 100 women job card holders were selected at random. Thus a total number of 300households were surveyed. The author- investigator has conducted personal interviews with the women workers to elicit required information and to find out their major problems. For analytical purposes simple average and percentages are used. The study is in the nature of an assessment of the impact of MNRGS on the rural women.

MGNREGS in Odisha

MGNREGS has been implemented in Odisha in three phases since February 2006 to April, 2008. As per report of the Ministry of Rural Development, Government of India, out of total 440.55 lakh man days generated till 2014, the share of women was 39.79 percent which is a little more than the minimum rquired under the provisions of the Act. The Panchyats Raj Department has constituted Odisha Society for Social Audit, Accountability and Transparency (OSSAAT), and an electronic Fund Management System to minimise irregularities and control misappropriation of funds for reducing migration.

In Ganjam district, the District Rural Development Agency(DRDA) is the main implementing agency for functioning of the MGNREG scheme. As per the official reports of DRDA, since its inception in 2006, 1,30898 number of households have completed 100 days of work. Similarly, the number of man-days of employment generated has gone up from 24.08 lakh in 2006-07 to 85.28 lakh in 2015-16. The average share of women in total person days was 47 percent which is more impressive. Non availability of male workers due to migration and availability of work within the village could be the basic reason for the larger participation of women in the scheme. But the share of employment generation of the persons belonging to schedule caste and schedule tribe are 12 per cent and 39 per cent respectively which indicate their lower participation in the scheme. In the said program the average money wage rate per day is Rs.167 which is less than the market wage. The average expenditure made per GP under NREGA during 2006-07 was Rs.5.89 lakh compared to that of Rs.24.49 lakh as on August, 2016. Thus the funds utilized have been increased indicating effective utilization of funds. The local educated enthusiastic youth have been engaged as supervisors to encourage people for more participation in the work.

Results and Discussion

Profile of the Study Area and Women MNREGS Workers

The village 'Narendrapur' is situated 12 km away from Berhampur city, famous for folk dance named as 'RANAPA'. The village has a weekly 'haat' that sits on Wednesday where different products are sold by the rural people. Jagannathpur is situated 10 km away from Berhampur city and the village Raghunathpur is at a one km distance from Jaganathpur village. In the Jagannathpur village, out of 481 MGNREG workers registered, women constitute 53 percent. But in Ragunathpur village share of women registered is 50 percent and for Narendrapur village it is 49 percent. The average share of women registered in these 3 villages was 47 percent which is more than the national average. In these villages, women workers were engaged in renovation of existing ponds; construction of muddy roads, culvert, cowshed, well; land development and maintenance of road-side tree plantation; construction of IAY house etc. During the year 2015-16, out of 17 GPs of Chatrapur block, Narendrapur topped by generating 14,000 man days employment.

Of the 300 respondents, 48 percent belonged to 31-40 years of age followed by 22 percent in the age group 41-50 and 19 percent for young age group. Only 3 percent of workers are in 60 years plus age group. It is also observed that majority of the workers are in the age group of 31-40 years in 3 villages. It indicates that due to poverty and unemployment, workers are interested in the aforesaid programme to sustain their livelihood.

It is observed overall 80 percent of the respondents are illiterate. In the three sample villages illiteracy rate is more than 70 percent. Out of the total, 14 percent of the workers have education up-to primary level, 5 percent completed upper-primary education and only one percent has secondary education. This shows that literacy rate among rural women is very low. In Jagannathpur village no respondent are educated up-to secondary level. Hence the Government should undertake sufficient measures to improve literacy rate in the study area.

'Other caste' communities are more dominant among the sample constituting 70 per cent followed by schedule castes 16 percent. There are a few schedule tribe workers in the sample area i.e.5 per cent only. Raghunathpur has no ST women job card holder. There is a need to organize training programmes by the government and to create awareness among underprivileged sections of the society regarding the benefits of the scheme.

As a whole, 57 percent of the respondents have cultivation as their main occupation whereas 36 percent belong to the category of agricultural labourers. Remaining 7 percent are in other category. In Narendrapur and Raghunathpur villages more than 70 percent depend on agriculture for their livelihood. But in Jagannathpur village 73 percent of the respondents were found working as agricultural labourers.

Economic statur:

Data relating to the number of days for which the sample respondents worked are presented in the following table.

Table-1: Distribution of women workers by the Size of Employment

Name of the village	No of persons employed				Total
	Less than 60 days	61-80 days	81-100 days	101-150 days	
Jagannathpur	62(62.00)	30(30.00)	08(08.00)	00(00.00)	100(100.00)
Narendrapur	06(06.00)	14(14.00)	73(73.00)	07(07.00)	100(100.00)
Raghunathpur	68(68.00)	21(21.00)	11(11.00)	00(00.00)	100(100.00)
Total	136(45.33)	65(21.66)	92(30.66)	07(02.3)	300(100.00)

Source: Compiled from field study

Note: Figures in the brackets indicate percentage to the total

From the aforesaid table it is clear that 45 percent of the workers are working less than 60 days in a year whereas only 2 percent of the respondents are working in between 101-150 days. In Narendrapur village 73 percent of the workers are employed for 81-100 days which is the maximum. But in Jaganathpur and Raghunathpur villages 62 and 68 percent of workers are engaged for less than 60 days. The reason is that the daily labourers of Jagannathpur and Raghunathpur village prefer to work in Tata project which is under construction and they are being paid Rs.300/- per day whereas from MGNREGS work they get Rs.167/- only.

Monthly income, expenditure and saving are accepted as the basic criteria of economic status of sample households. Such data are given in Table-2.

Table-2: Net Saving Per Respondent before and after MGNREG Scheme

(In Rs.)

Occupation	Before NREGS			After NREGS		
	Monthly income	Monthly Expenditure	Net surplus /deficits	Monthly income	Monthly Expenditure	Net surplus /deficit
Small farmers	2500	2400	100	3800	3000	800
Agricultural labourers	2200	2300	-100	3400	2700	700
Others category	2300	2500	-200	3550	2900	650

Sources: Compiled from field study

It is observed from the table that in each category income level of the respondents have increased substantially after their registration in the scheme. In case of small farmers there is increase in income to the level of 65 percent. The saving amount is also high i.e. Rs.800/-. In case of agricultural labourers and other categories, the workers are able to save more money than before. Now the workers are able to meet minimum basic needs of life. Before they had registered in MGNREG scheme, saving amount was very low and the workers were in huge debt. But after their participation in this programme situation has changed. The workers cleared their debt to some extent. The saving level of the workers also improved a lot. They prefer to stay in the local area as a result of which there is reduction in migration.

Opinion of the women workers

Workers are of opinion that they feel more happy as this program has given them an important source of livelihood and there is improvement in the local area. Previously, the villagers of Narendrapur were facing trouble due to lack of good road. But when MGNREGS workers actively participated in road construction work, a one km long 20 feet road was completed just within 15 days in the construction of which 50 people were employed. After the construction of the road it became easy for the four wheelers including tractors to pass through the village. Thus the improvement of road brings a positive change in the living of the local people. Dhoni Sethy, a divorcee lady of about 35 years of age is an inhabitant of Narendrapur village. Before joining the MGNREG scheme, she was woking as a washerwoman and led a miserable life. But after she registered her name in MGNREG scheme, she was engaged in different activities like plantation and road construction. Previously she could earn only Rs.90-100 per day. But at present through this scheme she earned Rs.167 per day. The economic status of the aforesaid woman has improved. Now she is able to spend a substantial part of her income on food, health, social functions and educating her children. The aforesaid woman is also able to clear her debt and save money for future. Besides, being a permanent resident of this village she prefers to work in this scheme. She is able to share her feelings with others by working in a group.

Problems of Women Workers

The major problems of the respondents are as follows.

a) Delay in disbursement of wages is the most important problem for the lack of enthusiasm among the workers towards the scheme. It is due to delay in measurement of works by the junior engineers of Chhatrapur block and delay in availability of funds with the implementing agencies and lack of internet connectivity at GP levels. Many workers in remote areas find it difficult to travel a long distance to collect their wages from banks and post-offices. Most of the labourers are illiterate and ignorant about banking transaction. So they are unable to get wages in time and face massive economic hardships. b) Very few women get work for 101-150 days. During the field visit it was noticed that the job card holders who are unemployed do not even get the unemployment allowance as mentioned in the scheme. Many rural people are not aware about the provision of unemployment allowance. c) Work opportunities are given only to one unskilled manual labourer and the scheme has no provision for skilled labourers. d) In the Ganjam district about 67 per cent of works have remained incomplete. New works are started without completion of earlier works. The completion rate of work is slow due to heavy rainfall, land disputes in work area and weak monitoring of work. For this reason, the labourers are unable to join in new work. e) Due to lack of awareness, participation of women is not so satisfactory. The awareness programme created by the Gram Panchyats and DRDA authorities has not yet reached remote rural areas.f) The respondents complaint that they are being assigned work only for one project which is meant for a fixed period. After completion of the project, labourers wait for another project. During this gap they do not find any work. There is no continuous engagement of labourers in MGNREG scheme. Besides, due to illiteracy villagers are not able to assess the project meant for them.

Measures

The following measures are suggested to overcome the problems.

i) In the present situation it is the responsibility of the Gram panchayat to create awareness programmes in rural areas pertaining to the use of ATM cards, Debit cards meant for cashless transaction. ii) As per Ministry of Rural Development, many sarapanches are not aware of the dimension and implication of the scheme. So Panchayat Raj department should conduct training programs for elected representatives of GPs so that the scheme can be implemented effectively. iii) As many of the women workers are illiterate, awareness can be created through brochures, TV, Radio, films, village camps by SHGs and NGOs.

Conclusion

From the field study it is clear that there are more opportunities for rural women in this Act. But considerable gap exists between ground level reality and provisions of the Act. This gap can be filled up through proper awareness at the grassroot level. Then only there will be a lot of improvement in the status of women.

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Gender-wise Development of Education in Odisha

Kabita Kumari Sahu*

Education plays a significant role in influencing the quality of life and awareness among the individuals as well as in social transformation of the society. Education is not only an end but a means to realise other desirable ends like reducing poverty, overcoming discrimination, ensuring equality and promoting inclusive growth.It is the tool to break the gender discrimination. Almost all the countries in the world have been trying to promote education and bring gender parity at all levels of education. In India, union government has started bringing separate gender budget since 2005-06. The National Policy for the Empowerment of Women, 2001 suggested the following for the education of the girl child.

(i) Equal access to women and girls, (ii) Special measures to eliminate discrimination, (iii) Create a gender sensitive educational system, (iv) Increase enrolment and retention rates of girls, (v) Improve the quality of education to facilitate development of occupation/ vocation/ technical skills by women and (vi) Reducing the gender gap in secondary and higher secondary education is focus area.

Odisha has done reasonably well on literacy front. The literacy in Odisha has increased 5 times from 15.80 percent in 1951 to 72.9 percent in 2011 growing at an annual compound rate of 2.58 percent as against 2.33 percent per annum at National level from 18.33 percent in 1951 to 73.0 percent in 2011. Whereas the male literacy has increased 2.99 times from 27.32 percent in 1951 to 81.60 percent in 2011, the female literacy has grown much faster i.e., 14.16 times from a low base of 4.52 percent in 1951 to 64.0 percent in 2011. Both male and female literacy are fast approaching National averages.But, there are substantial social, regional and gender disparities in literacy. The Scheduled Tribe communities have low literacy rates. The ST female literacy has increased from a very low level of 4.76 percent in 1981 to 41.20 percent in 2011, which is significantly lower than SC and general female literacy. Though the ST male literacy has increased from 23.27 percent in 1981 to 63.70 percent in 2011, there is still a big gap between ST and the general male literacy. The SC communities have done comparatively better. The SC male literacy has almost bridged its gap with the general male literacy rate. There is also remarkable improvement in SC female literacy. Though the rural female literacy has more than doubled from 21.90 percent in 1981 to 60.7 percent in 2011, there is still a substantial gap with their urban sisters. The gap between rural and urban male literacy has, however, been decreasing.Women

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have fared better in literacy because of a number of entitlements provided by the State. But, Female literacy in Odisha has been lower than male and has consistently been below the all-India level.

The objective of the paper are as follows:

I. To analyse the district wise growth of literacy according to gender in Odisha

II. To examine gender and regional disparities in education in Odisha with special reference to KBK and non-KBK districts

Gender gap in Literacy in Odisha (in per cent)

Literacy is a vital input required for social and economic development of society. It provides basic requirements to acquire better skills, absorb new technologies, and harness new opportunities to march forward to achieve desired goals of development. But it is unfortunate that ST communities have fared the worst in Odisha. Table-1 depicts the growth of literacy of all communities and Scheduled Caste and Scheduled Tribe population in Odisha (in per cent).The ST female literacy increased from a negligible level from 1.77 percent in 1961 to 4.76 in 1981 and 23.37 per cent in 2001 in Odisha .It may be seen that the literacy rate of ST women is very low at 41.20 percent in 2011, compared to 58.76 percent for SC women and 64.01 percent for all women in Odisha. Though literacy rates of both ST and SC women have increased over the years, the increase is less than that for their male counterparts.

Table- 1 : Literacy rate in Odisha (in percent).

Year	All population			SC population			ST population		
	Male	Female	Gender gap	Male	Female	Gender gap	Male	Female	Gender gap
1961	34.68	8.64	26.04	19.82	3.44	16.38	13.04	1.77	11.27
1971	38.29	13.92	24.37	15.98	5.17	10.81	16.38	2.58	13.8
1981	56.45	25.14	31.31	35.26	9.40	25.86	23.27	4.76	18.51
1991	63.09	34.68	28.41	52.42	20.74	31.68	34.44	10.21	24.23
2001	75.35	50.51	24.84	70.47	40.33	30.14	51.48	23.37	28.11
2011	81.59	64.01	17.58	79.29	58.76	20.53	63.70	41.20	22.50

Source:CensusofIndia,1961-2011.

The gap between the male and female literacy rates of STs increased from 11.27 percent in 1961 to 22.50 percent in 2011. In the case of SCs, the gap kept on increasing from 16.38 percent in 1961 to 30.14 percent in 1991, but declined to 20.45 in 2011. Efforts are made by the government to eliminate social, regional and gender disparities and further improve literacy levels by increasing enrolment rates of children in the age group of 6-14 and keeping a vigilant eye to reduce dropout rate and retain all students irrespective of gender, caste and community in all regions.

The drop-out ratio among tribal school going children is alarming. The state governments have been undertaking various steps such as, free distribution of books and school kits, provision of scholarship, reimbursement of school fees, free bus travel, mid-day meal, residential schools, etc. to encourage education among tribal students.

The drop out rate among ST girls are highest among all categories of students. The dropout rate among ST girls was 66.5 in 2000-01. It declined to 56.6 in 2003-04 and to 2.85 in 2012-13 while for SC girls it was 54.30 percent in 2000-01 and decreased to 36.6 per cent in 2003-04 and to 2.42 in 2012-13. Drop-out rates in upper primary schools in Odisha for ST boys and girls were highest up to 2008-09, but 2009-10 onwards that are almost at par with other categories. The causes of dropout are poverty, early marriage, lack of infrastructure in the locality, etc. which need to be addressed properly to arrest the trend of dropout before completion of high school education.

At the high school level, the drop out ratio of ST boys were highest than ST girls. In case of SC categories drop-out rate of girls were highest except in the year 2003-04. But for the overall population, the drop out ratio of girls were higher than boys.

Among the districts, the coastal district of Jagatsinghpur has the highest male literacy rate of 92.38 percent while Khorda has the highest female literacy rate of 81.61 percent in 2011.Puri district has highest ST female literacy in 2011 that is 64.71 per cent and Jagatsingpur district has highest SC female literacy in 2011 that is 69.95 per cent.

Regional Disparity in Education in Odisha

There exist regional disparities in literacy rate between KBK and non-KBK regions of the state. The male, female and over all mean literacy rate is lower in KBK region compared to non-KBK region in both 2001 and 2011 census years. Table-2 estimates the regional disparity in education in two regions (KBK and Non-KBK) in Odisha in 2001 and 2011.

Table-2 Gender wise status of education in KBKandNon-KBK

Region	2001			2011		
	Male	Female	Total	Male	Female	Total
KBK	57.55	29.10	43.33	68.80	45.61	57.10
Non-KBK	79.56	55.74	67.83	86.27	69.18	77.56
Odisha	75.35	50.51	63.08	82.40	64.36	73.45

Source: Census of India,2001and 2011

Standard Deviation(SD) and Coefficient of Variation (CV) of literacy rates in KBK districts are higher than those of the non-KBK districts, implying thereby wider differences in literacy rates of KBK districts compared to that of non-KBK districts. The details are presented in Table-3.

Table-3: Variation in Literacy rate in KBK and Non- KBK

Year	Gender	NonKBK			KBK		
		Mean	SD	CV	Mean	SD	CV
2001	All	66.61	9.91	14.88	42.85	11.35	26.49
	Male	79.56	8.88	15.43	57.55	17.93	22.72
	Female	55.74	13.01	44.69	29.1	18.96	41.06
2011	All	78.66	8.48	14.6	58.1	10.16	20.54
	Male	87.07	6.67	9.76	68.3	10.05	16.67
	Female	69.81	10.17	21.81	46.61	10.03	25.76

Source: Census of India, 2001 and 2011

Gender disparity

The Gender Parity Index (GPI) is a socio economic index designed to measure the relative access to education of males and females. This index released by UNESCO indicates that girls are not discriminated against in the state in recent years as regards educational attainment. But because of the initial skewedness, gender disparity in enrolment has not been fully rectified. Girls' enrolment has grown at the primary stage from 24.38 lakhs in 2002-03 to 30.58 lakhs in 2015-16 and at the upper primary stage from 520394 to 1018744 during 2004-05 to 2011-12 and from 618.03 thousand to 735.48 thousand at the secondary stage during the same period. The rate of growth of enrolment of girls has been higher than that of boys but disparities still persist - girls still account for only 45.7 per cent of the enrolment at the elementary stage and 37.73 percent in secondary stage. Many of the equity gaps will be closed over time merely by the expansion of secondary education. Relevant data are given in Table-4.

Table-4: Gender Parity Index

Year	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Elementary Education	0.94	0.95	0.95	0.96	0.96	0.94	0.94
Secondary Education	1.00	0.98	0.97	0.98	1.04	1.01	0.99

Source: OPEPA 2015-16

Suggestions

Some suggestions may be made to bridge the existing gap in literacy in Odisha.

First, the attitude has to be changed and women are to be recognised as an essential human resource base. They are not only to be supported; they are to support the family equally. Second education needs to be reoriented to increase women's access to traditionally male-dominated courses. More incentives like scholarships and free ships have to be provided to deserving girls. Third, providing gender-fair education is a challenge before the society. Gender sensitivity training for teachers and counsellors and active recruitment of women in non-tradition fields of study are essential.

Conclusion

Education plays a significant role in influencing the quality of life, awareness among the individual as well as in social transformation of the society Given the vital importance of education at all spheres of human life, almost all the countries in the world have been trying hard to promote education on the one hand and to bring gender parity at all levels of education on the other. Therefore, it is suggested that in order to reduce drop out rate and enhance enrolment of girls in particular, parental motivation is very significant. In addition, government has to take special measures like opening of more schools in remote areas, appointment of more female and ST teachers, provision of special incentive scheme for girls etc in order to increase girls' participation in schools.

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