Poverty and Agricultural development Scenario in Orissa: A Regional Analysis

P., Nanda and MK, Sinha and A., Kumar

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Prabhakar Nanda[1], Mukesh K. Sinha and Ashwani Kumar

Directorate of Water Management (ICAR), Bhubaneswar, Orissa, India

E-mail: prabhakar.nanda@gmail.com

Abstract

Abstract

The preliminary study of meso data at the district level and panel data of the sampled villages made under the project Village Dynamics Studies in South Asia(VDSA) in the two sampled districts of Orissa reveal interesting pictures with respect to poverty incidence, asset holding pattern, size class-wise land holding pattern, agricultural productivity, livestock owning and natural resource endowment. Poverty in Orissa, an eastern coastal state of India has been a matter of great concern for successive governments and planning authorities at the national and state levels. The eastern state has been under scrutiny by the national planning authorities and a number of poverty alleviation programme launched in the country have focused Orissa as a test case of impact of development initiatives. However, the state has failed to *catch up with national poverty reduction efforts due* to *plethora of socio-economic, historical, political, administrative and natural reasons. It is estimated that during 2004-05, the incidence of rural poverty was* 47 *and for urban Orissa it was* 44 *as against the average poverty incidence of* 26 *for India. The social grouping of people under poverty in the state reflects that the poor scheduled tribes constitute as high as* 76 *in rural areas and* 65 *in the in urban areas respective category of population. The region-wise break up of rural and urban poverty in the stare indicates that the southern Orisso suffers from highest incidence of poverty followed by western, northern and eastern Orissa. The districts like Nuapoda, Balangir, Kalahandi, Koraput are grouped under highest poverty incidence region in the state. The two district sampled for study namely Bolangir (48.79 of population below poverty) under Western Orissa and Dhenkanal (47.53 of population below poverty) under north eastern high lands reveal different scenarios of poverty under different social groupings. The analysis of Ginni coefficient and Theil entropy measures in one of the sampled villages in Dhenkanal district under the project were found to be 0.7and 0.9 respectively. There is differential pattern of land holdings which highly skewed in favour of large farmers in all the study villages. The occupational composition of population, sex ratio, the age group distribution of population, farm mechanization, agricultural productivity and migration pattern also reveal diversified pattern under different size class and social groups.*

Introduction:

Orissa, an eastern coastal state of India continues to be primarily an agrarian economy with more than 65 percent of work force engaged in agriculture and the contribution of agriculture to state domestic product was estimated to be about 25.68 percent during the year 2004-05. The poverty

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[1] *Principal Scientist and corresponding author*

scenario analysis reveals that (Table 1) there has been a drop in the head count ratio in both rural and urban Orissa, The rural poverty reduced to 46.80 percent in 2004-05 in comparison to 67.28 in 1973-74 where as for national scenario it reduced to 28.30 percent from 56.44 percent during the same period. The head count ratio for different regions within the state also reveals differential picture where the northern (59.1 percent) and southern (72.7 percent) are acute poverty ridden than the coastal region (Table.2). The reduction is much less in comparison to national scenario in the same period. The per capita availability of cultivated land was 0.29 hectares in 1950- 51 that decreased to 0.18 hectares in 1998-99. The state has 31.54 lakh small and marginal farmers accounting to 19.88 percent of the total operational holdings (Economic Survey 2008-2009, Govt. of Orissa). The skewed distribution of resources and their utilization has resulted in uneven growth of coastal and inland districts of Orissa that leads to different poverty scenario in the different regions of the state. Differential resources utilization pattern and economic development level that accentuates poverty could be traced to differential resource endowments in districts of coastal and inland districts. It is pertinent to examine differential resource endowment pattern for accounting poverty in the backdrop of regional development of the state and agriculture which determine the level of poverty.

General Characteristics of the State

The Coastline of Orissa stretches over 408 kms in the East Coast covering an area of 410 sq. km. The total population of the coastal districts is about. 31.46 percent of state total (2001 census). The coastal region of Orissa has been categorized under northeastern Coastal plains and East and Southeastern Coastal Plains. The total Coastal tract covers 21 percent of total geographical area under nine divided districts. The non-coastal areas are grouped under North Western Plateau, Western Undulating lands, Southern Eastern Ghats, Mid Central Table lands etc.

Table.1. Incidence of Poverty in Orissa and India, 1973-74 to 2004-05

Year	Orissa			India		
	Rural	**Urban**	**Combined**	**Rural**	**Urban**	**Combined**
1973-74	67.28	55.62	66.18	56.44	49.01	54.88
1977-78	72.38	50.92	70.07	53.07	45.24	51.22
1983	67.53	49.15	65.29	45.65	40.79	44.48
1987-88	57.64	41.53	55.58	39.09	38.20	38.85
1993-94	49.72	41.64	48.56	37.27	32.36	35.97
2004-05	46.80	44.30	46.40	28.30	25.70	27.50

Source: Planning Commission, Govt. of India

Table.2. Rural and Urban Poverty Comparison in Orissa

Region	Rural					Urban				
	Poor (%)	Cal-orie Poor (%)	Popu-lation (%)	Poor (%)	Cal-orie Poor (%)	Poor (%)	Cal-orie Poor (%)	Popu-lation (%)	Poor (%)	Cal Poor (%)
	Headcount ratio		Share			Headcount ratio		Share		
Coastal	27.4	64.6	46.4	27.1	40.1	44.1	40.5	49.8	49.1	40.9
Southern	72.7	91.5	18.6	28.9	22.8	55.0	64.4	10.0	12.4	13.1
Northern	59.1	79.1	35.0	44.0	37.0	42.9	56.5	40.1	38.5	46.0
Note: Poor refers to Monthly Per Capita Expenditure (MPCE) below the poverty line provided by the Planning Commission and calorie poor refers to those below 2400 per capita in rural areas and 2100 per capita in urban areas										

Source: Planning Commission, India

Soil Properties and Land Resources

The coastal region is dominated by alluvial soils with high total soluble salts (EC 4ds/m) one predominant in this region. These soils occur along the coastal belt of the state in a narrow

strip extending 5-25 km inward. The salinity occurs due to littoral deposits or estuarial ingress of brackish tidal water from sea through creeks. Nearly 0.254 m / ha of saline soils are distributed in the district of Balasore, Bhadrak, Jajpur, Jagatsinghpur, Kendrapara, Puri, Khurda, and Ganjam. During monsoon, a build up of sub soils salinity occurs due to high ground water table under low-lying situations. These soils are mostly clay-to-clay loam in texture and columnar in structure. The PH of the soils varry between 6.0 to 8.0 with a conductivity of 10.40 ds /m as 25 C in the summer. The exchangeable sodium percentage varies between 18 to 27 .The soils are rich nitrogen, potassium, low to medium in phosphorus.

Demographic Characteristics

The analysis of demographic characteristics of coastal and non-coastal areas (*2001 census) reflects that the coastal region constitute more literate people in both the categories of sex i.e., male and female in comparison to non-coastal region. Both the urban and rural literacy figures are higher in coastal district than non-coastal districts. Coastal belt is thickly populated (536 number of people /sq. km.) in comparison to non-coastal belt (168 numbers of people /sq. km.). Coastal belt has registered lower females per thousand of males (964) than non-coastal district (982). The population dependent on agriculture is higher in both coastal as well as non-coastal areas. However in comparisons to non-coastal regions, the dependency on agriculture is higher in coastal region. This may be due to spread of industrial locations in non-coastal areas in comparisons to coastal areas.

Land Utilization Pattern

The analysis of land use statistics for the year 1997-98 portray that a relatively higher level of cropping intensity is recorded for coastal areas (159%) in comparison to non-coastal

areas (137%). In coastal districts, areas under barren and non-agricultural use are larger in comparison to non-coastal districts. Area under permanent pasture is more in coastal areas than in non-coastal areas. Among the coastal districts, Bhadrak has maximum area under barren land where as Balasore has minimum barren land. Ganjam district has maximum area under the category of net sown area and Jagatsinghpur has the least area under the same category. The geographical size of the district, irrigation potential and distribution of land form (up, medium or low) are influencing factors on net sown area. With respect to distribution of forestland, Jagatsinghpur district has lowest area under forest where as Ganjam district has highest area under forest category in coastal districts. Culturable waste is minimum in Ganjam and maximum in Puri district. Bhadrak district has maximum pastureland. Jagatsinghpur has the minimum area under pastureland. Coming to coastal and non-coastal distribution of land resources under different type of use, net cropped area is higher in coastal areas along with cropping intensity. The Culturable wastelands are more in non-coastal districts than in coastal district. No specific trend is found in current and other fallow category for both the regions. Non coastal districts have more area in comparison to coastal districts with respect to miscellaneous tree and groves category.

Cropping Pattern

There is distinct difference in cropping pattern between coastal and non-coastal districts. In coastal districts, the pattern is mostly paddy-paddy sequence with HYV paddy predominance. More than 70% of area is covered under paddy in the state and in coastal area; it is more than 80%. In Kharif, both in coastal and non-coastal areas, paddy occupies more than 90% of cultivated area. In Rabi HYV paddy is taken up in irrigated tracts of boath coastal and non coastal areas and jhola or beda lands in non coastal non irrigated areas. In Kharif, non-coastal

non-irrigated areas have more area under local paddy varieties where as in coastal areas it is mostly HYV paddy.

Paddy is the major cereal crop in coastal as well as non-coastal areas. Major area comes under cereals crops (77.6%) followed by pulses (11.8% area) and Oil seeds (6.4 %). The area under fiber crops accounted for only 1.2 % and other cash crop which include sugar cane, Potato, Chilly, Ginger, Onion, and tobacco, etc constitutes only 3 % of total gross cropped area under principle crops .The cropping intensity for coastal district varied between 137 to 172% between the districts. Highest cropping intensity was observed for Puri district (172%) and minimum for Bhadrak district (137 %) in coastal areas during the year 1997-98. As compared to Non coastal aggregate, the cropping intensity for coastal areas (159 %) was much higher than non-coastal areas (144 %).

Agricultural Productivity

Agricultural productivity in general is higher in coastal district than the non-coastal tracts. However, in irrigated tracts of coastal region, productivity of major crops varies considerably, which may be due to input use differences and soil types, and farmer entrepreneurship. The yield rate of HYV paddy in coastal districts was higher in Cuttack (30/qtls/ha) (Table 3), though fertilizer consumption is less as stated earlier. This may be due to alluvium tract in Cuttack district which is otherwise highly fertile due to sediment deposition. Jagatsinghpur (29/qtls/ha) comes second in the productivity of HYV paddy in coastal districts followed by Ganjam (26 qtls/ha) Average HYV paddy yield rate for Orissa is 23.52qtl/ha. Productivity of major cereals, pulses and oilseeds also vary considerably .The yield rate of paddy as a whole was highest in Ganjam (17.45qtl/ha) during 2008-09 in and that of Bhadrak it was

14.30 qtl/ha .For Cuttack the yield rate of paddy was 9.36 qtl/ha as against 12.12qtl/ha for whole of the state during the year 2008-09, yield rate of Khurdha was 16.78 qtl/ha.

For maize, Kendrapara records highest yields (15.33 qtls /ha), followed by Bhadrak (15.00 qtl/ha) and Jagatsinghpur (12.87qtl/ha) in Coastal District. One for total cereals Bhadrak records highest yields 17.51 qtl/ha followed by Cuttack (14.97 qtl/ha) and Kendrapara (11.87qtl/ha). For Total Pulses also Bhadrak records highest yields of 636 kgs. /ha as against 459 kg/ha in Jajpur, 407 kg/ha in Cuttack with Orissa average productivity 429 kg/ha. coming to total food grains . Bhadrak records highest productivity in the state (16.10 qtl/ha), Balasore records second highest productivity in coastal areas with 14.11 Qtl/Hect and 10.69 Kgs per hect in Cuttack. In total oilseeds, Puri records highest productivity of 14.02 qtl/ha followed by Jajpur (1094 kg/ha) and Bhadrak(1025 kgs/ha) as against state average of 610 kgs/ha for the year 97-98

Table. 3 Area under HYV paddy and Yield in Coastal districts

NAME OF THE DISTRICT	AREA (000 hect)	YIELD RATE Q/ha
Balasore	92.72	19.78
Bhadrak	97.61	28.99
Cuttuck	61.64	30.1
Jagatsingpur	49.71	28.96
Khurda	60.8	30.25
Puri	94.57	24.1
Kendrapara	51.74	27.88
Ganjam	261.31	26.45
Jajpur	53.1	27.37
Orissa	2160.64	23.52

Water resources and irrigation scenario

Irrigation plays a vital role in the agrarian economy of Orissa and so far approximately 37% of net cultivated area have been brought under different sources of irrigation and rest 63% of net sown area is rainfed. The state has 65.59 lakh hectare of cultivable land of which 59.00 lakh hectare can be brought under assured irrigation. So far irrigation potential has been created up to 39.73% of the estimated irrigated land covering and area of 23.49-lakh hectare. There are two distinctly major irrigation schemes under the head of Mahanadi delta irrigation system (Coastal) and Hirakud irrigation system (non coastal). Coastal irrigation system comes under Mahanadi delta stage-I, stage-II, Risikulya and Salandi major irrigation system. Inference of Table will portray the source-wise irrigation development and utilization in coastal and non-coastal areas. Canals are the major source of irrigation in both coastal and non-coastal districts and contribute more than 60% of total irrigation potential created from all sources. In coastal districts, Ganjam has more than 50% of arable land getting irrigated followed by Puri, Kendrapada, and Jagatsinghpur (Table 2). Balasore districts have maximum concentration of tube well irrigation in the state where more than 50% of total ground water potential has been harvested. A comparison of net irrigated area as a percentage of net sown area in coastal and non coastal districts of the state reflects that (Table 2), in the coastal districts more than 50% of net sown area has been provided with irrigation facilities as compared to 26% in non coastal area. This has gone a long way in stabilizing agricultural economy of coastal districts in comparison to perpetual droughts in non-coastal districts. However irrigate monsoon and other naturals calamities have contributed to coastal miseries in Orissa. A perusal of table will reflects the extent of rainfall aberration and natural calamities in Orissa for 50 years. The coastal areas used

to suffer maximum in the event of floods and cyclone, where as in land district suffers maximum in the event of drought.

The coastal tracts have enough potential for development of dugwells, swallow and deep tubewells as only 14 % of total ground water potentials has been harvested so far. A major constrains for development of ground water potential in these tracts have been triangulated holdings, traditional cropping pattern, low economic conditions of the people and electric supply in rural areas. Non-standard pump sets and its after sales services also have been identified as major constraints to ground water development. Irrigation tanks are rare in coastal areas and are more prevelent in non-coastal areas, however overly in Orissa the tank has not been used as a source of irrigation in most of the areas and only confined to some western district of the states.

Other Infrastructure endowment

Infrastructually coastal areas are well developed in comparison to non-coastal district. The rural road infrastructure, banks regulated markets, cold storage, schools and colleges at present are more in numbers in coastal areas than non-coastal areas. Among the coastal districts, Puri, Jagatsinghpur and Cuttack are well ahead in comparison to other coastal districts, in terms of infrastructural developments, which are vital for sustainable agriculture. The analyses of major infrastructal facilities available district wise reflects that in terms of village electrification, credit deposit ratio of banks etc. coastal district are much more advanced than non coastal districts. However, specific trend is forward for both the region with respect to road networks, but Ganjam among the coastal district has maximum road length in terms of state highways and also equally advanced network of other types of roads. In terms of population served by banks offer as on 1996, Khurdha districts tops list with population bank ratio being highest in coastal districts. Non coastal districts are having more population per bank or population ratio is less. In

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terms of post offices, hospital beds also in the coastal districts are much advanced than non-coastal districts.

Agricultural Input Use

Inputs like HYV seeds, fertilizer and pesticide application are critical factors for boosting agricultural production. In general, Orissa has been lagging behind to other states with respects to fertiliser application and other input use. Average fertiliser application in Orissa was 34kg/ha as on 1997-98. The district wise analysis of fertiliser application indicates that coastal districts consume more fertilizer than non-coastal irrigated area on per hectare basis. In comparison among the coastal districts, highest consumption of fertilizers to the extent of 84 kg/ha. was marked in Bhadrak, and minimum is marked for Cuttack (48kg /ha) in Kharif. Balasore district ranks second in term of fertiliser use (74 kg/ha) followed by Ganjam. Bargarh district ranks highest in terms of per ha fertiliser consumption in rabi among coastal and non coastal districts (198 kg/ha). In terms of total (N+P+K) Balasore district ranks highest with 29.53 thousand metric ton followed by Ganjam and Bhadrak with 28.81 and 19.49 thousand metric tones respectively during 1997-98. With respect to HYV seeds use, Ganjam ranks highest in coastal district in terms of total area under HYV paddy (261.31 thousand ha) followed by Bhadrak, and Balasore with 97.61 thousand ha and 92.72 thousand, respectively . The table 4 reveals some major agro economic scenario of the districts in coastal tracts and non coastal interior districts.

Table.4. Agro economic indicators in Coastal and Non Coastal districts of Orissa (area in 000'ha)

Districts	Normal rainfall (mm)	Geographical Area	Cultivated Area	Net area sown	Per ha. Fert. Con. (kg)	Gross Cropped Area	Cropping Intensity (%)	Net Irrigate area	Gross Irrigate area
Balasore	1568.3	371	270	256	73	345	135	66.91	113.60
Bhadrak	1568.3	279	186	176	83	241	137	89.55	125.89
Cuttack	1501.3	392	194	187	38	334	179	88.92	132.12

Jagatspur	1501.3	174	125	114	45	194	170	35.00	43.89
Jajpur	1501.3	289	185	182	44	293	161	41.47	69.03
Kendrapara	1501.3	257	175	150	38	226	151	189.21	74.24
Ganjam	1295.6	870	398	396	46	638	161	87.89	220.74
Puri	1449.1	306	192	167	45	287	172	53.89	129.78
Khurdha	1449.1	289	137	136	36	227	167	41.19	74.10
Total coast	**1481.7**	**3227**	**1862**	**1764**	**49.77**	**2785**	**159.2**	**694.03**	**983.39**
Bolangir	1443.5	655	338	330	19	449	136	41.75	75.95
Sonepur	1443.5	229	112	107	36	165	155	69.34	106.61
Dhenkanal	1421.1	460	227	199	15	293	147	35.75	50.22
Anugul	1421.1	635	226	219	22	303	138	38.11	53.47
Gajapati	1295.6	381	80	79	39	100	126	23.89	29.27
Kalahandi	1378.2	820	371	362	18	515	142	78.15	101.71
Nawapara	1378.2	341	178	176	11	233	133	25.62	33.91
Keonjhar	1534.5	830	302	298	20	400	134	11.99	28.08
Koraput	1521.8	838	302	292	13	388	133	71.85	101.23
Malkangiri	1521.8	612	141	130	15	190	147	98.81	34.61
Nawarangpur	1521.8	519	215	186	30	275	148	18.03	29.85
Rayagada	1521.8	759	203	165	22	230	140	34.01	42.11
Mayurbhanj	1648.2	1042	441	430	23	514	120	71.91	105.69
Phulbani	1597.1	760	167	155	4	180	116	14.6	17.66
Boudh	1597.1	344	89	82	17	119	145	32.49	36.79
Nayagarh	1449.1	396	133	127	24	226	178	33.38	46.16
Sambalpur	1527.0	671	194	193	78	255	132	62.24	101.74
Baragarh	1527.0	583	345	342	83	438	128	135.34	212.80
Deogarh	1527.0	278	72	69	27	92	134	14.18	24.49
Jharsuguda	1527.0	220	85	81	57	96	118	9.45	20.48
Sundargarh	1647.6	971	337	336	19	398	118	62.72	81.94
Total Non Coastal	**1497.6**	**12344**	**4558**	**4358**	**28.19**	**5859**	**136.6**	**983.61**	**1334.77**
Total Orissa	**1502.6**	**15571**	**6420**	**6122**	**38.98**	**141**	**1598.6**	**2231**	**3318.15**

Livestock and Fishery Resources

Among the coastal districts, Ganjam records highest numbers of livestock as per 1995 census followed by Khurdha and Balasore. Jagatsinghpur district has lowest of livestock resources followed by Cuttack. As regards to fish catch in term of value in Rs, Balasore district ranks highest with Rs.12591 lakhs followed by Jagatsinghpur with Rs.11644 lakhs and

Kendrapara Rs.7503 lakhs. The fish catch 284.23 M.T both inland and marine fishery catches. The total value of fish production of the state was Rs 810 crores during 1998-99. (Coast = Inland + Marine and Non coast Inland)

Forest Resources

During 1997, the total forest area of the state was 58135.47 sq. km, which was 37.3 % of total geographical area. The forest survey of India records that only 30% of the area is under forest area. The forest area of the state is unevenly distributed. The coastal districts where population density is significantly high have a comparatively smaller area under forests. The districtwise break up of forest cover for coastal districts reflects that Ganjam district has the maximum area under forest cover (around 50% of total geographical area) followed by Cuttack around 25% of area. Bhadrak district has minimum area under forest cover (only 1%) in coastal districts.

Conclusion

The incidence of poverty in the coastal districts in the state of Orissa is less acute in comparison to non coastal districts due to differential resource endowment and agricultural development. The food production scenario and resource endowment in coastal and non-coastal districts varies considerably. The productivity of land resources and input use also vary considerably. From poverty eradication and food security point of view, these factors need careful consideration for any meaningful planning.

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