

Resource Conflict and Sustainable Development in Odisha

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Abstract: Geographically Odisha has an area of 1,55,707 square kilometres surrounded by the neighbouring states Andhra Pradesh, Chhattisgarh, Jharkhand, West Bengal and Bay of Bengal. It has a population of 3,68,04,660, out of which males constitute 1,86,60,570 and female 1,81,44,090. It has 51,349 villages and 138 towns and the literacy rate is 70.5 males whereas 50.5 relates to females. Odisha has rivers like Mahanadi, Brahmani, Baitarani, Tel, Rushikulya, Sabari and others. Odisha is a land of mountains, but two highest mountains named Garhjat and Mahendra Giri are notable. Chilika is the biggest lake which is 64 km long and 20 km wide. It is the brackish water island lake in Asia which stretches over an area of 1,100 sq km, where in two beautiful islands named Malud and Parikuda invite tourists throughout the year. Odisha has a large deposit of Chromite, Bauxite, Dolomite, Graphite, Iron Ore, Coal, Copper, Kaolin, Lead, Quartzite, Steatite, Tin. Therefore there have been Steel Plant at Rourkela, SAND Complex at Chhatrapur, Heavy Power Project at Talcher, Coach Repairing Workshop at Mancheshwar, Aluminium Complex at Koraput, Angul and Jharsuguda. Culturally Odisha is rich with Odissi, Tribal Dance, Folk Dance and so many. On cottage industrial sector, the handloom product, silk and tussar, silver filigree work, Pat chitra etc enrich the land of Odisha. In this sense culturally it is a conglomerate entity of variegated cultural ethos.

Odisha is a state which is more rural in India and suffers from poverty, unemployment and inequality as because the economic growth of Odisha are lowest among the major states of India. Dr. Sankarshan Acharyain his article "Orissa Needs Visionary Leaders" has expressed that "Orissa's economy, already in the abyss, is growing at an anaemic rate of less than 4% per year as compared to 8% for India. States like Gujarat which are already at the top of Income Bracket, are growing at much faster pace than 8%. This paper tries to underscore the importance of resources available in Odisha and assess the significance of Sustainable Economic Development.

Key Words: Resource, Conflict, Development, Sustainable, Economic

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I. PERSPECTIVE:

As it has been told in the abstract Odisha is a state with a geographical area 1,55,707 sq km. and possesses vast resources in the form of tangible and intangible, which can make it one of the leading state in India. In spite of having large six important resources like human resources, natural resources, mineral resources, agricultural resources, biological resources and financial resources the state is lacking behind economically in comparison with other states in India. Odisha is a state having 30 districts. From the following table it can be well assessed the vary of the population in between 1991 and 2001 and decimal growth rate and density of population.

Table No.1: District Wise Density of Population in Odisha

Sl. No.	District	Population	Increase	Sex Ratio	Density
1	Ganjam	3,529,031	11.66%	983	430
2	Cuttack	2,624,470	12.10%	940	667
3	Mayurbhanj	2,519,738	13.33%	1006	242
4	Baleshwar	2,320,529	14.62%	957	610
5	Khordha	2,251,673	19.94%	929	800
6	Sundargarh	2,093,437	14.35%	973	216
7	Jajapur	1,827,192	12.49%	973	630
8	Kendujhar	1,801,733	15.35%	988	217
9	Puri	1,698,730	13.05%	963	488
10	Balangir	1,648,997	23.32%	987	251

11	Kalahandi	1,576,869	18.07%	1003	199
12	Bhadrak	1,506,337	12.94%	981	601
13	Bargarh	1,481,255	10.02%	977	254
14	Kendrapara	1,440,361	10.63%	1007	545
15	Koraput	1,379,647	16.86%	1032	157
16	Anugul	1,273,821	11.74%	943	200
17	Nabarangapur	1,220,946	19.03%	1019	231
18	Dhenkanal	1,192,811	11.80%	947	268
19	Jagatsinghapur	1,136,971	7.50%	968	682
20	Sambalpur	1,041,099	11.27%	976	157
21	Rayagada	967,911	16.46%	1051	137
22	Nayagarh	962,789	11.37%	915	248
23	Kandhamal	733,110	13.10%	1037	91
24	Malkangiri	613,192	21.62%	1020	106
25	Nuapada	610,382	15.02%	1021	158
26	Subarnapur	610,183	12.61%	960	261
27	Jharsuguda	579,505	13.69%	953	274
28	Gajapati	577,817	11.37%	1043	134
29	Baudh	441,162	18.16%	991	142
30	Debagarh	312,520	14.01%	975	106

Source: Odisha at a Glance 2016, Directorate of Economics and Statistics Odisha

Human growth is treated as a capital for economic growth. It is one of the source only when the human resource becomes efficient, hard working and industrious. It may be a boon as well as ban for the economic development of Odisha. But it is considered a boon as because the large population offers engage labour power in agricultural sector as well as in industrial sector. Since cost of production may be less because of the engagement of the labour force it will encourage to go for more investments. In some extent this efficient human capital compensate the shortage of natural resources. Agriculture has been treated as the life line of economy in Odisha. For the vast majority of the people agricultural products provides security of food and therefore in every budget the state government largely focus on agriculture. For the development of agriculture water resources is a main factor and by now 6.5 hectares of land is under irrigation facilities. Particularly in Odisha the peasants depend upon monsoon as the farmers cultivate land for seasonal food product. Out of agricultural product the revenue receipt expected by the state government is Rs1,20,028 Lakh crore during 2018-19. The State Government has generated funds towards agriculture during 2017-18 is Rs 1.06 Lakh Crore, in 2016-17 Rs 94,052.65 Crore, in 2015-16 Rs 8,44,877 Crore, in 2014-15 Rs 80,139.53 Crore. On Forest production the forest area covering in the state of Odisha has been shown on the following table

Table-2: Forest Area of Odisha

Legal Status	Are in sq km.	Percentage to geographical area
Reserved (under Forest Department)	26329.12	16.91
Demarcated Protected	11685.68	7.50
Undemarcated Protected	3838.78	2.47
Unclassified (Building, Roads, Nurseries)	20.55	0.01
Others	16261.34	10.44
Total	58135.47	37.33

Source: Orissa Fact File, PCI Publications & Marketing Divisions, Bhubaneswar

Table No- 3 : Revenue generated from the Forest Area, Odisha

(Rs In Crores)

Years	Item				Total
	Timber & Fire Wood	Bamboo	Kendu Leaf	Others	
1	2	3	4	5	6
1990-91	21.10 (19.34)	6.45 (5.91)	76.85 (70.45)	4.68 (4.29)	109.08 (100.0)
1991-92	18.15 (21.42)	7.00 (8.26)	51.57 (60.87)	8.00 (9.44)	84.72 (100.0)
1992-93	10.40 (10.00)	10.00 (9.62)	78.26 (72.25)	5.34 (5.13)	104.00 (100.0)
1993-94	8.33 (8.39)	9.65 (9.72)	75.35 (75.88)	5.97 (06.01)	99.30 (100.0)
1994-95	17.39 (14.65)	8.91 (7.51)	84.16 (70.92)	8.21 (6.92)	118.67 (100.0)
1995-96	7.95 (11.65)	10.02 (14.68)	43.58 (63.84)	6.71 (9.83)	68.26 (100.0)
1996-97	11.74 (15.32)	8.74 (11.41)	47.86 (62.46)	8.28 (10.81)	76.62 (100.0)
1997-98	10.24 (14.01)	9.06 (12.39)	40.60 (55.53)	13.21 (18.07)	73.11 (100.0)
1998-99	6.47 (7.45)	8.52 (9.81)	63.50 (73.15)	8.32 (9.58)	86.81 (100.0)
1999-00	5.21 (5.46)	5.50 (5.77)	74.50 (78.10)	10.18 (10.67)	95.39 (100.0)
2000-01	14.23 (16.89)	5.11 (6.85)	55.00 (65.28)	9.91 (11.76)	84.25 (100.0)
2001-02	12.60 (12.98)	2.01 (2.07)	69.00 (71.06)	13.44 (13.89)	97.10 (100.0)

Source: Odisha Fact File Published by Press Communication of India Bhubaneshwar

The state Odisha has about 64.09 lakh hectares of cultivable area out of total geographical area of 155.711 lakh hectares, accounting for 41.16 percent. The total cultivated area is about 61.50 lakh hectares. Agriculture contribute 26 percent in the State Gross Domestic Product and about 70 percent population of the state are dependent on agriculture. Although Odisha is considered as an agrarian state even then 70% of population are having low per capita income in the farm sector. There is a large disparity between the per capita income in the farm sector and the non farm sector. The National Agricultural Policy of the Government of India aimed to achieve annual growth of more than 4% in the agricultural sector on a sustainable basis. Taking into account the farm and non farm sector, the non farm sector has grown much faster. In the year 2007 the government of India prepared a National Policy for farmers which focused more on the economic well being of the farmers, rather than just on production. Instead of inclining the public investment in agriculture the investment has been declined because of low capital formation in the agricultural sector. The private investment in agriculture has also been slow due to inappropriate policies of the government. Though 70 percent of India lives in villages, agriculture growth should be the engine of broad based economic growth and development as well as natural resources conservation, food security and poverty alleviation. But in Odisha there has been no accelerated investment for agricultural development. Therefore it is quiet distressing that the farmers feel at the lowest rung in the social hierarchy. The State Government has prepared a new agricultural policy for development of agriculture in the state. The main objectives of this policy are:

- To bring in a shift from the present level of subsistence agriculture to a profitable commercial agriculture so that people would accept agriculture as a vocation;
- To promote sustainable agricultural development;

- To enhance productivity of important crops at least to match with national average (enhancing seed replacement, availability of quality planting materials, INM, IPM, water management, farm mechanisation and technology transfer);
- To encourage crop diversification particularly in uplands and medium lands (e.g paddy to non paddy crops);
- To focus on horticultural crops including dry-land horticulture;
- To encourage modern farming system approach;
- To enhance water use efficiency through peoples' participation;
- To facilitate increased long term investment in agricultural sectors (on farm as well as off farm) both by private sector, public sector and private & public partnership (PPP), particularly for post harvest management, marketing, agro processing and value addition, etc;
- To encourage contract as well as compact farming;
- To increase access to credit for small and marginal farmers;
- To facilitate appropriate market linkages for agricultural produce with respect to which the state has competitive advantages;
- To implement integrated watershed development programmes in watershed areas for Natural Resource Management (NRM), increased crop production as well as non-farm income;
- To create appropriate institutions/ facilities to undertake regulatory, enforcement and quality assurance activities matching to the emergent needs.
- To redefine the roles and responsibilities of the agricultural extension machinery by suitably restructuring the field extension set up.

Year after year for last 70 years the government has formed agricultural policy for the economical development of the farmers but it seems these policies are in the cold storage of the government. Even today the news paper flood with news relating to the poor condition of the farmers. The poverty stricken cultivators even today mortgage their standing crop to the landlord. There are instances of suicidal death of farmers. The exploitation is becoming larger and larger day by day. The National Commission of Farmers in its recent report has stated that knowledge deficit is a constraint on

Agricultural productivity. There is a university named 'Odisha University of Agriculture and Technology' in Bhubaneswar. But all knowledge produced within the forewalls of the university seems to be meaningless as the knowledge has not been translated into action in Odisha. The modernisation of farming needs better seed fertilizer, pesticides and to get it. The farmers need monetary support. All banks in Odisha provide loan to the farmers but the credit extends by the banks is very limited particularly agricultural loan is very small. The rate of interest is higher in comparison to the price, the loans gets out of the production. Lack of Credit at reasonable rate is a persistent problem, in large part reflecting the collapse of the cooperative credit system. The failure of the organised credit system in extending credit led to excessive dependence on informal sources usually at exorbitant interest rate. Therefore the state is to ensure 100 percent access to credit within stipulated period for all agricultural and allied subjects with low rate of interest. All the micro finances may be regulated to keep the interest rate at low otherwise the farmers of Odisha cannot grow.

Another important resource for development of Odisha is its mineral product. On mineral wealth Odisha is not less than other states. A detailed picture of mineral wealth of Odisha is shown in the following table;

Table No-4: Availability of Mineral Resource in Odisha

Minerals	Place of Availability	District	Preserved Capacity
Bauxite	Khariar Karlapat Gandhamardan Pattangi Damanjodi	Nawapara Nawapara Bargarh Koraput Koraput	1733 BT
China Clay	Karanjia Jashipur	Mayurbhanj	157 MT
Chromite	Kalaranga Bhimtanagar Sukarangi, Gurung Birsal, Kathapal, Maraubali, Konala, Daitari, Nuasahi	Jajpur Dhenkanal Keonjhar	183 MT
Coal	Talcher Himgiri	Anugul Sundargarh	51,571 MT

	Rampur	Sambalpur	
Dolomite	Dubulabera, Keonjorama, Dephripada	Sambalpur Sundargarh	434 MT
Fire Clay	Belpahar Gandawara	Jharsuguda Sambalpur	108 MT
Gold Quartz Quartzite	In some parts of Kalahandi, Sambalpur	Kalahandi Sambalpur	15 MT
Graphite	Patnagarh, Titilagarh	Balangir	2MT
Iron Ore	Gorumahisini, Badampahar, Suleipat, Kiriburu Bansapan, Barbil, Joda, Thakurani Barsuan, Malakgatoli Tensa Umarkot Sukinda, Daitari	Mayurbhanj Keonjhar Sundargarh Nawarangpur Jajpur	3567 MT
Lime Stone	Haldia Biramitrapur, Hatibadi, Purunapathi, Beldhi Dunguri	Khurda Sundargarh Sambalpur	1032 MT
Manganese Ore	Jamada, Badbil, Joda Athmalik Nimikhal Kutinga Champajhor	Keonjhar Anugul Nawapara Rayagada Balangir	50 MT
Nickle	Kansa		270 MT
Vanadium Ore	Mayurbhanj	Mayurbhanj	4 MT

Source: Geography of Odisha Published by Kitabmahal Cuttack

Table No- 5: Minerals Reserve in Odisha

Sl. No.	Minerals	Reserve in Odisha MT	Reserve in India	In Million Tonne percentage to All India Reserve
1	Iron Ore	3,567	12,745	27.99%
2	Chromite	183	186	98.39%
3	Coal	51,571	2,13,905	24.11%
4	Bauxite	1,733	2,911	59.53%
5	Lime Stone	1,032	76,446	1.35%
6	Dolomite	434	4,967	8.74%
7	Fire Clay	108	696	15.52%
8	China Clay	157	986	15.92%
9	Nickle Ore	270	294	91.84%
10	Manganese	50	176	28.41%
11	Mineral Sand	82	266	30.83%
12	Graphite	2	3.1	64.52%
13	Pyrophyllite	8.6	13.2	65.15%
14	Copper, Lead	9	485	1.86%
15	Quartz, Quartzite	15	1350	1.11%

Source: Orissa Vision 2020 New Age Publications Cuttack

Mineral Production, Cess and Revenue generated during last several years have been depicted in the following table which shows that the trend of revenue receipts from mining sector over the last 20 years has been increasing steadily. As it is known, the mining sector is an important source of revenue for the state but its proportion to the total own non- tax of the state Odisha has been fluctuated at different years.

**Table No- 6: Production of Ores/ Minerals in the State of Odisha during 2015-16 & 2016-17
(Quantity in tonnes)**

Sl. No	Ore/ Mineral	2015-16	2016-17
1	Asbestos	0	0
2	Bauxite	10839542	11914000
3	Chinaclay	6	18,500
4	Chromite	3102940.136	4129711.231
5	Coal	138580000	139208000
6	Dolomite	1035242.827	1249995.120
7	Fireclay	0	0
8	Galena	0	0
9	Graphite	17643.3	20156.500
10	Iron Ore	80866243.319	102663381.562
11	Kyanite	0	0
12	Lead Ore	0	0
13	Limestone	4524561.6	4762094.724
14	Manganese Ore	425271.96	627613.929
15	Mineral Sand	0	239000
16	Pyrophyllite	4490	0
17	Pyroxenite	0	11096.800
18	Quartz	0	1278.900
19	Quartzite	50084.31	48360.500
20	Sand (Stow)	0	0
21	Serpentinite	0	0
22	Silica Sand	421.1	0
23	Soapstone	0	0
24	Magnetite	0	0
25	Feldspar	0	0
26	Red Ochre	0	0
27	Sandstone	0	0
28	Gemstone	0	0
	Total	238088446.552	234874707.766

Source: Department of Steel and Mines, Government of Odisha
Website: www.orissaminerals.gov.in

During 2015-16 there was the target of revenue receipts of Rs 6626 Crores and in 2016-17 it was Rs 7,000 Crores and the government collected Rs 5,797.97 Crores and Rs 5,134.82 Crores in 2015-16 and 2016-17 respectively. As per the latest assessment made by the Directorate of Geology, The Reserve of Coal was the highest at 51.571 million tonnes followed by Iron Ore 3567 Million Tonne. Similarly Bauxite Reserve is 1733 Million Tonne and Lime Stone 1032 Million Tonne in Odisha. Though Odisha is rich in minerals,

exploitation is not commensurate with the potential enhanced rate of exploitation of different minerals reserves to improve the financial position of the state but also will be helpful in generating sizeable direct and indirect employment. The rate of exploitation of minerals, ores in the state is less than 1% except graphite, chromite and manganese. Odisha has a total reserve of Rs 3567 million of high grade iron ore which is 26.50% of the country's deposit. The Government of Odisha is in concerted efforts to attract investments in Steel based and other industries to make better use of the mineral wealth of the state. The second steel plant of the state named Nilachal Ispat Nigam Limited (NINL) has been commissioned which is promoted by MMTC and IPICOL. It is a joint sector with 1.1MTPA capacity steel project with a project cost of Rs 1524 Crore. Besides Tata Iron and Steel Company is interested to set up port –based steel plant of 2.5 MTPA capacity at Gopalpur in the district of Ganjam for which the state government has allotted 3734 acres of land to the company. But the production is yet to start because of infrastructural amenities. Further the associated project of Konark Met Coke Ltd (KMCL) with a project cost of 480 Crores is going to be completed. Besides 14 entrepreneurs have come up to install steel plants in Odisha by now. Odisha is rich in Bauxite deposits with a reserve of 1733 million tonne which is 70.39% of the countries deposit. The Government of Odisha has decided to lease the Bauxite Mines for setting up Aluminium industries in the State. There is Gem Stone Policy of the State Government for promoting exploration of Gem Stone in a scientific and systematic manner. In Odisha 28 gem stone tracts have been identified out of which 18 tracks have been developed. The news paper flashes with news at times about theft of gem stone by outsiders and thereby the government is in a heavy loss in this segment. In this aspect, the state government should take appropriate measure for preventing of illegal trading and stealing of gem stone.

As a conceptual study the three main features of resources have been discussed in the above paragraph. Besides there are other resources with the state of Odisha which needs exploration and proper utilisation for its economic development. Odisha is full of archaeological treasures. The early man was knowing only the use of stones tools. In the district of Sambalpur, Dhenkanal, Keonjhar, Sundargarh and Mayurbhanj there is evidences of Palaeolithic Culture. But no systematic and intensive exploration has been undertaken yet by the government of Odisha. Like this in other parts of the state of Odisha i.e. in the district of Ganjam, Sishupalgarh, Udayagiri, Khandagiri, Lalitgiri, Ratnagiri there is abundant of archaeological treasures. In fact to generate economic resource there is the need of upgradation of the archeological site of Bhubaneswar, Hirakud, Chaurashi, Béalishbati, Simhanath Island near Rameshwar, Ratnagiri of Cuttack, Udayagiri at the river bank of Birupa, Jajpur, Solampur and Ayodhya of Balesore, Kitching of Mayurbhanj, Sitabinji of Keonjhar, Ranipur and Baidyanath of Balangir, Gandharadi of Phulbani, Buddhist Monestary of Boudh, Kanakeshwara Temple of Kualo in the district of Dhenkanal, Sarang, Rasol and Bajrakot of Dhenkanal. By developing these areas the state government can generate funds out of tourism but during last 70 years there has been no eye catching development on heritage and monuments for which the state is not attracting tourists from other parts of India and abroad.

Water Resource may be other economic resource in Odisha. In Odisha the river like Subernarekha, The Brahmani, The Mahanadi, The Baitarani, The Budhabalanda, The Salandi, The Rushikulya, The Bahuda, The Banshadhara, The Godavari System are there. All the rivers are primarily peninsular rivers and have taken their origin from Chotanagpur Plateau in the north in Bihar, The Amarkantak Plateau in west in Madhya Pradesh and the Eastern Ghats within Odisha. Although some reservoir and basin have been constructed even then there is frequent drought in Odisha. If these river can be inter linked with each other then it may generate funds for the state out of agriculture, marine culture and navigation.

Forest Resource play a significant role in maintaining the economical stability; and in some extent provides a wide variety of products of commercial value. Again the forest protect the impact of natural calamities like droughts, floods and cyclone. In Odisha Kendu Leaf is treated as one of the economic plantation. It not only provide large employment opportunity but also generates economic resource for the state. As per record 37.3% of the state geographical area 31.4% of the forest area produce Kendu Leaf. For the economic development of the state the remaining area of the forest land needs economic plantation.

The present government came to power in 2000. Since then considerable measures have been taken by the government for sustainable development of Odisha. In accordance with India Today July 3, 2017 issue the state is one of the third largest contributor of rice to PDS. The government has taken measure for a farming intensive state and thereby created irrigation potential from 3600 capacity to 5474 hectares of land for irrigation. It has been stated that income growth rate of farmers has been increased from 3.5 to 8.3 by the end of 2013. The state has taken poverty alleviation measure. It has been estimated that povertiness in Odisha has been decreased from 60% to 20% considering the national average of Odisha's output from 12% GSDP growth rate to 8% growth rate during 2016-17. In power sector the state has carried out massive programme to provide electricity to the villages. In 1999-2000 there was electricity for 26,000 villagers and by the end of 2016-17 it has upraised to 47,000 villages. Similarly in steel production, from 2 million metric tonne in 2000 to 22.9 million metric tonnes in 2017. On an welfare measure there was 43,447 elementary schools in Odisha whereas it has been increased to 68,997 during 2016-17. On higher education there was 432 colleges in Odisha by 2016-17 and by

now the number of degree colleges has been 942 colleges. There was Infant Mortality Rate 81 per 1000 live birth in 1998-99 which has fallen to 41 till 2016. There was Maternal Mortality Rate 400 during 1998 which has reduced to 200 by the end of 2013.

No doubt much progressive work has been done in Odisha but hindrances like flood, drought, cyclone, tsunami, etc are the hindrances in the economic growth of Odisha. Such natural disasters are also there in other states but they have grown much faster for their sustainable policies. But due to political will and implementation of policy programmes in Odisha is lacking behind.

To become a self sufficient Odisha there is the need of sustainable development. Management of the environment, urbanisation, water conservation, resettlement of displaced persons, environmental ethics and climatic change are the prerequisite elements of sustainable development. Sustainable Development promotes to the development. That meets the need of the present without compromising the ability of the future generations to meet their own needs which leads to new resource consumption strategies like conservation or reduction of excessive resource use, recycling and reuse of materials wherever possible. Use of renewable resources such as solar energy, tidal energy and non renewable resources like oil, coal etc may bring economic growth to the state. Poor people also aspire for a better live.

There may be ecological and other crisis in poverty and inequality. In Gandhiji's words, " Earth provides enough to satisfy every mans' needs, but not every men's greed".

Sustainable Development in Odisha can be achieved by some policy changes at the state level and basic changes in the way people deal with environmental issues. Therefore there is the need to use technology in which larger man power should be utilised. The state should look for labour intensive rather than capital intensive technology. There is high growth of unemployment in Odisha. No doubt sophisticated technology puts people out of work, although it increases production. By increasing production some measures are to be taken for utilising the unemployment force.

Sustainable Development is possible only when policy, programmes are implemented by the implementing authorities of the state. In Odisha there are hospitals, schools, colleges and a lot of organisations but all those do not have adequate hands or fiscal resources. It is imperative to quote the statement published in India Today July, 3,2017 at page 34 "Navin told friends that on his first meeting with the ministers and bureaucrats of the state, he was repelled by their obsequious behaviour, saying their only interest was to findout "what my price was". So long the attitude of the policy makers and implementers of the state will not go forward with positivity, even if abundant of resources there will be no sustainable development in Odisha.

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