

The Blue Economy in Odisha

Exploring the Socio Economic Political and Ecological Implications on the Coastal Communities



A. Gandimathi, Jesu Rethinam, Jones Spartegus, R.Sridhar

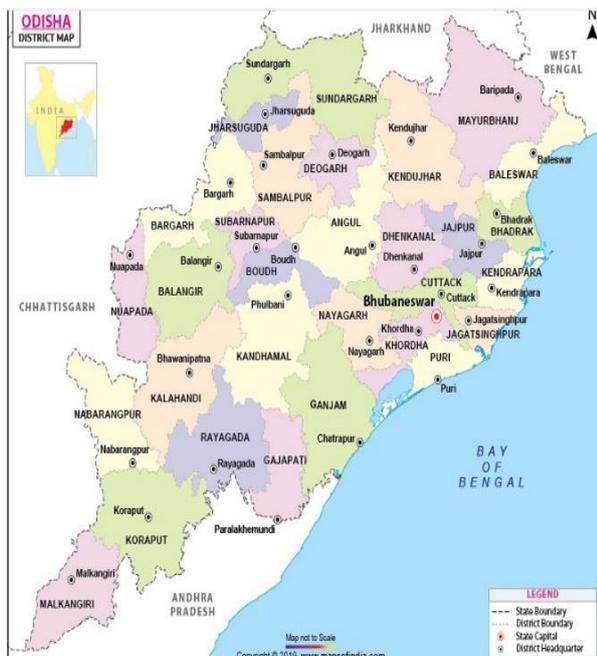
National Fishworkers Forum and SNEHA, India

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INTRODUCTION

The state of Odisha lies on India's east coast bound between the states of Andhra Pradesh and West Bengal. The Odisha has a coastal stretch of 480 km long which comprises six districts, Ganjam, Puri, Jagatsinghpur, Bhadrak, Kendrapara and Baleswar. The state has a continental shelf area of approximately 26,000 sq.kms. The Department of Fisheries discloses the Odisha's profile¹ has 1,14,238 fishermen families accounting 6,05,514 fisher-folk population in 813 fishing villages. There are 73 fish landing centres and 2 fishing harbours. In addition. CMFRI Census Report 2010 states that there are 17,973 fishing crafts operating in the State's coastline for marine fishing, of which 1,754 are mechanized, 6,734 are motorized and 9,485 boats are non-motorized. It estimates about 1,69,000 active marine fishers and about 1,89,000 inland fishermen. There are 638 (78 marine and 560 inland) active Fishermen Cooperatives with a total membership of 99,294 (19,651 Marine). (Census 2010, CMFRI).



The coastal region is drained by a number of rivers like Mahanadi, Brahmani, Baitarani, Devi, Budhabalanga, Subarnarekha Rushikulya and some other smaller ones. This has given rise to the names such as the "Gift of Six Rivers" or the "Hexadeltaic region". These rivers carry a large volume of sediments which have formed the above huge single delta. Hence the Odisha coast is under uninterrupted influence of freshwater flow and delta building processes. The famous Chilika Lake is a brackish water lagoon, spread over the Puri,

Khurda and Ganjam districts, at the mouth of the Daya River, flowing into the Bay of Bengal, covering an area of over 1,100 km. It is the largest coastal lagoon in India and the second largest brackish water lagoon in the world, a biodiversity hotspot and home to numerous migratory and vulnerable species.

¹ <http://dof.gov.in/documents/state-fisheries-profile/odisha>

Inland Resources	
Total Inland Water Bodies (lakh Ha)	9.80
Rivers & Canals (Km)	4,500
Reservoirs (Lakh ha)	2.56
Tanks & Ponds (lakh Ha)	1.14
Flood plain Lakes/Derelict Waters (lakh Ha)	1.80
Brackish water (lakh Ha)	4.30

The Odisha's Inland Resources such as Freshwater resources are estimated to be 6.76 lakh ha comprising 1.25 lakh ha of tanks/ponds, 2 lakh ha of reservoirs, 1.80 lakh ha of lakes, swamps & jheels and 1.71 lakh hectares of rivers and canals. The

State's brackishwater resources are of the order of 4.18 lakh ha with a breakup of 0.79 lakh ha of Chilika Lake, 2.98 lakh ha of estuaries, 32,587 ha of brackishwater area and 8,100 ha of backwaters.

STATUS OF COAST

The coastline is in general oblique to the global wind system which generates strong littoral currents and represents one of the world's largest littoral drift areas. This means that the volume of sand movement along the Odisha coast from south to north is immense, and it represents a highly dynamic coastline. The other important features of Odisha coast are mangroves, estuaries and other related sedimentary as well as sandy environments like sand dunes¹. This variation in littoral currents and wave energy goes to show the fragility in coastal morphology of Odisha.

The coasts can be differentiated as southern coasts, consisting of Ganjam, Puri and Jagatsinghpur districts, and northern coasts consisting of Bhadrak, Kendrapara and Baleswar districts. The continental shelf off the southern coastline of Orissa is narrower, like northern Andhra; there are broad sandy beaches and open surf-beaten shores. The northern coastline is much shallower—with a broad shelf, a gradual slope and a longer intertidal zone and coastal mudflats, much like the coastline of West Bengal. In the northern part of Orissa the continental shelf extends up to 120 km but in the southern part up to 40 km (FAO, 1986). The northern coasts had traditional crafts like the Dingy, Chhoat, and Patia. These were suited for stability in low surf, shallow coastal waters. Gears used here were dominated by drifting gillnets, as well as encircling nets (FAO, 1986).

STATUS OF FISHERS

Much like northern Andhra, fishers in the southern coasts of Odisha traditionally used various Kattumarams (Teppa) with 2,3,4 logs depending on the gear, and bar boats without a beam or a frame called the Padhva, which are very similar to the Masula boats traditional in

central Andhra. These boats were ideal for the high surf in these shores. There was wide diversity in gears from bottomset nets from shrimps, driftnets for anchiovy, sardines, boats siene nets, hook and lines, and also beach sienes. It is interesting to note that the southern coasts have had a much longer history of marine fishing and are inhabited by Telugu speaking communities like the Jalaris and Vodabalija. The collective name used for them is “Noliya”. These communities continue to maintain contacts with fishers in central and northern Andhra.

However, marine fishing in the northern coasts started much later, with Bengali fishers migrating from East Bengal, as well as non-fishing Odia communities entering this sector as the fish trade to Calcutta and other markets increased. Some studies show marine fishing in the north is less than 100 years old. Bengali and Odia speaking Rajbansis as well as inland fishing (also coastal farming) communities like Kaibartas, as well as non-fishers like Khandayat, Harayan, Radhi, Barik, etc are involved in the marine fishing here (Kalavathy,1985)².

Hence, the variation in coastal and marine morphology had resulted in different communities involved and in different histories of marine fisheries, as well as diversity in the crafts and gears used traditionally. However, developmental policies at national and state level have projected standardised models for fisheries and coastal development.

DEVELOPMENTS ON THE COAST

When it comes to industrial and infrastructural development, the enormous mineral wealth of Odisha made it one of the very early states to export mineral ore by reforming its Port sector. The Paradip Port was established in 1962 and was declared a Major Port under the central government in 1965. After the neoliberal reforms of 1991, Odisha passed the **Port Policy in 2004** which established *Odisha Maritime Board* as a Single Window Agency for development of **Ports and Inland Waterways**, and paved the way for private players in port sector in Odisha. Three ports were already operational namely, Paradip Port, Dhamra and Gopalpur. The Dhamra Port was built by a joint venture of Larsen&Toubro and Tata Steel, was one of the initial private ports in Odisha built in 2009, but has since been bought over by Adani Ports. Gopalpur Port is owned by Shapoorji Pallonji Ports Pvt. Ltd and Orissa Stevedores Ltd and was commissioned with limited operational infrastructure in March 2013.

In addition to port construction, connectivity through inland waterways was also initiated in 2010 when a stretch of 371 kms of Mahanadi river distributaries were declared as **National Waterway 5**. This comprised of 5 barrages with terminals at Talcher, Nasirabad, Balasore and Rajnagar, and connecting them to the Dhamra and Paradip ports. These were

conceived to facilitate easy transport of cargo such as coal, fertiliser, cement, iron ore and agricultural produce. These waterways were to ensure 2 m depth to facilitate barge movement³.

As mentioned in the introduction, Odisha's coasts are extremely fragile given its alignment with the winds. The industrial infrastructural works along the coast led to **erosion, accretion** and change in coastal formations, but these paved the way for more projects claiming to address these ecological concerns. The World Bank funded **Integrated Coastal Zone Management** project was piloted in Odisha along the Chilika lake coast as well as the coastal stretch between Paradip and Dhamra from 2010 onwards. The emphasis on building static coastal protection structures like seawalls, geotubes did not solve the problem, but only furthered it.

Many stretches of the coast were also established for **conservation** activities, with Chilika Lake being declared a Ramsar site in 1981, while the Bird Sanctuary in its core was declared in 1987, Gahirmatha Marine Sanctuary, as well as Bhitarkanika National Park being declared in 1997 and 1998 respectively. The Bhitarkanika Mangroves were declared a Ramsar site in 2002, making Odisha an Indian state with two Ramsar sites. In addition to these, several more coastal stretches were cordoned off as Turtle Nesting Sites, with huge restrictions placed on communities accessing them for even basic livelihood purposes.

With such an enormous natural resource base on the coast, it was obvious that the eyes of capital were drawn towards exploiting them. For example, in **1986**, the Government of Odisha signed a MoU with the Tata group allowing them to invest in intensive Shrimp Aquaculture. With the immediate effect, 600 ha of customary fishing grounds within Chilika belonging to nine fisher villages were handed over to **Tata Aquatic Farms Limited**. With the onset of neoliberal reforms in 1991, Odisha further opened up 6000 Ha of the Chilika Lake to investors for shrimp cultivation under the **New Lease Policy of 1991**. Despite vociferous resistance from the Chilika Bachao Andholan, a grassroots movement against the corporate grab of the Lake, the state government has continued with the rigorous push towards leasing common water resources for intensive shrimp aquaculture with Brackishwater Area Development Programmes of the late 90s.

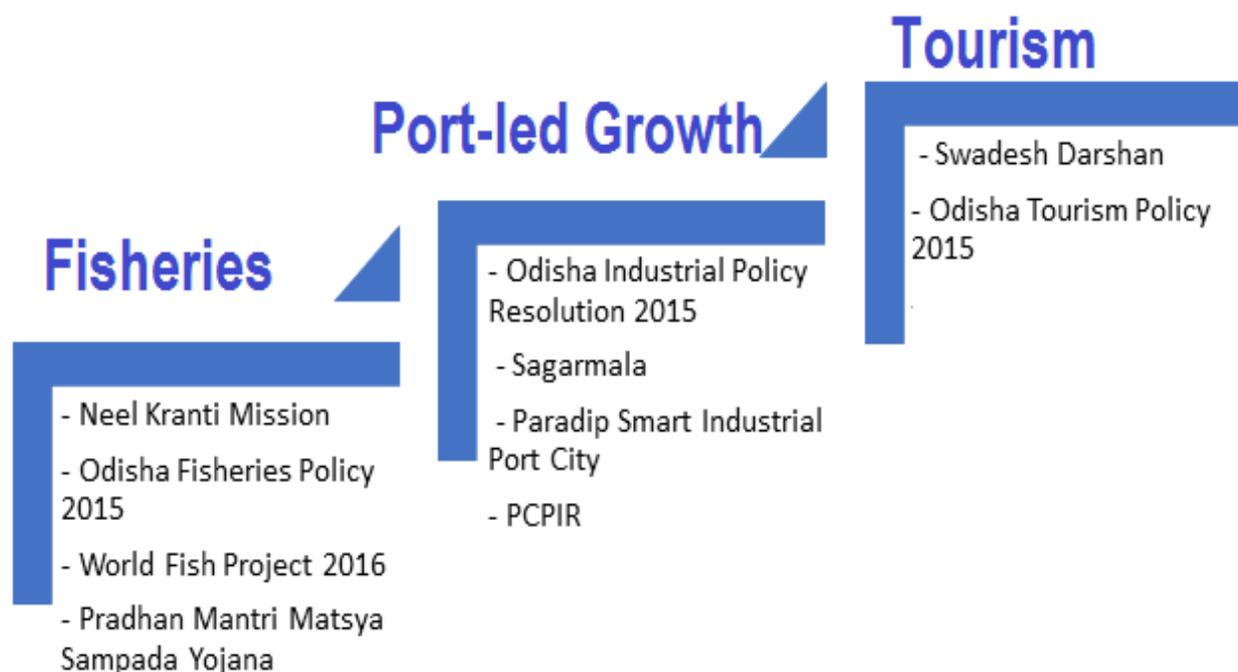
Thus, we can clearly see that even prior to the onset of BE, the coast of Odisha was already a hotbed of neoliberal activity, and there have been huge conflicts with the loss of rights of coastal communities. This reiterates the idea that BE is but an extension of the ongoing Neoliberal paradigm of economic growth.

ADOPTION OF BE: POLICIES, AND PROJECTS

With the onset of Blue Economy emerging as the paradigm for coastal development in India under **Sagarmala**, Odisha outlined its development model titled '**Odisha Industrial Development Plan: Vision 2025**' which aimed to attract investments to the tune of Rs. 2.5 lakh crore claiming to generate direct & indirect employment opportunities for 30 lakh people opening up numerous sectors for investments including manufacturing parks, fisheries and agriculture, food processing, logistics, transport, electronics manufacturing, urban infrastructure, waste management, chemicals, petrochemicals, plastics, energy, tourism and related downstream industries.

First, we will briefly look at the policy changes, followed by component-wise discussions. This report focuses on the components reviewed and site visits for the purpose of the study such as **Fisheries**, **Port-Led Growth** and **Tourism** in the state.

POLICY REFORMS



→ *Odisha Fisheries Policy*

With the Neel Kranti Mission initiated by Central Government in 2015, Odisha embarked to exploit all the freshwater, brackishwater and marine resources in the **Odisha Fisheries Policy, 2015**.

Odisha Fisheries Policy, 2015

Vision

To be a pioneer in aquaculture development & fisheries extension for ensuring food security, livelihood, welfare of fishers and employment generation, with an aim to double fish production over the next 5 years in Inland, Brackishwater as well as Marine sectors.

Main features

Marine Fisheries

- Deep-sea fishing will be promoted with incentives to marine fishermen and other entrepreneurs
- Modernisation of all Fishing Harbours, Jetties, Fish Landing Centres along the Odisha coast through PPP mode, schemes will be formulated to address the concerns of Safety of Fishers at Sea and Welfare of the fisher communities.
- Strict implementation of Marine Fisheries Regulations for resource sustainability.

Culture Fisheries

- 25 % of Reservoirs will be leased to private entrepreneurs to undergo Culture Based Fisheries in Lakes and Reservoirs using Commercial Pisciculture Methods.
- Long-term lease of Tanks, Ponds, Dead Rivers and other Water-Logged Areas to farmers and other entrepreneurs to establish aquaculture with incentives.
- Encourage PPP through incentives for Fish Seed Production; private entrepreneurs and small-scale Aquaculturists will be encouraged to develop clusters in fisheries coastal aquaculture with basic infrastructure such as inlet and outlet channels, road connectivity, electricity, ice plants, cold storages, with PPP mode of operation.

Post-Harvest

- Postharvest Infrastructure Support & Marketing facilities will be developed through various schemes for both in inland and marine fisheries with private sector.
- Odisha Pisciculture Development Corporation (OPDC) and FISHFED will be reinforced to address needs for fish preservation, transportation, distribution & marketing.
- Creation of modern fish market complex in industrial belt/ cities and towns

→ *Odisha Industrial Policy Resolution, 2015*

Odisha Industrial Policy Resolution, 2015 (IPR 2015)

Vision

To transform Odisha into an industrialised state, by encouraging less polluting industries and employment generating sectors.

Main features

- Investment promotion through Industrial Promotion and Investment Corporation of Odisha, and Odisha Investment and Export Promotion Office.
- Expansive Industrial land bank with concessional land lease rates, and tax concessions.

- Financial assistance to the private sector for development of industrial infrastructure
- Creation of single window clearance for quicker approvals
- Priority Sectors in the Policy: Agro and Food Processing, Ancillary and Downstream, Automobiles and Auto-components, Manufacturing in Aviation and Maintenance Repair & Overhaul (MRO) facilities, Bio-technology, Gem stone cutting and polishing, Handicraft, Handloom, Coir and Leather products, Information technology, IT enabled service and ESDM units, Petroleum, Chemicals & Petrochemicals, Pharmaceuticals, Plastics and Polymers, Sea food Processing, Textile including Technical Textile & Apparel, Tourism and Hospitality

→ [Odisha Tourism Policy 2016](#)

Odisha Tourism Policy 2016
<p>Vision</p> <p>To develop Odisha as the supreme tourist destination, placing it prominently on domestic and global tourism map for inclusive growth, employment generation, poverty eradication and raising incomes.</p>
<p>Main features</p> <ul style="list-style-type: none"> • To promote (1) Beach Tourism, (2) Eco-Tourism, (3) Buddhist Tourism, (4) Heritage Tourism, (5) Religious Tourism, (6) Knowledge Tourism, (7) Medical Tourism, (8) Travel Tourism, (9) Caravan Tourism, (10) Wellness Tourism, (11) Cruise Tourism, (12) Sand Art Tourism, (13) Adventure Tourism • Encouragement to domestic & foreign private investment for joint venture or in Public Private Partnership (PPP) mode for development of long-term infrastructure in the tourism sector. • Establishing a Tourism Land Bank at different locations around the state • The Government has taken a policy decision to establish modern wayside amenities to provide quality services to the highway and roadside tourists. • Concessions and subsidies to Tourism investors along the lines of Industries.

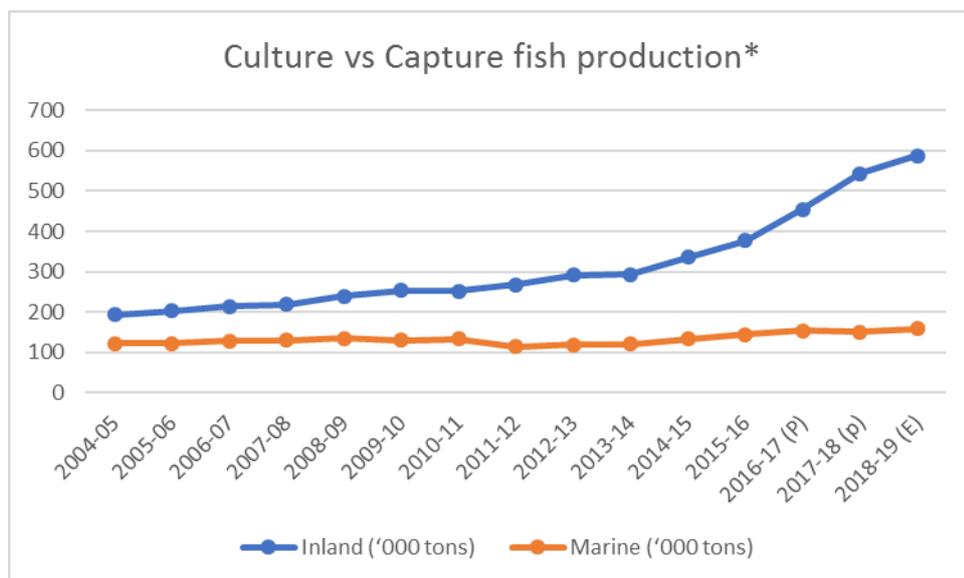
FISHERIES

The policy signals a definite shift from capture to culture fisheries. In implementing this policy, the Fisheries Department has subsequently stated that Brackishwater bodies are to be leased out for a minimum of 15 years aiming to **lease out 50% of the coastal land** suitable to partnership firms, technical entrepreneurs, State-owned corporations and companies or exporters registered in Odisha⁴, and is identifying government land suitable for brackish water aquaculture, initially estimated at about 24,000 Ha.

In continuation of this policy, the state government has launched projects with multinational agencies like **WorldFish**. The project commenced on 1st July 2016 and will continue till 31st March 2022. The MoU of Odisha with **WorldFish** states that it intends to:

“technically support the Fisheries Department to implement the Odisha State Fisheries Policy 2015 and to achieve sustainable aquaculture and fisheries sector in Odisha State, India, creating employment, stimulating inward investment and contributing to State goals for reducing malnutrition among vulnerable and marginalized communities, particularly women and children”.

The **WorldFish** project lists several components such as promotion of Carp-Mola polyculture system, Carp Intensification and hatchery seed quality improvement, Introduction of Genetically Improved Farmed Tilapia (GIFT), Reservoir Fish Productivity and Production Enhancement and GIS & Spatial planning for Inland fisheries resources management. The WorldFish technical collaboration will support to increase the productivity of aquaculture through improvements in seed, technology and farming systems. The project is implemented in eleven pilot districts Mayurbhanja, Balasore, Bargarh, Sambalpur, Kalahandi, Koraput, Cuttack, Kendrapara, Jagatsingpur, Bhadrak, Balasore and Ganjam on pilot basis.



*Fish farms and Shrimp farms are counted under Inland. Only Marine Capture fish catch are counted under Marine, as per Government's Fisheries Statistics norms.

In 2017-18, the state government had spent a total of Rs.89 crore, while the Centre had spent a total of Rs.18 crore, coming to a total of Rs.107 crore as government investment into fisheries in Odisha⁵. The major investments planned further for capture fisheries are

- Construction of Fishing Harbours at Astaranga (Puri district), Balaramgarhi, Bahabalpur (Baleshwar district) and Chudamani (Bhadrak district).

- Promoting deepsea fishing. As of September 2020, Odisha has released guidelines to operationalise the Centre's subsidy scheme for deepsea fishing vessels.

Overall, it certainly appears that multinational partnerships such as WorldFish, together with Odisha's Fisheries Policy are aimed at furthering commercialisation and privatisation of fisheries with the aim of boosting export earnings, and converting fisheries into commercial enterprise, rather than a form of livelihoods. The overwhelming focus on culture fisheries over capture fisheries will mean exclusion of fishing communities, especially SSF. Within marine capture fisheries, the promotion to capital intensive deepsea fishing and fishing regulations while ignoring ongoing problems faced by SSF due to encroaching industries on landward side, and conservation and ports on seaward side may certainly lead to further exclusion of the fishing communities.

With its emphasis on post-harvest investments, the Policy may also further the formalisation of the supply and value chain thereby marginalising the women who are involved in the informal spaces performing these roles for their livelihoods. But the most dangerous implication of the policy is the complete legitimisation of large-scale privatisation of coastal land and waterbodies, failing to recognise the customary access and control rights of communities, all in the name of fisheries growth, and export earnings

PORT-LED DEVELOPMENT

Under the Centre's **Sagarmala** programme, Odisha will have investments to the tune of Rs.50,495 crore. Of this, Rs.16,178 crore is for Port Modernisation projects centred around a new mega port at Outer Harbour, Paradip Port. Port Connectivity projects worth Rs.25,380 are centred around Paradip, Dhamra, Gopalpur ports and also railway lines inland to major industrial clusters and to neighbouring state. The National Waterways 5 works are also included within Sagarmala.

Port led Industrialisation projects worth Rs.8,780 crore include **Paradip Smart Industrial Port City** (Paradip SIPC) projects. The Smart Industrial Port City being developed near Paradip Port Trust will house a number of projects across sectors, for which Port Trust has initiated work on projects valued at Rs. 3500 crore pertaining to the self-contained city spread over 700 acres of land which includes Multi Modal Logistic Parks (MMLP), various Industrial parks and food parks. The MMLP would comprise warehousing zones, container terminals and bulk cargo terminals. The park envisages a suite of facilities like inland container depots, container freight stations, parking, mechanised handling and intermodal transfers, all

at a single location. The **Paradip-Dhamra Coastal Economic Zone** is also established with a number of export based industries planned over an expanse of 19200 acres.

As part of the **East Coast Industrial Corridor**, Odisha has identified two nodes i.e. Gopalpur, Bhubaneswar Kalinganagar (GBK node) and Paradip –Kendrapada – Dhamra – Subarnarekha (PKDS node) and was been approved under National Industrial Corridor Programme on 19th August 2020⁶. Odisha has acquired 1,31,215 acres under Industrial Land Bank, including 17,087 acres across the coastal districts.

Among the major projects are⁷ :

1. Petroleum, Chemicals and Petrochemicals Investment Region (PCPIR), Paradip:

Indian Oil Corporation has established a refinery which was inaugurated in February 2016. It was built at an estimated cost of Rs. 34,555 crores. It is designed to process even low quality, high sulphur crude oil, producing various fuels as well as petrochemical feed stocks of Paraxylene, Polypropylene, Petcoke and Mono Ethylene Glycol apart from Sulphur extraction.

These shall be inputs for **Paradip Plastics Park** within the same PCPIR, manufacturing various plastics-based value-added products. As known by experience in Mangalore, extraction of such petrochemicals is enormously harmful to the environment and harmful to the health of people living around the plant. The Odisha government has also committed to provide 650 Million Litres per Day (MLD) of freshwater from a perennial river source to this refinery. This is just to give a glimpse of the extent of ecological damage for the sake of PCPIR.

2. Deras Seafood Park, Khorda district: The project has 150 acres of developed plots with facilities like 15 Pre-processing centers, each of 10 MT, Cold storages of 2,000 MT capacity, 100 MT of Block Ice manufacturing, Polythene Unit and Packaging Unit.

This Seafood Park is situated in Khorda district, which is not a coastal district, but borders the Chilika Lake. It is obvious that this is planned to procure, process and export the shrimps produced from the intensive aquaculture farms which are being expanded as per the policies discussed previously. Apart from SeaFood Park, there are numerous **Agri Export Zones (AEZ)** planned throughout the state including inland areas and in the coastal district of Ganjam.

3. 1000 MW Solar Parks: 6,087.28 Acres are targeted in the state to realise a target of 1000 MW solar power generation under the Centre's **National Solar Mission**. Two of these solar parks are planned in Bhograi⁸, in coastal Baleshwar district, near the area where the Subarnarekha river meets the sea.

This highlights the potential threats to all common lands and “waste lands”, especially in the coastal regions and along waterbodies, which can be claimed for “renewable energy” purposes. Odisha government seeks World Bank funds for the development of internal infrastructure, such as substations and associated transmission lines, of the project.

4. **Port Based Manufacturing Zone, Dhamra:** Spread over 7500 acres of coastal land, including a captive Desalination plant to provide 100 MLD out of the total freshwater requirement of 250 MLD.
5. **Steel Cluster at Kalinganagar and TATA Steel SEZ at Gopalpur** have been established for manufacturing units of value-added steel products with input steel from the mega Tata Steel plant at Kalinganagar. Similarly, **Aluminium Cluster in Angul** has been established for value added downstream industries using Aluminium stock produced by NALCO and Vedanta.

The coastal village of **Jatadhar** in Jagatsinghpur district was in the news few years ago for having successfully resisted and preventing the **POSCO Steel Plant**, but the same 1083 Ha of coastal forest land was subsequently allotted to JSW Steel in June 2017. News reports⁹ also mention a flawed public hearing was conducted in December 2019.

This scale of industrialisation being planned and implemented corresponding with transport and logistics infrastructure with the Odisha Maritime Board identifying 14 ports for Odisha, along with Inland riverine ports and Waterways. It is quite absurd that for a coastline of 480 kms, they have planned for a 13 ports, all under PPP, private ownership or captive port models.

Operational Ports

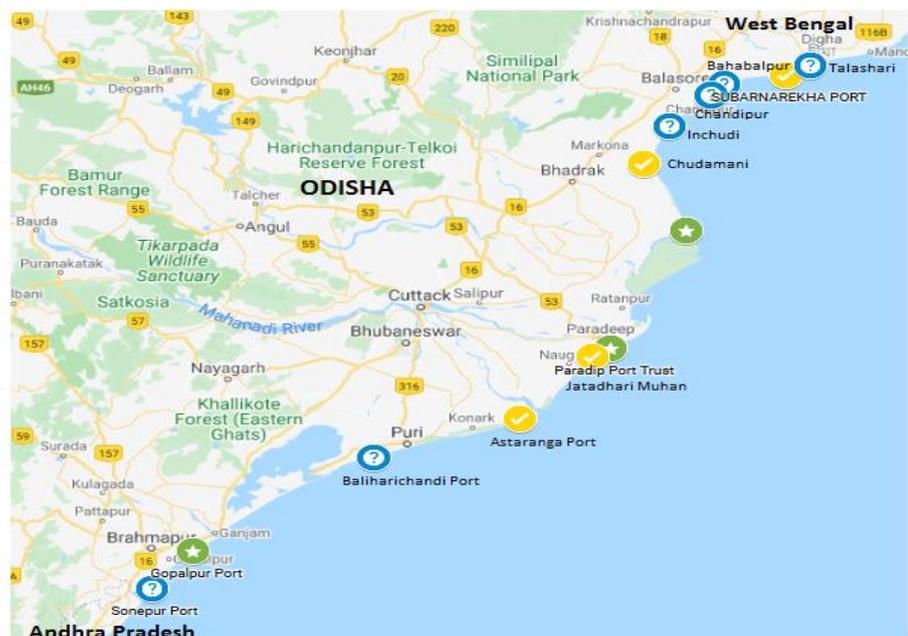
- Paradip Port Trust
- Dhamra Port
- Gopalpur Port

Under construction Ports

- PORT AT ASTARANGA
- SUBARNAREKHA PORT
- Chudamani
- JATADHARI MUHAN (JSW)

Notified ports

- Ⓞ Bichitrapur (Talashari)
- Ⓞ Bahabalpur Port
- Ⓞ Chandipur Port
- Ⓞ Inchudi Port
- Ⓞ Baliharichandi Port
- Ⓞ Sonepur Port



Odisha’s embrace of Blue Economy needs to be seen as completely in-sync with the development of hinterland and inland industries, since all the industrialisation plans are

dependent on inland mineral resources. Odisha accounts for 33%, 98%, 92.5%, 51% and 33.2% of India's deposits of Iron ore, Chromite, Nickel, Bauxite and Coal (IPR 2015). With these policies, the state aims to go beyond mining and establish a manufacturing base to move up the value chain by having more smelters, and also more value-added metal based industries manufacturing downstream products.

The second aspect is that Odisha also is promoted as the gateway to eastern India including West Bengal, Jharkhand, Bihar, and eastern UP, in much the same way as Gujarat ports serve the north western states like Rajasthan, Haryana, Punjab. Already, Paradip Port handles the 2nd most cargo among Major Ports in India after Kandla. The financial viability of the plan to have 13 ports along 480 kms coastline in Odisha are dependent on increased industrialisation and consumption in these hinterland regions of West Bengal, Jharkhand, Bihar, Chattisgarh and eastern Uttar Pradesh.

However, these huge investments with a grand economic vision are at the cost of exclusion of the coastal communities and their livelihoods as well as irreversible ecological costs.

TOURISM

In Odisha, Coastal tourism is given priority focus by both state and central policies¹⁰. Under the centre's **Swadesh Darshan** scheme, Odisha has been allotted one Coastal Circuit consisting of Gopalpur, Barkul, Satapada and Tampara – spanning Ganjam and Puri districts with Centre sanctioning Rs.76.5 crore for the same. Activities promoted for this cluster include watersports, Floating restaurant, Sand Art Park, among others.

Implementing the Odisha Tourism policy 2015, it has evolved several projects like:

1. **Shamuka Beach Project**, in Puri district is envisaged as among the largest integrated tourism projects in India, spanning over 3000 acre to be developed over 3 phases. Around 11 luxury hotels, a modern golf course, and other such luxury tourist facilities are planned in this coastal stretch. The private players have been provided with lease periods of 70 years.
2. To promote Chilika lake as a hotspot of **ecotourism**, the **Chilika Development Authority** has created a landbank of 1000 acres around the lake for tourist development activities like Aranya Eco-village tourism, Lagoon park, aquarium, marine zoo at Satapada, **Cruise tourism** with day-cruises around the lake are proposed from Satpada to Barkul, Water sports and Luxury resorts at Rambha, and Mangaljodi, among others.

3. **Talsai Beach Development Authority** established in Baleshwar district with a land of 700 acre for infrastructure like resorts, hotels¹¹ along the lines of Digha-Sankarpur Development Authority of West Bengal, that was promoted under the ICZM project.

Under the Integrated Coastal Zone Management Programme funded by World Bank, the Environment Ministry, originally selected Chandrabhaga beach near Konark as the candidate for **Blue Flag Certification** in Odisha. But it was changed to **Puri's Golden Beach in July 2019**. The Blue Flag process was brought under the *Beach Environment and Aesthetics Management System (BEAMS)*, and claimed as a way to ensure 'clean beaches' according to the *Society for Integrated Coastal Management (SICOM)*. However, its guidelines focus entirely on creating tourist-friendly infrastructure on beaches. In 2019, the government of India had even amended the CRZ regulations to permit building tourist facilities on beaches. This is among the initial 13 beaches across India being chosen for Blue Flag certification, with an overall target of 200 beaches to be certified in the ICZM-Phase 2 project.

These tourist projects at the cost of grabbing of coastal lands, environmental degradation, have serious implications on the livelihoods concerns and displacement of the coastal communities

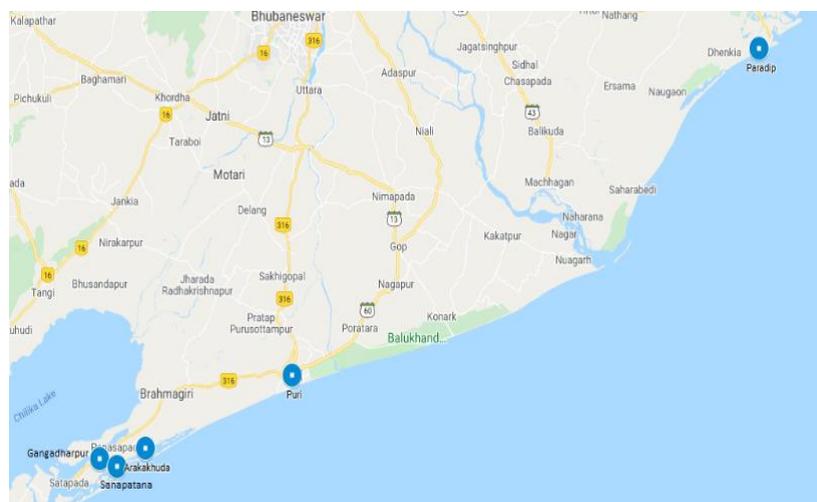
MARITIME SECURITY

Under the centre's Coastal Security Scheme Phase 1 and 2, Odisha has operationalised 18 Marine Police Stations since January 2015 and has sought permission from the union Home Ministry for two more¹², along with a separate cadre for Coastal Security.

With these policy and legal reviews, the research team undertook field visits in Odisha.

FIELD OBSERVATIONS

The *Odisha BE field visit* was organised in October 2019. The visit was planned by the Research Team in consultation with Dakshin Foundation who facilitated the visit.



The field visit covered the following specific themes -Port-led Development, Tourism and Fisheries

1. Focus Group Discussions (FGD) with Fishers of Sandukudh village adjacent to Paradip Port and visited Paradip Port
2. Visited Golden beach in Puri, selected for Blue Flag certification and a discussion with some of the fisher leaders from the area.
3. Visited three villages along the northern bank of Chilka lake - Gangadharpur, Arakakhuda, Sanapatana, and conducted FGDs with fishers – men and women in all three villages.

➤ Sandukudh, Paradip – Threat of eviction by Port-led industries

The team visited the Paradip port which is under massive expansion under Sagarmala from 18 berths to 31 berths including 3 offshore Single Point Moorings with submarine pipelines for crude oil to serve Indian Oil Corporation’s mega petrochemical complex. It was observed that the port berths currently handled material cargo such as coal, phosphate fertilizer, iron ore and limestone majorly and even agricultural produce like wheat and sugar to a minor extent. Thus, the port targeted cargo ships for import and export of raw material, and not container ships. It was observed that most of the cargo handling mechanisms were basic, with lot of material wasted and strewn around the berth floor. We could also observe huge stretches of acquired land demarcated for the port expansion as well as construction work for the Petrochemical refinery in the vicinity.



Existing Facilities at Paradip Port



It was observed that most of the cargo handling mechanisms were basic, with lot of material wasted and strewn around the berth floor. Sensitive materials like coal were being handled very carelessly, heightening the risk of coal dust polluting the nearby surroundings. We could also observe huge stretches of acquired land demarcated for the port expansion and the proposed Smart Industrial Port City logistical park. In the distance, we could view works at the Petrochemical refinery. We learnt that the offshore SPM is at a distance of about 20 kms from the coast, and the port channel is quite broad, meaning that fishers are not allowed within the 20 kms radius.

We visited the neighbouring village of **Sandukudh**, just to the south of Paradip Port and had an FGD with fishermen and fisherwomen. We were informed that it is a village across 84 acres consisting of almost 10000 families of which around 5000 families (3800 HHs) are Telugu speaking traditional fisher families, while the rest are Odia and Bengali. The particular fishers we interacted migrated from Andhra coasts near Kakinada and settled here in 1966, but elaborated that Telugu fishers have been settling in this region for long before. They have organised themselves into the Sandukudh Marine Primary Fishermen Cooperative Society, established in 1983, with over 800 members.

Despite the vast Paradip Beach right in front of the village, fishers have no direct access as its owned by the Port Trust. We learnt that the beach itself was formed is due to the accretion after Paradip Port from the 1960s. Further, beach beautification projects have prevented fishers using the beach space for any livelihood purpose. Thus, they are dependent on the Nehru Bangla Fishing Harbour which is 14 km away for Sandukudh fishers.



Beach Beautification at Paradip Sea Beach

However, the harbour is dominated by non-fishing Odia trawler owners, and there is not enough space for country boats.

Being in the vicinity of Paradip major port and the Petrochemical refinery campus, as part of the PCPIR project, the central government is attempting to displace them and capture the land. While the village was officially recognised only in 2002 by the Odisha government when it declared 1765 households, a recent 2017 survey as part of the Urban Slum Household Area (USHA) survey under the **Odisha Land Rights to Slum Dwellers Act, 2017**, state government declared 3000 households. Fishers shared that several other villages have received land rights under this law after USHA surveys, but were unsure whether their village would receive similar benefits.

Thus, despite huge industrial activity all around them, there is no plan for resettlement. They were denied basic civic amenities, and even electricity supply was provided to them only from 2018 onwards. Despite immense corporate investment pouring into their area, they rue that government nor companies are not building schools or medical centres, even under CSR. **Women** are involved in marketing and **dry fish processing and sales**, however since they have no access to coastal areas for drying, they dry most of the fish in and around their homes itself. The local fish markets are controlled by non-fishing Odia traders, and so fisherwomen are not allowed to sell directly to the customers. They sell dryfish in bulk to markets as far as Nakapalli, Andhra Pradesh. Even at the Harbour, SSF do not get a fair price as company agents control Auctions to a large extent.

In addition, there also **7-and-a-half-month fishing ban** in certain fishing grounds close to **Turtle nesting grounds** in Marine Protected Areas such as Gahirmatha Marine Sanctuary to the north, and the Jagatsinghpur coastal reserve forests near Astaranga to the south from 1st Nov to 15th June. Despite fish bans for an astonishing 7 and a half months, they receive no compensation. While non-motorised boats under 8 feet are allowed, most of the fishing boats

in this village are the regular 30 feet FRB boats with 10 Hp Outboard motors, and also some with 20 Hp Inboard motors. These bans are enforced by **coastal police** who harass the fishers. *In a nutshell, the FGD with Sandukudh fishers disclosed the multiple levels of marginalisation of traditional fishing communities due to Coastal Industries, Marine Conservation, Harbour based fisheries as well as sales of fish catch and in value and supply chain.*

➡ Puri – Blue Flag Beach Tourism

The team visited the Puri Golden Beach, and interacted with Babuli Prasad and other members of the Puri team of Odisha Traditional Fishworkers Union. In June 2019, the Central Environment Ministry selected Chandrabhaga beach near Konark as the original candidate for *Blue Flag Certification* in Odisha but was changed to Puri's Golden Beach subsequently. Fisher leaders here informed us that this change was not known to the public at all, and that there was no discussion nor intimation to fishers by the district collector as there is no need for any official Public Hearings as per deregulated EIA Act 2020.



Blue Flag Beach with fences

A one km long stretch of the beach was used to park over 80 SSF boats, but has now been cordoned off as the Blue Flag beach. The delineated beach boundaries have already been barricaded with caged fences. The allocated stretch will be privatised where the fishers and the local informal vendors will not be permitted to engage in their pre and post fish landing activities.

Overall, several surrounding beaches in Puri like Penthakata fishing village, Mayfair, Gandhi Park Beach, Chahadith, etc are being used for fishing activities, as well as several informal vendors serving the local tourists. The capture of beach spaces and privatisation under Blue Flag, and other tourism projects in the vicinity will thus impact not just fishers but vendors from other allied sectors.

Subsequently, the beach has been open to the public from August 2020, and the district administration has specifically banned access to vendors, with user fees for tourists and security. In October 2020, this beach has been awarded the Blue Flag status.

These developments confirm the concerns of the coastal communities. Due to the privatisation of beach spaces, not only are they being excluded from their habitats and livelihood resources and women are pushed into unsafe locations without safety net.

➤ Chilka Lake – Intensive Aquaculture

The Research team visited three fisher villages along lake side of Chilika Lake namely Gangadharpur, Arakhuda and Sanapatna, near Brahmagiri, in Puri district.

In **Gangadharpur**, we saw several shrimp ponds built on bunds around the lake, while using both the lake as well as groundwater as water source. All the effluents from these farms were let into the lake itself.



In some cases, we also found parts of the lake itself being captured using extremely fine nets as enclosures, through which only water could pass through. These sections called “Gheri” would be used to grow shrimps.

We had an FGD in Gangadharpur with lake-based fishers. They shared that the entire village used to be dependent on lake-based capture fisheries, but from the mid-90s onwards, areas on and around the lake began to get privatised to local powerful groups, mostly belonging to Pradhan caste, a dominant landed community for Industrial shrimp culture. Fishers responded through major protests against industrial shrimp farming as part of the Chilika Bachao Andholan. When peaceful protests were not heard, it began to turn violent. Many bunds were broken by the villagers, leading to retaliatory violence on the villagers with hired goons and supported by the local admin too. The local elected bodies were indifferent since it is controlled by the non-fishing communities. Some of the elderly fishers we met showed us bullet injuries that they sustained during open firing by the police. Yet the shrimp farming continued unabated.

We learnt that many fishers also owned small patches of farm in extremely low-lying land right around banks of the lake, where they traditionally used to cultivate paddy and shrimp alternatively. Thus, they were self-reliant in terms of paddy and fish. But these lands got destroyed when the Cyclone Hudhud smashed the area in 2014. Thus, they lost their paddy to nature, and are losing their resource base and lake fishes too due to encroachment and pollution by intensive culture fisheries.

The industrial shrimp farms do not even employ them as labour, as labourers are hired from other areas. Devoid of any gainful employment opportunities and with traditional livelihoods destroyed, youth from here are forced to migrate to different parts of India. Women, too were traditionally involved in fisheries activities like salting, drying, as well fish vending in local markets. However, with reducing fish in the lake, women too are forced to work as daily wage labourers in construction sites, brick kilns, etc. They also mentioned the degrading water quality in the village, pointing out a number of cases of water borne diseases.



During our FGD in **Arakhuda**, fishers gave a background that they were among the oldest villages on the Chilika lake, and are a big village of population 12000 with 1276 households. All the households are involved in capture fisheries, with 8 months of fishing in the lake and 4 months of marine fishing. The village has approximately 1500 fishing boats, with about

800 being motorised SSF boats. Fishers get paid in share of catch and not fixed wage like in mechanised sector. About 80% of them have marine fishing ID card, they said. However, they do not receive any fuel subsidies.

The elaborated that capture fisheries in the lake is managed by a separate department and they need to pay a licence fee for Rs.150 per year, for fishing licence in the 2616 acre of lake allotted for their village, which is a part of Manikapatna revenue village. But the department keeps raising the annual licence fee, which they are unable to pay with reducing fish catch in the lake, due to increasingly polluted lake. They said that they have not been paying for the last 12 years. Lower fish catch also means that a number of youth migrate out for work.

The women then shared that they are involved in salting and drying of fish, along with fish vending to far-off places like Balugaon in Khorda district and Humma in Ganjam district. They added that they do not receive any support from the fisheries department, but mentioned that a private philanthropist donated a fish drying machine a few years back, which got damaged during the 2014 cyclone Hudhud. There is one women cooperative society called Gajalakshmi Fisher women's society.

We observed that despite being in a CRZ 1 area and being part of the ICZM projects, they were not aware about the CZMP maps. But they mentioned that under ICZM projects funded by World Bank, a number of women SHGs were formed in the village by the fisheries department. They denied that mother prawns are caught by them for aquaculture, but did share that less than 10% of the fishers do catch fingerlings secretly.

We visited the village of **Sanapatna**, and had an FGD in the main village square with about 27 fishers. This was a village consisting of 350 households with a population of 2000, all belonging to fishing communities. They said there are about 350 boats in the village, with about 50-60 motors being motorised. They mentioned that almost 200 boats were damaged in the recent Fani cyclone but received only Rs.4200 per boat as compensation. Earlier they used to

keep boats in the mouth of the lake but the intensity and frequency of cyclones have increased, and the lake mouth is also shifting, highlighting the acute shortage of safe parking space for boats, as well as vulnerability of the habitat.

Women shared that they are engaged in salting, drying and selling of fish and travel to fish markets as far as Brahmagiri, Humma requiring travel for 2 days, including overnight stays. All fishers here have some small patch of land belonging to the village, but do not possess pattas for the same. They do not possess pattas even for their own houses. However, all have been provided with a Marine Fishing ID card. All the males are members of the Marine Fishing Society, as well as Lake Fishing Society, though the latter is inactive, and no schemes are



directed through it. They shared that their customary lands within their village boundaries were initially leased out by some members of the local fishing community to do shrimp farming. But they incurred losses, so they stopped soon. But upper caste investors from outside have been grabbing their customary lands for shrimp

farming now, and being supported by administration as well. They narrated that they face harassment from administration and the police for them.

The fishers here, like in the previous two Chilika villages, belong to the Telugu speaking Noliya caste, which is under the OBC classification in Odisha. Due to marginalisation of political voice and a paucity of schemes and opportunities available to them, they have demanded SC status to raise political voice for their community.

FINDINGS AND ANALYSIS

From the analysis of policy documents, secondary data and primary data from field interactions, it is clear that neoliberal growth-led models were already in place prior to the adoption of Blue Economy in Odisha. From the various policy and project documents, adoption of Blue Economy has led a shift towards expansion of coastal mining, culture fisheries, infrastructure projects to strengthen port connectivity, and beach tourism.

Our observations revealed different levels of social, economic, ecological and political implications of BE on SSF and women

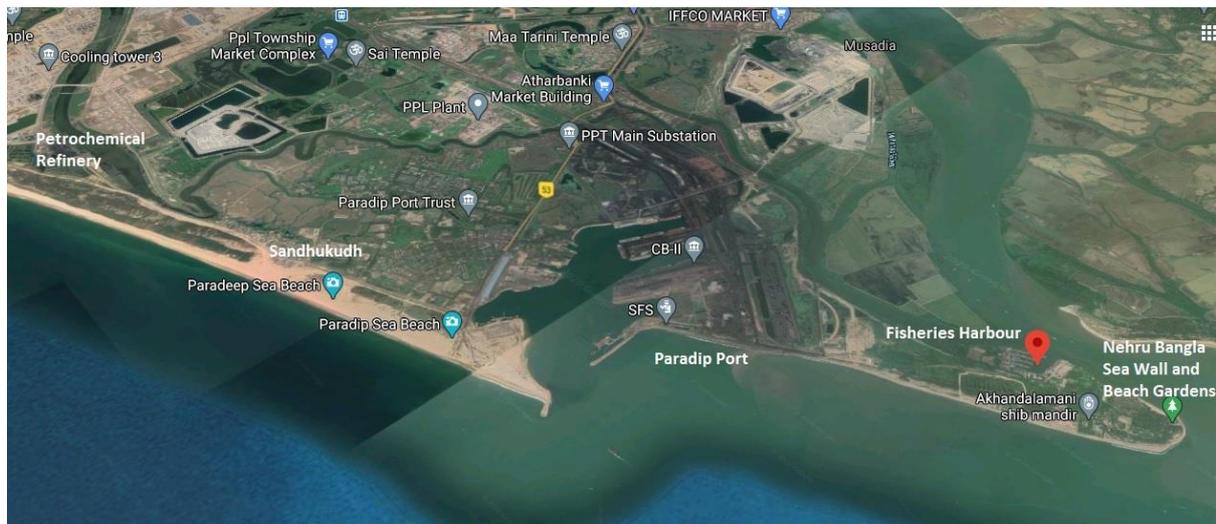
Ecological Implications

➔ Shoreline changes

The Odisha coast by nature is extremely dynamic with vast movements of sand along the shoreline. It also has a very large number of sediment cells as well as interspersing mud cells. This is an indication of wide variation of coastal topography. The coastal plain of the

state is a combination of several deltas of varied sizes and shapes formed by the major rivers the Subarnarekha, the Budhabalanga, the Baitarani, the Brahmani, the Mahanadi and the Rushikulya, which regulate sand-sea dynamism. In such a fragile coastline, massive coastal protection structures as well as port infrastructure will have continuous disastrous consequences in the long run.

From Sandhakuda near Paradip, we could observe the extent of accretion and erosion on either side of the Port, while the fishers affirmed that the beach was not as big a few years back, implying that it is due to accretion of the beach, as a result of along the coastline disturbing the littoral drift in the form of infrastructure project needless to say port structures.



The above satellite image affirms the field observation perfectly. It shows the massive accreted beach *south of the Port*, right in front of Sandhakuda, and shows the eroded coasts to the *north of the Port*. Infact, sea walls are constructed all along the Nehru Bangla creek tip.

In such a context, the massive port expansion at Paradip with land reclamation of 193 Ha, along with numerous new ports planned, this erosion and damage to coastline is bound to further increase. The cumulative impacts of these projects would be devastating and it needs a serious scientific cumulative impact assessment study by the Government.

➡ Pollution and Biodiversity Loss

It is quite astonishing to learn that India's first Ramsar site, Chilika has now been opened up for intensive shrimp aquaculture as well as tourism with few efforts taken to regulate them. The continuous anthropogenic pressures on the lake are bound to have an adverse impact on biodiversity of the lake, besides loss of fishery resources, as shared by fishers. The system of 'Gheri' which illegally enclosurises sections of the lake have led to increased juvenile capture and hence, further loss of fish catch. The leasing of lake and lands on the lake bank, considered 'wasteland' have led to the loss of spawning grounds. The same concerns were voiced by fishers

in Puri who shared that with increasing marine pollution, they are unable to catch any fish within 5 kms distance.

As we could observe, the village of Sandhukudh is sandwiched in between the Port and the Indian Oil Refinery, which is slated to produce extremely poisonous and dangerous petcoke, and sulphur extraction plants. The processes involved in the extraction of these substances are known to cause air pollution and health issues including lung and skin infections, not to mention long term damage to the water sources. Despite the the government's claim to promote sustainable development, such polluting industries have come up in the vicinity of residential areas like Sandhakuda where over 10000 people live. In addition to this, would be the expanded coal, fertilizer and iron ore terminals at Paradip Port. The coal dust emanating would make villages like Sandhakuda cannot be inhabited in near future.

Sanapatana Fishers also expressed that a new mouth of the Chilika Lake has opened up, which has altered the salinity as well as the currents of the lake. This is evident from rapidly shifting sand slits and sand bars during cyclonic floods. This is affirmed by Governmental reports like **National Assessment of Shoreline Changes 1990-2016** showing that less than 21% of the coast is actually stable, meaning the rest 79% of the coastline is either eroding or accreting, either ways unstable.

The damage to freshwater resources is also immense given that over 650 MLD of freshwater from perennial rivers will be diverted towards the entire PCPIR project on a daily basis by the state government¹³. This raises severe questions about the not just water security of coastal villages, but to the entire riverine ecosystems as well as nearshore waters.

Thus, with the increasing number of industrial projects planned, and expansion of industrial aquaculture in freshwater as well as brackishwater, it may lead to destruction of the natural resources, habitats mostly importantly water scarcity resulting in serious threats to ecological integrity and very survival of humanity.

➤ Disaster vulnerability

The FGD in Gangadharpur revealed that they lost their lake side farms due to the impact of Cyclone Hudhud in 2014. The Indian Meteorological Department says the last 5 years has seen a 32% increase in the frequency of cyclones in India¹⁴. From 2007-20, the Bay of Bengal basin has seen at least 15 major cyclones. Some of these, like Sidr in 2007, Aila in 2009, Phailin in 2013, Hudhud in 2014 and Bulbul in 2019, Amphan in 2020 caused widespread damage in Odisha. Thus, while there is an international need to tackle climate change, the pressing need is to enhance the disaster resilience of people's livelihoods, especially in Odisha.

While Odisha's disaster response measures have gained international praise, however in the context of BE and the extreme levels of dispossession, and displacement on the coast, communities are losing their resilience, as they are now entirely at the mercy of governmental disaster measures. Disaster resilience cannot be built when the communities are losing rights over natural resources essential for the rebuilding of their livelihoods. In such a scenario, the risk of disaster induced distress migration is acute.

Socio-Economic

➤ Threat of displacement

As enunciated by fishers in Sandakudh, the village was issued with an eviction notice 8 years back. It highlights the fact that coastal communities' rights to land and habitation where they can continue their traditional livelihood in a convenient manner has never been recognised. Clearly, the Port Trust is looking to assert its ownership of the land, and thus, even basic services like electricity were being denied to them. The present threat is applicable to all coastal villages where Coastal Economic Zones, Tourism, Coastal Mining are being promoted in a larger way.

➤ Loss of livelihood and distress migration

We have documented the grabbing of both land as well as the waterbody in Chilika lake area, leading to loss of access rights, with the lake-based capture fishery certainly on a downhill. Fishers, especially youth have been migrating, since they could not sustain their families with the income from the lake. Most of them face harassment as they have little awareness about resource rights and avenues for justice. Thus, distress migration has increased, due to the development activities around the lake.

With the dispossession of fishery resources, along with increased investments into the fishery supply and value chains, focussing on modernisation and formalisation of the post-landing activities will lead to further exclusion of women.

This wholesale shift from self-employed category to being a casual labourer has grave implications. But with huge investments pouring in, it seems this is the only option left for more and more fishers, especially women.

Political

The massive scale of industrialisation and promotion of coastal development, has led to creation of industrial and tourism related land banks with long term leases over land, as well as long term leases for aquaculture over fresh and brackish waterbodies. With industrial projects and Ports notified all along the coast, vast swathes of land have been brought under the various Industrial Area Authorities and the Odisha Maritime Board, which are claimed as "*public purposes*".

The following paradigm shift in the development plans through policy and legislative regulations have larger political implications not only for Odisha but for the entire coastal governance.

1. Largescale privatisation of coastal lands on a lease basis by setting up parastatal bodies
2. Centralisation of powers and disempowering both local governments and state government
3. The ecological destruction Ramsar site like Chilika lake will have implications on the entire coastal stretch, not only in Odisha, but Andhra Pradesh and West Bengal.
4. Legitimatisation of non-fishing communities to promote industrial aquaculture through leasing out policies have resulted in sanitisation of dispossession of resource rights of the traditional communities over coastal commons.

Thus, the expansion of BE components in Odisha will lead to unaccounted ecological externalities as well as the exclusion of coastal communities in Odisha and militarisation of the coast by conversion landing sites into coastal police station in order to protect the investments of the multinational corporates.

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