

# ASSESSING HEALTH AND DEVELOPMENTAL NEEDS OF FISHER COMMUNITIES OF SOUTHERN ODISHA

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# **Executive Summary**

To build an understanding of the project site and the fishing communities residing there, an exploratory study was undertaken in Ganjam, Odisha in June 2019 for three weeks. The study has highlighted the issues with healthcare access and quality, occupational hazards and common diseases prevalent in these communities along with other pressing issues faced by the communities. This report gives an account of the methodology used for the study, the sites visited, issues discussed with the communities and some of the interventions which could be undertaken in these areas.

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# 1. Introduction

Human health plays a key role in enabling individuals to maintain viable livelihoods in natural resource-dependent communities like the fishing communities (Woodhead et al, 2018). Multiple pressures like decline of fisheries resources, climate change and large scale industrial fishing have created a dire situation for the fishermen and their livelihoods, consequently affecting the physical and mental health of the marine fishing community (Jacob & Rao, 2016). Fishing communities are exposed to multiple health risks due to the nature of their occupation and substandard housing and sanitation systems (FAO 2006). Poor health of fishing communities has significant implications on the social integrity, economic viability, and sustainability of fisheries (Woodhead et al, 2018). There is growing recognition that sustainable fisheries require social sustainability of fishing communities (Britton & Coulthard, 2013; Coulthard, 2012; Woodhead et al, 2018). Human health is an important factor which contributes to social sustainability (Dempsey et al., 2009).

Studies have shown positive linkages between community health and ecosystem health (D'Agnes et. al 2010, Westermen et. al. 2012). For instance, integrating community health components into environmental interventions could increase efficiency and cost effectiveness in natural resource management. Health interventions also create an excellent entry point and facilitates trust building between the environmental organizations and the communities. Most contemporary conservation interventions support fortress conservation models, focus on alienating people from biodiversity (Buscher et al. 2019) and do not consider the developmental aspirations of the communities or their well-being. Many ongoing community-based conservation interventions are heavily skewed towards conservation outcomes rather than community outcomes often leading to increased stress and conflicts over rights and access. Given the well-established linkages between community health and ecosystem health, we believe focusing on an integrated approach could facilitate better environmental outcomes without compromising on community well-being.

Community health interventions facilitates participation of a wider demographic group, empower the more marginalized sectors, reduce poverty, facilitate community cohesion, decrease the impact of extrinsic factors such as natural disasters and lead to better governance of the natural resources they depend on (Westermen et. al. 2012). In the last decade, many organizations have integrated programs on community health and resource management and have seen significant benefits like increasing resilience and adaptive capacity of the communities. Some examples include the Population Health and Environment Program (PHE) by Blue Ventures in Madagascar, Integrated management of coastal resources (IPOPCORM) by PATH Foundation in the Philippines (Robson 2017, D'Agnes et. al 2010).

## 1.1 Need for the Project

The decline of fisheries due to large scale trawling and climate change has increased the vulnerability of the artisanal fishing community in India (Jacob & Rao, 2016). In addition to that,

the fishing communities in coastal Odisha are also prone to the frequent natural calamities. Their low-incomes combined with the above issues has a major impact on their well-being. As per a previous study undertaken in this region, some of the villages do not have access to clean drinking water, sanitation and health facilities (Chandrana et. al. 2017).

Dakshin Foundation has been working in coastal Odisha since 2007 focusing mainly on the long-term monitoring of sea turtles at the Rushikulya mass nesting rookery. This has included training of community-based conservation organizations and local youth groups to monitor the turtle population, shoreline changes, and climate change impacts. In these areas, marine turtles and artisanal fishing communities share space on land and sea. Local fishers face livelihood losses due to regulations during the turtle breeding season. According to a report by the Food and Agriculture Organization of the United Nations, fishing communities of Odisha suffer from high poverty, food insecurity during the lean season, malnutrition, and many diseases due to unhealthy living conditions and poor healthcare facilities.

In the light of these issues, Dakshin is planning to develop a programme to improve community health outcomes in coastal and fishing communities and to make the communities more resilient to external shocks. To design such a programme, a scoping study was planned and undertaken in southern Odisha with the following objectives:

1. To identify the major issues related to community health and healthcare services in the fishing communities
2. To identify other developmental needs of the communities
3. To identify the major stakeholders for the project, and a basic understanding of the communities and community institutions

## 2. Methods

The scoping study was carried out from 13 June 2019 to 30 June 2019. Qualitative research methods were used along with site visits to get a basic understanding of the communities. Key informant interviews, group discussions and participant observation were the main tools used. Interviews were conducted with leaders from Village committees and Gram panchayats, Block and District officials, and health workers. Six group discussions and 26 semi-structured interviews were conducted with key informants and other stakeholders. Thematic analysis of the data collected was implemented to arrive at preliminary results.



Image 1. Group Discussion at Nolia Nuagaon

### 3. The sites- Fishing villages

Odisha has 6 coastal districts, Ganjam District being the southernmost. It has 60 km of coastline dotted with estuaries. It is the most populous district of the state and ranks fifth in area (8206 sq km) (Census of India, 2011). Ganjam has 22 Blocks and 22 Tehsils with 26 fishing villages and 8601 families, of which 8583 are traditional fishing families. 3421 families are BPL (Below Poverty Line) families (CMFRI, 2011). To the north of the district is Chilika lake which is the second largest salt-water lagoon on earth. The Rushikulya rivers flows beside the Ganjam town and meets the Bay of Bengal. The river mouth forms an estuary and creates sandbars and beaches which is one of the best known mass nesting sites for olive ridley turtles.



Image 1: Sites visited in Odisha during scoping study  
Source: Google Earth

The marine fishing villages in Ganjam District fall under 4 different blocks- Ganjam, Chatrapur, Rangeilunda and Chikiti. Purnabandha, Gokhurkuda, Kantiagada Podampetta, New Podampetta, Prayagi villages are situated to the north of the Rushikulya river while Nolia Nuagaon, Sano Aryapalli and Nua Golabandha are to the south, as shown in the map. These eight artisanal fishing villages of Ganjam district were studied as a part of this study. These villages cover almost 60% of the coastal areas located in 3 different blocks of Ganjam district- Ganjam, Chatrapur and Rangeilunda. They were selected for being traditional fishing communities, their

proximity to Rushikulya turtle nesting site and also some were suggested by Mr Mangaraj Panda, one of the key informants and president of UAA (United Artists Association).

All of these villages are marine fishing villages except Purnabandha, which is a riverine fishing village. These fishermen fish in the Rushikulya river and estuary. It is also the only village with Odia fishing community while the rest of the villages are resided by Telugu fishing families. There is a canal called 'Saheb' or 'Palur' which runs parallel to the villages north of Rushikulya and connects Chilika to Rushikulya estuary. There are aquaculture farms beside the canal. The beaches around the Rushikulya estuary are very dynamic and are prone coastal erosion. Families from old Podampetta were shifted to two different locations due to heavy coastal erosion in Podampetta. The new villages are called New Podampetta and Kantiagada Podampetta. The biggest port and industrial area in Ganjam district is in Gopalpur. Aryapalli village is located very near to Gopalpur port and Indian Rare Earths Ltd which is a beach sand minerals mining company. Nua Golabandha village is located very near to an Army cantonment and faces several issues due to this.

## **4. Findings and Observations**

This section will talk about the insights and themes gathered from the observations and data collected during the scoping study.

### **4.1 Livelihoods**

The communities studied were artisanal fishing communities. Until around 20 years back, when the fisheries department introduced motorized boats, they were using entirely traditional crafts and gears. Purnabandha fishers still use non-motorized boats for fishing. The marine fishing villages use both motorized and non-motorized crafts and different types of nets depending on the target species. They go upto 40-50 kms distance in the sea and the round fishing trip takes around 10-12 hours.

Some of the issues pertaining to artisanal fishing as a livelihood and other themes which stood out during our interaction with the communities are described below.

#### **4.1.1 Uncertainties surrounding Fisheries and Occupational Hazards**

Respondents from all the fishing communities studied expressed their concerns regarding the uncertainties related to fishing as an occupation. Most of the communities expressed their apprehensions about the risk involved in venturing out to the sea due to cyclonic weather during monsoons. All the communities complained about the slump in the income during the monsoon season. Some of these communities also mentioned about the restrictions related to fishing, like the ban on using motorized boats in the turtle breeding season starting from 1st of November to 31st of May every year. Additionally, there is a ban for the fish-breeding period from 15th of April to 14th of June across Odisha. However, the ban is exclusive to motorized fishing boats while the traditional non-motorized crafts are allowed to operate. Given the extensive periods of these bans, fishermen mostly do not adhere to them and there is negligible patrolling by the authorities concerned with the implementation of these regulations. Some of the fishing communities like the Sano Aryapalli fishers have complained about these regulations.



Image 9: Fishermen selling fish at Gokhurkuda beach during monsoon

Some schemes have been introduced by the Fisheries department to compensate the fishermen during these periods of restrictions. The Savings-cum-Relief scheme encourages fishers to save. It requires a fisher to deposit Rs. 1500 over a period of 9 months. The state and central govt adds Rs. 1500 each to this deposit and in the lean period a sum of Rs. 4500 is given back to the beneficiary. In addition to this, an annual compensation of Rs. 7500 is provided to marine fishers during the turtle breeding ban period. Besides these, there are some other schemes for fishers too like scholarship for children of fishermen, subsidies for buying boats. There is a lack of clarity amongst the fishers as to why these bans are in place and also regarding the compensation they could receive from the state. Some fishermen were unhappy due to the delays in receiving their compensation. Moreover, riverine fishermen of Purnabandha were unhappy that despite their participation in turtle conservation measures, they do not qualify for any.

All these communities also opined that the fish catch has declined. Their perception of the reasons for this decline varied with the type of gear they used. The communities from Prayagi to Nolia Nuagaon do not use ring seines, so they complained that the decline is due to the use of ring seines by fishers down south. Apart from ring seines, they blamed the trawlers coming from Andhra and Tamil Nadu and the use of zero nets by other riverine fishers. Fishers of Sano Aryapalli who use ring seines, said that the decline was due to too many people catching fish. Invariably, the catch per fisherman has reduced drastically over the years in any given scenario.

As new technologies come and income keeps dwindling, the fishers opt for destructive fishing methods like the ring seines and zero nets. Ring seines cost around Rs. 3-5 lakhs each and the craft used for ring seines cost around Rs. 7 lakhs. Clearly, these could only be afforded by the fishers who receive credit easily. Politicians and traders lend money to the fishers for their own

self-interest. Destructive methods of fishing have thus been indirectly encouraged by moneylenders. Further, Purnabandha fishers and a higher official from the fisheries department opined that trawlers coming from outside are helped by traditional Telugu fishermen in return for personal favors.

Apart from the low catch in monsoon and other regulations, it is immensely risky to head out to the sea. The marine fishers complained about boats getting toppled over due to high waves, and sustaining injuries due to falling off the boats and hitting the motor. Nua Golabandha fishers said that every year 4-5 fishermen lose their lives due to such boat accidents. The fishers said they receive insurance only for death or loss of boats but not in the case of disabilities. Furthermore, pulling fibre boats from the sea onto the shore where it could be kept safely during rains takes 20 people. They pull it onto the shore by lifting it on their shoulders. This leads to muscle pain and could even dislocate their shoulders.



Image 10: Effort in pulling the boat in Nua Golabandha

### **4.1.2 Large Scale Migration**

In all the villages, there is large scale migration of fishermen to other states for work. They migrate to different coastal states like Tamil Nadu, Kerala, Goa, Maharashtra, Gujarat where commercial trawl fishing is active. They work as labor in the trawl industry or as construction labor in big cities. Some of them migrate for 3 months in the monsoon, some for 6 months or even for an entire year. Fishermen who migrate to work in trawlers do not take their family along. They work for 3 months, come back for a month and again leave for 3 months. The community members who migrate and work as construction laborers, usually take their family along and go for longer periods. In Nua Golabandha, the group discussion with fishermen revealed that 80% of the active fishers had migrated during the monsoon season. In Kantiagada

Podampetta, the village committee members, including the president, secretary and even the ward member had migrated for work.

Besides the uncertainties pertaining to the weather and fishing regulations, the main motivation for migration is the high income earned in shorter periods. Fishermen reported that the people who migrate for work earn around Rs. 1-2 lakhs in 3 months, which they can't earn even in an entire year staying back at the village. Another reason for migration is the lack of alternative livelihood opportunities for the fishing communities as neither they own any land nor have education to qualify for skilled jobs. Fishers who do not migrate to other states, work as local labour either through MGNREGA (Mahatma Gandhi National Rural Employment Guarantee Act) scheme or as a construction labourer in the nearby towns. Their earnings are meager as compared to the city migrants.

Though the migration generates quick income for the families and is a source of livelihood, nonetheless, it creates a sort of vacuum not only in the families left by the migrant fishers, but also in the community in general. As in the case of K Podampetta, there is a lack of governance in the village due to the absence of members of the village institutions. A few respondents mentioned that the fishermen who work in the trawl industry are bound by contracts and hence cannot quit work in the time of emergencies. Their working conditions can only be understood in-depth upon doing a detailed assessment.

### **4.1.3 Women's participation in Labour**

Women play a major role in earning a living in these fishing communities. Their role, though not directly in fishing but rather in allied fishing activities, cannot be overlooked. They sell fresh catch in the nearby villages and towns. They dry additional catches and sell it in the dry fish market in Humma. Women from other fishing villages buy and in turn sell these dried fish in different villages, as far as Khordia and Puri district and do so mostly on foot. Women also work as local laborers through the MGNREGA scheme or as a construction labourer. Apart from earning livelihoods, women are also occupied with household work and childcare. Most of the villages have women SHGs (Self Help Groups) and in some villages like Sano Aryapalli and Podampetta, a women's cooperative called Samudram was quite active previously. After the implementation of GST, their operations have reduced. They only take up large orders now.



Image 11: Women selling dry fish in Humma Market

## 4.2 Health

This section talks about the observations and data collected on health and sanitation of the fishing communities.

### 4.2.1 Access to Healthcare

One of the major health issues we came across in the fishing villages is the lack of quality healthcare. Though Primary Health Centres (PHCs) are present at certain distances, the availability of doctors in the PHCs is always a matter of concern. Usually, two doctors are posted at each PHC - one for Allopathic medicine and one Ayush doctor for Homeopathic medicine. In the Ganjam town PHC, the Allopathic doctor is unavailable for several many months. It was reported that doctors leave for higher studies and their positions remain vacant for a long period. Doctors also usually stay in their quarters until any case of emergency appears. Some of the PHCs present within the village like in Nolia Nuagaon do not have any doctors. Also, these PHCs lack facilities for medical tests like X-ray, Ultrasonography etc. The community members have to visit the Sub-divisional hospital in Chatrapur or Behrampur for accessing these facilities or in case of any serious ailments. Some of the community members complained that the doctors only provided prescriptions and the patients had to buy the medicines from private pharmacies. It is however not clear whether the PHCs do not stock medicines or if the patients do not have faith in medicines provided for free. Some of them said that the government medicines do not work so

they prefer going to private doctors or buying medicines from private pharmacies. Therefore, the locals incurred high costs in case of medical issues and also lack access to quality healthcare in general. The below table shows the approx distance from village to PHC and availability of doctors.

| Villages       | PHC Location                | Approx Distance to PHC (kms) | Presence of Doctor |
|----------------|-----------------------------|------------------------------|--------------------|
| Purnabandha    | Ganjam town                 | 3.5                          | Only one           |
| Gokhurkuda     | Ganjam town                 | 5                            | Only one           |
| K Podampetta   | Ganjam town                 | 7                            | Only one           |
| N Podampetta   | Humma                       | 8                            | Yes                |
| Prayagi        | Palur                       | 3.5                          | Not sure           |
| Nolia Nuagaon  | In the Village or Chatrapur | 0 or 7                       | Not in village     |
| Sano Aryapalli | Chatrapur                   | 5                            | Not sure           |
| Nua Golabandha | Golabandha or Gopalpur      | ~10                          | Not sure           |

Table 1: Approx Distance from PHC

### 4.2.2 Paralysis

In all of these communities visited, paralysis had been reported as a major health issue. As per the respondents, paralysis occurred in both men and women of the age group between 40-55 years. Purnabandha community reported that about 4-5 people died due to paralysis. The total number of households here is ~230. In Gokhurkuda, one of the key respondents informed that currently, 5 people are suffering from the disease. There are around 200 families living there. Monoplegia or Hemiplegia are the common types of paralysis suffered by patients and it happens mostly following a stroke. Cardiovascular diseases are common in these communities, most probably due to the high salt intake and alcoholism. The patients are usually treated in a govt. tertiary care hospital in Behrampur (MKCG). Sometimes, they are also taken to private hospitals as the treatment in Government hospital is not considered satisfactory. Evidently, families incur huge expenses for such treatments. Additionally, the families have to incur huge expenditure for the treatment process and do not receive any insurance or support from the government. A point to be considered is that paralysis cases have also been reported from the non-fishing community, but the percentage of people suffering need to be compared to conclude whether it is more prevalent in the fishing community and why.

### **4.2.3 WASH - Water, Sanitation and Hygiene**

The problem of non-availability of drinking water which was highlighted in a previous study, seems to be resolved to a great extent. Only one respondent from Gokhurkuda said that there is a water problem in the summer season. Most of the villages either depend on piped water supply or bore wells. They do not boil or purify the water, rather drink it directly. Anganwadi workers and ASHAs (Accredited Social Health Activist) reported that during monsoons, diarrhoea is a common problem in these communities, especially among children. However, as per them, the incidents of diarrhoea have seen a reduction. Some villages reported salinity and possible contamination of groundwater due to industrial effluents. Purnabandha community members have reported that their borewells get saline water due to the presence of aquaculture farms nearby. Sano Aryapalli fishers believe that their groundwater is polluted due to the close proximity to Gopalpur port and industrial activities. They consider it unfit for drinking and buy drinking water cans instead.

Another visible issue in these communities is related to sanitation. Open defecation is quite prevalent in all these communities. Even though the ODRP (Odisha Disaster and Recovery Project) houses are mandated to have toilets, majority of the people do not use them. As informed by the ASHA and Anganwadi workers, there have been awareness sessions in the villages regarding this. In the ODRP settlement of New Podampetta, one of the key respondents quoted that “50% of families have toilets in the village. Out of those who have them, 50% use them”. In the old hamlets with traditional houses, toilets are not present. A key respondent from Gokhurkuda informed that only 4-5 households in Gokhurkuda-2 have toilets. Though this issue had been raised in the village committee meetings, people are not concerned about building toilets. The perspective of women on this issue and the difficulties they face without toilets can be understood in the assessment phase.

Waste disposal is also a big issue in these settlements. There are no drainage facilities in the old hamlets and in some areas where drains have been constructed, they are filled with garbage. There is no garbage collection, segregation or waste management. Household waste, both biodegradable and non-biodegradable is dumped in the empty areas or in the water bodies inside or around the village. Sometimes waste is also burned. Small water bodies beside the villages are filled with waste and are completely eutrophicated. They could lead to many vector-borne diseases. The community generally doesn't see waste management as a problem but on enquiring one of the respondents from K Podampetta told that during monsoons, the dumped waste becomes a breeding ground for mosquitoes. Skin diseases are also common within the fishing communities as per some of the respondents. The reason according to them could be bathing in the community ponds which have unclean water.



Image 12: Waste dumped right beside ODRP houses of K Podampetta

#### **4.2.4 SRH - Sexual and Reproductive health**

Access to family planning needs seem adequate as ASHA workers stock up contraceptives and distribute in the communities. They also encourage sterilization after two children as they receive incentives for each procedure. As per the Annual Health sample survey conducted in 2012-2013, the average household size in Ganjam district in rural areas is 4.3 (AHS 2012-2013). Most of the families have 2 children, but couples wanting a son take another chance if they have two daughters. Anganwadi worker from Purnabandha informed that the gap between children is often less. She also informed that childcare is usually poor in these communities as both the parents go out for work. Women stay away from home every week for 3-4 days to sell dried fish. So, the burden of taking care of younger siblings is often left onto the elder ones. Anganwadi and ASHA workers also mentioned that girls get married at an early age in these communities. And, it is always women who undergo sterilization and not men. So, even though it looks like the access to family planning requirements are met, there needs to be more counselling and awareness about having gap between two children and opting to have only two children. Moreover, vasectomy should be encouraged too.

IMR (Infant Mortality Rate) and MMR (Maternal Mortality rate) have reduced now. ASHAs assist in institutional delivery, neonatal care and home-based newborn care. ASHA workers get paid for each institutional delivery. Checkups of pregnant women are done by Anganwadi and ANMs (Auxiliary Nursing Midwifery). Some of the communities complained that ASHA workers charge them for institutional deliveries. Sometimes, they also did not inform them about problems which appeared in the early stages of pregnancy due to which complications developed at a later stage.

## 4.2.5 Role of Anganwadi and ASHA

ASHA and Anganwadi workers have a big role to play in providing healthcare access to these communities, especially for women and children. They are responsible for stocking up medicines and providing the first line of defense against communicable and non-communicable diseases. As per the Ayush doctor in Humma, the primary role of ASHAs is to identify people suffering from diseases and refer them to hospitals. Initially, their role was limited to reducing maternal and infant deaths but now their work has been expanded to tackle communicable and non-communicable diseases. They can also collect blood samples and test it. Beside these, their major role is providing contraception methods and creating awareness about family planning. They identify low weight babies and refer them to Nutrition Rehabilitation centre. Their role also includes bleaching and chlorination of water bodies and tanks. In addition to these, they are supposed to collect data on various diseases and conduct surveys in the village. They have to attend two meetings monthly in the PHCs and their work is supervised by the ANMs and National Rural Health Mission (NRHM) Block Manager.

Medicines are provided to ASHAs by ANMs every month. They get paid according to the work they do and have to meet monthly targets. They manage to earn around Rs. 6,000-10,000 per month. They get trained 2-3 times a year by external agencies or NGOs through the PHCs. As per the interactions with ASHAs, it was found that there is a lack of data collection and record maintenance. One ASHA worker had just the list of family members of the village and another had not conducted surveys for over a year. This could also be due to their under-qualification and high work pressure. Considering there is one ASHA worker per 1000 people, they are generally overworked. Key respondents from some communities like Purnabandha opined that the educational qualifications of ASHA workers were too less and they were not very efficient. A doctor said that recruitment of ASHAs was undergoing but he was not sure if they will be any additions in the fishing villages. Previously qualification as low as 5th or 6th class pass was considered for selection, now 9th pass and above are mandatory to qualify for ASHA selection.

In contrast to ASHAs, Anganwadi workers conduct surveys at certain intervals. They collect information about underweight children, pregnant and nursing women apart from the demographics. As per the report of Anganwadi workers of Purnabandha, amongst 170 children between 1-6 years, 10 are moderately underweight and one is severely underweight. In Gokhurkuda 2, out of 59 kids between 1-6 years, 10 are moderately underweight and none are severely underweight. This shows that, though the severity of malnutrition is not very high but the nutrition of many kids between 1-6 years needs to be improved.

There are usually 1-2 Anganwadi workers for each village depending upon the population. Each Anganwadi school is attended by around 35-40 children. They are looked after for a maximum of 3-4 hours and provided with one meal. Anganwadi workers also help women benefit from 'Mamata Yojana', which incentivises women to have only two children. Every month, one day is recognized as the Immunization day when pregnant women and nursing mother can get immunized at the Anganwadi centres. Another day of the month is set as Village Health and Nutrition day (VHND) when vital stats of children and pregnant women are checked. Also, Iron tablets are provided to adolescent girls. One of the Anganwadi workers is also the president of

Gaon Kalyan Samiti of the village which gets Rs. 10,000 annually to spend on health and sanitation, especially to reduce diseases like malaria, dengue, diarrhoea, tuberculosis. Last year in Gokhurkuda, the committee spent the money buying dustbins for waste management. Respondents complained that Anganwadis did not take proper care of children and were not stocking medicines. There is a need for proper accountability and capacity building of ASHA and Anganwadi workers. Interaction with ANMs need to be done during the in-depth assessment.

#### **4.2.6 Alcoholism**

Alcoholism is quite common in the fishing villages. Most of the fishers are addicted to alcohol and especially country liquor. There are a few country liquor breweries in these areas. However, most of the communities opined that alcoholism and domestic violence has decreased. In Sano Aryapalli, one of the respondents stated that alcoholism has reduced after closing the liquor manufacturing units. A female respondent from Podampetta quotes “Now women and men earn the same money, if a man raises a hand, women can raise too. Women do most of the work in the family”. As per another respondent, alcoholism is now rising among the youth.

#### **4.2.7 Effect of Aquaculture and Industrial Pollution**

There are brackish water aquaculture farms beside the Palur canal starting from Rushikulya almost till Chilka lake. They are also close to the beach situated just 200 m from the HTL. From the canal, previously 100 m was a ‘no aquaculture zone’, but this restriction was reduced to 50 m subsequently. The owners of the land are from non-fishing community and they have leased the land to wealthy people from other towns, cities and states. A huge investment is required to operate an aquaculture farm. As the lessees are outsiders they do not bother about the sustainability and local ecosystem and only look for short term gains. The waste water from the aquaculture farms are led into the canal without any treatment. Shrimp aquaculture needs feed, medicines and pesticides. This pollutes the canal water and further reaches Rushikulya river, Chilka lake and the sea, posing a threat to the biodiversity and hampering the spawning of fish and prawns in the canal. Additionally, it impacts the fishing communities living beside this canal. The canal water is completely unusable now. One of the respondents who works in the aquaculture industry and is from the fishing community reported that the medicines used in the aquaculture farms have a negative impact on the health of the children. Besides these, the biggest issue is the salinity of groundwater. All the communities living beside the canal complained about the negative impacts of aquaculture farms. Purnabandha community raised this issue with different officials and are totally unwilling to have any aquaculture farms beside their village due to its negative impacts.

Apart from the pollution from aquaculture farms, there are other industries in proximity to these villages. Jayashree Chemicals is a factory which produces caustic soda and chlorine. The by-products are hazardous in nature. It is located very near to the Rushikulya estuary and the Purnabandha village. As per their CSR head, earlier their production was Mercury based but now they have a safer membrane-based production system for caustic soda. According to him, their wastewater is treated in a Sewage Treatment Plant (STP) and no waste water is poured into the

river untreated. However, the community members from Purnabandha village worry that the chemicals from the factory might have an impact on riverine fisheries, groundwater and their health. The CSR head also informed that there is some Mercury left with them which needs to be recycled.

Near Sano Aryapalli and the fishing villages in the southern coast, there is Gopalpur port and Indian Rare Earths industry. There is large scale sand mining done by these industries but the impact of their operations on the fishing communities could not be assessed as a part of the recce.

## **4.3 Infrastructure**

Infrastructure wise, different communities have different needs but there are common requirements as well. The housing patterns, issues with waste management and need for fishing jetties and public transport are a few things common in most of the villages. Some of these needs have been flagged by the communities and some of them have come up through observations and later discussed with the some of the key informants.

### **4.3.1 Housing**

Housing facilities are going through a transition since ODRP houses are being constructed. Coastal Odisha and Ganjam are frequently affected by cyclones, so the state government has assisted in building the ODRP houses. The ODRP houses were constructed under the Odisha Disaster Recovery Project post cyclone Phailin in 2013. The authority overlooking this project is the Odisha State Disaster Management Authority (OSDMA) supported by the World Bank. The families with houses affected by cyclone received 3 lakhs each for construction of a 294 sq. ft house (one bedroom, one drawing-cum-bedroom, a kitchen and a toilet) on a site allocated by the govt. The house plan has been given to them by the OSDMA. These houses are built with amenities like electricity and provision for piped water supply (Odisha Disaster Recovery Project, 2015).



Image 13: New Primary school built along with ODRP houses in Gokhurkuda

Most of the villages visited had already completed the construction of ODRP houses. Some of the villages were completely new settlements with all ODRP houses, while some had traditional houses. Nua Golabandha community haven't completed the construction as they have been asking for compensation for relocation. In most of the villages, many families now own 2 houses as they live in their traditional houses and have given away the ODRP house to the younger generation. In addition to the houses, OSDMA helped the community in building cyclone shelters, Anganwadi school, primary school and PHCs in some of the new settlements. The ODRP houses look better in terms of spaciousness and sanitation facilities. The traditional houses in fishing communities are usually crammed up with adjoining walls and there are no toilets and drainage facilities. Women respondents from Purnabandha said that they feel safer against cyclones in the ODRP houses, but also reported that some people who were actually affected by the cyclone haven't received the compensation whereas people who were not affected did.

### **4.3.2 Infrastructural Needs of the Communities**

The below table shows the infrastructural needs mentioned by each community and some which they didn't raise as an issue explicitly but were observed to be important.

| <b>Villages</b> | <b>Infra Needs Mentioned</b>   | <b>Needs Observed/not mentioned Explicitly</b>   |
|-----------------|--|--|
| Purnabandha     | PHC, Library, Panthi Niwas-Tourist accommodation, Renovation of Jettyghara (sporadic requests) | Toilets in Anganwadis, Room for Anganwadi for Telugu Sahis(operate in rented room), Drainage and waste management, Renovation of school                                |
| Gokhurkuda      | Completing temple construction, Waste Management and Toilets(old village)                      | Water scarcity in Anganwadi as informed by the Anganwadi worker  |
| K Podampetta    | Concrete Bridge, Fish drying platform  | Waste management   |
| N Podampetta    | Concrete Bridge and road   | Better coordination for water supply   |
| Prayagi         | Installing lights on the way to the beach, proper road to beach, Fishing jetty                 | Inclusion in VSS committee, access to collect firewood   |
| Nolia Nuagaon   | Fishing jetty  | Bus service from Chatrapur to Nolia Nuagaon (only autos or bike), better mobile connectivity, drainage and waste management  |
| Sano Aryapalli  | Fishing jetty  | Waste management (Connectivity is good through govt and private buses)   |
| Nua Golabandha  | Road construction, ODRP house completion   | No developmental activities could be undertaken in the current village as they will be resettled.<br>They need help in getting the compensation amount for relocation. |

Table 2: Infrastructural Needs of different communities

Need for fishing harbor was a common demand in many of these villages. Apart from other individual needs and aspirations of the communities, waste management and sanitation seemed to be a recurrent issue. Consultation with the community before taking up any developmental activities is very important.



Image 14: Waste dumped inside the Nolia Nuagaon village around a lake

Nua Golabandha community has a lot of concerns due to the army cantonment being very close to their village. The army practice firing in the sea, thrice a week. Few fishermen got injured during this. They are not allowed to fish during these 3 days every week, which is a big blow to their livelihoods. Even if they go, the catch is not good due to the disturbance. It's been 35 years since the army cantonment has been established. They have been asked to shift from this area by army 14-15 years back. While the Army has paid the state government a relocation fund in 1983, the government hasn't allocated any money to the community. They have been asking for this compensation for shifting and completing their ODRP houses. They have received 3 lakhs for building the ODRP houses like other communities, but as per them it is not sufficient for the completion of the job. They talked to the MLA (Member of Legislative Assembly), Army chief, Collector and other authorities, but no help has been received so far. Since last 37 years, they have only kachcha road. Due to the issues with resettlement, clearance has not been given for concrete road and no facilities or schemes have been implemented from Panchayat or any department since the last 15 years. Even fisheries department do not engage with them properly. Moreover, when locals go to the nearby areas to collect firewood, they get beaten up or the army burns their firewood.

### **4.3.3 Lack of Public Transport**

Lack of public transport seems to be an issue for most of these communities. Though road connectivity is fine except for the Podampettas; there are no public buses operating from Ganjam town to Chatrapur or Behrampur. Chatrapur being the district headquarters has people travelling

there for official work. Lack of proper public transport system causes inconvenience for the villagers, especially women. Authorities interviewed said there were not enough commuters and that the demand for public transport was low. On the contrary, as per the communities, they have raised this issue with the authorities.

#### **4.3.4 Encroachment of Beach space**

Communities north of Rushikulya complained about the encroachment of beach spaces by the non-fishing community. This encroachment happens through tree plantation and is not a recent phenomenon. According to the fishing community's narrative, the area along the beach used to be forested previously and they collected firewood from there. Eventually, Casuarina and Cashew plantations were grown and harvested by the non-fishing community for profit. Some of these areas fall within CRZ, but for lands outside CRZ they have got pattas (land records) now. The issue with this is firstly, this leads to privatization of common spaces which the fishing community has been using for different purposes. Secondly, some of the fishing community members have also started encroachment through plantations. Thirdly, some of the new encroachments are coming up in the beach where turtles come for nesting. Another threat is that these private lands beside the beach are being turned into aquaculture farms. Consequently, Purnabandha community is finding it difficult to construct new infrastructure due to lack of space. Therefore, any new encroachments need to be checked by the authorities.

### **4.4 Education**

Literacy level in fishing communities has always been low. Currently, most of the children are sent to schools irrespective of their gender however the literacy level of the older members of the community is low. As per 2011 Census data, Gokhurkuda has a literacy of 36.5 percent and for Podampetta it is 48.5 percent (District Census Handbook Ganjam, 2011). The youth have mostly finished their secondary schooling. The communities give high importance to education now. Sano Aryapalli community built a high school in the village as it was difficult for the girls to go to Chatrapur for studying. This shows that the community values education even for girls. The below sections talk about the major themes which came across while talking about education in these communities.

#### **4.4.1 Quality of Education**

Most of the villages have a primary or middle school. However, the quality of education in these schools seemed substandard. Some of the better-off families send their children to private schools. However, there are a very few families who can afford this. As per the respondents from different villages, the main issue is the lack of dedication in teachers to provide quality education. Some parents who send their children to these schools state that the teachers spend most of their time gossiping or fiddling with their phones. Teacher to student ratio in the schools is also low. For example, as per information from the BEO's office, Gokhurkuda middle school has 157 students whereas there are only 5 teachers. A respondent from that village said that the teachers are not specialized in the subjects they teach, hence the low quality of education. Also, when the teachers go on leave, there are no replacements. In Purnabandha school, there is no

headmaster and a teacher is in-charge. On asking her if there are any issues running the school, she said there were none. The Block Education Officer seemed to agree that there is an issue with education in fishing communities, but he is of the opinion that it is due to the lack of guidance from parents and there needs to be consultation with them. There is a Student management committee in every school which has members from the community. Except for a few literate members of the community, the rest of them were not vocal about the quality of education probably because they were not able to assess the quality.

#### 4.4.2 Lack of Guidance to the Students

As the parents are usually illiterate and are occupied with earning a livelihood, there is limited guidance for the children. To fill this gap, most of the children from these communities are sent to tuition centres within the villages. Purnabandha has 4 to 5 such tuition centres. Educated youth from the community run them. This might be helping the students to gain better knowledge about the subjects. However, these tuition centres teach big batches of students belonging to different classes together. Also, different subjects are taught at the same time, making it difficult for the students to grasp everything at once. As per a key informant, the students from these communities are usually weak in English and Math.

Although, there are secondary schools in Ganjam, Humma, Chatrapur and Behrampur, quite a less number of youth complete their higher secondary education. The reasons for this needs to be assessed in the next stage of the project. There is also lack of career guidance for the youth after finishing schooling. Though there are skill development trainings provided through Odisha Rural Development and Marketing Society (ORMAS) in Ganjam district, the participation of youth from fishing communities is negligible. This could be because of the lack of awareness about such programs. However, some of the youth from Podampetta have attended industrial training to learn machinery. As mentioned before, most of the communities also complained about educated youth not getting employment opportunities.

### 4.5 Role of Institutions

Local institutions play a big role in governance and catering to developmental needs of these communities. There are traditional institutions like the Village committee and many other committees with different functions in every village. Along with these, there is the usual Gram Panchayat, Block Samiti and Zilla Parishad representatives at different administrative levels.

| Committees/Point of Contact | Functions   |
|-----------------------------|---|
| Village Committee (VC)      | Village level decision making and governance, Dispute resolution, penalizing offenders. Most powerful traditional institution at the village level. The president is usually selected based on inheritance. |
| Ward Member                 | Utilizing schemes and funds from Panchayat for village development, Bridge between panchayat, authorities and VC. Needs to discuss with VC before taking up any developmental                               |

|   |   |
|---|---|
|   | work  |
| Fisheries Society                             | Implementing schemes related to fisheries, takes up issues related to fishers to the Fisheries dept, making decisions related to fisheries management along with VC   |
| Village Water and Sanitation Committee (VWSC) | VWSCs have been formed post the 73rd amendment of the constitution under NRHM and envisaged as a part of the Panchayati Raj Institution. This committee mainly looks after the water supply in the village. They collect 50 Rs per family for maintenance work.   |
| Gaon Kalyan Samiti (GKS)                      | GKS has been initiated for revenue villages under NRHM to work on community level health. Their main role is to reduce the occurrence of diseases and manage epidemic situations. They receive an annual fund of 10000. The President of GKS for the villages visited are usually an Anganwadi worker. The other members constitute PRI members, SHGs and other representatives from other village committees |
| Student Management Committee (SMC)            | As per the section 21 of RTE read with Rule 3 of Orissa Right of Children for free and Compulsory rules 2010, SMC should be constituted in every school. The members would include 75% student guardians, ward member, teachers, local educationist etc. The functions include overall management of school and improvement of school and also holistic development of students.                              |
| Gaon Rojgar Sevak (GRS)                       | For implementation of MGNREGA, the state govt recruits a GRS at the Panchayat level. GRS assists GP in executing NREGA works  |

Table 3. Various Village level committees

All these committees are present in some of the villages however, in others they are not like Podampetta doesn't have a separate Fisheries society. They are active to different extents in different villages. Apart from these committees, there are also local youth committees and NGOs like Ma Ganga Devi Yuvak Sangh and RSTPC (Rushikulya Turtle Protection Committee). These organizations did not seem to be very active in the recent days.

#### 4.5.1 Fishing Committees

All the fishing villages are associated with one or more fishing committees. There is a single fishing committee binding the communities from Nolia Nuagaon to Prayagi called the Ma Ganga Devi Fisheries Society (MGDFS). All these villages are small-scale fishers and use similar fishing methods. They do not use ring seines or big crafts as in the southern villages. The villages south of Nolia Nuagaon, like Sano Aryapalli, Nua Golabandha are comparatively large fishing villages and use similar fishing technologies and methods. The MGDFS members met the

fisheries society of the southern villages and have come to a resolution of respecting the boundaries of each other's fishing zones.

Apart from these zonal fisheries committees, there are separate fisheries committees in some of the villages like Purnabandha, Gokhurkuda and Nolia Nuagaon. A senior fisheries official stated that there are 17 marine fisheries societies present in Ganjam district. These societies were registered as cooperatives in 1946 with the help of govt. The district fisheries officer is the registrar. Some of these cooperatives are now dormant and the department is providing 2 lakhs to each village for their reactivation and to be used as revolving fund.

## 5. Way Forward

As discussed above, the scoping study was an exploratory study which provided a snapshot of the fishing communities of Ganjam district. There needs to be a better understanding of the health issues mentioned by the communities and issues related to mental health. In addition, it is necessary to understand the perception of community regarding their well-being and the issues faced by different age groups needs to be assessed.

Some of the interventions which could be initiated in these communities are

1. **Capacity building of ASHAs and Anganwadi workers:** As discussed above, ASHAs and Anganwadi workers are the primary contact for community members for health-related issues. They are active in some villages, but there are gaps. For example, child care and stocking up of medicines in Anganwadis needs to be improved. Motivating them and building their capacities could go a long way in improving community well-being. ASHA staff are also an excellent untapped resource for delivering some of the health interventions and training at the grassroots.
2. **Community Sensitization:** Workshops for awareness on WASH practices, diet and nutrition and SRH (increasing gap between children etc.) could be conducted. These could be done in collaboration with local committees, Anganwadis, schools and other local institutions. Short films to create awareness could be screened during the no fishing days.
3. **Improve access to Healthcare:** We can assist in getting health insurance for treatment of diseases like paralysis and compensation for occupational injuries. We could collaborate with PHCs, officials and improve medicine availability and healthcare.
4. **Waste Management Initiatives:** Different activities on sanitation and waste management could be taken up in collaboration with VWSC, GKS and the Gram Panchayat. Water testing in aquaculture and industry affected villages could be carried out.
5. **Dialogue on Natural Resource Management:** Workshops for awareness on Fisheries schemes and regulations, CRZ regulations and commons and rights of fishing communities could be organized to increase the participation of the fishing communities in fisheries resource management.

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