SECTION I

PROJECT CONTEXT

A. Brief Profile:

Orissa is situated in the north-eastern part of the Indian peninsula with a coastline of 480 Km (about 8% of the coastline of India). It is bounded by the Bay of Bengal on the east, West Bengal on the northeast, Jharkhand on the north, Chhattisgarh on the west and Andhra Pradesh on the south. According to the 2001 census, the state has a population of 37 million, which grew at an annual growth rate of 1.5%.. A quarter of the population is tribal, residing in the hilly interior of the state. Nearly 54 percent of the state's scheduled caste population resides in the coastal districts.

Agriculture is the most important livelihood activity in the state, providing employment to sixty-four percent of the working population directly or indirectly, and the overall percentage of people in the state dependent upon agricultural income is over 76%. Rice is the main crop grown in the state, and Orissa contributes one-tenth of the rice production in India.

The state's dependence on primary sector has made it extremely vulnerable to natural disasters like drought and cyclones.. The cyclones that struck the coastal areas in the state are the major setback to the state's economy, and the fisheries sector was a particular casualty. The coastal economy is also crippled by recurrent floods to the major rivers like the Mahanadi.

FISHERY RESOURCES IN ORISSA

Orissa has a diverse coastline with estuarine, coastal and offshore fish resources. It also has substantial inland water resources

Marine and coastal resources

There are six maritime districts in the state: Balasore, Bhadrak, Kendrapara, Jagatsinghpur, Puri and Ganjam These six districts cover 14.5% of the total land area in the state. There are 641 marine fishing villages situated along the Orissa coast. The total marine fisher population of the State during the year 2005 has been estimated at 4,50,391 (NMFC, 2006) in 86,352 households, of which 41% are in Balasore district, 15% in Jagatsinghpur district, 13% in Bhadrak, 12% in Puri, 10% in Ganjam and 9% in Kendrapara districts. Out of 1,21,282 persons engaged in marine fishery activities in Orissa, 74,980 are full-time fishermen, 34,315 are part-time and 11,987 are occasional fishermen.

An important characteristic of coastal fisheries in Orissa is the existence of a diverse range of ecosystems – beaches, lagoons, estuaries – along the coast, which gave rise to a wide variety of adaptations in terms of fishing and post-harvest practices, allowing opportunities for a number of people to have sustained access to livelihoods. The state's proximity to the rich shrimp grounds in the northern Bay of Bengal as well as the existence of a broad continental shelf (in the north zone) ensure that the fisheries are characterised by a high proportion of commercially important species like hilsa, pomfrets and shrimp. However, a large stretch of the coastal area (about 40 percent of the total coast) has effectively become a 'no-take' area as a result of several conservation measures, and this remains the most significant issue confronting the fishers – and the fisheries administration – in the state.

Chilika Lake

Chilika is the largest brackishwater lake in Asia. It covers an area of 906 km^2 during summer and 1,165 km^2 during the monsoon period and is a leading centre in Orissa for fish, prawn and crab fisheries.. A total number of 217 species of fresh/brackishwater fish comprising 147 genera, 71 families and 15 orders were reported from Chilika Lake, besides 24 species of shrimp and shrimps, 9 families of crabs comprising 28 species. Besides, 136 species of molluscs under 66 families were also reported. The main species of fish caught in Chilika include mullets, sciaenids, threadfins, catfish, hilsa, clupeids, perches, *Etroplus suratensis*, shrimp species including *Penaeus monodon*, *P indicus*, *P semisulcatus*, *Metapenaeus monoceros*, *M dobsonii*, and crab species such as *Scylla serrata* and *Neptunus pelagicus*. A total of 454 motorised and nearly 5,000 traditional boats are operated in the Lake.

Mangroves

Bhitara Kanika in Orissa is the second biggest mangrove forest in the country, next only to the Sunderbans of West Bengal. Located in the Kendrapara District of Orissa, the Bhitara Kanika sanctuary spreads over 650 km^2 with a forest cover of 380 km^2, out of which mangroves spread over 115 km^2. The mangrove habitat acts as a nursery ground for many fish, shrimp and shellfish species of commercial importance. The Gahirmatha beach of Bhitara Kanika is the biggest nesting ground of Olive Ridley sea turtles in the world. About half a

million Olive Ridleys are estimated to arrive on this coast during late December to January and again from mid-March to April.

Brackish water fisheries resources

In Orissa, there are some 32,587 ha of brackish water lands suitable for aquaculture. Brackishwater aquaculture in the state grew very rapidly: in 1983-84 it was confined to 23.5 hectares, this increased to 240 ha in 1984, and to 9600 ha in 1993 and by 2001, some 12,709 ha had been developed for aquaculture. In 2006, the area under culture is 13,355 ha

Inland fisheries resources

Freshwater fish being one of the main ingredients of food of the people in the state, inland fisheries and freshwater aquaculture are of great importance. The state has 121,000 ha of tanks/pond resources; 197,000 ha of reservoirs; lakes, swamps and *bheel*s with an area of 180,000 ha; and rivers and canals of 171,000 ha, with a total production of over 439,000 tonnes suitable for fisheries development. The total freshwater production from different sources was estimated to be 195,000 tonnes in 2007-08, which was six half times higher than that for 1985-86 (31,000 tonnes), but less than half the estimated potential. Competition from cultured freshwater fish from the neighbouring state of Andhra Pradesh is stated to be a constraint for the economic viability of local produce.

B. Physiography of the State:

The State of Orissa is located on the eastern coast of the Indian peninsula, covering an area of 155,707 sq km distributed between the coastal plain along the Bay of Bengal and the North Western Plateau of Central India. The State can be divided into four distinct physiographical regions viz., the northern plateau, eastern ghats, central table land and coastal plains. Orissa is drained by three major rivers, the Mahanadi, the Brahmani and the Baitarani. The average rainfall varies between 1,200 mm and 1,600 mm. Orissa is also prone to natural disasters like floods, cyclones and droughts.Out of the 30 districts six districts i.e. Balasore, Bhadrak, Kendrapara, Jagatsinghpur, Puri, Ganjam are the coastal districts, where the Inland, Brackish water and marine fisheries activities are going on.

C. Coastal Resources / Marine Areas of the State:

Orissa as a Maritime State shares 480 kms. of coast line of Bay of Bengal in the east coast forming 8 % of the coast line of India. It has 6 coastal districts viz. Ganjam, Puri, Jagatsinghpur, Kendrapara, Bhadrak and Balasore. The continental shelf up to 200m depth, covers an area of 24,000 sq. km, which is 4.5% of the total area of the country's continental shelf. Northern part of Orissa has a wider continental shelf stretching up to 120 kms. which gradually narrows down to Southern part extending up to 40 kms. Details of continental shelf area in different depth zones and District-wise coastal lengths are as follows:

District-wise Coastal Length (in kms.)

District	Coastal Length
Balasore	**80**
Bhadrak	**50**
Kendrapara	**68**
Jagatsinghpur	**67**
Puri	**155**
Ganjam	**60**
Total	**480**

Depth-wise Continental Shelf Area:

Depth Zone (Mtrs.)	Continental Shelf Area (Sq. Kms.)
0-20	6,820
20-50	8,650
50-100	4,810
100-200	3,550
Total	**23,830**

Marine crafts and gears in Orissa vary at par with the diversity of the ecology from South to North Orissa. South Orissa comprising Ganjam, Puri and Jagatsinghpur has a narrow continental shelf and open sandy beaches whereas North Orissa comprising Kendrapara, Bhadrak and Balasore is characterised by an extended continental shelf, inter-tidal flats and extensive river delta.

Marine fishery of Orissa is mainly carried out by a means of mechanised boats, medium size trawlers, traditional crafts (Catamarans), motorised canoes (FRP and Wooden) fitted with OBMs and Beach landing crafts fitted with IBM. As per the recent statistics, the present fleet size of the State is as follows.

Sl.	Name of the dist.	No. of Fishing crafts			Total
		Mechanised	Motorised	Non-motorised	
1.	Balasore	569	738	538	1845
2	Bhadrak	293	295	181	769
3	Kendrapara	119	305	385	809
4	Jagatsinghpur	656	323	588	1756
5	Puri	76	1446	1056	2578
6	Ganjam	0	696	1182	1878
	Total	**1902**	**3803**	**3930**	**9635**

Now, the mechanised sector mostly use set gillnets and disco-nets. However, in mechanised sector trawl nets are widely used. Pelagic fishery is predominant in Southern Orissa and demersal fishery is prevalent in Northern Orissa.

Maximum sustainable yield from Orissa coast has been estimated to be 1.61 L MT. But since last four years the catch is almost at the same place increasing from 1.2 lakh to 1.3 lakh MT Year-wise production is illustrated below:

Fish catch in Orissa coast

Year	Production (in MT)
2003-04	1,16,880
2004-05	1,21,928
2005-06	1,22,213
2006-07	1,28,141
2007-08	1,30,568
2008-09	1,35,486

There are 63 fish landing centres in the State out of which 18 nos. have been developed under Centrally Sponsored Plan Schemes. Out of these 18, there are 4 fishing harbours and 14 fish landing centres.

The present status of marine fishery sector of Orissa in nutshell is appended at ***Annexure - I*** and the coastal map showing the marine districts is enclosed at ***Map- I***.

D. Coastal regulation for fishing activities

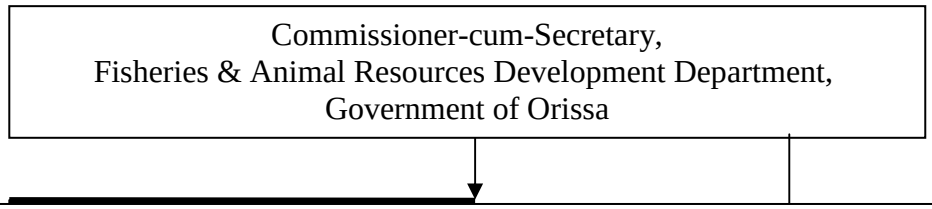
1. Laws and Policies:

The state has a clear cut policy towards marine fishing in the form of Orissa Marine Fishing Regulation Act (OMFRA). This come in to force from 1982. The OMFRA is applicable for the coastal waters of Orissa state. The Act is implemented by the Deputy Director of Fisheries, Marine South and five other Authorised Officers i.e. ADF (Marine) Balasore, Kujanga, Puri, Ganjam and ADF, BT Balugaon. Some other officers of the Fisheries Department and Forest Department have also been declared with power to implement the PMFRA. Registration of the Boats and issue of fishing license to the boats on annual basis is done under the OMFRA. The said act regulates different fishing zones along the coastline. Furthermore it aims at sustainable fishing through numerical restriction of mechanized fishing vessels in the landing centres and protecting the economical interests of traditional fisher operating in the marine sector. Fishing ban and ban on particular gears are done under the Act.

As regards protecting the coast, the Coastal Regulation Zone (CRZ) notification & the Coastal Aquaculture Authority Act (CAA), 2005 notified by GOI have been in force. The Act enables to regulate the coastal aquaculture to ensure sustained increase in aquaculture products and protection of coastal environment. The District Collectors and District Fisheries Officers are in the district level committee for registration of the Aquaculture farms. They recommend the cases to the Coastal aquaculture Authority for grant of license for culture.

2. Institutions/ Authorities (role and responsibilities)

Govt. in Fisheries & ARD Department is responsible for implementation of the OMFR Act & Rules and CAA Act, 2005 in the State. The Directorate of Fisheries, Oriisa is responsible for the proper implementation of the above Acts and different developmental schemes in Inland, Brackish water and Marine sector. The Organo-gram of the Department is as follows:



3. Status of implementation so far:

OMFRA implementation

After promulgation of Orissa Marine Fisheries Regulation Act and Rules in the State, it was made mandatory for all the fishing boats plying in territorial waters of the State to register and license. No mechanized fishing vessels are allowed to fish within 5 km from the coast to protect the interest of traditional fishermen. No outside (neighbouring States) fishing vessels, not registered under OMFRA are allowed to fish in the territorial waters of Orissa. To conserve the fish stock and biodiversity, uniform ban on fishing from 15th April up to 31st May every year is meticulously followed in the State. Orissa coast, being famous for the nesting sites of rare Olive Ridley Sea turtle, several conservative measures are being

taken under the OMFRA. Fishing has been prohibited in specified turtle congregation areas namely, Devi River mouth, Rushikulya River Mouth and Dhamara River mouth by all the mechanized vessels within 20 km radius form the coast. Use of Turtle Excluder Devises (TED) has been made mandatory in all the operating trawlers. Several officers from Fisheries Department and other Line Departments such as Forest department and Coast Guard have been declared as Authorized Officers for strict implementation of the Act. Awareness programmes are conducted in all the Coastal districts involving local fishers to make them sensitized about conservation and sustainable fishing. Recently the Coastal Zone Management Authority have been formed.

Coastal Zone Management- Status

So far Coastal Zone Management has not been started in the coast. The Coastal Zone Management Authority has been formed and all the activities to be taken up for development of the fishing harbour or fish landing centres are to be taken from the Authority.

Current capacity building programme-achievements and limitations

No capacity building programme is being underway in Fisheries Department pertaining to Coastal zone management. Paucity of funds plays a major constraint in the State. However two training institute, one at Fishery Training institute, Balugaon for fresh water and the other at Training Institute at Paradeep for Brackish water training is existing.

4 Overall budget/ resource spent in the State

The State does not allocate any specific budgetary provision under CZM. However, scanty budgetary flow is limited to support the conservation and regulatory measures being taken up under OMFRA. This can be very well explained by the budget provision for the last five years which is given below:

Year	Allotted funds (Rs. in lakhs)
2003-04	2.000
2004-05	3.375
2005-06	6.000
2006-07	3.180
2007-08	9.140

5 Key issues in Coastal Zone Management

In the last few decades, the Chilika had been under tremendous threat from both natural & anthropogenic pressures resulting in severe degradation of lagoon ecosystem. The degradation process involved- excessive silt deposition, chocking

of outer channel, chocking of inlet, poor exchange of water, poor flushing-out of sediment, reduction in tidal influx, reduction in salinity level, invasion of fresh water weeds, shrinkage of water spread area etc. This degradation of the lagoon environment in the past had also adversely affected the growth of fishery resources. The fisheries outturn decreased from the highest ever record of 8926 MT (1986-87) to the lowest of 1274 MT (1995-96). This sharp decline in the fish production could be attributed to the composite factors i.e. the excessive silt deposition resulting into chocking of outer channel & mouth, decrease in salinity, obstruction of fish migratory route, poor recruitment of juveniles from the sea, juvenile poaching, unregulated destructive fishing, fishing beyond capacity, encroachment for shrimp culture etc. Further, poor-recruitment of juveniles through silt-choked Palur canal, continued to be the main reason for low productivity in southern sector of the lagoon.

Orissa is famous globally for the annual mass nesting of endangered Olive Ridley Sea Turtles. The Gahirmatha beach is the largest nesting ground of Olive Ridley followed by Rushikulya river mouth area. There are seven species of sea turtles found Worldwide, out of which 4 species of sea turtles are reported in Orissa (Olive Ridley, Hawksbill, Leatherback and Green turtles). Out of the above, mass nesting of Olive Ridley of pacific habitat is confirmed in this coast. Olive Ridley is a sea turtles, measuring about 70cm in length and weighing about 50 kg .Data collected on Olive Ridley nesting in Orissa between 1976 and 1999, shows that the number of nesting varied from a low of 150,000 in 1976 to a high of 602,000 during January-March1987. In March !999, the figure was 340,000. During the year 2003 and 2004 the total number of nesting was 272,800 and 365,500 respectively. October to May is the period during which the nesting sea turtles stay in the shallow waters on the continental shelf. The Department of Fisheries, Government of Orissa has been looking after conservation of important marine resource and Socio-economic development of fisher folk by implementing different developmental schemes and executing the Orissa Marine Fisheries Regulation Act/ Rules (OMFRA). Considering the chances of huge mortality of sea turtles on account of fishing related activities in the specified areas, the Department of Fisheries, Department of Forest and Environment and Coast Guard have been working jointly for strict enforcement of Orissa Marine Fishing Regulation Act/ Rules.

The Central Empower Committee, constituted by Hon'ble Supreme Court has visited the Orissa Coast on 12th and 13th, February 2004. The mandate of the team was to suggest measures to provide favorable condition for mass nesting of

the turtles. As such the suggestions of Empowered Committee have been duly compiled by the Department of Fisheries in connection to fishing gear and mechanization of fishing crafts along the nesting sites.

NESTING SITE:

1) Gahirmatha Marine Wild Life Sanctuary in Kendrapara District with total area of 1435 sq. km. comprising of a core and buffer zone. The core area of Gahirmatha extends 10 kms. from the coast line in to the sea.
2) Jatadhari river mouth to Devi river mouth.
3) Chilika mouth (Magarmukha) to Rushikulya river mouth.

Large congregation of Olive Ridley Sea Turtles in the coastal waters of Orissa is reported to start from mid October to end of April/ May. The recent ban on fishing in the turtle congregation areas is effective from 1st November to 31st May vide notification no.1895/FARD Dt.04.02.2005 Besides this, uniform ban on fishing by all mechanized vessels from 15th April to 15th June, every calendar year is imposed in the territorial waters in line with the ban on fishing in the EEZ by GOI for marine fishery resource conservation. Fishing by motorized vessels, trawlers in 20 kms from the specified Sea turtle congregation area and their buffer zones namely Dhamara River mouth, Devi River mouth and Rushikulya River mouth has been prohibited for a period of seven months from Nov. to May of each calendar year. There is also ban on use of seine net along the entire coast throughout the year .There is also prohibition of fishing within seaward radius of 20 kms. from Gahirmatha area of Bhitarakanika Wild Life Sanctuary throughout the year. Prohibition of fishing by trawlers up to a seaward radius of 20 kms. from Jatadhar river Mouth to Devi River Mouth and from Chilika Mouth to Rushikulya Mouth for a period of five months from January to May of every calendar year

The existing ban on fishing and use of Turtle Excluder Device (TED) in trawl net is mandatory as per OMFRA to prevent incidental mortality of sea turtles. Accordingly 1760 nos. of TEDs have been distributed among the fishermen. Prohibition of fishing within a sea radius of 20 Kms. from Gaharmatha area of Bhitarkanika Wild Life Sanctuary has adversely affected the mobility of fishing vessels both mechanised and traditional. Thereby the livelihood for the poor marine fishermen of the area is at stake since they have no alternative key activity for their subsistence. These fisher are mostly landless or having paltry quantum of land that is not sufficient for their subsistence through out the year.

Moreover due to high rate of illiteracy and non-acceptance to any change process these fishermen/women are forced to leave their native to distant places in neighbouring states as labourers. Likewise the livelihood of fishermen from Dhamara fishing harbour and fish landing centres of Talchua, Kharnasi, Khandiapatna, Jumboo and Tantiapal are also at stake. Besides prohibition of fishing in two other reported mass nesting areas i.e., Jatadhar river to Devi river mouth and Chilika mouth to Rushikulya mouth have also equally affected the local fishermen.

From a conservative estimation, it is envisaged that about 26,861 (Say, 0.27 lakhs) active fishermen in the vicinity of the prohibited areas are mostly affected. Out of the said population about 30% active full time fishermen (8070) are perpetually loosing their daily wages to the tune of about Rs. 21.78 Crores per annum during the active ban period (1st November to June 15th including 60 days common ban in the entire East Coast from 15th April to June 15th). Other part-time fishermen are also loosing their income to the tune of Rs. 25.42 Crores annually, considering average daily income of active full time fishermen and part time fishermen as Rs. 150/- and Rs. 75/- respectively. Out of 240 days of fishing 180 days of fishing are affected by turtle conservation. Similarly in Chilika periphery there are about 12,500 fisher families with a total population of around 134,500 whose per capita income hovers around INR 1200 during yester years. Taking into account of the economic output and the number of fisher family in Chilika lagoon, income per fisher family was merely INR 52,000 during 2003-04. In successive years this trend of family income is in a decline mode due to overexploitation, increase in the fleet size etc. This has resulted in regular conflicts between fishermen and non-fishermen community, migration to neighbouring states.

Ecologically sensitive zones

- Apart from this the state of Orissa has ecologically sensitive area like Bhitar Kanika Wild Life Sanctury, in the Kendrapara district which is a protected coastal mangrove area.
- The state has also Gahirmatha Sanctury for the protection of the breeding ground of the endangered sea turtle Olive ridley.

Effect on the livelihood of the fishermen

Due to the ban on fishing for the protection of Olive ridley turtle and the general ban imposed by the Govt. of India, the fishermen of the coast of Orissa lose almost seven months in a year. The rough weather condition also

prevail for more than two months, in which the fishermen can not go for fishing. The livelihood of these fishermen are badly effected and some things has to be done sooner or later to address the issue.

6 Key learning from fisheries activities:

a. important activities implemented in last 10 year:

1. Regularisation of fishing fleets in the coast by fixing maximum fleet size limits in each fish landing centre and fishing harbour.
2. Revenue generation from registration and licence of fishing fleets.
3. Imposition of fishing ban in specified areas attributing to conservation
4. Availing central assistance for welfare of Fisher community such as development of model fishermen villages, motorisation of country crafts, subsistence to fishermen during lean period of fishing, etc.
5. Regulating coastal aquaculture to ensure sustained increase in aquaculture products while protecting environment.
6. No aqua cultural activity is allowed within a distance of two hundred meters from the High Tide line of seas, rivers, creeks and backwaters.
7. Each brackish water aqua farm needs certificate of registration, granted by Coastal Aquaculture Authority (C.A.A.), Chennai established under the Coastal Aquaculture Authority Act, 2005.
8. So far, 564 brackish water farms covering an area of 348.39 ha. have been certified by the C.A.A., Chennai.

b. Success & failures:

1. Safe guarding the territorial waters of the state reducing the conflict among fishermen between the neighbouring states,
2. Checking the proliferation of shrimp farms in the state,
3. Creating awareness of environmental protection among shrimp farmers and promotion of sustainable shrimp farming in the state.

7 Justification of the project:

Need of the hour in the present context speaks about providing best possible alternative livelihood support in the affected areas leading to reducing fishing pressure, migration of fishermen and other related socio-economic problems. Orissa coast provide ample opportunities in 0ffering brackish water areas for aquaculture having the following resources:

Brackish water (ha.)	***417537***
Area suitable for Brackishwater tanks	32587
Brackish lagoon - Chilika	79000
Estuaries	297850
Backwaters	8100

The Lagoon, estuaries and back waters are not suitable for the aquaculture. Most of the presently used brackish water ponds are lying idle due to serious outbreak of viral diseases in shrimps. Such ponds can be renovated and new available areas can be created for promotion of other diversified cultures such as – crab fattening, Sea bass culture, scampi culture and other fish culture.

The milk and poultry produce in the state is lagging behind the national average.

The ban imposed on fishing in the turtle congregation area i.e. within a sea radius of 20 Kms. from Gaharmatha area of Bhitarkanika Wild Life Sanctuary has considerably restricted the mobility of fishing vessels. Thus, the livelihood for the poor marine fishermen of the area is at stake since they have no alternative key activity for their subsistence. These fisher are mostly landless or having paltry quantum of land that is not sufficient for their subsistence through out the year. Moreover due to high rate of illiteracy and non-acceptance to any change process these fishermen/women are forced to leave their native to distant places in neighbouring states as labourers.

In order to adopt alternative livelihood options such as crab fattening, scampi culture, Sea bass or Composite fish culture(IMC), diary-goatary, value addition of fishery products/Hygienic fish drying yard etc. the fisher require up-gradation of skill in the adopted key activities.

SECTION II

THE PROJECT

1. Project objectives and key indicators

The Project aims at providing best alternative livelihood support in the 60 fishermen villages on a pilot basis, mostly situated in the periphery of Chilika Lake and Gahirmatha Wild life Sanctuary by promoting allied farming activities such as Crab fattening, Sea bass or Composite fish culture(IMC), Scampi culture, Diary, Goatary, value addition of fishery products/ Hygienic fish drying yard etc., so as to make them less dependant on fishing and thereby reducing fishing pressure. Here it is worthwhile to mention that in these areas under the project, the livelihood of the fishermen is mostly fishing in the sea which has been effected by the ban imposed for the turtle conservation for which the fishermen population have lost their livelihood for about nine months in a year and are the right person to be given alternative livelihood for their sustenance.

Thus the proposed Project envisages the following are the objectives:

- To Reduce fishing pressure
- To minimize destructive fishing/ illegal fishing
- To improve the socio-economic status of traditional fisher folk
- To have effective sea turtle conservation measures
- To protect spawning ground of economically valuable and endangered fish fauna
- To enrich Bio-diversity
- To sensitize fisher for responsible fishing
- To upgrade R&D for effective resource management.

And the key indicators are:

- Reduction in migration of fishermen as labourers to neighbouring states and districts,
- Increase in per capita income of fisher family,
- Better living condition of fisher around project area,
- Formation of self help groups,
- Decreased number of boats caught in restricted area in ban period violating OMFRA.

2. Project's Guiding principles and key design features

The project's guiding principle includes formation of self help groups to adopt various allied farming activities. The components of the farming activities will be as per the preference of the local community. The project will start with the capacity building among the members of the self help groups. The groups will be provided with the required infrastructure and input to take up the activities.

For year long sustenance of the affected fisher of the proposed area, it is suggested to have the following alternative activities which are site specific and in accordance to the livelihood pattern of the locality.

Proposed earmarked site	Proposed activity	Persons to be associated in the activity	Remarks
Gopalpur-Chilika (Includes Periphery of Chilka Lake)	i. Crab fattening/ Sea bass or Composite fish culture(IMC)/ Scampi culture in abandoned shrimp farms	100 SHGs @ 15 members/ SHG (to be formed out of about 9000 active fisher)	Live crab export is one of the avenues for incremental income generation. The Chilika periphery has long stretches of abandoned shrimp farm sites due to CRZ regulations and White Spot Disease in shrimps which can be utilised in the project activity. The new technology for scampi culture and Sea bass culture are also profitable activities.
	ii. Dairy & Gotary (Integration)	100 SHGs @ 15 members/ SHG (to be formed out of about 9000 active fisher)	Rare Chilka Buffalo breed yields more milk thriving on saline fodders and can be promoted for additional income generation.
	iii. value addition of fishery products/Hygienic fish drying yard	100 SHGs @ 15 members/ SHG (to be formed out of about 9000 active fisher) from which 25 SHGs to be formed of fisherwomen only	Value addition of the produce such as hygienic dry fish, pickles & other diversified products can increase additional income of the participating fishers.
	iv) Repair & revival of laboratory facilities of Fishery Training Institute (FTI) & B&T at Balugaon	All the local fishermen of Chilika periphery	Sensitization of the fisher on the physico-chemical parameters, pathology etc. Monitoring and analysis of physico-chemical and biological parameters of the fishers ponds for scientific management and better yield.
Paradeep-Dhamra	i. Crab fattening/ Sea bass or	100 SHGs @ 15 members/ SHG (to	Live crab export is one of the avenues for incremental income

Proposed earmarked site	Proposed activity	Persons to be associated in the activity	Remarks
(Includes Gahirmatha sanctuary Area)	Composite fish culture(IMC)/ Scampi culture in abandoned shrimp farms	be formed out of about 9000 active fisher)	generation. The earmarked area has long stretches of fallow suitable brackish-water areas which can be utilised in the project activity. The new technology for scampi culture and Sea bass culture are also a profitable activities.
	ii. Dairy & Gotary (Integration)	100 SHGs @ 15 members/ SHG (to be formed out of about 9000 active fisher)	Milk and meat produce can ameliorate the annual family income of the participating SHGs.
	iii. value addition of fish products/Hygienic fishery drying yard	100 women SHGs @ 15 members/ out of which 25 SHG to be formed out of fisher-women only	Value addition of the produce such as hygienic dry fish, pickles & other diversified products can increase additional income of the participating fishers.

3. Project Area Description

As discussed above, the above project will be operative in two areas namely Periphery of Gahirmatha Sanctuary, Bhitar Kanika National Park and periphery of Chilka Lake. These two sites have been very sensitive so far as the ecosystem is concered. The Gopalpur-Chilka site includes the periphery of the Chilka lake which is a Brackish water lake and is rich in fishery resources, but due to the culture of Tiger prawn (*Peneaus monodon*) in the lake area the environment of the lake area has been changed drastically leading to social and economical conflicts between the fishermen and non-fishermen of the area. The sea going fishermen living in between the Chilka and the sea are neither able to go for sea fishing nor for the operation in Chilka lake. They need alternative livelihood for their sustenance. The Paradeep-Dhamra stretch has also got problem of fishing ban in the most part of the area for the conservation of the Sea turtle. The ban is imposed in the area for almost seven months including the common ban in the east coast of India. Apart from this the weather condition in the rest of the period is not good for almost two months. Thus the fishermen loses their livelihood for almost nine months in a year, leading to social agitation and financial hardship.

Preferably 30 villages from each of these two selected pockets have been identified where these alternative livelihood components will be under taken in SHG mode. The list of such villages is enclosed in **Annexure-II**.

i. Gopalpur-Chilka (Including Periphery of Chilka Lake):

The proposed area is situated in the fringe of the brackish water lagoon – the Chilka Lake. There are about 12,000 fisher households in the proposed area. The fisher mostly depend on fishing the lake, thereby there is increased fishing fleets every year which leads to use of undesirable fishing gears/ crafts to improve their catch per unit effort resulting stock depletion, environmental hazards and regular conflicts. Thereby socio-economic condition of the fisher of the area is declining day by day. As a result they are now taking extreme decision to migrate as daily labourers or indulging in illegal fishing in prohibited areas. The fishermen living in the coastal areas are affected both by the fishing ban and fishing conflicts in Chilka Lake. One stretch of Rushikulya river mouth area also comes under the proposed limit where the turtle nesting takes place for which ban is imposed for five months in a year.

ii. Paradeep-Dhamra (Including Gahirmatha sanctuary):

With an aim to protect ecological, faunal and floral significance of the area, in exercise of the powers conferred under Wild Life Protection Act, Government of Orissa have declared Gahirmatha area as wild life sanctuary prohibiting all type of fishing. The entire area have an average width of 11 Kms. from Barunei river mouth to Mahandi river mouth where total restriction has been imposed through out the year. The entire area ins in the limit of Paradeep-Dhamra area. The peripheral fishermen population are deprived of fishing in that area thereby livelihood have been seriously affected. There are about 90 fisher villages in the periphery of the sanctuary comprising of about 7400 fishermen households. Due to ban in fishing in the sea for almost seven months, the economical condition of the fishermen has been gone down. Particularly the traditional fishermen of the area are effected by this ban, who agitate at time to provide compensation as they are complying to the international obligation. They need alternative livelihood very badly.

4. Project components and description:

a) Crab fattening/ Sea bas culture or Composite fish culture(IMC)/ Scampi culture

Crab fattening:

i) Mud Crab fattening:

Mud crabs of genus Scylla, also known as green crabs or mangrove crabs constitute an important secondary crop in traditional prawn or fish culture systems in the Asian countries. The mud crabs inhabit in both marine as well as brackish water environments. Two species of mud crabs, namely, *Scylla serrata (Smaller species) and Scylla tranquebarica (larger species)* are found in the inshore sea, estuaries, back waters, coastal lakes and mangrove swamps of all maritime states. Both the species co-exist in the inshore sea as well as in the inland brackish waters preferring muddy or sandy bottom. The importance of live mud crabs as an export commodity has opened up great opportunities for crab farming.

The crabs belonging to the species *S. tranquebarica* is free living and grows to a large size with carapace width of 22cm / 2.0 kg and those of *Scylla serrata* have borrowing habit and grow to the size with carapace length of about 12.7cm/0.50 kg. In sub adult and adult stages, the monthly growth works out to 8 to 10 mm/100 to 150 g in culture condition. Mud crabs are omnivorous and they feed on a wide variety of food items such as shrimps, crabs, bivalve molluscs and fish.

Due to their faster growth, resistance to diseases and adaptability to adjust in wide range of salinity, these two species are considered as the candidate species among crabs available in India. These crabs are caught from natural waters frequently in soft shell condition (called water crabs) which often fetches lower prices in market due to low meat content. They can be suitably reared in left out brackish water ponds for a period of 2-3 months to fatten the crabs with hard shell and full meat content. The water crab available in Chilka lake is around 26 % of the total catch of crabs.

Fattening of crabs involves the selection of ”water crabs” having a size of 150 gms and above and rearing for 2-3 months in ponds, pens(100 to 500sq. m) and battery of 20 to 25cages (4 to 10 Sq. M) with or without equally divided compartments. For pens and cages fixed in traditional culture ponds, the management steps practised for grow out culture will be followed. Earthen ponds of 0.2 to 0.6 ha in size and rectangular in shape having a sandy or muddy or clay loamy bottom soil are to be constructed with a minimal digging which provides

ample soil for bund construction. Bunds should have a minimum of 1.0 m width at the top to prevent crabs from escaping by borrowing through bunds. The wider axis of the pond may face the water source in order to a greater tidal effect through the out lets.

Before stocking the ponds are to be prepared by removing unwanted organisms by netting. To prevent the escape of stocked crabs from the ponds, fencing with suitable materials such as casuarinas poles, bamboo split matting or nylon netting to a height of 1m will be erected either in the inner edge of the ponds or on the top of the earthen bunds. A row of earthen mounds may be constructed in such a way that they remain submerged during the high tide and exposed during the low tide in order to serve as natural habitat.

The pond is prepared by draining out water. The pond is allowed to dry or bake in sunlight before liming is done. The water is let in during the high tide or sea water is pumped in to a height of 1.5 m. Since the mud crabs are highly cannibalistic, earthen or PVC pipes will be placed as hide outs/ shelters to reduce the fighting among the normal hard crabs and soft water crabs.

Soft shelled crabs of size 8 to 10 cm carapace width and above or crabs more than 150 to 200gms are stocked in the density of 1 crabs per sq. meters depending on the availability.

The reared crabs are to fed once in a day, preferably in the late evening either with trash fish or molluscan meats at a rate of 3 to 5 % of the stocked biomass, depending upon the observed feeding intensity and size recorded at regular and periodical sampling of the reared crabs.

Water management consists of water exchange and cleaning of screens of the sluice to ensure free flow of water. The reared crabs are to be examined periodically by sampling to record their growth and health condition. Crabs should be handled with care and properly tied before measuring their carapace with the total weight. At a stocking density of one crab per sq. m, crabs belonging to S. tranquebarica can grow from an initial weight of 150 g and above to a weight of 500 to 700g in three months of rearing.

The harvesting of crabs can be effectively done in tide fed ponds by letting in water through sluice into the pond during the incoming tide (high tide). As the water enters into the pond, mud crabs tend to swim against the incoming water and congregate near the sluice gate and they can be caught with the help of a scoop net. The crabs can be partially harvested by baited lift nets and bamboo cages. The expected survival rate would be around 60 to 70%.

The approximate expenditure to be incurred towards the recurring costs for fattening process in ponds and cages is given under :

- WSA 1 Ha
- Size of water crab 150 gms and above
- Stocking density of water crab 10,000 nos
- Days of culture 60 days
- Cost of water crab Rs 75,000
- Qnty of feed req. daily 90 kgs approx
- Cost of feed @2-3 % Rs 25,000 approx
- Watch and ward Rs 10,000
- Crab barrier material Rs 5,000
- Handling equipment Rs 2000
- Pump 5 HP Rs 20000
- Others Rs 13,000
- Total operational cost Rs 1,50,000
- Return2500 kgs Rs 3,00,000
- Profit Rs 1,60,000

  Share of the Shg will be Rs 10,000

ii) Sea bass or Composite fish culture(IMC)

Sea bass culture :

Biology

The Asian sea bass (*Lates calcarifer*) commonly known as "Bhekti" is an important fishes so far as consumption and price is concern**.** It is euryhaline in nature and catadromous(migrating towards sea for breeding) in behaviour. It is

Morphology:

Body elongated, compressed, with deep caudal peduncle. Head pointed, with concave dorsal profile becoming convex in front of dorsal fin. Mouth large, slightly oblique, upper jaw reaching to behind eye; teeth villiform, no canine teeth present. Lower edge of preoperculum with strong spine; operculum with a small spine and with a serrated flap above original of lateral line. Dorsal fin with 7 to 9 spines and 10 to 11 soft rays; a very deep notch almost dividing

spiny from soft part of fin; pectoral fin short and rounded; several short, strong serrations above its base; dorsal and anal fins both have scaly sheath. Anal fin round, with three spines and 7–8 soft rays; caudal fin rounded. Scale large ctenoid (rough to touch).

Geographic distribution

Seabass is widely distributed in tropical and sub-tropical areas of the Western Pacific and Indian Ocean, between longitude 50°E - 160°W latitude 24°N – 25°S (Fig. 1). It occurs throughout the northern part of Asia, southward to Queensland (Australia), westward to East Africa (FAO 1974).

Ecological distribution

Seabass is a euryhaline and catadromous species. Sexually mature fish are found in the river mouths, lakes or lagoons where the salinity and depth range between 30–32 ppt and 10–15m, respectively. The newly-hatched larvae (15–20 days old or 0.4–0.7cm) are distributed along the coastline of brackish-water estuaries while the 1-cm size larvae can be found in freshwater bodies e.g. rice fields, lakes, etc. (Bhatia and Kungvankij 1971). Under natural condition, seabass grows in freshwater and migrates to more saline water for spawning.

Life history

Seabass spends most of its growing period (2–3 years) in freshwater bodies such as rivers and lakes which are connected to the sea. It has a rapid growth rate, often attaining a size of 3–5 kg within 2–3 years. Adult fish (3–4 years) migrate towards the mouth of the river from inland waters into the sea where the salinity ranges between 30–32 ppt for gonadal maturation and subsequent spawning. The fish spawns according to the lunar cycle (usually at the onset of the new moon or the full moon) during late evening (1800–2000 hours) usually in synchrony with the incoming tide. This allows the eggs and the hatchlings to drift into estuaries. Here, larval development takes place after which they migrate further upstream to grow. At present, it is not known whether the spent fish migrates upstream or spends the rest of its life in the marine environment

Feeding habits

Although the adult seabass is regarded as a voracious carnivore, juveniles are omnivores. Analysis of stomach content of wild specimens (1–10

cm) show that about 20% consists plankton, primarily diatom and algae and the rest are made up to small shrimp, fish, etc. (Kungvankij 1971). Fish of more than 20 cm, the stomach content consists of 100% animal prey: 70% crustaceans (such as shrimp and small crab) and 30% small fishes. The fish species found in the guts at this stage are mainly slipmouths or or pony fish (Leiognatus sp.) and mullets (Mugil sp).

Growth

The growth rate of seabass follows the normal sigmoid curve. It is slow during the initial stages but becomes more rapid when the fish attains 20–30 gm (Table 3). It slows down again when the fish is about 4 kg in weight.

Table 3. Age, average body length and weight of seabass under tank conditions.

Age (days)	Average length (mm)	Average body weight (gm)
Fertilized eggs	0.91	
0	1.49*	
1	2.20	
7	3.61	
14	4.35	
20	9.45	
30	13.12	0.1
40	17.36	0.5
50	28.92	1.2
60	32.85	3.5
90	93	9
120	145	50
150	210	120
180	245	280
210	310	330

Culture practices:

Sea bass is considered as a suitable species for farming in different farming systems in India. It is suitable for farming in ponds and cages in the coastal, inland saline and fresh water ecosystem. It is a hardy fish capable of withstanding wide environmental fluctuations. It fetches good prices in the domestic as well as export market.

Sea bass can be cultured in grow out ponds or net cages. Ponds ranging from 0.2 to 1.0 ha in size with a water depth of 1.5 m are selected for the purpose.The pond should preferably have a sandy or clay loamy bottom. Bunds should have a minimum of 1.0 m width at the top.

There should be availability of abundant and good quality water. Sea bass are highly tolerant to varying salinity condition, so brackish water would be ideal for sea bass culture.

Before stocking in grow out culture systems, sea bass fry grown in hatcheries are to be furthered reared either in nursery ponds or in cages/hapas for a period of 30-40 days till they attain the optimum size that can be stocked in the culture systems. The preferred stocking size of the seed in grow out operation is 5-10 grams. Sea bass can be cultured in grow out ponds or net cages. ed either in nursery ponds or in cages/hapas for a period of 30-40 days till they attain the optimum size that can be stocked in the culture systems. The preferred stocking size of the seed in grow out operation is 5-10 grams.

Nursery ponds of 200 to 300 sq. m. area with provision to retain at least 70-80 cm. Water will be used for the purpose.. Pond preparation is similar with the grow out preparation except freshly hatched Artemia naupli are introduced. These stocked naupli will grow and form sufficient biomass which is available as food for the sea bass fry. Sea bass fry acclimatised to pond condition will be stocked @ 20-30 nos per sq. m. during the early hour of the day. Supplementary feeding will be done with chopped, cooked fish / shrimp meat.

Grow out culture ponds are to prepared before stocking by repeated netting, draining and drying to remove predators/pest fishes. After checking the pond bottom, quality water will be filled. If the bottom is acidic, neutralisation is to be done with lime. In order to maintain abundant natural food, the pond is to be fertilised with chicken manure@ 500kg/ha, keeping the pond level at 40 to 50 cm. The water level is to be increased gradually . After 2weeks when plenty of natural algae develop in the pond, nursery reared sea bass seed of 5-10gm size will be stocked @ 0.5 to 1 pcs per sq. m. during the early hours of the day. Supplementary feeding is to be done with the pellet feed as per the required dosages. The fishes are harvested at 7 to 9 months period of culture. The

approximate expenditure to be incurred towards the recurring costs for Sea bass in both nursery and grow out ponds is given under:

- WSA 1 Ha
- Stocking density 10000 nos
- Survival 50 %
- Seed cost Rs 20,000
- Feed cost Rs 50,000
- Equipment cost Rs 10,000
- Watch and ward Rs 10,000
- Cost of cages/hapas Rs 10,000
- Other input Rs 10,000
- Total operational cost Rs 1,10,000
- Participation from SHG Rs 10,000
- Total amount required Rs 1,00,000
- Return 1000 kgs Rs 2,00,000
- Profit Rs 1,00,000

COMPOSITE FISH CULTURE (IMC)

Introduction:

Scientific researches of recent decades in fresh water fish culture in India have evolved a high yielding new technology popularly known as composite fish culture involving Indian major carps like Catla catla, Labeo rohita and Cirrhinue mrigala,. This new technology has been steadily gaining increasing adoption rate among Indian fish farmers. Production levels as high as 10,300 kg/ha/year have been obtained in certain experimental operations and in general, on an average a level of 4000–6000 kg/ha/year has been demonstrated in farmers ponds. In view of attainment of high production levels in composite fish culture, the prospects for its expansion seems to be very bright .

Selection of ponds

Size and shape of stock ponds in which fingerlings are raised to table-sized fish through composite fish culture may vary. Ponds having 1.0 hectare in

area, rectangular in shape, 2 to 3 meters deep (1.5 m minimum depth) exhibiting a gentle slope and an even bottom are to be selected. Embankment should be firm with guarded inlets and outlets. Soil should be retentive with an assured supply of water. Perennial ponds with at least 1.0 meter water depth during peak summer are preferable. Even seasonal ponds retaining sufficient water for 8–9 months can also be utilized.

Methodology of composite fish culture

Essentially, the methodology of composite fish culture consisting of the following principal steps are to be followed :

Pre-stocking operations

This phase refers to pond preparation to ensure maximum survival and proper growth of cultured fishes and involve repairs of embankments, removal of weeds and undesirable aquatic biota, and correction of physicochemical properties of water and soil.

Control of noxious aquatic vegetation

In view of the adverse effects excessive aquatic plants exert on the pond with regard to living space, sunlight penetration, oxygen circulation, sheltering of fish enemies, they will either be kept under check or cleared from the pond. Clearance of weeds is achieved by (i) increasing the depth of the pond, (ii) manual means, (iii) mechanical means, (iv) chemical means, and (v) biological means. In smaller ponds, manual clearance of weeds is economical.

Eradication of fish enemies

Draining of ponds or repeated netting where draining is not possible will help in removing the predators and complete removal is ensured by the application of piscicides. Oil cake of mahua (Bassia latifelia) containing 4–6 per cent saponio, presently being used, serves initially as a piscicide at 200–250 ppm and later acts as organic manure.

Commercial bleaching powder, calcium hypochlorite, Ca(OCl)Cl, is not only a good substitute for mahua oilcake but also economical. It is effective at 25–30 ppm (250–300 kg/ha-m.) affecting fishes within 15–30 minutes of application and killing all fishes including catfishes and murrels within 1–2 hrs.

Besides detoxification being quicker, bleaching powder disinfects the pond and helps in faster mineralization of organic matter.

Liming

Ground limestone (Calcium bicarbonate) or slaked lime (Calcium hydroxide) or quick lime (Calcium oxide are applied at the pond bottom or spread over the water surface for correcting pH of water and soil, maintaining the sanitation of the pond, checking marked fluctuations in pH, and hastening mineralization of organic matter. Under Indian conditions, lime is used in stock ponds at the rates of 200–1000 kg per hectare per year in instalments based on soil pH as given below:

Soil pH	Soil type	Lime (kg/ha/yr)
5.0–6.5	Moderatel acidic	1000
6.5–7.5	Near neutral	500
7.5–8.5	Mildly alkaline	200

A pH range of 6.5–9.0 is observed as ideal for soilwater interactions resulting in a satisfactory biological regime. Liming is an essential preliminary to successful pond manuring.

Fertilization

Fertilization keeps the metabolic cycle in operation, increases natural productivity and fish production. Cowdung, pig and poultry manures, spoiled oilcakes, spoiled cotton and soyabean meal, compost and sewage as organic manures and nitrate of sodium, ammonium sulphate, ammonium superphosphate, muriate of potash as inorganic manures are used in fish ponds. A combination of both inorganic and organic fertilizers is recommended for ponds with neither too clayey nor too sandy soil possessing medium organic matter content. Selection of fertilizers, particularly inorganic, is governed by the reaction of the soil. N-P-K (6-8-4), Urea (N-46 per cent), ammonium sulphate (N-20 per cent), single superphosphate (P-16 per cent), Calcium ammonium nitrate (N-20 per cent) and triple superphosphate (P-48 per cent) are used.

Organic manuring has to take into account the oxygen budget of the medium. The quality of manure to be applied also depends on the organic carbon content of the soil as detailed below:

Organic carbon content of the soil (%)	Cattle dung (kg/ha/yr)
Less than 0.5	20000
0.5–1.0	15000
Above 1.0	10000

Heaping manure in corners facilitates slow diffusion and provides safer zones for fish. Improvements in the methods of application of manures and fertilizer are being effected for better turn over of nutrients.

Stocking Operations

Selection of species :

The major Indian carps - catla (Catla catla), rohu (Labeo rohita) and mrigal (Cirrhinus mrigala) are to be used in combination with calbasu (L. calbasu) and sometimes with bata (L. bata). Catla is surface-dweller is a zooplankton feeder where as Rohu is a column-dweller and utilizes decaying macro-vegetation, filamentour algae, periphyton, etc. Mrigal is a bottom feeding fish and makes use of filamentour algae and detritus. The omnivore Mrigal feeds on a wide variety of food items of both animal and plant origin at the pond bottom and margins. An association of the above three carps, therefore, ensures proper exploitation of the food niches in the pond.

Stocking density and species ration

Stocking with fingerlings of 100–150 mm is done at a rate below the carrying capacity of the pond. The prerequisite for evolving any sound stocking programme is information on the food requirements of cultivated fishes. In the absence of such information for all cultivable carps, stocking programme is based mostly on emperical experience. Number of fish to be stocked is computed by the following formula:

$$\text{Number of fishes to be stocked per unit area} = \frac{\text{Total expected increase in wieght}}{\text{+ Mortality (not more}}$$

than 10%) Expected increase of weight of individual fish

Stocking on volume instead of an area basis would be more meaningful. Phased-stocking of carp fingerlings in keeping with water level experimented with at the Freshwater Fish Culture Division of CIFRI has shown trends of increased fish production. The difference in the feeding habits of young and adults of certain species of cultivated fishes can be taken advantage of while stocking ponds. It is recommend to stock 3500 C, 4500 R and 2000 M in one hectare pond.

Post-stocking Operations

Supplementary feeding

Supplementary feeding is the main governing factor in determining the growth rate of pond fish. Since natural fish food produced in a limited way cannot supply the energy required for growth, the need for supplementing the food arises. Artificial feeding enhances fish production Extent of intensive feeding is an economic question which depends on the cost of the foods and their conversion rate termed also "food quotient". Food quotient varies considerably with variations in temperature, oxygen content of the water, size of the fish, feeding habits and general condition.

To make the artificial feed balanced and complete, it is necessary to understand and the basic requirements of the food at the different stages of cultivable carps. A mixture of oilcake and rice polish in equal proportions by weight is the feed to be provided. Dough prepared by mixing rice polish with the water soaked oilcake is placed in trays hung at different depths of the pond. Feeding preferably twice a day is advocated.

Total amount of food to be provided is calculated by the following formula L

$$\text{Amount of food to distribute per hectare} = \text{Growth per hectare due to artificial feeding.} \times \text{feed conversion rate.}$$

The average conversion rate of the feed mixture of rice polish and oilcake of groundnut is observed to be 2:1 that higher rates of feeding above the level equivalent to 5 per cent of the body weight at the initial stage is recommended.

Several feeds have been formulated using locally available ingredients at FARTC and their efficacies have been ascertained on fry and fingerlings of carps. Of these, three feeds one with GNOC (78.4%), rice bran (9.8%), sal seed cake (9.8%), fortified with minerals, trace minerals and vitamins, the second with GOC (24.5%), sesame oilcake (24.5%), rice bran (49.0%), also fortified with minerals, trace minerals and vitamins, and the third with GOC (40.0%), fish meal (20.0%), wheat bran (35.0%) with yeast have shown promising trends in so far as growth and digestibility are concerned. Further improvement in the feeds is to be effected after understanding the extent of utilization of the natural food by the carps, amine acid requirements and amino acid profiles of ingredients and enzymatic pattern

Under the management practices followed in composite fish culture, with average survival of over 80 per cent, fishes are observed to grow to the desired marketable size of one kilo and above in stock ponds.

Use of fertilizers alone yielded 2500 kg fish per hectare in six months (Chakrabarty et al., 1979 a) and 3352 kg and 4297 kg per hectare per year (Saha et al., 1978). This would well suit low-investment fish culture programmes.

Harvesting and marketing

Harvesting of stock ponds can effectively be done by drag netting. Fishes attaining the marketable size are harvested to reduce the pressure of density on the pond and thereby provide sufficient space for the growth of other fishes. Replenishment of the harvested species ensures maintenance of the ecological balance that the particular species exhibit. Such periodic harvesting with and without replenishment, facilitating stock manipulation, are biological means for increasing fish production.

Harvesting ensures proper financial return only when there is demand in the market and as such, fish supply is to be regulated to the market.

Pond sanitation

Liming wards off the ill-effects of organic matter decomposition and restores hygienic conditions in the pond. Raking helps releasing of noxious gasses from the bottom. Feeding is stopped when algal blooms appear. Aeration of the pond water from the bottom, surface agitation, replenishment of water and netting are measures taken to counteract periods of oxygen depletion consequent on

putrefaction of organic matter. It is suggested to treat with lime in concentrations not exceeding 10 ppm if water becomes acidic due to putrefaction and with 1.5 ppm potassium permanganate if water becomes foul. Alum is added to settle suspended silt which may cause fish mortality.

Fish diseases and their control

Fish culture under artificial conditions make fish prone to parasitic and non-parasitic diseases by lowering their resistance power when adverse hydrological conditions set in. Prophylactic measures are taken for the few diseases encountered. Methods of diagnosis and treatment of fish diseases are being evolved at FARTC. Affected fishes are treated with solutions of either potassium permanganate (2 mg/100 ml) or common salt (3 g/100 ml) or copper sulphate (50 mg/100 ml) for all bacterial and fungal diseases. Pond treatment with Cleaner solution (100ml/Ha. Meter depth) is recommended for fish lice infection.

Rational management of stock ponds with caution exercised at every phase of management can give rich dividends making fish culture a profitable proposition.

ECONOMICS

Adoption of composite fish culture in toto has made fish farmers realise profits by at least Rs. 15,000-Rs. 20,000 per hectare per yearby producing at intermediate level of inputs with production ranges of 4000–5000 kg/ha/

Production cost, income and returns in Composite Fish Culture is given below :

- WSA 1 Ha
- Stocking density 10000 nos
- Survival 80 %
- Seed cost Rs 20,000
- Feed cost Rs 50,000
- Pond preparation cost Rs 10,000
- Watch and ward Rs 10,000
- Cost of Nets Rs 10,000
- Other input Rs 10,000
- Total operational cost Rs 1,10,000
- Participation from SHG Rs 10,000
- Total amount required Rs 1,00,000

- Return 4000 kgs Rs 2,00,000
- Profit Rs 1,00,000

iii) Scampi culture

The scampi (*Macrobrachium rosenbergii*) is the largest among all the fresh water prawns. In India it is found in all the major rivers and lakes, which are connected to sea. The recent development of Scampi farming in India can be attributed to high demand and price, hardiness and resistance to disease and also culture characteristics of the prawn such as faster growth rate, ready acceptance of supplementary feed and compatibility with other fishes. Both nursery phase and grow out culture practices is well established in India.

Pond Preparation is same for both the nursery and grow out pond. The following sequence of action is to be followed in the preparation of ponds:

- Drying of pond bottom for a minimum period of 2-3 weeks for eradication of fish, insects, vegetation will help in improving the fertility of the soil
- Ploughing of the pond bottom helps remove of obnoxious gases.
- Liming to neutralise acid soil condition
- Intake of clean water
- Fertilisation with dolomite and yeast jiggery and bran mixture will help in the development of phytoplankton bloom and benthos.
- Shelter such as broken pvc, earthen pipes, palm leaves be laid in different location of the pond to reduce the cannibalism among the prawn.
- It require 7-10 days for the development of the bloom and stocking will be done with 7-10 days old (PL-10) @!0 to 15 pcs/ sq. m.

During the culture period a steady algal bloom can be maintained by changing water periodically. Feed is a major component and vital input in scampi farming. Nutritionally balanced and cost effective feed will ensure successful crops. Quality feed with protein level of 40% will be fed to prawn in the nursery ponds to get an average FCR of 1:2.The feeding will vary from 10 to 15% of the biomass. In about two months in Nursery, the average size will be around 5 grams. The juveniles will be harvested from the nursery and segregated on the basis of sex. Male juveniles will be cultured in grow ponds and the females in the nursery ponds.

Dry pellet feed with protein ranging to 30-32% are to be used in grow ponds where all male culture will be under taken.The quantity of feed to be given ranging from 8% at the beginning of the culture operation and finally to 3% per

day of the prawn biomass. Weekly sampling will be done by cast net for determining the average body weight and health of the prawn. Harvesting can be started when the male reaches above 60 gm and female at 30 gms. Selective harvesting is done in the pond to harvest the full grown scampi leaving others to grow. The total culture period is 7 to 8 months. The all male culture method is more beneficial. The approximate expenditure to be incurred towards the recurring costs for Scampi in both nursery and grow out ponds is given under:

- Unit 1 Ha
- Nursery phase WSA **0.24 Ha**
  - Seed stocking 50000
  - Seed cost Rs 30,000
  - Rearing period 50 days
  - Av. Survival 70 %
  - Male 15750 (45 %)
  - Female 19250 (55 %)
- Grow-out phase WSA **1 Ha**
  - Stocking 15750 nos
  - Av. Survival 80 %
  - Culture period 120 days
  - Survival nos 12600 nos
  - Feed 2000kg
  - Feed cost Rs 75,000
  - 5 HP Pump Rs 20,000
  - Retarded males 600 nos
  - Exportotable males 12000 nos
  - Average size 100 gms
  - Production 1200 kgs
  - Culture period 6-7 months
  - female pond 19000 nos
  - Period 4 months
  - Av. Survival 80 %
  - Av. Size 30 gms
  - Production 456 kgs

• Return	Male pond	1200kgs@Rs 300/kg=	Rs 360,000
	Female pond	456 kgs @ Rs 90/ Kg=	Rs 41,000
	Total	-	Rs 4.01 Lakhs
• Profit			Rs 2,50,000
• Total production from fish culture			Rs 0.50 Lakhs
• Investment required	Capital		Rs 1,50,000
	Operational		Rs 1,60,000
	Participation from SHG		Rs 10,000
	Total amount required as Operational cost		Rs 1,50,000
	Total		Rs 3,00,000

The proposed project aims at taking up crab fattening/ scampi culture/ sea bass culture by SHG groups in the newly excavated/ left out brackish water ponds available in the fringe of Chilika Lake and Gahirmatha sanctuary area. The SHGs that would be formed under the project may be of either gender for the purpose of this activity. Each SHG will be provided with a sum of Rs 1.50 lakhs as capital cost for development of ponds and Rs. 1.50 lakhs towards input cost. The stake holders will be trained on management practices at FTI, Balugaon and BWTC, Paradeep for the respective project sites.

b) Dairy & Gotary (Integration)

Each SHG will be provided with 5 to10 cows and 50 indigenous breed/exotic variety of goats with in a cost limit of Rs. 1.50 lakhs. The SHGs will also be provided Rs. 2.00 lakhs as capital cost towards establishment of sheds and equipments. From a conservative estimate each SHG will have an annual income of Rs. 2.40 lakhs from milk and meat. Capacity building of stakeholders will be converged under the existing schedules of AH&VS Department. The proposed activity of Diary and Goatary will be undertaken in stall fed condition and supplied vegetation as a result environmental degradation due to grazing of animals can be prevented. In this regards it can be mentioned that under technical supervision of Chilika Development Authority, Goat farming under stall

fed condition has been successfully demonstrated at Gourangapatana of Khurda districts .

- Cost of shed Rs 2,00,000
- Cost of cow 5-10 cows Rs 50,000
- Cost of goats 50 goats Rs 50,000
- Cost of feed Rs 50,000
- Others Rs 10,000
- Total operational cost Rs 1,60,000
- Participation from SHG Rs 10,000
- Total amount required Rs 1,50,000
- Profit Rs 2,40,000 sale of milk and goat

c) Value addition of fishery products/Hygienic fish drying yard

Low priced fishes and by-catches can be value added fetching more price in the domestic as well outside state markets. For the activity the SHGs will be formed mostly involving fisherwomen who normally take the responsibility of marketing in a traditional fishing sector. Each SHG will be provided with Rs. 4.00 lakhs for installation of small scale solar dryers and drying platforms. The capacity of the Solar drier will be 50 kgs dry fish production per day. Apart from this each SHG will be supported with Rs. 1.00 lakhs for making a small cement platform for drying and also for procurement of raw materials for value addition which will roll on for subsequent year trading.

- Cost of the solar drier Rs 3,25,000
- Cost of installation Rs 25,000
- Cost of storage room Rs 50,000
- Cost of raw material Rs 100,000 (to be reused)
- Production per month 1500 kgs @ 50kg/day
- Income per month Rs 75000
- Profit per month Rs 25,000
- Profit per year Rs 3,00,000

d) Capacity building and training

Training on general activities as well as on the specific field of operation will be imparted to all members of the SHG involved in the project The manuals for each training will be prepared and necessary materials on the training will be provided to the trainees. The training may be for a period of five days. The resource persons will be taken from the experienced retired fishery officers or qualified persons.

i. Crab fattening/ Sea bass or Composite fish culture(IMC)/ Scampi culture

The training under the programme will have general subject and specific culture practice on the crab fattening/ Sea bass culture/ Scampi culture. Five members of each of the SHG will be taken in to account and training on all the three technology will be imparted, because the SHG may change the culture practice, if they face some trouble or they may perform one culture in certain period of the year and do other in the rest of the year to make more profit. The field exposure visit will also be given to limited members, during the period or after the training is completed.

The expenditure per SHG may be as follows:

1	Five days Training stipend (Rs.120/day) to SHG members	Rs 3000
2	Materials for training	Rs 750
3	Institution/ Departmental expenditure	Rs 1250
4	Exposure visit to limited members/ staff	Rs 3750
5	Honorarium to resource persons	Rs 1250
	TOTAL	**Rs 10000**

ii. Dairy and Gotary (integration)

The training will be for a period of five days, in which the general subject , Dairy and Goatary and other activities will be given. five of each SHG members will be given training.

1	Five days Training stipend (Rs120/day) to SHG members	Rs 3000
2	Materials for training	Rs 1500
3	Institution/ Departmental expenditure/honorarium	Rs 2500
4	Exposure visit	Rs 3000
	TOTAL	**Rs 10000**

iii. Value addition of fishery products/Hygienic fish drying yard

The training will be for a period of five days, in which the general subject (other activities) and value addition on fishery products will be given. The technology of Solar dryer, Fish pickle, fish processing, filleting, hygienic dry fish production etc will be given to five of each of the SHG members.

1	Five days Training stipend (Rs120/day) to SHG members	Rs 3000
2	Materials for training	Rs 750
3	Institution/ Departmental expenditure	Rs 1250
4	Exposure visit to limited members/ staff	Rs 3750
5	Honorarium to resource persons	Rs 1250
	TOTAL	**Rs 10000**

SELECTION OF LIVELIHOOD OPTIONS

The Alternative Livelihood option for different Self Help Group will be different selecting one of the trade from the proposed activities. Meeting will be conducted and their interest will be taken in to consideration while selecting the option. Justification of selecting a particular subject would be based on the following points:

- Traditional knowledge and experience of SHG members
- Availability of suitable site outside the coastal eco-sensitive zones, wildlife sanctuaries, national parks, marine parks, turtle nesting areas etc.
- Technical considerations viz., soil & source water quality concentration of other aquaculture (especially shrimp culture) units in the locality.
- Availability of water/soft crabs (*S.serrate & S. tranquebarica*) throughout the year in adequate numbers for fattening.
- Availability of marine landings/ catch in adequate quantity for installation of solar driers to produce hygienic dry fish products year round.
- Marketing facilities for milk and value added fish products
- Availability of marine fishermen (Nolia) who do not have traditional knowledge and experience in diary and goatary.
- Infrastructure facilities (road connectivity, power supply, freshwater supply, market etc.).
- Availability of trash fish in good quantity to feed the mud crabs during fattening.
- Coastal areas prohibited for coastal aquaculture under regulatory law (CAA Act, 2005 CRZ Notification/ CZMP etc).
- Facility to supply fattened mud crabs to the agents of live mud crab exporters.
- Connectivity to milk route for supply milk to OMFED.
- Availability of lands, shrubby areas for goat keeping
- Availability of fodder for the Cows and goats for stall feeding

THE PROCESS OF FORMATION OF SHGs :

SHG is a group of rural poor who have volunteered to organize themselves in to a group for eradication of poverty of members. They agree to save regularly and convert their savings into a Common Fund known as the Group corpus. In our society, members are linked by various common bonds like caste, sub-caste, community, blood relation, place of origin, activities etc. The facilitators must identity these natural groups which are commonly called "Affinity Groups". While forming groups our staffs have recognized this natural bonds and affiliations and acted as facilitators in formation of the groups. Generally a SHG may consist of 15 fishermen/women and all the members of the group should belongs to below poverty line. However, if necessary 20-30% of the members in a group may be taken from marginally above the poverty line if they are acceptable to the BPL members of the groups. .A person should not be a member of more than one group. The group shall not consist of more than one member from the same family. The group should devise a code of conduct to bind itself. The must function in a democratic manner, allowing free exchange of views and participation by the members in the decision making process.

The process of SHG formation in these 60 villages can be divided into following steps:

Step-1: - Collection of information about village
- Social and resource mapping
- Skill available in the locality
- Marketing facilities available in the locality
- Affinity groups availability in the village

Step-I I: Meet with fishermen and fisherwomen in the village and explain them the purpose of our visit and intervention

Step-III : - Conduct 4-5 meeting over 4-5 months and set an agenda for each meeting :
- Talk about family issue / Community issue
- Identification of Affinity groups .
- Talk about rules and regulations in self help groups.

- Familiarize the members with the books to be maintained in SHG
- Elect representative and explain responsibilities of members
- Give a group name
- Talk about saving and lending
- Help in opening a Bank account
- Encourage members not only to save but also to start lending for both productive and consumption purpose.
- Organise a common action plan on lively hood activities and share this with SHGs members.

The above procedure has been adopted by our staffs while forming the self help groups in the identified villages. However there are some SHGs are already there and are not functioning properly. We have selected some of the SHGs and ensure that their documents and accounts were maintained as above. In future also the same procedure will be followed.

INVOLVEMENT OF NGO

One NGO for each of the two sites will be selected from the locality who will be involved in entry point of the project along with the Assistant Director of Fisheries, and other staff working for the project from different Department.

The selection criteria will be as follows:

- Good experience and track record of implementation of Government programme will be preferred
- Should have worked in the locality for at least one year
- NGO should be having adequate staff for the project i.e. at least one supervisor and two field workers.
- The work on sanitisation, savings, education, management and guiding the SHGs by the NGO will be preferred.

Basing on the experience and activities of the NGOs, interested NGO will be selected for the Project.

The NGO will be working on the following fields in the project.

- The work of the NGOs is at the entry point level.
- Mobilisation of the people for formation of SHGs as per the norm
- Assist the SHGs in locating the resources like ponds, GP tanks, upgraded cows/goats, etc, fish seeds, prawn seeds, water crabs etc. .
- Assist the SHGs in maintaining of records and daily activities.
- Daily activities of the SHGs on the alternative livelihood provided.
- Participation and monitoring the successful implementation of the Alternative livelihood options provided to the SHGs e.g.
- selection of Alternative options,
- Assist the SHGs in construction of the infrastructure required for the option, procurement of input materials,
- Assist the SHGs by co-ordinating with the tech. officers,
- Sanitisation, savings, education, health etc.

The job of the NGO will be reviewed every Six months and will take action for continuance or discontinuance. A committee composed will review the activity of NGO. Payment to the NGO will be made equally for the project period every six months after the review.

The NGO will be executing one Agreement with the Fisheries Department (Assistant Director of Fisheries concerned will be executing on behalf of the Department) before involvement of the NGO. The agreement copy with SHG and NGO is enclosed **in Annexure III and IV**

SECTION III

PROJECT IMPLEMENTATION ARRANGEMENT

A. Implementing Agencies- Role and Responsibilities

The project will be implemented by the Fisheries Department with the existing staffs deployed in the concerned districts/blocks of the proposed areas. The over all control will be with the Director of Fisheries.

One **Project Implementing Cell** will be setup in the Office of the Deputy Director of Fisheries, Marine South, under the Director of Fisheries and will solely work for the proper implementation of the project. The cell will be setup soon after the funds are received and project implementation starts. The cell will have the following officials:

- Deputy Director of Fisheries, Marine South
- Assistant Director of Fisheries, Project Implementing Cell
- Junior Fisheries Officer
- Head clerk-cum-Accountant of the Marine South Office
- Deputy Superintendent of Fisheries O/O DDF, Marine South

The DDF, MS, Head clerk-cum-Accountant, Deputy Superintendent of Fisheries O/O DDF, Marine South, will work in the Project Implementation Cell in addition to their normal duties.

The NGO selected for the project will work for the initial implementation of programme i.e. formation of Self Help Group and selection of the Livelihood options, along with the staff and will initiate the process of formation of Self help groups.

The concerned Assistant Director of Fisheries in the respective Areas i.e. ADF, Marine, Kujanga for Paradeep- Dhamra and ADF, BT, Balugaon for the Gopalpur-Chilka will implement the project in the field level. They will select the best suitable alternative livelihood component/ components in the area by involving the members of the SHGs and NGOs selected for the site. The Project Implementation staff in the office of the ADFs will be as follows:

1 Assistant Director of Fisheries
2 Deputy Superintendent of Fisheries -2
3 Head clerk O/O ADF
4 FEO O/O ADF

In each village, fisheries personnel will conduct and coordinate with the Self Help Groups (SHG), with the district officials for necessary follow up action.

The capacity building programmes for various components of livelihood will be organized in the village itself on farm trial-cum- learning basis. The training for the Gopalpur-Chilka area will be done at the training centre at Fishery Training Centre (FTI) at Balugaon and for the Paradeep-Dhamra will be done at Brackish Water Training Centre (BWTC) at Paradeep. Both the training centre are under the Fisheries Department and are functional at present. These training centres are capable of imparting necessary training to the Self Help Group on capacity building and technical aspects.

B. Financial Management Arrangement

B.1. Financial Management Frame work:

All the financial management is governed by the prescribed Orissa General Financial Rules (OGFR) and Delegation of Financial Powers Rules.

However for the project one Project Implementation Cell at Deputy Director of Fisheries, Marine South office will be working under the supervision of the Deputy Director of Fisheries and Director of Fisheries will have over all control.

The financial activities will be channelised through the Project Implementation Cell. Participating banks will also be there in the project at village level where the funds of the SHG will be placed. The funds received by the Deputy Director of Fisheries and the Assistant Director of Fisheries will be deposited in the Savings Bank Account of the Nationalised Banks and the funds placed with the SHG will be transferred by the ADF to the Savings Bank Account of their Bank meant for the concerned SHG, as per the norms of the project. The bank account of the SHG will be a joint one with the ADF concern or his representative officer.

The financial norms and procedures will be followed as laid in this project report, so far as the procurement norms are concerned.

The sanctioning power of different official under the project for a item at a time will be as given below:

1	Director of Fisheries	Rs	50,00,000
2	Project head (Nodal Officer) in the project unit	Rs	10,00,000
3	Asst Director of Fisheries	Rs	1.00,000

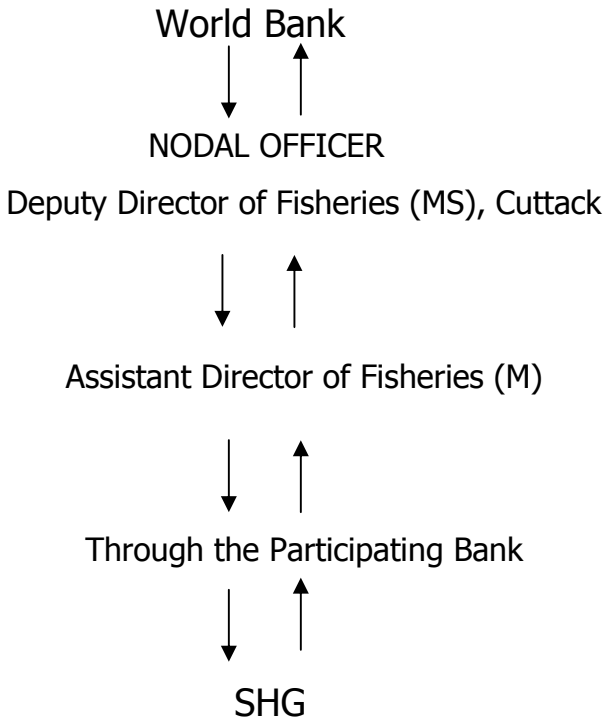
B.2. Fund Flow and Disbursement Arrangement:

As per practice, all the funds are routed through the state Budget excepting some of the central plan components like RIDF, ACA etc. Funds either budgetary or non-budgetary are sanctioned by Government in Administrative Department.

The funds under the project will be placed with the Deputy Director of Fisheries, Marine South. The funds received will be transferred to the account of the ADF concern for implementation as per the programme and schedule. The funds received by the ADF will be paid or advanced to the SHG as per norms which will be trained at the SHG level in banks and expenditure for the purpose will be made. The expenditure are to be made at Deputy Director Fisheries, MS, ADF and the SHG level as prescribed in the project.

The ADF will submit the utilisation certificate in the format used by Government to the Deputy Director of Fisheries, MS, which will ultimately compiled and submitted to the PMU and other quarters.

However the fund flow of the project will be as follows:



B.3. Accounting Policies & Procedures:

Accounting policies and procedures are followed as per the prescribed norms of Government as well as the Accountant General of Orissa from time to time. Monthly and annual expenditure statement are prepared in the district level which are compiled at the Directorate level before reporting to Government as well as to AG, Orissa.

The procurement norms of the project will be followed as prescribed in this project report in details.

B.4. Staffing & Capacity Building:

Staffs are adequately deployed at various levels of the Department for financial management. The proposed project sites covers 5 coastal districts of Orissa, namely– Ganjam, Khurda and Puri, Kendrapara and Jagatsinghpur. These staffs are periodically subjected to training on changes in financial procedures and rules at the state level training centre with assessment of their capacity build up through Departmental financial examinations. Under the project there is a provision for capacity building for the SHG members at Departmental Training centres located at Balugaon and Paradeep for the respective sites.

Staffing for the project

Department of Fisheries may have a Project Implementation Cell at the at Deputy Director of Fisheries, Marine South level, headed by a Deputy Director of Fisheries, Marine South. The state and field level Sub-units shall be as under:

Head office at Cutttack:	Deputy Director of Fisheries, Marine South	
	Assistant Director of Fisheries	
	Junior Fisheries Officer	
Gopalpur-Chilka :	ADF (B&T), Office at Balugaon,	
	DSF	2 nos to be posted
	FEO existing at	Ganjam
		Chilka Area
Paradeep-Dhamra:	ADF(M), Kujanga, Office at Kujanga	
	JFO existing at	Paradeep
	DSF	2 nos to be posted
	FEOs existing at	Rajnagar
		Mahakalpara

The existing staff of the area will be engaged for implementation of the project apart from posting some additional staff like ADF-1, JFO-2 and DSF-4 exclusively for the implementation of the project.

B.5. Financial Reporting:

Monthly, quarterly and annual expenditure statement are prepared in the district level in turn compiled at the Directorate level before reporting to

Government as well as to AG, Orissa. The ADF (M) will report to the Project Head in the Project Implementation Cell i.e. Deputy Director of Fisheries , Marine South, who in turn will report to the Director of Fisheries and the PMU. Director of Fisheries will report to the Government.

B.6. Internal Control Mechanism:

Internal control mechanism is by way of financial reviews at various levels such as at the Zones, Directorate as well as Government at periodical intervals.

Under the project the Project Implementation cell at Deputy Director of Fisheries, Marine South level will control all the managerial as well as financial control of the project. Any problem will be looked after by the Project Head in the Project Implementation Cell at Deputy Director of Fisheries, Marine South, for solution and decision. It may be referred to Director of Fisheries for decision if needed.

B.7. Audit Arrangement:

Audit is being conducted by the internal audit of the Directorate, Department as well audit by the AG, Orissa. The internal Audit scrutinises 100% of the expenditure covered under different schemes annually where as the AG auditors make test audit for 10% of the expenditures. The Project audit will be also be conducted by all the above audit parties as per the Government principles.

B.8. Retroactive Financing:

There is no arrangement of Retroactive financing in the department. Only funds that are available at hand are being utilised for the purpose it is meant for, since diversion of funds is prima-facilely not allowed.

B.9. User Cost Sharing Principle:

The SHG will take up the execution work wherein they will provide free labour from their members. They will also be engaged in daily watch and ward of their respective units. They will provide labour in day to day activities in implementation/ culture programme.

C. Procurement arrangement

C.1. Procurement Responsibility:

Procurement of materials/ equipments that are needed are either centrally purchased or purchased at the Assistant Director Fisheries level. But all procurements are subject to ratification by the Departmental Purchase Committee (DPC) constituted at their level according to financial capacity.

The Project Implementation Cell to be formed at Deputy Director of Fisheries, Marine South level will be responsible for the procurement of materials for the project. A committee will be formed headed by the Project Head, will finalise the procurement of materials as well as civil works to be procured at his level. The procurement which comes under the limit of the Assistant Director of Fisheries will be procured by the ADF following the procedures and forming a Committee as required. The procurement at the SHG level will have to be passed in the Committee meant for the procurement.

C.2. Procurement Methods:

Crab fattening/ Sea bass or Composite fish culture(IMC)/ Scampi culture

1 Pond development cost

The pond development will involve removal of soil from the bed and construction of the embankments with inlet and outlet sluices. The SHG will be advanced with the following amount in instalments. They will have to complete the works for advance taken, which will be measured by the Engineering personal engaged for the project from the Directorate or by the field technical officer, after only which the next instalment will be given. The disbursement of instalments should be monitored by the Assistant Director of Fisheries, of the project area. The recommendation from the field Technical Officer is required for release of the next instalment to the SHG. The work will be at par with the amount given except the last one, which will be given after the entire work is completed and measured by a Engineering personnel, engaged for the purpose. The instalments may be as follows:

1 st instalments	30 %
2 nd instalments	30 %
3 rd instalments	30 %
4 th instalments	10 %

2 Operational cost

Under the crab fattening techniques, the main inputs are water crab and feed for crabs. The water crabs are only available in Chilka lake and scanty in other regions. For the sea bass culture and Scampi culture also the main

component is seed and feed. The seed for Sea bass or Composite fish culture(IMC) and Scampi will be procured from the hatcheries on payment. The feed comprises of mainly trash fish for crab fattening and sea bass culture, which are to be procured from the nearby landing centres of the culture area by the SHG. The formulated feed for scampi is available in the market. The seed from the hatcheries may be procured by the ADF, on payment of Government fixed price. The SHG will procure the water crab as well as the feeds (trash fish) for the culture. The operation cost will be given to the SHG in two instalments as required to be assed by the ADF of the project. The SHG will have to operate an account for the same.

Dairy and Gotary unit

1 Construction of shed

the construction of cow and goat shed may require an amount of Rs 2 lakhs. The SHG will take advance and construct a shed as desired by the VAS. The advance will be given to the SHG who will utilise the amount and the Engineer/ field officer will give certificate of utilisation prior to the sanction of next instalments. The work will be at par with the amount given except the last one, which will be given after the entire work is completed and measured by a Engineering personnel, engaged for the purpose. The advance may be given as follows:

1 st instalments	30 %
2 nd instalments	30 %
3 rd instalments	30 %
4 th instalments	10 %

2 Procurement of cow and goat

For the procurement of cows and goats for the project a committee will be formed by the ADF concern of the site with at least the following members:

- ADF of the project area
- Veterinary Asst. Surgeon of the Area
- JFO and DSF of the project area
- Two members of SHG
- ADF/ JFO from the Project Implementation Cell

The committee will procure cows and goats from the market. The price will be fixed basing on milk yield of the cows and the prevailing price. The committee will decide from where the animals will be procured.

Value addition of fishery products/Hygienic fish drying yard

1 Infrastructure development for dry fish production

This component involves purchase of solar drier, Construction of concrete platform, godown, installation and operational cost. The Solar dryers are installed out side the building. The construction of godown and drying platform are simple. There is a provision of one lakh for the purchase of raw material and construction of drying platform and Rs 50,000 for godown. Both the work can be taken up by the SHG themselves by taking advances. The procurement of solar drier will have to be tendered and purchased by the department either by the Nodal Officer or the ADF concern. The installation charged of the solar dryer will be done by the solar Drier supplier. He will also make a trial run of the instrument supplied, along with training to the SHG for the operation of the instrument.

The SHG will have also an option to go for diversification. Even the SHG may decide to make dry fish production by making hygienic fish drying platform and not having the solar drier. In that case they may have bigger platforms, hanging racks and godowns. The ADF concern will take a final decision with obtaining the approval of DDF, MS, to go for the same. The estimate as required will be prepared and approved by the committee at the ADF level for the project. The other value addition options like pickeling fish, filleting, vacuum packing, or any other value addition operations may also be included. Since the value addition options are many, the estimates are to be made at the time of implementation which will be SHG specific and area specific, the same can not be done as at present.

2 Operational cost

The operational cost of Rs 50,000 meant for the dry fish production can be advanced to the SHG, on completion of the installation of the solar dryer to operate and produce dry fish. The operational cost is for purchase of raw materials and other inputs for the value addition of fish taken up by them. The amount can be rotated as a working capital by the SHG.

C.3. Procurement Thresholds:

Procurements are made as decided by the tender committee/ DPC and in line with the budgetary provision. When central procurements are made, usually FOR destination principle is being followed else at the procurers thresholds.

The major problem in procurement is the procurement of water crab, seed for Sea bass culture and scampi culture. The SHG will procure the water crab from the local catches on payment by SHG out of advance to them as per the approved price by the Committee. The seed procured from the hatcheries for sea bass and scampi culture by the SHG will be paid by the ADF concerned as per the Government rates. The availability of these materials are one of the constraint.

The feed are also comprises of the trash fish landing in the coastal landing centers, which are to be procured on daily basis by the SHG as per the approved price of the Committee.

C.4. Overall Procurement Plan:

The procurement plan is made annually so that tenders can be conducted for procurement centrally for fixing the price of the solar dryer as well as the cow and goats.. But as per circumstantial need, procurements can also made with permission of the Director of Fisheries.

The plan of procurement is as follows:

1st year	20 %
2nd year	30 %
3rd year	30 %
4th year	20 %

The plan of procurement is fixed as per the plan of implementation of the programme.

The Renovation/ excavation of pond, construction of godown, platform, operational cost of the culture are to be provided to the SHG and they will procure locally as per the need of the project. The ADF will retain part of the input cost to be procured by him. All price for the seed, feed and other similar items will be approved by the Committee formed at their level basing on the local price for the materials to be procured locally and by tenders/ quotation for goods to be procured from the suppliers.

The Solar drier will be procured by the Project unit head and provide to the SHG.

C.5. Procurement Manual:

Departmental procurements are made in accordance with the existing provisions under OGFR and DFP Rules. The specification and bid documents for

procurement of solar drier, godown and cow-shad goats are given in the **Annexure-V**

C.6. Annual Procurement Plan:

As described at col. - C.4.

C.7. Procurement of Works:

The construction of godown, renovation of ponds and construction of coe-shed will be done by the SHG himself and the work will be measured and check measured by the Engineers of the Fisheries Department. For construction and renovation the SHG will be advanced as per the norms and Agreements. The details of the construction of godown platform and shed is given in the **Annexure-VI**

C.8. Procurement at Community Level:

The execution of pond development by excavation or renovation will be taken up by the SHG, so that the SHG can provide some additional labour and execute the work properly.

The procurement of water crab, seed for Sea bass or Composite fish culture(IMC) and scampi culture as well as for the feed (trash fish) are to be done by the SHG. The formulated feed for the scampi culture may be procured by the ADF(M) concerned and supplied or SHGs may procure with due approval of the ADFs concerned .

C.9. Key Procurement Guidelines:

Departmental procurements are made in accordance with the existing provisions under OGFR and DFP Rules. The procurement plan for the project is also made for procurement under the project.

EXECUTIVE SUMMERY ON EIA AND EMP

1. OBJECTIVE OF THE PROJECT:

Conservation measures such as ban imposed on fishing in the turtle congregation areas such as Gopalpur-Chilka (Periphery of Chilka Lake) and Paradeep-Dhamra (Gahirmatha sanctuary) has considerably affected the livelihood of the poor marine fishermen and they have no other alternative activities for their subsistence.

The Project aims at providing best alternative livelihood support to those fishermen by promoting allied farming activities such as Crab fattening, Sea bass or Composite fish culture(IMC), Scampi culture, Diary, Goatary, Value addition of fish/Hygienic fish drying yard etc. so as to make them less dependant on fishing and thereby reducing pressure on coastal bio-diversity.

2. BASELINE DATA:

The proposed project will be undertaken in two stretches along the Orissa coast namely periphery of Gahirmatha Sanctuary, Bhitar Kanika National Park and periphery of Chilka Lake. paddy being the principal crop is practiced all through the extended region of the coastal plane. Olive Ridley turtles are observed in large numbers and fishing has been prohibited in specified turtle congregation areas namely, Devi River mouth, Rushikulya River Mouth and Dhamra River mouth. A good numbers of commercially important fishes and shell fishes are found in the marine, brackish and freshwater habitat of the region.

3. SOCIO ECONOMIC SETTING:

In Chilka periphery there are about 12,500 fisher families with a total population of around 134500 whose per capita income hovers around INR 1200 during yester years. In successive years this trend of family income is in a decline mode due to overexploitation, increase in the fleet size etc. This has resulted in regular conflicts between fishermen and non-fishermen community, migration to neighbouring states. Prohibition of fishing within a sea radius of 20 Kms. from Gaharmatha area of Bhitarkanika Wild Life Sanctuary has adversely affected the mobility of fishing vessels both mechanised and traditional. Thereby the livelihood for the poor marine fishermen of the area is at stake since they have no alternative key activity for their subsistence. There are about 90 fisher villages in the periphery of the sanctuary comprising of about 7400 fishermen households

with the total population of 38800. The socio–economic parameters viz. demography, population growth, density, sex ratio, health, work force participation, occupational structure, literacy etc, which play an important role in determining the impacts of a proposed activity on the socio-economic status of the study area have been assessed properly by conducting survey and public consultation.

4. ACTS AND RULES :

The Orissa Marine Fishing Regulation Rules, 1983*:* To conserve the fish stock and biodiversity, several conservative measures are being taken under the OMFRA. as Authorized Officers for strict implementation of the Act.

The Environment (Protection) Act, 1986*:* This act is an umbrella legislation that focuses on the protection of the environment which includes water, air and land the interrelationship among them.

Water (Prevention & control of pollution) Act 1974 & 1981

Air (Prevention & control of pollution) Act 1974 & 1981:These Acts have been enacted to implement measures devised for effective prevention and control of water and air pollution.

The Coastal Regulation Zone (CRZ) Notification, 1991 (amended, 2002): The act has been issued under Environment (Protection) Act 1986 for Environment Management of Coastal stretches. Proposed project areas lies in the category of CRZ-III or beyond. All required formalities will be under taken during the operation of proposed projects

The Coastal Aquaculture Act, 2005**:** The registration of brackish water farms in coastal areas of the State is mandatory under the Coastal Aquaculture act, 2005. As no major structure is coming up in implementing the programme , so no CRZ clearance is necessary.

5. PROJECT ACTIVITIES:

There is no major adverse impact on environment pertaining to farming activities such as Crab fattening, Sea bass culture, Scampi culture, Diary, Goatary, Value addition of fish/Hygienic fish drying yard etc.

6. EMP (Environmental Management Plan):

The proposed culture activity will be of modified extensive type and environmental degradation due to drainage of water will be minimal. As regards to the activities like value addition ,goatary and dairy which requires only small civil works and will have minor, localizes impacts and these can be readily managed. Necessary environment management programmes have been included in the project to mitigate/ minimise the adverse impacts of operation phase. Low level of negative impact which can be reversible due to appropriate mitigation measure has been proposed in the EMP.

7. PUBLIC CONSULTATION :

The local inhabitants from the identified 10 villages have been consulted for their opinion on the activities to be under taken under ICZMP. People from all sectors of society were present in this consultation programme. They were briefed about the concept of ICZMP and the possible impact(Positive/Negative) of the programme.

8. MONITORING :

Monitoring is necessary for both during construction phase as well as operation phase. It will be a continuous program to analyze and ensure the effectiveness of the mitigation measures for potentiality adverse environmental impacts arising from construction & operation of the project.

Monthly Monitoring Mechanism:

While implementing EMP, the Field staffs associated with the Project will monitor the essential parameters on fortnightly basis and give report on monthly basis to the Department and the Project Monitoring units (PMU).

Quarterly Monitoring Mechanism :

Based on the monthly report, Department staffs from Directorate/ PMU Environment experts will conduct joint monitoring on quarterly interval basis and will guide the field staffs for taking suitable mitigation measures on EMP from time to time.

Annual monitoring Mechanism:

Department exports / PMU Environment experts and if required External Experts will conduct annual monitoring on the implementation of the EMP.

Post Project Monitoring :

Post project monitoring will be carried out by Department exports / PMU experts/ External exports on the implementation of the EMP by the users group.

D. Environmental and Social Safeguards:

1.0 INTRODUCTION

1.1 Project description

The ban imposed on fishing in the turtle congregation area i.e. within a sea radius of 20 Kms. from Gahirmatha area of Bhitarkanika Wild Life Sanctuary and the periphery of Chilika Lake has considerably restricted the mobility of fishing vessels. Thus, the livelihood for the poor marine fishermen of the area is at stake since they have no alternative key activity for their subsistence. These fisher are mostly landless or having paltry quantum of land that is not sufficient for their subsistence through out the year. Moreover due to high rate of illiteracy and non-acceptance to any change process these fishermen/women are forced to leave their native to distant places in neighbouring states as labourers. The Project aims at providing best alternative livelihood support to 60 nos. of fishermen villages on a pilot basis situated in the periphery of Chilika Lake and Gahirmatha Wild life Sanctuary by promoting allied farming activities such as Crab fattening, Sea bass or Composite fish culture(IMC), Scampi culture, Diary, Goatary, Value addition of fish/Hygienic fish drying yard etc. so as to make them less dependant on fishing and thereby reducing fishing pressure.. The following environment management related activities are envisaged while implementing ICZMP:

- To have effective sea turtle conservation measures
- To protect spawning ground of economically valuable and endangered fish fauna

- To enrich Bio-diversity

To upgrade R&D for effective resource management.

1.2 Baseline data

The environmental management at the proposed sites is coming under the direct supervision of the Department of Fisheries, Govt. of Orissa .No environmental degradation, Saline ingress has been reported in the proposed site. There is no adverse impact on environment impact pertaining to farming activities such as Crab fattening, Sea bass or Composite fish culture(IMC), Scampi culture, Diary, Goatary, Value addition of fish/Hygienic fish drying yard etc. Restrictions on fishing have been imposed in specific turtle nesting sites as well as sanctuaries.

1.2.1 Physical settings

The proposed project will be operative in two areas namely Periphery of Gahirmatha Sanctuary, Bhitar Kanika National Park and periphery of Chilka Lake. Preferably 30 villages each from these two selected pockets have been identified where these alternative livelihood components will be under taken in SHG mode. The location map for the two stretches is enclosed in **Annexure – VII a & b**

Gopalpur-Chilika (Periphery of Chilka Lake):

The proposed area is situated in the fringe of the brackish water lagoon – the Chilika Lake. There are about 12000 fisher households in the proposed area. The fisher mostly depend on fishing the lake, thereby there is increased fishing fleets every year which leads to use of undesirable fishing gears/ crafts to improve their catch per unit effort resulting stock depletion, environmental hazards and regular conflicts. Thereby socio-economic condition of the fisher of the area is declining day by day forcing them either to migrate as daily labourers or indulging in destructing fishing.

Paradeep-Dhamara (Gahirmatha sanctuary):

With an aim to protect ecological, faunal and floral significance of the area, in exercise of the powers conferred under Wild Life Protection Act, Government of Orissa have declared Gahirmatha area as wild life sanctuary prohibiting all type of fishing. The entire area have an average width of 11 Kms. from Barunei muhana to Mahandi muhana where total restriction has been imposed through out the year. The peripheral fishermen population are deprived of fishing in that area thereby livelihood have been seriously affected. There are

about 90 fisher villages in the periphery of the sanctuary comprising of about 7400 fishermen households with the total population of 38800.

1.2.2 Biological settings

The proposed project in both the areas is located in the saline coastal area. paddy being the principal crop is practiced all through the extended region of the coastal plane. The fishers in these areas are mostly landless or having paltry quantum of land that is not sufficient for their subsistence through out the year. Presently a good number of brackish water ponds which were developed earlier are lying idle due to serious outbreak of viral diseases in shrimps. The following commercial fishes and shell fishes are found in the marine, brackish and freshwater habitat of the region :

Bhekti	*Lates calcarifer*
Boraga	*Daysciaena albida*
Ilishi	*Tenualosa ilisha*
Khainga	*Mugil cephalus*
Kundala	*Etroplus suratensis*
Sahala	*Eleutheronema tetradactylum*
Bagada	*Penaeus monodon*
Kantala	*Fenneropenaeus indicus*
Mud crab (red)	*Scylla serrata*
Mud crab (green)	*Scylla tranquebarica*
Kantala	*Peneaus indicus*
Lesser mullets	*Mugil tada, Liza parcia*
Seba khainga	*Chanus chanus*
Scampi	*Macrobrachium rosenbergii, Macrobrachium malcomsonii*
Indian Major Carps	*Catla catla, Labeo rohita, Cirrhinus mrigala*
Indian minor carps	*Labeo calbasu, Labeo bata*
Exotic carps	*Ctenopharyngodon idellus, Cyprinus carpio Hypophthalmicthys molitrix*
Sea weed	*Gracillaria edulis*

Sea crab

Molluscs

Bivalves

Gastropods

Elasmobranches

Pomfrets

Snappers

Scianids Ribbon fishes

Cat fishes

Sardine, Shad, Anchovies

Flat fishes

Brown shrimps, Flower prawn

Sand lobster

Olive Ridley turtles are observed in large numbers and fishing has been prohibited in specified turtle congregation areas namely, Devi River mouth, Rushikulya River Mouth and Dhamra River mouth .

1.2.3 Socioeconomic Settings

The socio–economic parameters viz. demography, population growth, density, sex ratio, health, work force participation, occupational structure, literacy etc, which play an important role in determining the impacts of a proposed activity on the socio-economic status of the study area have been assessed properly by conducting survey and public consultation. .

in Chilika periphery there are about 12,500 fisher families with a total population of around 134500 whose per capita income hovers around INR 1200 during yester years. Taking into account of the economic output and the number of fisher family in Chilika lagoon, income per fisher family was merely INR 52,000 during 2003-04. In successive years this trend of family income is in a decline mode due to overexploitation, increase in the fleet size etc. This has resulted in regular conflicts between fishermen and non-fishermen community, migration to neighbouring states.

Prohibition of fishing within a sea radius of 20 Kms. from Gaharmatha area of Bhitarkanika Wild Life Sanctuary has adversely affected the mobility of fishing vessels both mechanised and traditional. Thereby the livelihood for the poor marine fishermen of the area is at stake since they have no alternative key activity for their subsistence. These fisher are mostly landless or having paltry quantum of land that is not sufficient for their subsistence through out the year. Moreover due to high rate of illiteracy and non-acceptance to any change process these fishermen/women are forced

to leave their native to distant places in neighbouring states as labourers There are about 90 fisher villages in the periphery of the sanctuary comprising of about 7400 fishermen households with the total population of 38800.Socio economic status of ten sample villages of both area and details of public consultation are given in **Annexure-VIII(a to j)**.+

1.3 Policy, legal, and administrative framework

The purpose of Environmental Assessment (EA) is to assist in the decision making process and to ensure that the project is environmentally sound and sustainable and necessary management plans are included wherever necessary to minimize/ mitigate the environmentally adverse impacts. It is the responsibility of the project implementing agency i.e. the Fisheries Department, Orissa to ensure that the project activities are in consistent with the existing regulatory/ legal framework, whether national, state, municipal or local.

As the villages lies in the Bhadrak, Kendrapara, Puri, Khurda and Ganjam districts of Orissa, all administrative as well as revenue laws of the state are applicable while developing tanks for aquaculture purposes. Hence the problem of resettlement/ rehabilitation does not arises

The environmental regulations which have significance on the implementation of the Project are highlighted below.

The Orissa Marine Fishing Regulation Act and Rules, 1983

After promulgation of Orissa Marine Fisheries Regulation Act and Rules in the State, it was made mandatory for all the fishing boats plying in territorial waters of the State to register and license. No mechanized fishing vessels are allowed to fish within 5 km from the coast to protect the interest of traditional fishermen. No outside (neighbouring States) fishing vessels, not registered under OMFRA are allowed to fish in the territorial waters of Orissa. To conserve the fish stock and biodiversity, uniform ban on fishing from 15th April up to 31st May every year is meticulously followed in the State. Orissa coast, being famous for the nesting sites of rare Olive Ridley Sea turtle, several conservative measures are being taken under the OMFRA. Fishing has been prohibited in specified turtle congregation areas namely, Devi River mouth, Rushikulya River Mouth and Dhamara River mouth by all the mechanized vessels within 20 km radius form the coast. Use of Turtle Excluder Devises (TED) has been made mandatory in all the operating trawlers. Several

officers from Fisheries Department and other Line Departments such as Forest department and Coast Guard have been declared as Authorized Officers for strict implementation of the Act. Awareness programmes are conducted in all the Coastal districts involving local fishers to make them sensitized about conservation and sustainable fishing.

The Environment (Protection) Act, 1986

This act is an umbrella legislation that focuses on the protection of the environment which includes water, air and land the interrelationship among them.

The act provides power to the authority declared under the Act to take necessary measures for the purpose of protecting and improving the quality of environment life. It lays down standards for the quality of the environment, emissions or discharges of environmental pollutants from different sources. Environmental Impact Assessment Notification, 2006 forms a part of the regulation under this legislation.

However during project operation, the appropriate measures will be taken care.

Water (Prevention & control of pollution) Act 1974 & 1981 and Air (Prevention & control of pollution) Act 1974 & 1981

These Acts have been enacted to implement measures devised for effective prevention and control of water and air pollution. However, during the construction of the ponds and setting up of Solar dryers, all possible mitigation steps will be taken to prevent water as well as air pollution.

The Coastal Regulation Zone(CRZ) Notification, 1991 (amended, 2002)

The act has been issued under Environment (Protection) Act 1986 for Environment Management of Coastal stretches. Proposed project areas lies in the category of CRZ-III or beyond. All required formalities will be under taken during the operation of proposed projects .

The development or construction activities in different categories of CRZ area shall be regulated by the concerned authorities at the State/ Union Territory level, in accordance with norms stipulated in the CRZ regulation and in the state/ UT coastal zone management plan.

The Coastal Aquaculture Act, 2005

The registration of brackish water farms in coastal areas of the State is mandatory under the Coastal Aquaculture act, 2005. All the brackish water farm are to be registered under Coastal Aquaculture Authority,Chenai. The shrimp far which are not registered will be registered.

2.0 ENVIRONMENTAL AND SOCIAL IMPACTS

Checklist for Environmental & Social Assessment of the project is given in Table-1.

Table-1 Environmental and Social Assessment Checklist

Features likely to be affected	Positive impact		Negative Impact		No Impact	Mitigation measures required or not
	Yes	Likely	Yes	Likely		
Forestry/ Vegetation					✔	
Birds					✔	
Fisheries	✔					
Other wildlife/animals	✔					
Air quality				✔		✔
Noise environment					✔	
Water quality				✔		✔
Water availability				✔		✔
Soil quality					✔	
Land use and topography		✔				
Drainage patterns				✔		✔
Sedimentation/ erosion				✔		✔
Agriculture					✔	
Food production	✔					
Climate					✔	
Groundwater table		✔				
Industrialization					✔	
Housing (involuntary resettlement)					✔	
Employment/ training	✔					
Income and livelihood	✔					
Other socio-economic activities		✔				
Health and safety		✔				
Communications		✔				
Historical/ cultural monuments					✔	
Scenic views and vistas					✔	
Tourism					✔	

Impact identification matrix for the construction phase as well as the operation phase of the proposed project is given in Table-2.

Table-2 Impact Identification Matrix

	Air	Noise	Surface Water	Ground water	Climate	Land & soil	Ecology	Health	Socio Economic
Land Acquisition	No land is going to be acquired. Only abandoned shrimp culture ponds and Gram-Panchayat tanks are to be arranged on long term lease basis for the aquaculture activities. Hence no impact.								
Construction Phase : I. Construction of Shed for cow ,go down/ Dressing units & Drying platforms II. Excavation /renovation for pond development									
Transportation of construction materials	✔	✔				✔		✔	✔
Construction		✔	✔			✔		✔	✔
Operational Phase									
Generation of Liquid waste in shape of urine from animals,water used for washing fish,discharge of water from culture ponds while harvesting	✔		✔	✔		✔		✔	
Generation of Solid waste like faecal matter from animals, packing materials like poly bags etc	✔					✔		✔	

Impact prediction matrix for various activities involved in the construction phase and operation phase and the impact characteristics are given in Table-3.

Table-3 Impact Prediction Matrix

Activity	Environmental Attributes	Cause	Impact Characteristics			
			Nature	Duration	Reversibility	Significance

Construction Phase						
Transportation of construction materials	Air	Transportation of construction materials in trucks & Exhaust emission from vehicles	Direct Negative	Short term	Reversible	Low
	Noise	Noise generation from vehicles	Direct Negative	Short term	Reversible	Low
	Land & soil	Dumping of materials	Direct Negative	Short term	Reversible	Low
	Health	Inhalation	Direct Negative	Short term	Reversible	Low
	Socioeconomic	Employment	Direct **Positive**	Short term	Irreversible	medium
	Risk	Risk of accidents during transit	Direct Negative	Short term	Irreversible	Low, if safety measures are taken to prevent accidents
Construction activity	Noise	Noise generation from vehicles	Direct Negative	Short term	Reversible	Low
	Land & soil	Dumping of excavated earth	Direct Negative	Short term	Irreversible	Low
	Health	Inhalation	Direct Negative	Short term	Reversible	Low
	Socio-economic	Employment	Direct **Positive**	Short term	Irreversible	Medium

Activity	**Environmental Attributes**	**Cause**	**Impact Characteristics**			
			Nature	**Duration**	**Reversibility**	**Significance**
	Risk	Risk of accidents during transit	Direct Negative	Long term	Irreversible	Low, if safety measures are taken to prevent accidents
Operational Phase						

Farming activities such as Crab fattening, Sea bass or Composite fish culture(IMC), Scampi culture	Water Quality	Drainage of water from pond during the time of harvest	Direct Negative	Short term	Reversible	Low as the quantity of water used for the purpose is less
	Soil Quality	Dumping of silt/earth while renovation	Direct Negative	Short term	Reversible	Low due extensive type of farming.
	Socioeconomic	Employment generation	Direct **Positive**	Long term	Irreversible	High, new opportunities for income generation
	Overall impact on health and safety	Impose of stringent standards	Direct **Positive**	Long term	Irreversible	High due to availability of chief protein
Value addition of fish/Hygienic fish drying yard	Water Quality	Water use for washing plat form and fish	Direct Negative	Short term	Reversible	Low, as extensive type of farming practices will be followed.
	Soil Quality	Dumping of discarded waste product like scale, gill, intestine, shrimp heads etc	Direct Negative	Short term	Reversible	Low due proper disposal system
	Socioeconomic	Employment generation	Direct **Positive**	Long term	Irreversible	High, new opportunities for income generation
	Overall impact on health and safety	Impose of stringent standards	Direct **Positive**	Long term	Irreversible	High due to availability of hygienic dry fish
Diary and Goatary	Water Quality	Liquid waste in shape of urine from animals and water used for washing animals	Direct Negative	Short term	Reversible	Low, due to proper disposal system.
	Soil Quality	Dumping of Solid waste like animal	Direct Negative	Short term	Reversible	Low due utilisation as manure

		faeces				
	Socioeconomic	Employment generation	Direct **Positive**	Long term	Irreversible	High, new opportunities for income generation
	Overall impact on health and safety	Impose of stringent standards	Direct **Positive**	Long term	Irreversible	High due to availability of chief protein in shape of milk and goat meat

Institutional Framework

The concerned Assistant Director of Fisheries in the respective districts will have overall responsibility for implementation of the Project in coordination with the Self Help Groups and village level committee. The concerned Assistant Director of Fisheries will be assisted by adequate and qualified technical and managerial staffs and will be provided with necessary equipment/ instruments and other infrastructural facilities and vehicles. The concerned Assistant Director of Fisheries will be responsible for preparing consolidated environmental monitoring reports as part of the regular Project monitoring and will undertake Evaluation, during which suitable external Expert may be included in the process.

2.1 Positive impacts due to the project activities –

Summarized in Table-2s & 3

2.2 Negative impacts due to the project activities –

Summarized in Table-2 & 3

2.3 Mitigation measures:

Discussed in Section 5.1 in Table - 4

3.0 PUBLIC CONSULTATION

At the field level, awareness campaign are organised to update the knowledge of the stake holders. As the activities will be involved only in abandoned shrimp culture ponds and Grama Panchayat tanks on long term lease basis there will be no loss of public land and therefore no rehabilitation programme is necessary.

There is no adverse impact on environment impact pertaining to fisheries sector. Restrictions on fishing have been imposed in specific turtle nesting sites as well as sanctuaries. Trawling has been banned within 20 Km. radius from the shore in the specified banned areas of the State.

As regards to the activities like value addition ,goatary and dairy which requires only small civil works and will have minor, localizes impacts and these can be readily managed. Necessary environment management programmes have been included in the project to mitigate/ minimise the adverse impacts of operation phase.

The local inhabitants from the identified 10 villages have been consulted for their opinion on the activities to be under taken. People from all sectors of society were present in this consultation programme. They were briefed about the positive and adverse impact of the programme. Details of Villagewise public consultation are given in **Annexure-IX (a to j)**.

4.0 ANALYSIS OF ALTERNATIVES

To safeguard the coastal environment in harmony with the development plans, it is necessary to monitor the environmental components regularly and analyse the impact of such alternate livelihood activities with the available resources at the site. To fulfil this objective there is no other alternative except the establishment of allied farming activities such as Crab fattening, Sea bass culture, Scampi culture, Diary, Goatary, Value addition of fish and streamline the monitoring plan and procedures for analysis.

5.0 ENVIRONMENTAL MANAGEMENT PLAN

5.1 Mitigation

The primary objective of this proposed environmental management plan and monitoring programme is to control environmental impacts to levels within acceptable standards, and to minimise possible impact on the community and the workforce of foreseeable risks during the construction and subsequent operation phases of the activities. Such environmental mitigation measures shall be used in conjunction with good management practices, good engineering construction and operation practices.

Table -4 Mitigation Measures during Construction

Activity	Impacts	Mitigative measures to be taken
Initiation of activity	Legal non-compliance	All clearance/ approvals required for Environmental aspects during construction phases shall be ensured and made available before initiation of the work.
Construction Phase		
Site	Tree felling	• Any tree felling should be minimised.

development		Compensatory plantation through landscaping
Construction	• Soil erosion from dykes	• Grass patching on the exposed area of the dykes to prevent soil erosion Temporary and permanent drainage systems will be designed to minimize soil erosion.
	• Air pollution due to transportation	• Locally available materials should be used as much as possible so as to avoid long distance transportation, especially that of sand and brick for construction of shed, platform, and go down. • Vehicles delivering loose and fine materials like sand shall be covered to reduce spills on roads. • Stockpiles of aggregate or spoil shall be covered and water applied. • All vehicles, equipment and machinery used for construction shall be regularly maintained to ensure that the pollution emission levels conform to the CPCB norms. The random ambient air quality monitoring shall be done to ensure that the significant impacts are being mitigated adequately.
	• Noise pollution	• Noise emission level from vehicles and tractors engage foe excavation/renovation work shall strictly conform to the MoEF/ CPCB noise standards. Ambient noise level monitoring shall be conducted at suitable locations at periodic intervals during construction phase to conform to the stipulated standards both during day and night time.
	• Water logging and creation of mosquito	• Careful attention to be given on design and maintenance of earthworks and drainage systems during construction to avoid creation of significant habitat areas

	breeding site	for mosquito larvae. • Spray larvicide in silt traps to prevent the mosquito breeding.
	• Surface Water	• Use water resources without conflict.
	• Land pollution	• Construction debris will be collected and suitably used on site as per construction waste management plan.
Labour camps	• Soil contamination • Surface water contamination due to washing, bathing and waste disposal Unhygienic work environment	• Labour camps will be constructed within the project area • The concerned Assistant Director of Fisheries shall also guarantee for the following. ➢ Availability of uncontaminated water for drinking, cooking and daily uses. ➢ Supply of potable water at easily accessible places. ➢ Latrines and urinals shall be maintained in a clean sanitary condition at all times with adequate water supply. ➢ Trees will not be cut for firewood or tent.
Working Condition	• Impact on workers health • Impact on Public safety	• The concerned Assistant Director of Fisheries shall comply with all the precautions as required for ensuring the safety of the workmen as per the International labour Organisation (ILO) Convention No. 62 ➢ A readily available first aid kit including adequate supply of sterilized dressing materials and appliances. Suitable transport to take injured or sick person to the nearest hospital will be immediately provided. • No material will be so stacked or placed as to cause danger or inconvenience to any person or the public. All necessary fencing and lights will be provided to protect the

		public. • Work spots will be maintained clean, and provided with optimum lighting. • The concerned Assistant Director of Fisheries shall not engage any person below the age of 14 years for any work
Operation Phase **Crab fattening, Sea bass or Composite fish culture(IMC), Scampi culture activity**		
Maintenance	• Poor drainage or flooding	• Regular inspection and periodic maintenance for cleaning of drains to remove any debris or plant growth that may interrupt the flow.
	• Soil erosion and contaminati on	• All the dykes will be grass patched to avoid soil erosion. Coconut, Banana, Papaya and other fruit bearing trees trees, similar to that of cut trees shall be planted. No fertiliser /pesticide/chemical will be applied by following BMP(Best management practices)
	Salinization and seepage to the adjacent areas .	Maintaining the level of the drainage system below the ground level of the ponds to avoid seepage and salinisation.
	• Waste water from ponds	Modified extensive type of farming practices do not require frequent water exchange from ponds due to less feed application. Any how Effluent treatment system (ETS) with 10% of 5 ha and above water spread area of the farms in a cluster shall be made mandatory
Operation Phase **Value addition of fish/Hygienic fish drying yard**		
Maintenance	• Solid Waste management	• All the unit will be provided with dustbins and solid waste will be disposed by making composting in careful manner.

	• Waste water from the packing yards	Requirement of water for the said activity is minimal and suitable liquid waste management practices will be adopted for treatment of the discharged water before disposal.
Operation Phase **Goatary and dairy**		
Maintenance	• Management of Solid waste like faecal matter from animals	• By proper composting and making manure in pits with cover.
	Liquid waste in shape of urine from animals and water used for washing animals	• Will be utilised for making manure in the composting pits which will be covered.

5.2 Monitoring

Monitoring is necessary for both during construction phase as well as operation phase. It will be a continuous program to analyze and ensure the effectiveness of the mitigation measures for potentiality adverse environmental impacts arising from construction & operation of the project. It will also help to suggest any additional mitigation measures to avoid and significant detoriation of environmental It is proposed to monitor essential parameters for ambient air quality, ambient noise quality, ground water quality, and waste water quality both during the construction and operation phases of the project.

Interval of Monitoring

Monthly Monitoring Mechanism:

While implementing EMP, the Field staffs associated with the Project will monitor the essential parametes on fortnightly basis and give report on monthly basis to the Department and the Project Monitoring units (PMU).

Quarterly Monitoring Mechanism :

Based on the monthly report, Department staffs from Directorate /PMU Environment exports will conduct joint monitoring on quarterly interval basis and will guide the field staffs for taking suitable mitigation measures on EMP from time to time.

Annual monitoring Mechanism:

Department exports / PMU Environment exports and if required External Experts will conduct annual monitoring on the implementation of the EMP.

Post Project Monitoring :

Post project monitoring will be carried out by Department exports / PMU exports/External exports on the implementation of the EMP by the users group.

5.3 Capacity Development and Training

The concerned Assistant Director of Fisheries will be responsible for the implementation of environmental Monitoring Plan. The monthly monitoring report will be submitted to the Department and Project Monitoring Unit for preparation of the Consolidated Monitoring report.

Further, the laboratory facility at Fishery Training Institute (FTI) at Balugaon will also be utilised for sampling and analysis of environmental parameters. However manpower training in the field of environment management, environmental audit, waste management etc. are required as per the capacity building programme.

Section-IV
Program and Implementation Schedule

A. Overall Programme phasing and B. First year Implementation Plan:

The project will be operative for a period of four years. The over all phasing of the project period will be as follows:

Year	Proposed activity	
1st Year	1) Formation of 120 Self Help Group in both the sites (60 each) 2) 20 % of each component will be covered in the first year of operation in each site i.e. 20 SHG for Crab fattening/ Sea bass or Composite fish culture(IMC)/ scampi culture, 20 SHG for dairy and Gotary and 20 SHG for the value addition for fishery programme in each site. Infrastructure will be done accordingly 3) Laboratory equipment and strengthening to be done in first year 4) Training to 120 SHG to be given in first year and 20 % funds will be 5) Involvement of NGO 6) EIA & EMP 7) Project implementation cost	
2nd Year	1) Formation of 180 Self Help Group in both the sites (90 each) 2) 30 % of each component will be covered in the second year of operation in each site i.e. 30 SHG for Crab fattening/ Sea bass or Composite fish culture(IMC)/ scampi culture, 30	

Year	Proposed activity	
	SHG for dairy and Gotary and 30 SHG for the value addition for fishery products programme in each site. Infrastructure will be done accordingly 3) Training to 180 SHG to be given in second year and 30 % funds will be 4) Involvement of NGO 5) EIA & EMP 6) Project implementation cost	
3rd Year	1) Formation of 180 Self Help Group in both the sites (90 each) 2) 30 % of each component will be covered in the third year of operation in each site i.e. 30 SHG for Crab fattening/ Sea bass or Composite fish culture(IMC)/ scampi culture, 30 SHG for dairy and Gotary and 30 SHG for the value addition for fishery products programme in each site. Infrastructure will be done accordingly 3) Training to 180 SHG to be given in third year and 30 % funds will be 4) Involvement of NGO 5) EIA & EMP 6) Project implementation cost	

Year	Proposed activity	
4th year	1) Formation of 120 Self Help Group in both the sites (60 each) 2) 20 % of each component will be covered in the fourth year of operation in each site i.e. 20 SHG for Crab fattening/ Sea bass or Composite fish culture(IMC)/ scampi culture, 20 SHG for dairy and Gotary and 20 SHG for the value addition for fishery products programme in each site. Infrastructure will be done accordingly 3) Training to 120 SHG to be given in fourth year and 20 % funds will be 4) Involvement of NGO 5) EIA & EMP 6) Project implementation cost	
5th year	1) Project implementation cost	
Total	**600 SHG**	

SECTION-V

Monitoring and Evaluation

Monitoring, including systematic reporting, will be done regardless of duration and budget.

A. Objective

Through our monitoring & evaluation we seek to influence project success collect, practical lessons to guide future projects ensure sharing of experience and best practices.

B. Components of Monitoring:

We apply the following criteria when determining the level of monitoring required for a project:

The following tools will be applied in the ongoing monitoring & evaluation of our projects:

- monitoring visits at project site
- meetings with project partners and stakeholders
- narrative reporting
- financial reporting

Monitoring visits:

Monitoring visits at field level will be carried out by our Department 1-2 times per year. The frequency depends on the project complexity, duration, financial size and our experience with implementation by the partner.

The purpose of the visits at field level is to obtain a first hand impression of project achievements in relation to the project plan and to discuss progress and obstacles with the partner, focus on learning best practices, sharing experience and finding solutions in collaboration. A report will be prepared by the Department following each monitoring visit.

Meetings with partners:

As a supplement to visits at field level, regular meetings will be held with project partners to discuss progress in implementation and obstacles encountered.

Narrative reporting:

Depending on the project duration, the officer will be required to submit the following reporting:

Semi-annual progress report(s): A 3-5 pages narrative document focusing on implementation of activities, major achievements, and problems faced and solutions found.

Project completion report:

A report providing an analysis of achievement of project objectives, design, impact and sustainability will be prepared which will enable identification of positive and negative lessons learned For evaluation purposes the following reports will be used on a case by case basis depending on project duration and complexity:

Mid-term evaluation:

A report analyzing and describing project achievements will be presented against the plans outlined in the project document. It will visualize initial lessons learned and the needs for possible adjustments of the project. The evaluation may be prepared by the partner or by parties external to the project

Post evaluations:

Post evaluations will be conducted by parties external to the project.

Financial reporting

The grant is gradually released to a project based on accomplishment of a set of milestones listed. Regular interval financial reporting will lead us to assess the direction of the project and modifications can be initiated if necessary.

Annex VI

FEASIBILITY REPORT:

A. Physical (Hydrological) features

Orissa as a Maritime State having 480 kms. Of coast line of Bay of Bengal in the east coast forming 8 % of the coast line of India. It has 6 coastal districts viz. Ganjam, Puri, Jagatsinghpur, Kendrapara, Bhadrak and Balasore. The continental shelf up to 200m depth, covers an area of 24,000 sq. km, which is 4.5% of the total area of the country's continental shelf. Northern part of Orissa has a wider continental shelf stretching up to 120 kms. Which gradually narrows down to Southern part extending up to 40 kms. Details of continental shelf area in different depth zones and District-wise coastal lengths are as follows:

District-wise Coastal Length (in kms.):

District	Coastal Length (Kms.)
Balasore	**80**
Bhadrak	**50**
Kendrapara	**68**
Jagatsinghpur	**67**
Puri	**155**
Ganjam	**60**
Total	**480**

Depth-wise Continental Shelf Area:

Depth Zone (Mtrs.)	Continental Shelf Area (Sq. Kms.)
0-20	6,820
20-50	8,650
50-100	4,810
100-200	3,550
Total	**23,830**

Marine crafts and gears in Orissa vary at par with the diversity of the ecology from South to North Orissa. South Orissa comprising Ganjam, Puri and

Jagatsinghpur has a narrow continental shelf and open sandy beaches whereas North Orissa comprising Kendrapara, Bhadrak and Balasore is characterised by an extended continental shelf, inter-tidal flats and extensive river delta.

Marine fishery of Orissa is mainly carried out by a means of mechanised boats, medium size trawlers, traditional crafts (Catamarans), motorised canoes (FRP and Wooden) fitted with OBMs and Beach landing crafts fitted with IBM. As per the recent statistics, the present fleet size of the State is as follows:

Sl.	**Name of the dist.**	**No. of Fishing crafts**			**Total**
		Mechanised	**Motorised**	**Non-motorised**	
1.	Balasore	528	813	442	1783
2	Bhadrak	259	361	251	871
3	Kendrapara	167	197	341	705
4	Jagatsinghpur	758	407	630	1795
5	Puri	84	1331	904	2319
6	Ganjam	0	358	1652	2010
	Total	**1796**	**3467**	**4220**	**9483**

Now mechanised sector mostly use set gillnets and disco nets. However, mechanised sector, except gill nets, trawl nets are widely used. Pelagic fishery is predominant in Southern Orissa and demersal fishery is prevalent in Northern Orissa.

Maximum sustainable yield from Orissa coast has been estimated to be 1.61 L MT. But since last five years the catch dwindles between 1.1 LMT to 1.2 MT. Year-wise production is illustrated below:

Fish catch in Orissa coast

Year	**Production (in MT)**
2003-04	1,16,880
2004-05	1,21,928
2005-06	1,22,213
2006-07	1,28,141
2007-08	1,30,568
2008-09	1,35,486

There are 63 fish landing centres in the State out of which 18 nos. have been developed under Centrally Sponsored Plan Schemes. Out of these 18, there are 4 fishing harbours and 14 fish landing centres.

The present status of marine fishery sector of Orissa in nutshell is appended at ***Annexure - I*** and the coastal map showing the marine districts is enclosed at ***Map - I***.

The Chilika Lagoon with its rich fisheries resources & high faunal diversity is the largest costal wetland and brackish water ecosystem in the sub-continent. This highly productive estuarine ecosystem with its rich fishery resources sustains the livelihood of more than 0.20 million fisher folk inhabiting in and around the lagoon. The fisheries & ancillary activities of the lagoon do make significant contribution in the state economy. The annual shrimp outturn from the lagoon itself constitutes 6.72% of the total value of state's shrimp export and brings about 200 million rupees worth foreign exchange to the state exchequer.

B. Economic features

In the last few decades, the Chilika had been under tremendous threat from both natural & anthropogenic pressures resulting in severe degradation of lagoon ecosystem. The degradation process involved- excessive silt deposition, chocking of outer channel, chocking of inlet, poor exchange of water, poor flushing-out of sediment, reduction in tidal influx, reduction in salinity level, invasion of fresh water weeds, shrinkage of water spread area etc. This degradation of the lagoon environment in the past had also adversely affected the growth of fishery resources. The fisheries outturn decreased from the highest ever record of 8926 MT (1986-87) to the lowest of 1274 MT (1995-96). This sharp decline in the fish production could be attributed to the composite factors i.e. the excessive silt deposition resulting into chocking of outer channel & mouth, decrease in salinity, obstruction of fish migratory route, poor recruitment of juveniles from the sea, juvenile poaching, unregulated destructive fishing, fishing beyond capacity, encroachment for shrimp culture etc. Further, poor-recruitment of juveniles through silt-choked Palur canal, continued to be the main reason for low productivity in southern sector of the lagoon.

Orissa is famous globally for the annual mass nesting of endangered Olive Ridley Sea Turtles. The Gahirmatha beach is the largest nesting ground of Olive Ridley followed by Rushikulya river mouth area. There are seven species of sea turtles found Worldwide, out of which 4 species of sea turtles are reported in Orissa (Olive Ridley, Hawksbill, Leatherback and Green turtles). Out of the above mass nesting of Olive Ridley is confirmed in the coast. The Department of Fisheries, Government of Orissa has been looking after conservation of important

marine resource and Socio-economic development of fisher folk by implementing different developmental schemes and executing the Orissa Marine Fisheries Regulation Act/ Rules (OMFRA). Considering the chances of huge mortality of sea turtles on account of fishing related activities in the specified areas, the Department of Fisheries, Department of Forest and Environment and Coast Guard have been working jointly for strict enforcement of Orissa Marine Fishing Regulation Act/ Rules.

The Central Empower Committee, constituted by Hon'ble Supreme Court has visited the Orissa Coast on 12th and 13th, February 2004. The mandate of the team was to suggest measures to provide favourable condition for mass nesting of the turtles. As such the suggestions of Empowered Committee have been duly compiled by the Department of Fisheries in connection to fishing gear and mechanisation of fishing crafts along the nesting sites.

NESTING SITE:

1) Gahirmatha Marine Wild Life Sanctuary in Kendrapara District with total area of 1435 sq. km. comprising of a core and buffer zone. The core area of Gahirmatha extends 10 kms. from the coast line in to the sea.
2) Jatadhari river mouth to Devi river mouth.
3) Chilika mouth (Magarmukha) to Rushikulya river mouth.

Large congregation of Olive Ridley Sea Turtles in the coastal waters of Orissa is reported to start from mid October to end of April/ May.

The recent ban on fishing in the turtle congregation area is effective from 1st November to 31st May vide notification no.1895/FARD Dt.04.02.2005. The existing ban on fishing and use of Turtle Excluder Device (TED) in trawl net is mandatory as per OMFRA to prevent incidental mortality of sea turtles. Accordingly 1760 nos. of TEDs have been distributed among the fishermen. Prohibition of fishing within a sea radius of 20 Kms. from Gaharmatha area of Bhitarkanika Wild Life Sanctuary has adversely affected the mobility of fishing vessels and livelihood of fishermen from Dhamara fishing harbour and fish landing centres of Talchua, Kharnasi, Khandiapatna, Jumboo and Tantiapal. Besides prohibition of fishing in two other reported mass nesting areas i.e.,

Jatadhar river to Devi river mouth and Chilka mouth to Rushikulya mouth have also equally affected the local fishermen.

From a conservative estimation it is envisaged that about 26,861 (Say, 26,900) active fishermen in the vicinity of the prohibited areas are likely to be affected. Out of the 26,900 population about 30% active full time fishermen (8070) have lost their daily wage to the tune of about Rs. 21.78 Crores during the active ban period (November to May 31st including 45 days common ban from 15th April to 31st May). Other part time fishermen will lose their income to the tune of Rs. 25.42 Crores, considering average daily income of active full time fishermen and part time fishermen as Rs. 150/- and Rs. 75/- respectively. Out of 240 days of fishing 180 days of fishing are affected by turtle conservation. Similarly in Chilika periphery there are about 12500 fisher families with a total population of around 134500 whose per capita income hovers around INR 1200 during yester years. Taking into account of the economic output and the number of fisher family in Chilka lagoon, income per fisher family was merely INR 52,000 during 2003-04.

C. Existing services Status

The fisher community in the affected area are poor and in a disadvantageous position in the society because of their illiteracy and social isolation. They remain indebted to private money lenders who advance money to meet their professional and other expenses. The majority of them belong to same area or to the vicinity of their enterprise making it easy for them to reach their working place. The ban of fishing due to conservation measures for turtles will attract exploitation by middlemen, as there is no alternative source of income for them. Thus alternative livelihood support for their subsistence is essential. Under this background, it is suggested to involve the affected fishermen in the turtle conservation activities, diversified agro-forestry, aquaculture activities as well as Eco-tourism activities.

D. Planning aspects
Feasible Alternative Plans

For year long sustenance of the affected fisher of the proposed area it is suggested to have the following alternative activities which are site specific and in accordance to the livelihood pattern of the locality.

Proposed earmarked site	Proposed activity	Persons to be associated /benefited in the activity	Remarks
Gopalpur-Chilika (includes Periphery of Chilka Lake)	i. Crab fattening/ Sea bass or Composite fish culture(IMC)/ Scampi culture in abandoned shrimp farms	100 SHGs @ 15 members/ SHG (to be formed out of about 9000 active fisher)	Live crab export is one of th avenues for incremental incom generation. The Chilka periphe has long stretches of abandone shrimp farm sites due to CR regulations and White Spo Disease in shrimps which can b utilised in the project activit The new technology for scamp culture and Sea bass culture ar also a profitable activities.
	ii. Dairy & Gotary (Integration)	100 SHGs @ 15 members/ SHG (to be formed out of about 9000 active fisher)	Rare Chilka Buffalo breed yield more milk thriving on salin fodders and can be promoted fo additional income generation.
	iii Value addition of fish/Hygienic fish drying yard	100 SHGs @ 15 members/ SHG (to be formed out of about 9000 active fisher) from which 25 SHGs to be formed of fisherwomen only	Value addition of the produc such as hygienic dry fish, pickle & other diversified products ca increase additional income of th participating fishers.
	iv) Repair & revival of laboratory facilities of Fishery Training Institute (FTI) & B&T at Balugaon	All the local fishermen of Chilika periphery	Sensitization of the fisher on th physico-chemical parameters pathology etc.
	iv) Involvement of NGO	The NGO Organisation staff working with the SHG members for successful	The NGO involvement will ensur better selection of SHG and th livelihood option.

Proposed earmarked site	Proposed activity	Persons to be associated /benefited in the activity	Remarks
		implementation	
Paradeep-Dhamra (includes Gahirmatha sanctuary)	i. Crab fattening/ Sea bass or Composite fish culture(IMC)/ Scampi culture in abandoned shrimp farms	100 SHGs @ 15 members/ SHG (to be formed out of about 9000 active fisher)	Live crab export is one of th avenues for incremental incom generation. The earmarked are has long stretches of fallo suitable brackish water area which can be utilised in th project activity. The ne technology for scampi cultur and Sea bass culture are also profitable activities.
	ii. Dairy & Gotary (Integration)	100 SHGs @ 15 members/ SHG (to be formed out of about 9000 active fisher)	Milk and meat produce ca ameliorate the annual fami income of the participating SHGs
	iii. Value addition of fish/Hygienic fish drying yard	100 women SHGs @ 15 members/ out of which 25 SHG to be formed out of fisher-women only	Value addition of the produc such as hygienic dry fish, pickle & other diversified products ca increase additional income of th participating fishers.
	iv) Involvement of NGO	The NGO Organisation staff working with the SHG members for successful implementation	The NGO involvement will ensur better selection of SHG an livelihood option.

Social Screening outcome, R& R requirements, Need for land acquisition

It is proposed to provide 1.00 ha. area each per SHG for establishment of crab fattening tanks on long term lease basis at a lower premium. For other components common utility such as cow/ goat shed, solar dryer units, fish

dressing unit, fish drying platform etc. would be developed for each SHG in their respective villages as per the advice of PRIs.

Environmental Screening outcome, likely environmental impacts, need for detailed Environmental Assessments

No adverse impact on promotion the above components are foresighted to happen as such there would be little scope for EI/ EA etc.

PERT CHART:

THE SEQUENCE CHART OF ACTIVITIES FOR 1st YEAR

Proposed activities	Proposed Schedule of work	Proposed period during which wok will be under taken in the 1st year											
		Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Crab fattening 10 units	Pond preparation	✔	✔	✔									
	Stocking of water crab				✔		✔		✔		✔		
	Grow out culture				✔	✔	✔	✔	✔	✔	✔	✔	
	Harvesting					✔		✔		✔		✔	
	Marketing of crab					✔		✔		✔		✔	
	Training and capacity building	✔	✔										
Sea bass or Composite fish culture(IMC) 15 units	Pond preparation	✔	✔	✔									
	Stocking of seed				✔								
	Grow out culture				✔	✔	✔	✔	✔	✔	✔	✔	✔
	Harvesting	✔											
	Marketing of fish	✔											
	Training and capacity building	✔	✔										
Scampi culture 15 units	Pond preparation	✔	✔	✔									
	Stocking of seed				✔								
	Grow out culture				✔	✔	✔	✔	✔	✔	✔	✔	
	Harvesting											✔	
	Marketing of Scampi											✔	
	Training and capacity building	✔	✔										
Dairy & Gotary 40 units	Construction of shed	✔	✔	✔									
	Purchase of animals				✔								
	production of milk				✔	✔	✔	✔	✔	✔	✔	✔	✔
	Marketing of Milk				✔	✔	✔	✔	✔	✔	✔	✔	✔
	Training and capacity building	✔	✔										
Value addition of	Construction of go-down	✔	✔	✔									

fishery products / Hygienic Fish drying yard 40 units	Setting up of Solar dryer			✔									
	Production of value added product				✔	✔	✔	✔	✔	✔	✔	✔	✔
	Marketing of value added product				✔	✔	✔	✔	✔	✔	✔	✔	✔
	Training and capacity building	✔	✔										

THE SEQUENCE CHART OF ACTIVITIES FOR 2nd YEAR

Proposed activities	Proposed Schedule of work	Proposed period during which wok will be under taken in the 2nd year											
		Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Crab fattening 10 units	Pond preparation	✔	✔	✔									
	Stocking of water crab				✔		✔		✔		✔		
	Grow out culture				✔	✔	✔	✔	✔	✔	✔	✔	
	Harvesting					✔		✔		✔		✔	
	Marketing of crab					✔		✔		✔		✔	
	Training and capacity building	✔	✔										
Sea bass or Composite fish culture (IMC) 25units	Pond preparation	✔	✔	✔									
	Stocking of seed				✔								
	Grow out culture				✔	✔	✔	✔	✔	✔	✔	✔	✔
	Harvesting	✔											
	Marketing of fish	✔											
	Training and capacity building	✔	✔										
Scampi culture 25units	Pond preparation	✔	✔	✔									
	Stocking of seed				✔								
	Grow out culture				✔	✔	✔	✔	✔	✔	✔	✔	
	Harvesting											✔	
	Marketing of Scampi											✔	
	Training and capacity building	✔	✔										
Dairy & Gotary 60 units	Construction of shed	✔	✔	✔									
	Purchase of animals				✔								
	production of milk				✔	✔	✔	✔	✔	✔	✔	✔	✔
	Marketing of Milk				✔	✔	✔	✔	✔	✔	✔	✔	✔
	Training and capacity building	✔	✔										
Value addition of fishery products / Hygienic	Construction of go-down	✔	✔	✔									
	Setting up of Solar dryer			✔									
	Production of value				✔	✔	✔	✔	✔	✔	✔	✔	✔

Fish drying yard 60 units	added product												
	Marketing of value added product				✔	✔	✔	✔	✔	✔	✔	✔	✔
	Training and capacity building	✔	✔										

THE SEQUENCE CHART OF ACTIVITIES FOR 3rd YEAR

Proposed activities	Proposed Schedule of work	Proposed period during which wok will be under taken in the 3rd year											
		Jan	Feb	Mar	Apl	May	June	July	Aug	Sep	Oct	Nov	Dec
Crab fattening 10 units	Pond preparation	✔	✔	✔									
	Stocking of water crab				✔		✔		✔		✔		
	Grow out culture				✔	✔	✔	✔	✔	✔	✔	✔	
	Harvesting					✔		✔		✔		✔	
	Marketing of crab					✔		✔		✔		✔	
	Training and capacity building	✔	✔										
Sea bass or Composite fish culture(IMC) 25 units	Pond preparation	✔	✔	✔									
	Stocking of seed				✔								
	Grow out culture				✔	✔	✔	✔	✔	✔	✔	✔	✔
	Harvesting	✔											
	Marketing of fish	✔											
	Training and capacity building	✔	✔										
Scampi culture 25 units	Pond preparation	✔	✔	✔									
	Stocking of seed				✔								
	Grow out culture				✔	✔	✔	✔	✔	✔	✔	✔	
	Harvesting											✔	
	Marketing of Scampi											✔	
	Training and capacity building	✔	✔										
Dairy & Gotary 60 units	Construction of shed	✔	✔	✔									
	Purchase of animals				✔								
	production of milk				✔	✔	✔	✔	✔	✔	✔	✔	✔
	Marketing of Milk				✔	✔	✔	✔	✔	✔	✔	✔	✔
	Training and capacity building	✔	✔										
Value addition of fishery products / Hygienic Fish drying yard 60 units	Construction of go-down	✔	✔	✔									
	Setting up of Solar dryer			✔									
	Production of value added product				✔	✔	✔	✔	✔	✔	✔	✔	✔
	Marketing of value added product				✔	✔	✔	✔	✔	✔	✔	✔	✔
	Training and capacity	✔	✔										

	building												

THE SEQUENCE CHART OF ACTIVITIES FOR 4th YEAR

Proposed activities	Proposed Schedule of work	Proposed period during which wok will be under taken in the 4th year											
		Jan	Feb	Mar	Apl	May	June	July	Aug	Sep	Oct	Nov	Dec
Crab fattening 10 units	Pond preparation	✔	✔	✔									
	Stocking of water crab				✔		✔		✔		✔		
	Grow out culture				✔	✔	✔	✔	✔	✔	✔	✔	
	Harvesting					✔		✔		✔		✔	
	Marketing of crab					✔		✔		✔		✔	
	Training and capacity building	✔	✔										
Sea bass or Composite fish culture(IMC) 15 units	Pond preparation	✔	✔	✔									
	Stocking of seed				✔								
	Grow out culture				✔	✔	✔	✔	✔	✔	✔	✔	✔
	Harvesting	✔											
	Marketing of fish	✔											
	Training and capacity building	✔	✔										
Scampi culture 15 units	Pond preparation	✔	✔	✔									
	Stocking of seed				✔								
	Grow out culture				✔	✔	✔	✔	✔	✔	✔	✔	
	Harvesting											✔	
	Marketing of Scampi											✔	
	Training and capacity building	✔	✔										
Dairy & Gotary 40 units	Construction of shed	✔	✔	✔									
	Purchase of animals				✔								
	production of milk				✔	✔	✔	✔	✔	✔	✔	✔	✔
	Marketing of Milk				✔	✔	✔	✔	✔	✔	✔	✔	✔
	Training and capacity building	✔	✔										
Value addition of fishery products / Hygienic Fish drying yard 40 units	Construction of go-down	✔	✔	✔									
	Setting up of Solar dryer			✔									
	Production of value added product				✔	✔	✔	✔	✔	✔	✔	✔	✔
	Marketing of value added product				✔	✔	✔	✔	✔	✔	✔	✔	✔
	Training and capacity building	✔	✔										

SHG FORMATION:

THE PROCESS OF FORMATION OF SHGs :

SHG is a group of rural poor fishers who have volunteered to organize themselves in to a group for eradication of poverty of members. They agree to save regularly and convert their savings into a Common Fund known as the Group corpus. In our society, members are linked by various common bonds like caste, sub-caste, community, blood relation, place of origin, activities etc. The facilitators must identity these natural groups which are commonly called "Affinity Groups". While forming groups our staffs have recognized this natural bonds and affiliations and acted as facilitators in formation of the groups. Generally a SHG may consist of 15 fishermen/women and all the members of the group should belongs to below poverty line. However, if necessary 20-30% of the members in a group may be taken from marginally above the poverty line if they are acceptable to the BPL members of the groups. .A person should not be a member of more than one group. The group shall not consist of more than one member from the same family. The group should devise a code of conduct to bind itself. The must function in a democratic manner, allowing free exchange of views and participation by the members in the decision making process.

The process of SHG formation in these 60 villages can be divided into following steps:

Step-1: -Collection of information about village:
-Social and resource mapping
-Skill available in the locality
-Marketing facilities available in the locality
-Affinity groups availability in the village

Step-I I: Meet with fishermen and fisherwomen in the village and explain them the purpose of our visit and intervention

Step-III : Conduct 4-5 meeting over 4-5 months and set an agenda for each meeting :

- Talk about family issue / Community issue
- Identification of Affinity groups .
- Talk about rules and regulations in self help groups.
- Familiarize the members with the books to be maintained in SHG
- Elect representative and explain responsibilities of members
- Give a group name
- Talk about saving and lending
- Help in opening a Bank account
- Encourage members not only to save but also to start lending for both productive and consumption purpose.
- Organise a common action plan on lively hood activities and share this with SHGs members.

The above procedure has been adopted by our staffs while forming the self help groups in the identified villages. However there are some SHGs are already there and are not functioning properly. We have selected some of the SHGs and ensure that their documents and accounts were maintained as above. In future also the same procedure will be followed.

The sample SHG formed as a pilot basis for implementation of different components of this project. Since the ponds have not yet been selected and it will take time the component "dry fish and value addition of fish" have been taken for the SHGs. The details of the SHG are given in **Annexure X.**

EXISTING STATUS OF MARINE FISHERY INDUSTRY OF ORISSA **Annexure -I**

Sl.	Item of content	Status
1	**Length of coastline (Km.)**	**480**
2	**Area of continental shelf (Sq. Kms.)**	**24000**
3	**Number if fishing villages/ hamlets**	**589**
3.1	**Fishermen households**	**53255**
3.2	**Fishermen population**	
3.2.1	Male	93559
3.2.2	Female	85152
3.2.3	Children	153857
3.2.4	**Total**	**332568**
3.3	**Fishermen engaged in fishing activities**	
3.3.1	Full time	66929
3.3.2	Part time	16336
3.3.3	Occasional	4979
3.3.4	**Total**	**88244**
3.4	**Fishermen/ Fisherwomen engaged in ancillary activities**	
3.4.1	Full time	25825
3.4.2	Part time	8513

3.4.3	Occasional	3201
3.4.4	**Total**	**37539**
4	**Fishing Fleet**	
4.1	**Mechanised fishing vessels (05-0)**	
4.1.1	Wooden trawler	638
4.1.2	Sona trawler	527
4.1.3	Gill netter	696
4.1.4	**Total**	**1861**
4.2	**Motorised boats**	
4.2.1	IBM	1883
4.2.2	OBM	1287
4.2.3	BLC/ FRP	144
4.2.4	**Total**	**3314**
4.3	**Non-mechanised Craft (Traditional)**	**4006**
4.4	**Total Fishing Fleet**	**9181**
5	**Fishing Gears used (05-06)**	
5.1	Trawlnet	
5.2	Gillnet	
5.3	Total	
6	**Marine Fisheries Production (MT)**	
6.1	Mechanised	49033.22
6.2	Motorised	47261.98
6.3	Non-mechanised Craft (Traditional)	25918.67
6.4	**Total**	**122213.87**
7	**Landing facilities (FH/ FLC/ Jetties)**	
7.1	Fishing Harbours	4
7.2	Jetties	14
7.3	Traditional Landing Centres	45
7.4	**Total**	**63**
8	**Fishermen Cooperatives**	
8.1	Cooperatives operating in FLCs capture fisheries	59
8.2	Others including fisherwomen Cooperatives	58
8.3	**Total**	**117**
8.4	**membership**	
8.4.1	Male	16473
8.4.2	Female	5255
8.4.3	**Total**	**21728**
9	**Total shrimp processing Plants (Pvt. Sector)**	**23**

Annexure II

TARGETED VILLAGES FOR ALTERNATIVE LIVELIHOOD OPTIONS

Paradip-Dhamara Stretch	**Gopalpur-Chilika stretch**
1. Bhakud	1. Barakudi
2. Barakolikhala	2. Moto
3. Batighara	3.Gopinathpur
4. Bhatuni	4. Jadupur
5. Jamboo	5. Arakhakuda
6.Kajalpatia	6.Sanapatna
7.Kandarapatia	7.Gorapur
8. Kharanasi	8.Gabakundu

9. Narasinghpu r	9. Gangadharpur
10.Ramanagar	10. Khatisahi
11.Saseni	11. Siandi Noliapatna
12. Saharkani	12. Khirasahi
13. Sunity	13. Biripadar
14. Tantiapal	14. Khatiakudi
15. Tubi	15. Rasakudi
16. Rajendranagar	16. Kholamuhana
17. Rajpatana	17.Morada
18. Birabhajapur	18. Siyala
19. Jyotiprasad	19. Sahabajpur
20. Bhajaprasad	20. Maleswari
21. Khasamunda	21. Sana Arjipalli
22. Sailandrasurai	22. Patnasi
23. Uddiyan	23. Ramlanka
24. Keruanpal	24. Gajapatinagar
25. Charankala	25. Jamuna
26. Rajnagar	26. Padampeta
27. Pravati	27. Gokhurpada
28. Dangamala	28. Purunabandha
29. Siko	29. Nolianuagan
30. Banipal	30. Bada Arjipalli

Annexure –III

AGREEMENT FORMAT BETWEEN SHGs AND THE DEPARTMENT OF FISHERIES GOVT. OF ORISSA

FOR IMPLEMENTATION OF ALTERNATE LIVLIHOOD COMPONENT UNDER ICZM PROJECT

Annexure -III

WORLD BANK CONDITION OF CONTRACT:

AGREEMENT FORMAT BETWEEN SHG AND THE DEPARTMENT OF FISHERIES GOVT. OF ORISSA FOR IMPLEMENTATION OF ALTERNATE LIVLIHOOD COMPONENT UNDER ICZM PROJECT

AGREEMENT NUMBER _____/Date/ Month/Year

This AGREEMENT (hereinafter called this AGREEMENT) is made on the Date/Year/Month between (NAME of SHG, a society registered under Societies Act……..and having its office at _____, in the State of _____ hereinafter called the GRANTEE, which unless repugnant to the contrary shall include its successors, administrators, heirs, assigns and nominees OF FIRST PART

AND

DEPARTMENT OF FISHERIES GOVERNMENT OF ORISSA, having its office at <ADDRESS> hereinafter called the GRANTOR, which expression shall unless repugnant to the context be deemed to include its successors-in-interest.

WHEREAS

(a) The Government of India (GOI) has received a credit from the World Bank (the BANK) and a grant and the GRANTOR intends to apply a part of the proceeds of the said credit and grant made available to it for the purpose of certain Targeted Interventions and/or Care, Support & Treatment Services as defined in this AGREEMENT (hereinafter called the "SERVICES") on the terms and conditions set forth in this AGREEMENT;

(b) the GRANTEE has represented to the GRANTOR that it has the required professional skills, and personnel and technical resources, to provide the SERVICES on the terms and conditions set forth in this AGREEMENT;

NOW THEREFORE the parties hereto hereby agree as follows:

1. Documents

The following documents shall be deemed to form an integral part of this AGREEMENT:

(a) SECTION I - Terms and Conditions of this AGREEMENT;

(b) SECTION II - Approved Project Proposal and Detailed Implementation Plan describing the SERVICES to be performed;

(c) Section III - Schedule of Grant Disbursements

2. Previous Communications

This AGREEMENT between the parties supersedes all previous communications, whether oral or written, in relation to the implementation of the SERVICES to be undertaken in accordance with this AGREEMENT.

3. Implementation of the SERVICES

The GRANTEE shall in accordance with the terms and conditions as specified in Section I of this AGREEMENT implement the SERVICES as described in Section II of this AGREEMENT. The GRANTEE shall submit to the GRANTOR necessary documents and reports as specified in this AGREEMENT.

4. Financial Limit

The total financial grant for the SERVICES shall not exceed Rs. _____ (Rupees _____ Only).

5. Disbursement

The GRANTOR shall disburse grants to the GRANTEE for the SERVICES in such manner as provided in Section III - Schedule of Grant Disbursements, within the financial limit specified in Clause 4 above. The disbursement shall be subject to receipt of grant funds by the GRANTOR from SPMU OF ICZM Project Orissa.

6. Duration of this AGREEMENT

This AGREEMENT shall remain in FORCE from _____ to _____ unless terminated earlier in accordance with the provision of this AGREEMENT or in the event the period is extended through a mutually agreed amendment to this AGREEMENT. The total duration of the AGREEMENT including extension, if any, shall not exceed a period of one year.

IN WITNESS WHEREOF, the parties hereto have caused this AGREEMENT to be signed in their respective names as the day and year first above written.

FOR AND ON BEHALF OF THE GRANTEE

Signed by (1) _____
Name
Designation
Address
Date

Signed by (2) _____
Name
Designation
Address
Date

In the presence of
Signature of Witness 1 _____
Name
Address
Date

Signature of Witness 2 _____
Name
Address
Date

FOR AND ON BEHALF OF THE GRANTOR
Name
Position
Signature
Date

In the presence of
Signature of Witness 1 _____
Name
Address
Date

Signature of Witness 2 _____
Name
Address
Date
Location:

Section I. Terms and Conditions of this AGREEMENT

1. Construction of this AGREEMENT

1.1 This AGREEMENT shall be governed by and construed in accordance with the laws of India.

2. Definitions

2.1. "GRANTEE" means the Non-Government Organization (NGO)/SHG or non-profit institution or non-profit association or Community Based Organization (CBO) that is a party to this AGREEMENT. In case of a NGO network implementing this AGREEMENT, the Lead GRANTEE shall be a party to this AGREEMENT.

2.2. "GRANTOR" means the State Department of Fisheries Govt of Orissa that is a party to this AGREEMENT

2.3. "AGREEMENT" means this AGREEMENT between the GRANTOR and the GRANTEE consisting of this AGREEMENT and the documents listed in Clause 4 therein.

2.4. "SERVICES" means those activities related to targeted interventions and/or care, support and treatment (as defined hereinafter) that shall be performed by the GRANTEE for which the GRANTOR has agreed to provide funds and which are specifically defined in Section II of this AGREEMENT.

2.5. "Approved Budget" means the budget sanctioned by the Executive Committee of the GRANTOR for the implementation of the SERVICES based on which, the grant funds shall be released in installments.

2.6. "Quarter days" means the quarter days referred in the contract letter notified by the GRANTOR to the GRANTEE.

3. Instructions and Approvals

3.1 The GRANTEE shall carry out the SERVICES with due diligence and efficiency and in conformity with appropriate administrative, technical, financial, economic, environmental and social standards and practices, and in accordance with the provisions of this AGREEMENT.

3.2 No variation in the Approved Proposal and/or the Implementation Plan and/or the budget shall be valid or binding unless expressly agreed to in writing by the GRANTEE and the GRANTOR in the form of an Amendment. Each Amendment shall be allotted a distinctive number and shall constitute a part of the current agreement.

3.3 The GRANTOR shall not provide grant funds in respect of work done outside the scope of work and/or the geographical area as defined in Section II of this AGREEMENT and takes no responsibilities whatsoever for such work.

4. General Provisions

4.1 Nothing contained in this AGREEMENT shall be construed or have effect as constituting a relationship of employer and employee or principal and agent between the GRANTOR and the GRANTEE. The GRANTEE for this purpose refers to its own employees, whether permanent or contractual and any persons, association, institution and organization acting on behalf of the GRANTEE.

4.2 The GRANTEE shall be responsible for all acts and omissions of its employees and any persons, associations, institutions or organizations engaged by the GRANTEE including the GRANTEE's network partners (if any) and service providers (if any), whether or not in the course of implementing the SERVICES and for the health, safety and security of such persons or entities and their property.

4.3 The GRANTEE shall indemnify the GRANTOR in respect of any claims made against the GRANTOR pursuant to the implementation of the SERVICES including legal costs incurred by the GRANTOR in defending such claims.

5. Financial Limit

5.1 The financial limit under this AGREEMENT shall be the amount stated in Clause 4 on second page of this AGREEMENT.

5.2 Subject to availability of grant funds from world Bank , the funds shall be released to the GRANTEE in installments in accordance with Section III of this AGREEMENT, but in no case shall exceed the financial limit laid down in Clause 4 of this AGREEMENT.

5.3 If the GRANTOR becomes aware of the misuse of funds by the GRANTEE or its employees or agents, the GRANTOR reserves the right to stop all future disbursements and shall initiate action to recover all the amounts disbursed to the GRANTEE under this AGREEMENT

5.4 Grant funds are only to be used for the purpose stated in the Section II of this AGREEMENT and shall not be used as a source of profit.

5.5 In such cases where the GRANTOR is not able to meet the disbursement schedule as stated in Section III the same shall be notified to the GRANTEE and the expected delay be agreed upon. Any additional costs incurred by the GRANTEE for generating funds to keep the SERVICES operational during the period of delay shall be reimbursed on an agreed basis (bank interest rate of lending) by The Grantor over and above the financial limit agreed upon.

5.6 Budget revisions may not necessarily increase the financial limit and if any agreed revisions results in a financial limit increase/decrease the same may be made operational through an amendment to this AGREEMENT and appropriately serially numbered.

6. Disbursements

6.1 On signing of this AGREEMENT by the GRANTEE, the GRANTOR shall release the grant amount approved for the SERVICES in three installments. The first installment will cover the estimated expenses as provided in SECTION II of this AGREEMENT that are likely to be incurred by the GRANTEE during the first six months of the implementation of the SERVICES.

6.2 Subject to the GRANTOR being satisfied with the progress of implementation of the SERVICES in accordance with the Approved Proposal and/or the Implementation Plan,

the second grant installment duly approved, shall be disbursed in accordance with the Schedule of Grant Disbursements.

6.3 Disbursements to the GRANTEE shall be made in Indian Rupees. The funds so disbursed shall be deposited by the GRANTEE in a separate registered bank account of the GRANTEE.

6.4 In the event the implementation of the SERVICES is not as per this AGREEMENT, the GRANTOR reserves the right to - withhold or reduce the grant installment approved for the SERVICES to the GRANTEE or- stop further disbursement of grant installments to the GRANTEE. In such event, the GRANTOR shall identify the particular activities which are not implemented in accordance with this AGREEMENT together with the effect thereof and inform the GRANTEE in writing. Release of grant installments shall be made upon remedying of the unsatisfactory work, and on resolution of the outstanding queries by the GRANTEE, to the satisfaction of the GRANTOR.

6.5 Should the GRANTOR notice a lack of progress in implementing the SERVICES by the GRANTEE, and the GRANTEE fails to take corrective steps to implement the SERVICES within 30 days of a written notice being served to this effect to the GRANTEE by the GRANTOR; the GRANTOR may terminate this AGREEMENT in accordance with the terms of this AGREEMENT. The GRANTEE shall refund the grant funds received in excess of the cost of implementation as determined after an Audit of the accounts of GRANTEE is carried out by the GRANTOR or on its behalf.

7. Procurement

7.1 The GRANTEE shall carry out all procurement required for implementation of the SERVICES in accordance of the BANK's Procurement Guidelines

7.2. The compliance to above agreed procurement procedure shall be monitored through various reviews/audits as listed in this AGREEMENT or through other special review if so commissioned by the BANK.

8 Accounts, Records and Audit

8.1 The GRANTEE shall maintain financial management system, accurate accounts and records, prepare financial statements ("The Accounts, Records and Financial Statements") in respect of the SERVICES and carry out financial audit, in such form and detail which identifies all expenditures incurred for the SERVICES, all in a manner satisfactory to the GRANTOR and the BANK/DFID and in accordance with the NGO/CBO Guidelines. The GRANTEE shall furnish the financial statements to the GRANTOR in accordance with the NGO/CBO Guidelines.

8.2 The GRANTEE shall abide by all the terms and conditions specified in this AGREEMENT and the GENERAL FINANCIAL RULES, July 2005 as amended from time to time and any orders or instructions that may be issued by the Government of India or the State Government, where the GRANTOR is situated, from time to time.

8.3 The GRANTOR or its representatives and/or Auditors appointed by the GRANTOR (Panel of Auditors) and/or the BANK shall, on giving reasonable notice to the GRANTEE, visit the GRANTEE's offices to review and audit the Accounts and Records including review of the adherence to terms and conditions of this AGREEMENT or to inspect the pharmaceuticals, medical supplies, other goods or services procured for the SERVICES. The GRANTEE shall

- co-operate with such teams during the review and inspection
- provide access to the Accounts and Records pertaining to the SERVICES whether on computer or in manual form
- provide copies of accounts and records
- provide oral or written explanations of the Accounts and Records as may be reasonably required during the review and audit.

8.4 In the event the review and audit undertaken by the GRANTOR identifies any errors or inaccuracies in the Accounts and Records of the GRANTEE, the GRANTEE shall within 30 days of a written demand served by the GRANTOR, carry out suitable rectification in its Accounts and Records. The GRANTOR shall either adjust excess disbursements arising from errors in accounting by the GRANTEE from future installments or the GRANTEE would refund the excess disbursement arising from errors in accounting to the GRANTOR.

8.5 The GRANTOR shall appoint a panel of auditors who shall visit the GRANTEE once in six months to carry out the audit of the accounts and the financial records and the audit certificate issued by the auditor jointly signed by the Head of GRANTEE, Finance Officer of the GRANTEE and the auditor would form the basis of further release of grants.

9. Review, Monitoring and Reporting

9.1 The GRANTEE shall prepare and furnish to the GRANTOR, reports on progress (financial and physical progress) in implementation of the SERVICES as may be required by the GRANTOR from time to time and in a manner and substance satisfactory to the GRANTOR.

9.2(a) The GRANTOR shall review and monitor annually the performance and progress of the GRANTEE in implementation of the SERVICES using third party monitoring focusing, inter-alia, on purchases of pharmaceuticals and medical supplies by the GRANTEE

according to the list of firms referred to in paragraph 7.2(a) of this Section I. The GRANTEE shall participate in and facilitate such review by the GRANTOR; and

(b) The GRANTEE shall take all actions to improve performance and progress in implementation of SERVICES, as may be required by the GRANTOR on the basis of review referred to in (a) above.

9.3 The GRANTEE shall, at the request of the BANK/DFID, (a) exchange views with the BANK/DFID with regard to the progress of carrying out the SERVICES and other matters relating to this AGREEMENT; and (b) furnish all such information related thereto as may reasonably be required by the BANK.

9.4 The GRANTEE shall promptly inform the GRANTOR, the GOI, the BANK of any condition which interferes with or threatens to interfere with the progress of its obligations under this AGREEMENT.

10. Amendment

10.1 This AGREEMENT shall be amended by written mutual consent of the parties to this AGREEMENT. The amendments shall be documented and allotted a distinctive number.

11. Suspension and Termination

11.1 In the event of this AGREEMENT being terminated, the GRANTEE shall take such steps as are necessary to bring the SERVICES to a close in a cost effective, timely and orderly manner.

11.2 The GRANTEE shall not be entitled to payment of any amount by way of compensation for termination of this AGREEMENT.

11.3 The GRANTEE shall submit full accounts of all the receipts and payments and commitments incurred for the purposes of the AGREEMENT, which shall be audited by the GRANTOR or its representative

11.4 Provided that payments are within the Financial Limit and not subject to dispute, the GRANTOR shall disburse funds to the GRANTEE to meet approved expenses and commitments related to the SERVICES up to and including the date of termination including expenses necessarily incurred by the GRANTEE after the date of termination in winding up the SERVICES.

11.5 In the event of excess disbursement to the GRANTEE, the GRANTOR shall demand and recover from the GRANTEE such excess disbursements and the GRANTEE would be liable to refund the excess disbursements within a period of 30 days of ascertainment of the final amount. The GRANTOR reserves the right to appoint an Auditor to ascertain the amount to be paid to or received from the GRANTEE.

11.6 Without prejudice to any other remedies, the GRANTOR may, by notice in writing to the GRANTEE, suspend or terminate the right of the GRANTEE to use the proceeds of the grant under this AGREEMENT upon the happening of any of the following events

(a) The GRANTEE shall have failed to carry out the SERVICES or any part thereof to the satisfaction of the GRANTOR in accordance with the provisions of this AGREEMENT; or

(b) The GRANTEE shall have failed to perform any of its obligations under this AGREEMENT; or

(c) The GRANTOR shall have determined on the basis of the review referred to in paragraph 9 of this Section that the performance of the GRANTEE under this AGREEMENT is not satisfactory; or

11.7 The GRANTOR shall terminate this AGREEMENT with immediate effect by serving a notice in writing to the GRANTEE in case of the following events:
- GRANTEE becomes bankrupt
- GRANTEE is wound up.
- GRANTEE is blacklisted by CAPART or by Ministry of Home Affairs or any other government agency and the same is notified.
- Upon occurrence of any of the events listed under paragraph 11.6.

11.8 If at any point of time during period of implementation of the SERVICES it comes to notice of the GRANTOR that the GRANTEE is receiving multiple funding for SERVICES or any part thereof, then the AGREEMENT shall be terminated forthwith without any further notice.

11.9 If at any point of time it is noted that the full time staff being funded by this AGREEMENT are being used on multiple projects by the GRANTEE then the GRANTOR reserves the right to terminate this AGREEMENT forthwith.

11.10 It is essential that the GRANTEE maintains the staff having adequate qualification and experience satisfactory to the GRANTOR throughout the period of this AGREEMENT as has been provided in the proposal failing which the GRANTOR may require the GRANTEE to ensure such staff is provided. If the GRANTEE does not comply with the requirement the GRANTOR may proceed to terminate this AGREEMENT.

11.11 Notwithstanding the causes for termination of this AGREEMENT, Clauses 13.2, 20.1, 20.2, 20.5, 20.6 and 20.7 shall survive the termination of this AGREEMENT

12. Force Majeure

12.1 If the performance of this AGREEMENT by either party is delayed, hindered or prevented or is otherwise frustrated by reason of force majeure, which shall mean war, civil commotion, fire, flood, action by any Government or any event beyond the control of the parties to this AGREEMENT, then the party so affected shall promptly notify the other party in writing specifying the nature of the force majeure and of the anticipated delay in the performance of this AGREEMENT. From the date of the notification the GRANTOR shall at its discretion, either terminate this AGREEMENT forthwith or suspend the performance of this AGREEMENT for a period not exceeding 6 months. If at the expiry of such period of suspension, any of the reasons for the suspension still remain, the GRANTOR and the GRANTEE shall either agree to a further period of suspension or treat this AGREEMENT as terminated.

12.2 If at the expiry of the second period of suspension, the reasons for the suspension still remain, the GRANTOR and the GRANTEE shall treat this AGREEMENT as terminated.

13. Indemnity

13.1 The GRANTEE shall exercise reasonable skill, care and diligence in the performance of its obligations under this AGREEMENT.

13.2 The GRANTEE shall indemnify and keep indemnified the GRANTOR in respect of any loss, damage or claim howsoever arising out of or related to the breach of this AGREEMENT or legal provisions or negligence by the GRANTEE or the GRANTEE's employees, agents, partners or service providers, in relation to the performance or otherwise of this AGREEMENT.

14. Assigning to Others

14.1 The GRANTEE shall not, without the prior written consent of the GRANTOR, assign or transfer or cause to be assigned or transferred, whether actually or as the result of takeover, merger or other change of identity or character of the GRANTEE, any of its rights or obligations under this AGREEMENT or any part, share or interest therein. Upon any such assignment or transfer, the GRANTOR shall forthwith terminate this AGREEMENT.

15. Settlement of Disputes

15.1 All disputes arising out of the meaning or interpretation of any of the Clauses of this AGREEMENT or any other matter arising out of this AGREEMENT will be attempted to be sorted out in mutual consultation between the Project Director of the GRANTEE and the Joint Director of the GRANTOR within 15 days of the matter being referred to one party by the other in writing.

15.2 Should the parties be unable to settle disputes through mutual consultations as mentioned in Clause 15.1 or within a period of 15 days from the time the matter is

referred by one party to the other, the Grievance Redressal Cell (GRC) comprising a retired High Court Judge (as Chairperson), the Project Director of GRANTOR, the Finance Officer and/or the Joint Director (NGO Co-ordination) from the GRANTOR and the GRANTEE's representative elected to represent the GRANTEE in the Executive Committee of the GRANTOR shall discuss the matter in dispute with both the parties in the next monthly meeting of the GRC and take a decision on the same. The decision of the GRC will be binding on both parties.

15.3 Should either party have cause to disagree with the decision of the GRC, the matter in dispute shall be referred to a panel of 3 Arbitrators of which one Arbitrator shall be nominated by the GRANTEE, one by the GRANTOR and the third Arbitrator shall be chosen by the two Arbitrators and will act as the presiding arbitrator of the tribunal. The decision of the Arbitrators will be on the basis of a simple majority (i.e. at least 2 of the 3 Arbitrators should be in favor of any decision). The decision of the panel of Arbitrators shall be final and binding on both the parties. The Arbitration proceedings shall be conducted in accordance with the provisions of the Arbitration and Conciliation Act, 1996.

15.4 The place of arbitration shall be the city where GRANTOR is located.

15.5 All disputes arising between the parties shall be subjected to the jurisdiction of the Courts in the city where GRANTOR is located only and in no other courts.

16. Evaluation

16.1 The GRANTOR shall undertake or cause to be undertaken, evaluation of the impact and cost-effectiveness of the SERVICES. Such evaluation shall be carried out during the tenure of this AGREEMENT. The GRANTEE shall,

- co-operate with such teams during the review
- provide access to the Accounts and Records pertaining to the SERVICES whether on computer or in manual form
- provide copies of accounts and records
- provide oral or written explanations of the records as may be reasonably required during the evaluation.

17. Conflict of Interest

17.1 Neither the GRANTEE, their personnel, agent, network partner or service provider nor their personnel shall engage in any personal business/professional activities, either during the course of or after the termination of this AGREEMENT, which conflict with or could potentially conflict with the object of the SERVICES.

17.2 The GRANTEE shall notify the GRANTOR immediately of any such activities or circumstances, which give rise to or could potentially give rise to a conflict and shall advise the GRANTOR how, they intend to avoid such a conflict.

17.3 In the event of a conflict as described above arising during the tenure of this AGREEMENT, the GRANTOR reserves the right to terminate this AGREEMENT on giving written notice to the GRANTEE.

18. Prevention of Corruption

18.1 The Bank requires that the GRANTEE (including SUB-GRANTEE, if any), as well as GRANTOR participating in Bank-financed projects adhere to the highest ethical standards, both during the selection process and throughout the execution of a contract. In pursuance of this policy, the Bank:

(a) defines, for the purpose of this paragraph, the terms set forth below as follows:

(i) "corrupt practice" means the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the action of a public official in the selection process or in contract execution;

(ii) "fraudulent practice" means a misrepresentation or omission of facts in order to influence a selection process or the execution of a contract;

(iii) "collusive practices" means a scheme or arrangement between two or more GRANTEES with or without the knowledge of the GRANTOR, designed to establish prices at artificial, noncompetitive levels;

(iv) "coercive practices" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in a selection process, or affect the execution of a contract.

(b) will reject a proposal for award if it determines that the recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive or coercive practices in competing for the contract in question;

(c) will cancel the portion of the credit allocated to a contract if it determines at any time that representatives of the GRANTOR or of a beneficiary of the credit were engaged in corrupt, fraudulent, collusive or coercive practices during the selection process or the execution of the contract, without the GRANTOR having taken timely and appropriate action satisfactory to the Bank to remedy the situation.

(d) will sanction a GRANTEE, including declaring the GRANTEE ineligible, either indefinitely or for a stated period of time, to be awarded a Bank-financed contract if at any time determines that the GRANTEE has, directly of through an agent, engaged in corrupt, fraudulent, collusive or coercive practices in competing for, or in executing, a Bank-financed contract; and

(e) will have the right to require that, in contracts financed by the Bank, a provision be included requiring GRANTEE to permit the Bank to inspect their accounts and records and other documents relating to the submission of proposals and contract performance, and have them audited by auditors appointed by the Bank.

19. Commissions and Discounts

19.1 The GRANTEE shall not accept for their own benefit any commission, discount or similar payment or benefit, in connection with this AGREEMENT. In addition, the GRANTEE shall use their best endeavors to ensure that persons and organizations associated with the implementation of the SERVICES shall not receive any such additional remuneration or benefit.

20. Disclosure of Information, Intellectual Property Rights and Official Secrets Act

20.1 The GRANTEE shall not during or after the termination of this AGREEMENT disclose to any third party any confidential information arising from this AGREEMENT (other than in the proper performance of their duties hereunder or as may be required by a court or arbitration panel of competent jurisdiction) except with the prior written permission of the GRANTOR.

20.2 For the purposes of this clause, "confidential information" shall mean information relating to proprietary, technological, economic, legal, administrative business and technical matters of the GRANTOR that is not available in the public domain. The GRANTEE shall not use any information in a way, which would cause embarrassment to the GRANTOR or to the MOeF or to the BANK, or to the Government of India.

20.3 Before any publication is made, the approval of the GRANTOR shall be obtained. Any publication shall contain an express acknowledgement of the relevant copyright.

20.4 The GRANTEE shall within 10 days of the date of publication, supply the GRANTOR with as many copies of any publication as the GRANTOR may reasonably request.

20.5 Reports and any other document or materials prepared or inventions or information produced as a result of the performance of this AGREEMENT and all intellectual property rights therein, unless otherwise specifically stated in this AGREEMENT, shall be and remain the property of the GRANTEE. The GRANTOR shall have the right to request for copies and access documents and materials stated above.

20.6 Where the GRANTEE is in agreement with the GRANTOR to supply Project Reports to a Recipient, the reports shall be addressed to the GRANTOR. All intellectual property rights in such reports and any other documentation or materials prepared or inventions

or information produced as a result of the performance of this AGREEMENT shall be and remain the property of the GRANTEE.

20.7 When the Project Reports are supplied directly to the GRANTOR, the GRANTEE shall take all reasonable steps to ensure that personnel engaged on The Intervention have notice that the provisions of the Official Secrets Act apply to them and will continue to apply after completion or earlier termination of this AGREEMENT.

21 Notices

21.1 All notices, demands, and other communications in connection to this AGREEMENT shall be deemed to have been duly given if personally delivered or sent through registered post, or through speed post, or by overnight courier with package tracing capability as provided elsewhere in this AGREEMENT, to the address set forth below. Either party may change the addresses set forth for it herein upon written notice thereof to the other.

Notices to GRANTOR

<NAME & DESIGNATION OF CONCERNED OFFICER IN THE SACS>

<ADDRESS OF SACS>

Notices to GRANTEE

<NAME & DESIGNATION OF CONCERNED OFFICER IN THE NGO>

<ADDRESS OF NGO>

SECTION II

Attach the Approved Project Proposal and Detailed Implementation Plan describing the SERVICES to be performed;

Under the project the activities taken up are as follows:-

Sl No	Proposed Activities	Different items in the activities
1	Crab fattening/ Sea bass or Composite fish culture(IMC) / Scampi culture	Pond renovation /Excavation and input cost for the culture activities.
2	Diary and Goatery	Cost for shade construction, purchase of cow and goats with other input cost
3	Value addition of fishery products	Provision of solar drier and input cost for purchase of raw material for preparation of dry fish etc.

Department Of Fisheries shall

- facilitate necessary funds to the SHGs for construction / procurement for the activities proposed.
- provides necessary equipment, materials and also technical trainings for implementation of the income generating activities which are proposed by the groups in the villages.
- conduct continuous monitoring of the activities for promoting sustainability of the activities .
- be responsible for timely availability of inputs ,equipments and materials.
- interact with the Animal and Husbandry Department(Or any other concerned department) for attending to the issues related to the capacity buildings and purchase of cows and goats .
- interact with concerned departments/agencies for market linkage.

SHG shall

1. utilize the funds provided by the Department for construction of shade for cows and goats, development of pond by excavation/renovation as per the decision taken .
2. avail advance as mentioned below for taking up the work and after completion of the work on advance receipt, the same will be measured by a technical person and on utilization certificate of the advance, further advance will be given. The slab of advance to be given as follows;-

   1st Installment - 30%
   2nd Installment – 30%
   3rd Installment – 30%
   4th Installment – 10%

3. receive the animals such as cows, goats, etc. procured by the committee headed by the concerned ADFs.concerned as per the activity earmarked.
4. take over the solar driers procured by ADF.
5. be provided with working capital for Crab fattening/Sea bass culture / Scampi culture, input cost for cow and goat rearing and the working capital for value addition activities.
6. spend the amount as per the technical programme drawn up and monitored by the ADFs or his representative.

The cost to be spent for different activities by one SHG are as follows:-

7. will be receiving the cost for pond development, culture cost for fisheries activities, construction of shed, feed and other cost for animal rearing, cost of storage room and working capital for value addition activities as mentioned above. SHG shall be responsible for construction of ponds, sheds and other infrastructures required for the projects. Funds provided must be utilized by the beneficiaries for implementing the activities. Beneficiaries can not utilize this for any other purpose

8. Will submit the progress reports weekly / monthly basis as mentioned by the ADFs concerned.
   - Weekly production report.
   - Monthly income and expenditure report.
   - Monthly SHG activities report including meeting proceedings
   - Monthly marketing report.
   - Monthly loss and profit account
   - Annual loss and profit along with the income and expenditure of the year and any other reports as asked by the ADFs / Director of Fisheries.

   - take up the following management activity.
   - The SHGs can engage any or all members or hire any skilled persons for management of the activities.
   - No property should be sold or leased out to any of the persons.
   - The SHGs will be the sole owner of the property and it will take all possible measures for the safe guard of the property.
   - The property should not be utilized for any other purpose specified as under the scheme.
   - Any diversification should be approved by the ADFs.
   - The SHG should follow the technical programme drawn up by the ADFs.
   - For marketing activities the SHG should take prior approval of the ADF and follow his instructions.

- Any additional cost required for the activity should be shared by all members.
- Maintain the project items by own cost and responsibility
- Ensure that the methods adopted by the members promote sustainable fish/prawn/crab production .

9. Bear the following parts of the project input.

Activity	Items to be borne by beneficiaries
Crab fattening/ Sea bass or Composite fish culture(IMC) / Scampi culture	20% extra on the renovation/excavation cost in shape of labour. Day to day manpower requirement for culture activities. Watch and ward of the culture ponds Marketing (Physical involvement 100%)
Diary / Goatery	20% labour contribution in shed construction. Daily rearing and marketing activities (100%) Watch and ward
Value addition of fishery product	Physical contribution for dry fish production and marketing and 20% labour contribution of storage room construction. Watch and ward

10. Strive towards collective marketing of products with assistance from Department

11. All support of the Project shall be stopped when any breach of the condition aforementioned is found. Animals and materials provided by the Project also shall be withdrawn too.

SECTION - III

Attach the Schedule of Grant Disbursements

Stage	**Month**	**Disbursement%**	**Conditions**
Start	Month 1	30%	Advance (This will cover 100% Non Recurring Expenditure and 5 months Recurring expenses)
SOE for Qtr 1	Month 3		Review SOE and recommend for release 2nd installment by end of month 3.

SOE for Qtr 2	Month 4	30%	2nd Installment for RE for the months 4,5&,6
	Month 6		Audit
SOE for Qtr 3	Month 7	30%	Review SOE and recommend for release 3rd installment by end of month 7 for the month of 7,8 & 9
SOE for Qtr 4	Month 8	10%	4rd Installment for RE for the months 10,11 12
	Month 10	Nil	Review SOE.
	Month 13	Nil	Review SOE & Audit

Annuxure-IV

AGREEMENT FORMAT BETWEEN NGO AND THE DEPARTMENT OF FISHERIES GOVT. OF ORISSA FOR IMPLEMENTATION OF ALTERNATE LIVLIHOOD COMPONENT UNDER ICZM PROJECT

Annuxure-IV

AGREEMENT FORMAT BETWEEN NGO AND THE DEPARTMENT OF FISHERIES GOVT. OF ORISSA FOR IMPLEMENTATION OF ALTERNATE LIVLIHOOD COMPONENT UNDER ICZM PROJECT

AGREEMENT NUMBER _____/Date/ Month/Year

This AGREEMENT (hereinafter called this AGREEMENT) is made on the Date/Year/Month between (NAME of NGO, a society registered under Societies Act……and having its office at ----------, in the State of _____ hereinafter called the GRANTEE, which unless repugnant to the contrary shall include its successors, administrators, heirs, assigns and nominees OF FIRST PART

AND

DEPARTMENT OF FISHERIES GOVT. OF ORISSA having its office at <ADDRESS> hereinafter called the GRANTOR, which expression shall unless repugnant to the context be deemed to include its successors-in-interest.

WHEREAS

(a) The Government of India (GOI) has received a credit from the World Bank (the BANK) and a grant and the GRANTOR intends to apply a part of the proceeds of the said credit and grant made available to it for the purpose of certain Targeted Interventions and/or Care, Support & Treatment Services as defined in this AGREEMENT (hereinafter called the "SERVICES") on the terms and conditions set forth in this AGREEMENT;

(b) the GRANTEE has represented to the GRANTOR that it has the required professional skills, and personnel and technical resources, to provide the SERVICES on the terms and conditions set forth in this AGREEMENT;

NOW THEREFORE the parties hereto hereby agree as follows:

1. Documents

The following documents shall be deemed to form an integral part of this AGREEMENT:

a. SECTION I - Terms and Conditions of this AGREEMENT;
b. SECTION II - Approved Project Proposal and Detailed Implementation Plan describing the SERVICES to be performed;
c. Section III - Schedule of Grant Disbursements

2. Previous Communications

This AGREEMENT between the parties supersedes all previous communications, whether oral or written, in relation to the implementation of the SERVICES to be undertaken in accordance with this AGREEMENT.

3. Implementation of the SERVICES

The GRANTEE shall in accordance with the terms and conditions as specified in Section I of this AGREEMENT implement the SERVICES as described in Section II of this AGREEMENT. The GRANTEE shall submit to the GRANTOR necessary documents and reports as specified in this AGREEMENT.

4. Financial Limit

The total financial grant for the SERVICES shall not exceed Rs. _____ (Rupees _____ Only).

5. Disbursement

The GRANTOR shall disburse grants to the GRANTEE for the SERVICES in such manner as provided in Section III - Schedule of Grant Disbursements, within the financial limit specified in Clause 4 above. The disbursement shall be subject to receipt of grant funds by the GRANTOR from SPMU OF ICZM Project Orissa.

6. Duration of this AGREEMENT

This AGREEMENT shall remain in FORCE from _____ to _____ unless terminated earlier in accordance with the provision of this AGREEMENT or in the event the period is extended through a mutually agreed amendment to this AGREEMENT. The total duration of the AGREEMENT including extension, if any, shall not exceed a period of one year.

IN WITNESS WHEREOF, the parties hereto have caused this AGREEMENT to be signed in their respective names as the day and year first above written.

FOR AND ON BEHALF OF THE GRANTEE
Signed by (1) _____
Name
Designation
Address
Date

Signed by (2) _____
Name
Designation
Address
Date

In the presence of
Signature of Witness 1 _____

Name
Address
Date

Signature of Witness 2 _____
Name
Address
Date

FOR AND ON BEHALF OF THE GRANTOR
Name
Position
Signature
Date

In the presence of

Signature of Witness 1 _____
Name
Address
Date

Signature of Witness 2 _____
Name
Address
Date

Location

SECTION - I

Terms and Conditions of this AGREEMENT

1. Construction of this AGREEMENT

1.1 This AGREEMENT shall be governed by and construed in accordance with the laws of India.

2. Definitions

2.1. "GRANTEE" means the Non-Government Organization (NGO)/SHG or non-profit institution or non-profit association or Community Based Organization (CBO) that is a party to this AGREEMENT. In case of a NGO network implementing this AGREEMENT, the Lead GRANTEE shall be a party to this AGREEMENT.

2.2. "GRANTOR" means the State Department of Fisheries Govt of Orissa that is a party to this AGREEMENT

2.3. "AGREEMENT" means this AGREEMENT between the GRANTOR and the GRANTEE consisting of this AGREEMENT and the documents listed in Clause 4 therein.

2.4. "SERVICES" means those activities related to targeted interventions and/or care, support and treatment (as defined hereinafter) that shall be performed by the GRANTEE for which the GRANTOR has agreed to provide funds and which are specifically defined in Section II of this AGREEMENT.

2.5. "Approved Budget" means the budget sanctioned by the Executive Committee of the GRANTOR for the implementation of the SERVICES based on which, the grant funds shall be released in installments.

2.6. "Quarter days" means the quarter days referred in the contract letter notified by the GRANTOR to the GRANTEE.

3. Instructions and Approvals

3.1 The GRANTEE shall carry out the SERVICES with due diligence and efficiency and in conformity with appropriate administrative, technical, financial, economic, environmental and social standards and practices, and in accordance with the provisions of this AGREEMENT.

3.2 No variation in the Approved Proposal and/or the Implementation Plan and/or the budget shall be valid or binding unless expressly agreed to in writing by the GRANTEE and the GRANTOR in the form of an Amendment. Each Amendment shall be allotted a distinctive number and shall constitute a part of the current agreement.

3.3 The GRANTOR shall not provide grant funds in respect of work done outside the scope of work and/or the geographical area as defined in Section II of this AGREEMENT and takes no responsibilities whatsoever for such work.

4. General Provisions

4.1 Nothing contained in this AGREEMENT shall be construed or have effect as constituting a relationship of employer and employee or principal and agent between the GRANTOR and the GRANTEE. The GRANTEE for this purpose refers to its own

employees, whether permanent or contractual and any persons, association, institution and organization acting on behalf of the GRANTEE.

4.2 The GRANTEE shall be responsible for all acts and omissions of its employees and any persons, associations, institutions or organizations engaged by the GRANTEE including the GRANTEE's network partners (if any) and service providers (if any), whether or not in the course of implementing the SERVICES and for the health, safety and security of such persons or entities and their property.

4.3 The GRANTEE shall indemnify the GRANTOR in respect of any claims made against the GRANTOR pursuant to the implementation of the SERVICES including legal costs incurred by the GRANTOR in defending such claims.

5. Financial Limit

5.1 The financial limit under this AGREEMENT shall be the amount stated in Clause 4 on second page of this AGREEMENT.

5.2 Subject to availability of grant funds from world Bank , the funds shall be released to the GRANTEE in instalments in accordance with Section III of this AGREEMENT, but in no case shall exceed the financial limit laid down in Clause 4 of this AGREEMENT.

5.3 If the GRANTOR becomes aware of the misuse of funds by the GRANTEE or its employees or agents, the GRANTOR reserves the right to stop all future disbursements and shall initiate action to recover all the amounts disbursed to the GRANTEE under this AGREEMENT

5.4 Grant funds are only to be used for the purpose stated in the Section II of this AGREEMENT and shall not be used as a source of profit.

5.5 In such cases where the GRANTOR is not able to meet the disbursement schedule as stated in Section III the same shall be notified to the GRANTEE and the expected delay be agreed upon. Any additional costs incurred by the GRANTEE for generating funds to keep the SERVICES operational during the period of delay shall be reimbursed on an agreed basis (bank interest rate of lending) by The Grantor over and above the financial limit agreed upon.

5.6 Budget revisions may not necessarily increase the financial limit and if any agreed revisions results in a financial limit increase/decrease the same may be made operational through an amendment to this AGREEMENT and appropriately serially numbered.

6. Disbursements

6.1 On signing of this AGREEMENT by the GRANTEE, the GRANTOR shall release the grant amount approved for the SERVICES in three installments. The first installment will cover the estimated expenses as provided in SECTION II of this AGREEMENT that are likely to be incurred by the GRANTEE during the first six months of the implementation of the SERVICES.

6.2 Subject to the GRANTOR being satisfied with the progress of implementation of the SERVICES in accordance with the Approved Proposal and/or the Implementation Plan, the second grant installment duly approved, shall be disbursed in accordance with the Schedule of Grant Disbursements.

6.3 Disbursements to the GRANTEE shall be made in Indian Rupees. The funds so disbursed shall be deposited by the GRANTEE in a separate registered bank account of the GRANTEE.

6.4 In the event the implementation of the SERVICES is not as per this AGREEMENT, the GRANTOR reserves the right to - withhold or reduce the grant installment approved for the SERVICES to the GRANTEE or- stop further disbursement of grant installments to the GRANTEE. In such event, the GRANTOR shall identify the particular activities which are not implemented in accordance with this AGREEMENT together with the effect thereof and inform the GRANTEE in writing. Release of grant installments shall be made upon remedying of the unsatisfactory work, and on resolution of the outstanding queries by the GRANTEE, to the satisfaction of the GRANTOR.

6.5 Should the GRANTOR notice a lack of progress in implementing the SERVICES by the GRANTEE, and the GRANTEE fails to take corrective steps to implement the SERVICES within 30 days of a written notice being served to this effect to the GRANTEE by the GRANTOR; the GRANTOR may terminate this AGREEMENT in accordance with the terms of this AGREEMENT. The GRANTEE shall refund the grant funds received in excess of the cost of implementation as determined after an Audit of the accounts of GRANTEE is carried out by the GRANTOR or on its behalf.

7. Procurement

7.1 The GRANTEE shall carry out all procurement required for implementation of the SERVICES in accordance of the BANK's Procurement Guidelines

7.2. The compliance to above agreed procurement procedure shall be monitored through various reviews/audits as listed in this AGREEMENT or through other special review if so commissioned by the BANK.

8. Accounts, Records and Audit

8.1 The GRANTEE shall maintain financial management system, accurate accounts and records, prepare financial statements ("The Accounts, Records and Financial Statements") in respect of the SERVICES and carry out financial audit, in such form and detail which identifies all expenditures incurred for the SERVICES, all in a manner satisfactory to the GRANTOR and the BANK/DFID and in accordance with the NGO/CBO Guidelines. The GRANTEE shall furnish the financial statements to the GRANTOR in accordance with the NGO/CBO Guidelines.

8.2 The GRANTEE shall abide by all the terms and conditions specified in this AGREEMENT and the GENERAL FINANCIAL RULES, July 2005 as amended from time to time and any orders or instructions that may be issued by the Government of India or the State Government, where the GRANTOR is situated, from time to time.

8.3 The GRANTOR or its representatives and/or Auditors appointed by the GRANTOR (Panel of Auditors) and/or the BANK shall, on giving reasonable notice to the GRANTEE, visit the GRANTEE's offices to review and audit the Accounts and Records including review of the adherence to terms and conditions of this AGREEMENT or to inspect the pharmaceuticals, medical supplies, other goods or services procured for the SERVICES. The GRANTEE shall

- co-operate with such teams during the review and inspection
- provide access to the Accounts and Records pertaining to the SERVICES whether on computer or in manual form
- provide copies of accounts and records
- provide oral or written explanations of the Accounts and Records as may be reasonably required during the review and audit.

8.4 In the event the review and audit undertaken by the GRANTOR identifies any errors or inaccuracies in the Accounts and Records of the GRANTEE, the GRANTEE shall within 30 days of a written demand served by the GRANTOR, carry out suitable rectification in its Accounts and Records. The GRANTOR shall either adjust excess disbursements arising from errors in accounting by the GRANTEE from future installments or the GRANTEE would refund the excess disbursement arising from errors in accounting to the GRANTOR.

8.5 The GRANTOR shall appoint a panel of auditors who shall visit the GRANTEE once in six months to carry out the audit of the accounts and the financial records and the audit certificate issued by the auditor jointly signed by the Head of GRANTEE, Finance Officer of the GRANTEE and the auditor would form the basis of further release of grants.

9. Review, Monitoring and Reporting

9.1 The GRANTEE shall prepare and furnish to the GRANTOR, reports on progress (financial and physical progress) in implementation of the SERVICES as may be required by the GRANTOR from time to time and in a manner and substance satisfactory to the GRANTOR.

9.2(a) The GRANTOR shall review and monitor annually the performance and progress of the GRANTEE in implementation of the SERVICES using third party monitoring focusing, inter-alia, on purchases of pharmaceuticals and medical supplies by the GRANTEE according to the list of firms referred to in paragraph 7.2(a) of this Section I. The GRANTEE shall participate in and facilitate such review by the GRANTOR; and

(b) The GRANTEE shall take all actions to improve performance and progress in implementation of SERVICES, as may be required by the GRANTOR on the basis of review referred to in (a) above.

9.3 The GRANTEE shall, at the request of the BANK/DFID, (a) exchange views with the BANK/DFID with regard to the progress of carrying out the SERVICES and other matters relating to this AGREEMENT; and (b) furnish all such information related thereto as may reasonably be required by the BANK.

9.4 The GRANTEE shall promptly inform the GRANTOR, the GOI, the BANK of any condition which interferes with or threatens to interfere with the progress of its obligations under this AGREEMENT.

10. Amendment

10.1 This AGREEMENT shall be amended by written mutual consent of the parties to this AGREEMENT. The amendments shall be documented and allotted a distinctive number.

11. Suspension and Termination

11.1 In the event of this AGREEMENT being terminated, the GRANTEE shall take such steps as are necessary to bring the SERVICES to a close in a cost effective, timely and orderly manner.

11.2 The GRANTEE shall not be entitled to payment of any amount by way of compensation for termination of this AGREEMENT.

11.3 The GRANTEE shall submit full accounts of all the receipts and payments and commitments incurred for the purposes of the AGREEMENT, which shall be audited by the GRANTOR or its representative

11.4 Provided that payments are within the Financial Limit and not subject to dispute, the GRANTOR shall disburse funds to the GRANTEE to meet approved expenses and commitments related to the SERVICES up to and including the date of termination including expenses necessarily incurred by the GRANTEE after the date of termination in winding up the SERVICES.

11.5 In the event of excess disbursement to the GRANTEE, the GRANTOR shall demand and recover from the GRANTEE such excess disbursements and the GRANTEE would be liable to refund the excess disbursements within a period of 30 days of ascertainment of the final amount. The GRANTOR reserves the right to appoint an Auditor to ascertain the amount to be paid to or received from the GRANTEE.

11.6 Without prejudice to any other remedies, the GRANTOR may, by notice in writing to the GRANTEE, suspend or terminate the right of the GRANTEE to use the proceeds of the grant under this AGREEMENT upon the happening of any of the following events
(a) The GRANTEE shall have failed to carry out the SERVICES or any part thereof to the satisfaction of the GRANTOR in accordance with the provisions of this AGREEMENT; or

(b) The GRANTEE shall have failed to perform any of its obligations under this AGREEMENT; or

(c) The GRANTOR shall have determined on the basis of the review referred to in paragraph 9 of this Section that the performance of the GRANTEE under this AGREEMENT is not satisfactory; or

11.7 The GRANTOR shall terminate this AGREEMENT with immediate effect by serving a notice in writing to the GRANTEE in case of the following events:
- GRANTEE becomes bankrupt

- GRANTEE is wound up.
- GRANTEE is blacklisted by CAPART or by Ministry of Home Affairs or any other government agency and the same is notified.
- Upon occurrence of any of the events listed under paragraph 11.6.

11.8 If at any point of time during period of implementation of the SERVICES it comes to notice of the GRANTOR that the GRANTEE is receiving multiple funding for SERVICES or any part thereof, then the AGREEMENT shall be terminated forthwith without any further notice.

11.9 If at any point of time it is noted that the full time staff being funded by this AGREEMENT are being used on multiple projects by the GRANTEE then the GRANTOR reserves the right to terminate this AGREEMENT forthwith.

11.10 It is essential that the GRANTEE maintains the staff having adequate qualification and experience satisfactory to the GRANTOR throughout the period of this AGREEMENT as has been provided in the proposal failing which the GRANTOR may require the GRANTEE to ensure such staff is provided. If the GRANTEE does not comply with the requirement the GRANTOR may proceed to terminate this AGREEMENT.

11.11 Notwithstanding the causes for termination of this AGREEMENT, Clauses 13.2, 20.1, 20.2, 20.5, 20.6 and 20.7 shall survive the termination of this AGREEMENT

12. Force Majeure

12.1 If the performance of this AGREEMENT by either party is delayed, hindered or prevented or is otherwise frustrated by reason of force majeure, which shall mean war, civil commotion, fire, flood, action by any Government or any event beyond the control of the parties to this AGREEMENT, then the party so affected shall promptly notify the other party in writing specifying the nature of the force majeure and of the anticipated delay in the performance of this AGREEMENT. From the date of the notification the GRANTOR shall at its discretion, either terminate this AGREEMENT forthwith or suspend the performance of this AGREEMENT for a period not exceeding 6 months. If at the expiry of such period of suspension, any of the reasons for the suspension still remain, the GRANTOR and the GRANTEE shall either agree to a further period of suspension or treat this AGREEMENT as terminated.

12.2 If at the expiry of the second period of suspension, the reasons for the suspension still remain, the GRANTOR and the GRANTEE shall treat this AGREEMENT as terminated.

13. Indemnity

13.1 The GRANTEE shall exercise reasonable skill, care and diligence in the performance of its obligations under this AGREEMENT.

13.2 The GRANTEE shall indemnify and keep indemnified the GRANTOR in respect of any loss, damage or claim howsoever arising out of or related to the breach of this AGREEMENT or legal provisions or negligence by the GRANTEE or the GRANTEE's employees, agents, partners or service providers, in relation to the performance or otherwise of this AGREEMENT.

14. Assigning to Others

14.1 The GRANTEE shall not, without the prior written consent of the GRANTOR, assign or transfer or cause to be assigned or transferred, whether actually or as the result of takeover, merger or other change of identity or character of the GRANTEE, any of its rights or obligations under this AGREEMENT or any part, share or interest therein. Upon any such assignment or transfer, the GRANTOR shall forthwith terminate this AGREEMENT.

15. Settlement of Disputes

15.1 All disputes arising out of the meaning or interpretation of any of the Clauses of this AGREEMENT or any other matter arising out of this AGREEMENT will be attempted to be sorted out in mutual consultation between the Project Director of the GRANTEE and the Joint Director of the GRANTOR within 15 days of the matter being referred to one party by the other in writing.

15.2 Should the parties be unable to settle disputes through mutual consultations as mentioned in Clause 15.1 or within a period of 15 days from the time the matter is referred by one party to the other, the Grievance Redressal Cell (GRC) comprising a retired High Court Judge (as Chairperson), the Project Director of GRANTOR, the Finance Officer and/or the Joint Director (NGO Co-ordination) from the GRANTOR and the GRANTEE's representative elected to represent the GRANTEE in the Executive Committee of the GRANTOR shall discuss the matter in dispute with both the parties in the next monthly meeting of the GRC and take a decision on the same. The decision of the GRC will be binding on both parties.

15.3 Should either party have cause to disagree with the decision of the GRC, the matter in dispute shall be referred to a panel of 3 Arbitrators of which one Arbitrator shall be

nominated by the GRANTEE, one by the GRANTOR and the third Arbitrator shall be chosen by the two Arbitrators and will act as the presiding arbitrator of the tribunal. The decision of the Arbitrators will be on the basis of a simple majority (i.e. at least 2 of the 3 Arbitrators should be in favor of any decision). The decision of the panel of Arbitrators shall be final and binding on both the parties. The Arbitration proceedings shall be conducted in accordance with the provisions of the Arbitration and Conciliation Act, 1996.

15.4 The place of arbitration shall be the city where GRANTOR is located.

15.5 All disputes arising between the parties shall be subjected to the jurisdiction of the Courts in the city where GRANTOR is located only and in no other courts.

16. Evaluation

16.1 The GRANTOR shall undertake or cause to be undertaken, evaluation of the impact and cost-effectiveness of the SERVICES. Such evaluation shall be carried out during the tenure of this AGREEMENT. The GRANTEE shall,
- co-operate with such teams during the review
- provide access to the Accounts and Records pertaining to the SERVICES whether on computer or in manual form
- provide copies of accounts and records
- provide oral or written explanations of the records as may be reasonably required during the evaluation.

17. Conflict of Interest

17.1 Neither the GRANTEE, their personnel, agent, network partner or service provider nor their personnel shall engage in any personal business/professional activities, either during the course of or after the termination of this AGREEMENT, which conflict with or could potentially conflict with the object of the SERVICES.

17.2 The GRANTEE shall notify the GRANTOR immediately of any such activities or circumstances, which give rise to or could potentially give rise to a conflict and shall advise the GRANTOR how, they intend to avoid such a conflict.

17.3 In the event of a conflict as described above arising during the tenure of this AGREEMENT, the GRANTOR reserves the right to terminate this AGREEMENT on giving written notice to the GRANTEE.

18. Prevention of Corruption

18.1 The Bank requires that the GRANTEE (including SUB-GRANTEE, if any), as well as GRANTOR participating in Bank-financed projects adhere to the highest ethical standards, both during the selection process and throughout the execution of a contract. In pursuance of this policy, the Bank:

(a) defines, for the purpose of this paragraph, the terms set forth below as follows:

(i) "corrupt practice" means the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the action of a public official in the selection process or in contract execution;

(ii) "fraudulent practice" means a misrepresentation or omission of facts in order to influence a selection process or the execution of a contract;

(iii) "collusive practices" means a scheme or arrangement between two or more GRANTEES with or without the knowledge of the GRANTOR, designed to establish prices at artificial, noncompetitive levels;

(iv) "coercive practices" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in a selection process, or affect the execution of a contract.

(b) will reject a proposal for award if it determines that the recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive or coercive practices in competing for the contract in question;

(c) will cancel the portion of the credit allocated to a contract if it determines at any time that representatives of the GRANTOR or of a beneficiary of the credit were engaged in corrupt, fraudulent, collusive or coercive practices during the selection process or the execution of the contract, without the GRANTOR having taken timely and appropriate action satisfactory to the Bank to remedy the situation.

(d) will sanction a GRANTEE, including declaring the GRANTEE ineligible, either indefinitely or for a stated period of time, to be awarded a Bank-financed contract if at any time determines that the GRANTEE has, directly of through an agent, engaged in corrupt, fraudulent, collusive or coercive practices in competing for, or in executing, a Bank-financed contract; and

(e) will have the right to require that, in contracts financed by the Bank, a provision be included requiring GRANTEE to permit the Bank to inspect their accounts and records and other documents relating to the submission of

proposals and contract performance, and have them audited by auditors appointed by the Bank.

19. Commissions and Discounts

19.1 The GRANTEE shall not accept for their own benefit any commission, discount or similar payment or benefit, in connection with this AGREEMENT. In addition, the GRANTEE shall use their best endeavours to ensure that persons and organizations associated with the implementation of the SERVICES shall not receive any such additional remuneration or benefit.

20. Disclosure of Information, Intellectual Property Rights and Official Secrets Act

20.1 The GRANTEE shall not during or after the termination of this AGREEMENT disclose to any third party any confidential information arising from this AGREEMENT (other than in the proper performance of their duties hereunder or as may be required by a court or arbitration panel of competent jurisdiction) except with the prior written permission of the GRANTOR.

20.2 For the purposes of this clause, "confidential information" shall mean information relating to proprietary, technological, economic, legal, administrative business and technical matters of the GRANTOR that is not available in the public domain. The GRANTEE shall not use any information in a way, which would cause embarrassment to the GRANTOR or to the MOeF or to the BANK, or to the Government of India.

20.3 Before any publication is made, the approval of the GRANTOR shall be obtained. Any publication shall contain an express acknowledgement of the relevant copyright.

20.4 The GRANTEE shall within 10 days of the date of publication, supply the GRANTOR with as many copies of any publication as the GRANTOR may reasonably request.

20.5 Reports and any other document or materials prepared or inventions or information produced as a result of the performance of this AGREEMENT and all intellectual property rights therein, unless otherwise specifically stated in this AGREEMENT, shall be and remain the property of the GRANTEE. The GRANTOR shall have the right to request for copies and access documents and materials stated above.

20.6 Where the GRANTEE is in agreement with the GRANTOR to supply Project Reports to a Recipient, the reports shall be addressed to the GRANTOR. All intellectual property rights in such reports and any other documentation or materials prepared or inventions

or information produced as a result of the performance of this AGREEMENT shall be and remain the property of the GRANTEE.

20.7 When the Project Reports are supplied directly to the GRANTOR, the GRANTEE shall take all reasonable steps to ensure that personnel engaged on The Intervention have notice that the provisions of the Official Secrets Act apply to them and will continue to apply after completion or earlier termination of this AGREEMENT.

21 Notices

21.1 All notices, demands, and other communications in connection to this AGREEMENT shall be deemed to have been duly given if personally delivered or sent through registered post, or through speed post, or by overnight courier with package tracing capability as provided elsewhere in this AGREEMENT, to the address set forth below. Either party may change the addresses set forth for it herein upon written notice thereof to the other.

Notices to GRANTOR

<NAME & DESIGNATION OF CONCERNED OFFICER IN THE SACS>

<ADDRESS OF SACS>

Notices to GRANTEE

<NAME & DESIGNATION OF CONCERNED OFFICER IN THE NGO>

<ADDRESS OF NGO>

SECTION - II

Attach the Approved Project Proposal and Detailed Implementation Plan describing the SERVICES to be performed;

Under the project the activities taken up are as follows:-

Sl No	Proposed Activities	Different items in the activities
1	Crab fattening/Sea bass or Composite fish culture(IMC) /Scampi culture	Pond renovation /Excavation and input cost for the culture activities.
2	Diary and Goatery	Cost for shade construction, purchase of cow and goats with other input cost
3	Value addition of fishery products	Provision of solar drier and input cost for purchase of raw material for preparation of dry fish etc.

Department Of Fisheries

- is interested in seeking Social intermediation support**.**
- will provide information to the NGO needed to carry out the assignment.
- provide support to conduct continuous monitoring of the activities for promoting sustainability of the activities
- be responsible for effecting the bi-partite agreement.
- will provide fund for facilitation of services.

NGO shall

1 Mobilise the people for formation of SHGs and assist the SHG members in locating the resources .

2 Facilitate SHGs in convening meeting, submitting reports, disseminating information , opening and operating bank accounts and the maintenance of records.

3 Establishing linkage among stakeholders of ICZM project, village committee and SHGs

4 Facilitate linkage between SHGs & public bodies like Panchayats, Panchayat samiti etc as well as Government department such as Revenue,Forest, water resources etc for obtaining ponds on lease, electricity supply and obtaining land for their activities.

5 Be responsible for assisting the SHGs to develop the process of collective decision making.

6 The concerned Assistant Director of Fisheries on behalf of the Department may find if necessary to postpone or cancel the assignment and or shorten or extend its duration. Howe ever every effort will be made to give early notice of any change. Like wise if NGO like to discontinue its participation, a minimum of three month notice should be given . In the event of termination by the Department or

discontinuance by NGO, the latter shall be paid for the services rendered for carrying out the assignment to the date of termination or discontinuance .

7 Be responsible for deployment of Competent staffs on a full time basis to work at the project.

8 The payment for services will not exceed a total amount of Rs for each category of expenditure as decided by the concerned Assistant Director of Fisheries on the basis of the project guidelines .

9 Undertake to carry out the assignment in accordance with the highest standards of professional and ethical competence and integrity.

SECTION - III

Attach the Schedule of Grant Disbursements

Stage	**Month**	**Disbursement%**	**Conditions**
Start	Month 1, 2,3		Organisation and formation of SHG along with trade selection
SOE for Qtr 1	Month 3	30%	The payment of 30% of the total amount to be paid after completion/formation of 30% of the SHGs to be verified and certified by ADF concerned.
SOE for Qtr 2	Month 4,5,6		Organisation and formation of SHG along with trade selection
	Month 6	30%	The payment of next 30% of the total amount to be paid after completion/formation of 60% of the SHGs to be verified and certified by ADF concerned.
SOE for Qtr 3	Month 7,8,9		Organisation and formation of SHG along with trade selection
SOE for Qtr 4	Month 9	30%	The payment of next 30% of the total amount to be paid after completion/formation of 90% of the SHGs to be verified and certified by ADF concerned.
	Month 10,11		Organisation and formation of SHG along with trade selection
	Month 12	10%	The payment of 10% of the total amount to be paid after completion/formation of 100% of the SHGs to be verified and certified by ADF concerned.