

# ICZM Project

## PROJECT ON

**DEVELOPMENT OF PARTICIPATORY  
ECO-TOURISM AT CHILIKA AND TAMPERA  
(ALONG ORISSA COAST) UNER LIVELIHOOD SECURITY**

**By:**

**ORISSA TOURISM DEVELOPMENT CORPORATION  
DEPTT. OF TOURISM, GOVT. OF ORISSA**

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# **PROJECT REPORT OF ECO TOURISM IN ORISSA.**

## **SECTION I - THE PROJECT**

### **A. (STATE'S) VISION AND STRATEGY FOR ICZM:**

Like other parts of the State, coastal region is also enriched with vast natural resources. However, the fragile eco system of the coast often create obstacles in utilizing such resources for the wellbeing of the people, inaccessibility of the area, ingression of violent sea waves, frequent natural calamities like cyclones etc.. Therefore, the people remain below poverty line and natural resources are being under used. The present scenario of Global warming has increased vulnerability to this dynamic part of the State and compelled rethinking in planning and Management of this region under the banner of integrated coastal Zone Management.

Tourism is changing rapidly as nature, heritage, and recreational destinations become more important, and as conventional tourism is forced to meet tougher environmental requirements. This presents a challenge to government and private enterprise to develop new approaches to the tourism market. Successful tourism must benefit local populations economically and culturally to give them incentives to protect the natural resources which create the attraction. Strategies must be economically feasible if private investors are to support the projects. Our goal is to enable people to enjoy and learn about the natural, historical and cultural characteristics of unique environments while preserving the integrity of those sites and stimulating the economic development opportunities in local communities.

Coastal Tourism in this state is mainly managed till now by Govt. organizations. The aspects of tourism in the coastal region are accommodation, boating, bird watching, dolphin watching etc. But till now coastal tourism in association with the Eco System has not been adequately explored. Eco tourism will be done without disturbing the ecology of the surroundings. Moreover it will help in upbringing the lively hood of the local people.

### **Coastal Tourism and Eco-Tourism:**

Promotion of Eco-Tourism by way of development of Infrastructure facility includes creation of facilities with the help of Eco-Friendly materials and with a view not to affect adversely the biosphere. It would be ensured that the infrastructure created, when will be used, will not create any pollution in the area. All possible measures should be taken to release the effluent after it is treated to an acceptable state. This would boost the tourism potential as well as utility of the local materials, boosting of local art and craft, socio- economic development of the local inhabitants.

The infrastructural development for the project will adopt following guiding principles.

The standard/normal construction practices will be adopted which will not adversely affect the ambient environment. The infrastructural development will be designed not to adversely affect the existing equilibrium of the eco system of the region and will keep safe both, man and wild life.

The development of infrastructure will utilize the local people both in terms of manpower and resources.

The ultimate management and development of additional support of “Eco Tourism” will be on the participatory basis with the local community.

- Eco-friendly sewerage disposal and solid waste recycling practices will be adopted to keep the environment safe.
- As far as practicable, local raw material as well as local manpower will be utilized during the project development and its management.
- The overall development of the local people including their culture, social coherency and safeguard will be addressed.
- Supportive structures and facilities will be augmented to meet the severity of the natural calamity. This will be designed for the safety of the tourists as well as the local people.
- All steps will be taken to prevent the spread of diseases in the region.
- Non biodegradable solid waste items will be kept off from the tourist sites.

Eco-tourism focuses on local cultures, wilderness adventures, volunteering, personal growth and learning new ways to live on our vulnerable planet. It is typically defined as travel to destinations where the flora, fauna, and cultural heritage are the primary attractions. Responsible ecotourism includes programs that minimize the adverse effects of traditional tourism on the natural environment, and enhance the cultural integrity of local people.

Therefore, in addition to evaluating environmental and cultural factors, initiatives by hospitality providers to promote recycling, energy efficiency, water re-use, and the creation of economic opportunities for local communities are an integral part of ecotourism.

Historical, biological and cultural conservation, preservation, sustainable development etc. are some of the fields closely related to Eco-Tourism. Many professionals have been involved in formulating and developing eco-tourism policies. They come from the fields of Geographic Information Systems, Wildlife Management, Wildlife Photography, Marine Biology and Oceanography, National and State Park Management, Environmental Sciences, Women in Development, Historians and Archaeologists, etc.

Ecotourism is considered the fastest growing market in the tourism industry, according to the World Tourism Organization with an annual growth rate of 5% worldwide and representing 6% of the world gross domestic product, 11.4% of all consumer spending - not a market to be taken lightly.

## Tourism Concern

The term ecotourism was coined by Héctor Ceballos-Lascuràin in 1983, and was initially used to describe nature-based travel to relatively undisturbed areas with an emphasis on education. The concept has, however, developed to a scientifically based approach to the planning, management and development of sustainable tourism products and activities. It is an enlightening, participatory travel experience to environments, both natural and cultural, that ensures the sustainable use, at an appropriate level, of environmental resources and, whilst producing viable economic opportunities for the tourism industry and host communities, makes the use of these resources through conservation beneficial to all tourism role players.

It is not a marketing ploy, nor is it scenic or nature-based travel .

It is an approach that creates a variety of quality tourism products that are environmentally/ ecologically sustainable

- economically viable
- socially and psychologically acceptable
- The result of which reflects: an integrated and holistic approach to product development
- capacity building in host communities
- a sense and uniqueness of place
- commitment to the greening of the tourism industry

Increasing evidence shows that an integrated approach to tourism planning and management is now required to achieve sustainable tourism. It is only recently that there has been a growing recognition of the importance of combining the needs of traditional urban management (transportation, land use planning, marketing, economic development, fire and safety etc.) with the need to plan for tourism.

Some of the most important principles of sustainable tourism development will include:

Tourism will be initiated with the help of broad-based community-inputs and the community should maintain control of tourism development.

- Tourism will provide quality employment to its community residents and a linkage between the local businesses and tourism should be established.
- A code of practice will be established for tourism at all levels - national, regional, and local - based on internationally accepted standards. Guidelines for tourism operations, impact assessment, monitoring of cumulative impacts, and limits to acceptable change should be established.
- Education and training programmes to improve and manage heritage and natural resources should be established.

However, **the primary benefits** are:

**1. increased funding for protected areas and local communities** ( protected areas suffer from budget constraints, yet collect nominal entrance fees or none at all; but travelers are interested in helping the areas, as they become more environmentally conscious)

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**2. job creation for local residents** (e.g., tour guides, park wardens, cooks, crafts makers, etc.)

**3. environmental education for visitors** (increasing awareness can change behaviour, change use patterns, and create advocates for conservation)

## **B. PROJECT OBJECTIVES AND KEY INDICATORS:**

The main objective of this project is to develop Eco-Tourism along the coast line and particularly utilizing the water bodies (Chilika Lake etc.). This will enhance the tourism potential, utilization of the local materials, engagement of locals in hospitality, giving opportunities to the locals and tourists for inter-change the ideas, rediscovering the local art and culture and financial benefit to the local inhabitants.

The prime objective of the project is to reveal the Scenic resources in coastal region and to utilize the services of people of the region for their economic gain. This will boost the means of living for the people.

### **Key Indicators**

This project shall:

- effectively promote the preservation of the local ecosystem.
- be economically viable in order to attract financing and be sustainable:
- be well planned, financed, managed and marketed in order to meet the stringent environmental and recreational demands of a true ecotourism development.
- promotion of ethical responsibilities and behavior of the tourists towards the natural and cultural environment
- Involve all party education (communities, government, NGOs, industry and tourists)
- recognize the intrinsic values of the tourism related resources available
- accept the tourism related resources on their own terms, recognizing limits, which involves supply-oriented management
- Have long-term benefits (economic and non-economic) to the resource, tourism industry and the local community
- Involve responsible conservation practices related to both internal and external operations
- Create opportunity for better management of this valuable region under the banner of ICZM through intersectional practice.

Ecotourism is cultural tourism (a cross-cultural experience), nature tourism (assisting with conservation programmes), a travel-learn experience (discover how we are coping with modernity), a little bit of soft adventure (just being here is an adventure), and benefiting the well-being of indigenous peoples.

### **WHAT DO ECOTOURISM MARKETS WANT?**

#### **Activities Preferred**

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Ecotourists are interested in a tremendous range of activities. Walking, hiking or trekking, may not have been given as much emphasis as they deserve. Water-based activities are also important, particularly to the experienced ecotourist. General ecotourists are interested in varied experiences, including culture. Thus, land-based packages with a lot of varied rural, ocean, hill, mountain or other scenic views, and strong cultural components, would be of interest for the more general ecotourist .

What is distinctive is that *consumers' preferences tend to be moving in the direction of the ecotourists'*. Also, ecotourists are interested in *more than one type of activity* for their next vacation.

Hiking, Backpacking, Touring camping , Boating, Rafting, Canoeing, Kayaking , sailing, Cruise boat, walking, fishing, sightseeing, swimming, other water activities, local cultures, cycling, skiing, wildlife viewing, visiting museums, historical ruins and sites , horse/trail riding/ mountain scenery, visiting popular attractions, parks, etc.

*Importance of Features*

Experienced Ecotourist	General Consumer
1. wilderness setting	1. casual walking.
2. wildlife viewing	2. wildlife viewing
3. hiking/trekking	3. learning about other cultures
4. visiting national park/other protected area.	4. visiting national park/other protected area
	5. wilderness setting.

### **MARKET PREFERENCE SHIFTING TOWARD CONSERVATION & QUALITY EXPERIENCES**

Markets have expressed strong support for environmentally sensitive travel operators, whether attractions, accommodation, transportation, food services, or tour operators. Markets are prepared to avoid destinations or operators that are perceived to have negative environmental impacts. The preferences of those interested in nature, adventure, and culture are becoming mainstreamed into more general markets. There is a desire for conservation; increased participatory experiences and programs; accommodation and facilities which are representative of the experience; and a range of benefits which go beyond the operator and visitor, and which are more long lasting.

There are implications to planners in this shift of preferences. A tourism facility can be built and operated using very environmentally sensitive techniques which can lead to a model, environmentally-friendly facility. This both attracts environmentally sensitive tourists, and has a positive, less consumptive or polluting impact on the environment

**Fig.1 – Shift from traditional tourism**

<i>Tourism Component</i>	<i>Traditional Tourism</i>	<i>Current and Future Tourism Market Trends</i>
<b>Facilities</b>	- Accommodation as bed - Accommodation as island of luxury & pampering	- Accommodation as part/facilitator of the experience - Accommodation as extension of the conservation ethic
<b>Service</b>	- Fundamental requirements of the guests	- Total experience of the guests; understanding activity, & other needs
<b>Luxury</b>	- Structures to service guests - Mid range - luxury - Fun - Service	- Environments available to guests - Budget - mid range - Education, satisfaction, appreciation - Style
<b>Marketing</b>	- Mass markets  - Enjoyment  - Sell image - Green image (eco image)	- Specialty market niches - nature/adventure/culture/education - Wilderness ethic, environmental stewardship, enlightenment - Describe benefits plus responsibilities - Green reality (eco ethic)
<b>Programmi ng</b>	- On-site activities  - Contact during vacation, possible education - Observing - Activities specific and specialised	- On-site experiences, plus off-site long-lasting benefits  - Contact and education; pre, during, and post-vacation - Experiencing - Interlinked activities and experiences
<b>Benefits</b>	- Operator (\$) - Customer benefits on vacation	- Operator, community, resource (varied benefits) - Benefits last longer than actual vacation
<b>Measures of Success</b>	- Volume-based  - Number of visitors - \$ spent	- % of repeat visits and word of mouth  - Customer enlightenment - Community/operator quality of life, cultural renewal & pride - Spreading out visitation period - Positive economic impact & viable business - Resource conservation

(Wight 1996a)

Tourism businesses shall have two "green" opportunities through marketing:

- 1. how best can we depict/help the environment**
- 2. how can we improve their own environmental performance to gain competitive advantage**

The likelihood of tourists being attracted to an area will be heightened and each experience shall build upon a central travel motivator because in our project :

- the accommodation is environmentally sensitive;
- there are opportunities to take day trips
- there are opportunities to take longer trips with an operator (whether land or water, very active or more moderately active)
- local attractions or services include interpretive information on the community/culture, the area, and activities
- information is provided on regional conservation activities
- the regional partners work with each other to develop an environmental charter, or code, as a guide for tourism businesses in the area, to enhance environment and ecotourist experience.



### C. PROJECT AREA DESCRIPTION:

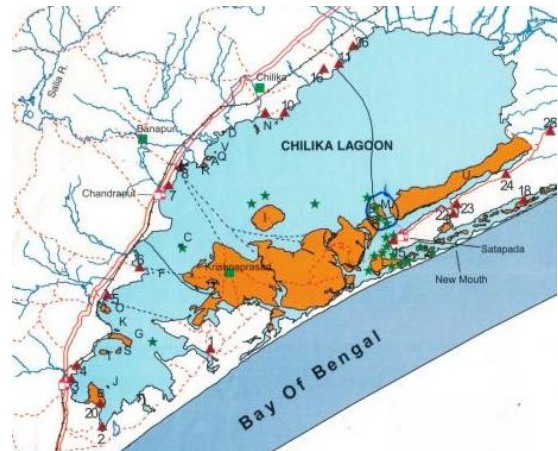
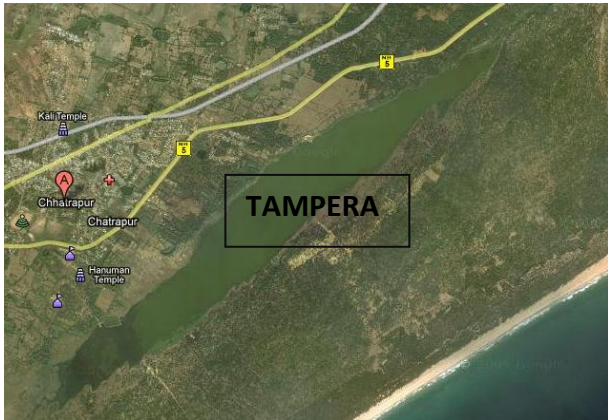
Our project will be restricted to the Chilika- Gopalpur stretch of the Coastal region of the State. Although tourism has started since long in Chilika, but it was restricted to only few sites of this largest brackish water lagoon, such as Kalijai, Rambha, Nalabana etc. However, recent opening of tourist site at Satapada and opening of new mouth at Sipakuda has increased the tourist flow to a large extent. With the construction of recent motorable road from Puri, the tourist potential has increased many folds. Simultaneously tourists are showing interests to explore many of the Islands of Chilika, with tremendous scenic as well recreational potential.

The present “Eco tourism” project is, therefore, designed to develop in and around Chilika Lagoon, which has good communication and with sizable tourist flow. The proposed project is planned to explore the optimum tourist potential of the region to augment people’s participation and safeguard their livelihood security. This will ultimately address the empowerment of people and to face the wrath of the nature (natural calamity) in this coastal region. **The proposed sites are CHILIKA LAGOON AND**

#### **TAMPERA**

**Fig .2 – Location of Chilika and**





### **Chilika Lagoon :**

Chilika lagoon is situated on the east coast of India. It is the largest brackish water lagoon in Asia with estuarine character. It is the largest wintering ground for migratory water-fowl found anywhere on the Indian sub-continent. It is one of the hot spot of biodiversity in the country, and some rare, vulnerable and endangered species listed in the IUCN Red List of threatened Animals inhabit the Lake area for at least part of their life cycle. This list includes a number of rare, threatened and endangered species such as Irrawady dolphins and the Barakudia limbless skink. The Nalabana wildlife Sanctuary is located within the Lagoon.

The lagoon is a highly productive ecosystem with rich fishery resources. The rich fishing grounds sustain the livelihood of more than 2,00,000 fisher folk who live in and around the lake. But the traditional techniques of fishing in Chilika like Janao, Bahano, Dian, Uthapani and Dhaudi are gradually being abandoned.

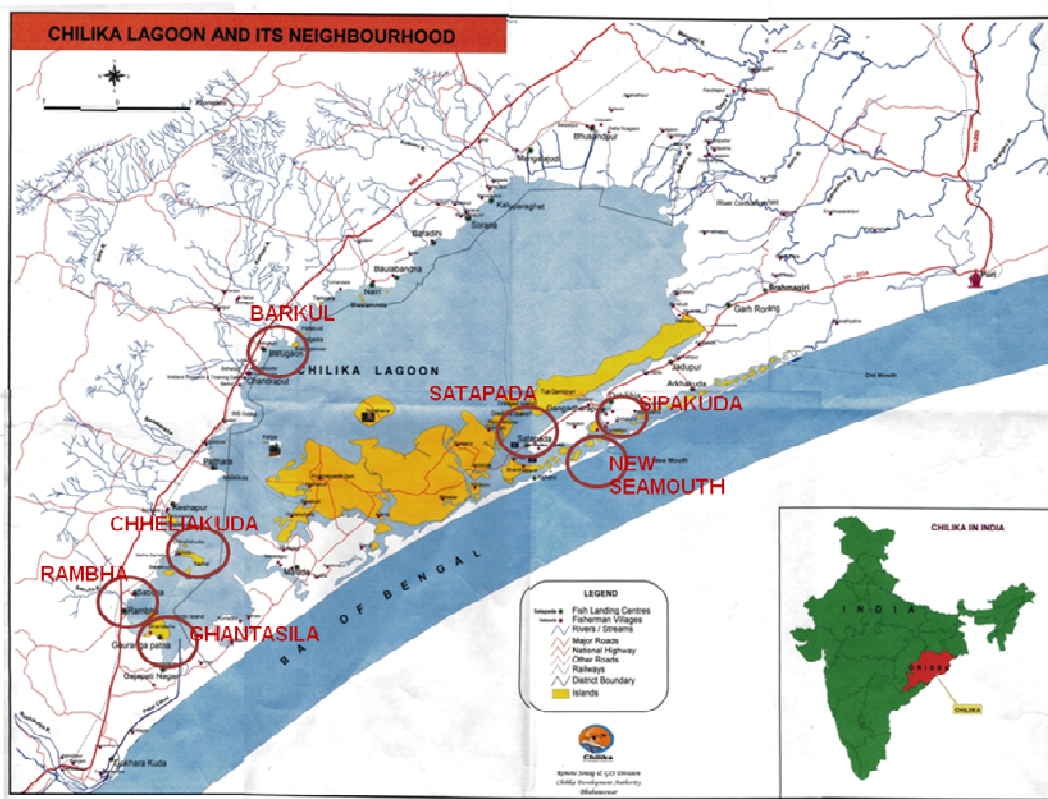
Based on its rich biodiversity and socio-economic importance, Chilika Lake was designated by the Government of India as a Ramsar Site in 1981, especially as an important Water-fowl habitat.

The area of the lagoon varies between 1165 and 906 sq.km during the monsoon and summer respectively. The lake itself can be broadly divided into four natural sectors based on salinity and depth: the southern zone, central zone, northern zone and the outer channel. Numerous islands are present in the lake, prominent among which are Mahisa, Berhampura, Nalabana, Kalijai, Somolo, Honeymoon, Breakfast and Birds islands etc.

**Location :** Chilika lagoon is situated between 19° 28' and 19° 54' North latitude and 85° 05' and 85° 38' East longitudes. It extends from Southwest corner of Puri and Khurda districts to the adjoining Ganjam District of Orissa State.

### **PROPOSED AREAS AT CHILIKA LAGOON**

**Fig .3 – Location of the Proposed sites to be developed at Chililka**



## Tampera Lake :

- This is a sweet water lake in the district of Ganjam, situated at the Southern area of Orissa.
- One can hear the soothing sound of water rippling alongside paddleboats and water scooters, as one drifts on Tampera backwater. There is a feeling of complete relaxation on entering a world of serenity and natural beauty in Tampera.
- It is a paradise where land, sea and sky, come together in a union of elements. As one floats on the backwater, the beauty of the serene waterways and quaint inlets and creeks along the coast enchants. It remains an unforgettable journey, along the tranquil backwaters of Tampera which is 5.6 kms. Long and 670 meters wide, with Rushikulya Backwater.
- Boating and water scooters form a part of the water sports complex which has become an added attraction of this place.

**Fig .4 – Location of the Tampera lake**



#### **D. PROJECT DESCRIPTION AND SCOPE:**

### **CHILIKA**

#### **1. Satapada :**

**Existing tourist flow:** As per 2007 tourist data (Source Deptt. Of Tourism, govt. of Orissa), 134223 nos. of tourists are coming to Satapada .

**Dependent Communities:** *Satapada, Brahmapura and Arakhakuda villages*

As per 2001 Census:

Satapada has a total population of 1962 out of which 1007 are men and 955 are women.

Arakhakuda has a total population of 289 out of which 145 are men and 144 are women.

Brahmapura has a total population of 175 out of which 100 are men and 75 are women.

Traditionally, the fisherman caste was stratified in terms of professional skills in the fishing industry trades, divided as boat and fishing gear-making, net-making, fishing, trade, and so on. Even among those fishermen with some education and exposure to the external world, almost 88 percent of the households reported that they have no participation in the onward fish trade. In Arakhakuda, both prawn culture and fishing are intensive. Juvenile prawns are being caught and sold to fishermen in areas where pen culture is common. In the early 1990s, the effects of globalization could be seen in the fast-rising prices of prawns compared to those of traditional fish, which made exporting commercially attractive, and attracted middlemen, politicians, and money lenders into the business. In addition to conventionally or legally assigned fishing sites, people started prawn farming in open areas and the lake periphery. Ideally, vertical linkages with processing, marketing and sale, and distribution activities would be developed while maintaining fishing as the primary

activity in the region. Such an expansion of economic activities would facilitate sustainable management local community as well as increase the tourism potential.

**Need of the community:**

Linkages with processing, marketing and sale, and distribution activities needs to be developed while maintaining fishing as the primary activity in the region. Such an expansion of economic activities would facilitate sustainable management of the local community as well as increase the tourism potential. Training the local people for guides shall also add to the increase of livelihood source.

**Project activities:**

Handicraft & Handloom Centre

Public convenience

Boats

Arrangement of cultural troupes

## 2. New Mouth, Chilika :



**Existing tourist flow:** Since tourists who come to Satapada and Sipakuda visit the New mouth, at present a good number of tourists are coming here. The following facilities are required to meet the basic requirements of the tourists.

**Dependent Communities:** *Sipakuda and Banamalipur:*

As per 2001 Census:

Sipakuda has a total population of 455 out of which 228 are men and 227 are women.

Banamalipur has a total population of 297 out of which 153 are men and 144 are women.

Traditionally, the fisherman caste was stratified in terms of professional skills in the fishing industry trades, divided as boat and fishing gear-making, net-making, fishing, trade, and so on. Now the local communities are also engaged in agricultural and other tourism based activities.

**Need of the community:**

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Linkages with processing, marketing and sale, and distribution activities need to be developed while maintaining fishing as the primary activity in the region. Such an expansion of economic activities would facilitate sustainable management of the local community as well as increase the tourism potential. Training the local people for guides shall also add to the increase of livelihood source.

**Project activities:**

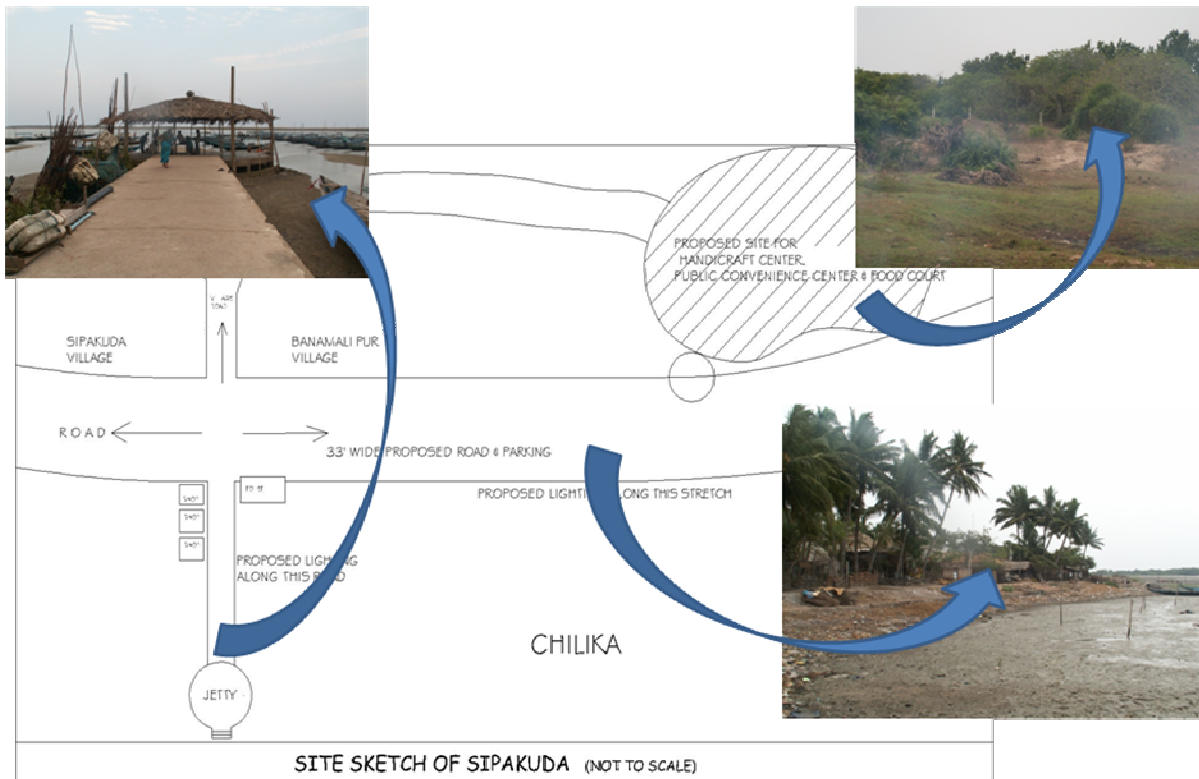
Food Court

Public convenience

Sit-outs

**3. Sipakuda :**





**Existing tourist flow :** If we consider 50% of tourists who come to Satapada come to Sipakuda the volume of tourists come to 46978 nos. in the year 2007. And as per local interaction, during peak times around 1000 tourists visit the place per day.

**Dependent Communities:** Sipakuda and Banamalipur:

As per 2001 Census:

Sipakuda has a total population of 455 out of which 228 are men and 227 are women.

Banamalipur has a total population of 297 out of which 153 are men and 144 are women.

Traditionally, the fisherman caste was stratified in terms of professional skills in the fishing industry trades, divided as boat and fishing gear-making, net-making, fishing, trade, and so on. Now the local communities are also engaged in agricultural and other tourism based activities.

**Need of the community:**

Linkages with processing, marketing and sale, and distribution activities need to be developed while maintaining fishing as the primary activity in the region. Such an expansion of economic activities would facilitate sustainable management of the local community as well as increase the tourism potential. Training the local people for guides shall also add to the increase of livelihood source.

**Project activities:**

Food Court

Public convenience

Parking

Illumination

Boats

#### 4. Barkul :

**Existing tourist flow:** As per 2007 tourist data (Source Deptt. Of Tourism, govt. of Orissa), 271793 nos. of tourists are visiting the place.

**Dependent Communities:** *Balugaon and Barkul*

As per 2001 Census:

Balugaon has a total rural population of 78,730 out of which 39673 are men and 39057 are women.

Barkul has a total population of 1490 out of which 760 are men and 730 are women.

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Balugaon is a large and developed village. A famous Goddess resides 'Bhagabati' resides at Banapur close to Balugaon. Traditionally, the fisherman caste was stratified in terms of professional skills in the fishing industry trades, divided as boat and fishing gear-making, net-making, fishing, trade, and so on. Now the local community is also engaged in agricultural, and other tourism based activities. Banapur villagers are famous for cane weaving. Here already linkages with processing, marketing and sale, and distribution activities have been developed.



**Need of the community:**

Maintaining fishing as the primary activity in the region, an expansion of economic activities would facilitate sustainable management of the local community as well as increase the tourism potential. Training the local people for guides shall also add to the increase of livelihood source.

**Project activities:**

- Food Court
- Public convenience
- Parking
- Illumination
- Boats

**5. Rambha :**





**Existing tourist flow:** As per 2007 tourist data (Source Deptt. Of Tourism, govt. of Orissa), 72346 nos. of tourists are visiting the place.

**Dependent Communities:** *Rambha , Sabulia, Diandein & Madhurchuan*

As per 2001 Census:

Rambha has a total rural population of 75319 out of which 38305 are men and 37014 are women.

Sabulia has a total population of 5933 out of which 3017 are men and 2916 are women.

Madhurchuan has a total population of 2301 out of which 1171 are men and 1130 are women.

Diandein has a total population of 1237 out of which 629 are men and 608 are women.

Traditionally, the fisherman caste was stratified in terms of professional skills in the fishing industry trades, divided as boat and fishing gear-making, net-making, fishing, trade, and so on. Now the local community is also engaged in agricultural and other tourism based activities.

**Need of the community:**

Linkages with processing, marketing and sale, and distribution activities need to be developed while maintaining fishing as the primary activity in the region. Such an expansion of economic activities would facilitate sustainable management of the local community as well as increase the tourism potential. Training the local people for guides shall also add to the increase of livelihood source.

Three distinct communities can be identified as having crucial linkages to the Lake and its resource management:

- a. the fishermen (traditional and non-traditional),
- b. the farmers who live around the lake, and
- c. those who depend on the forest resources in the Lake catchment area for both their livelihood and to meet their fuel/timber requirements.

**Project activities:**

Public convenience

Training for rescue facility

## **6. Islands ( Ghantasila & Chheliakuda ) :**



**Existing tourist flow:** Tourists who visit Rambha visit these islands.

**Dependent Communities:** *Rambha , Sabulia, Diandain & Madhurchuan*

As per 2001 Census:

Rambha has a total rural population of 75319 out of which 38305 are men and 37014 are women.

Sabulia has a total population of 5933 out of which 3017 are men and 2916 are women.

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Traditionally, the fisherman caste was stratified in terms of professional skills in the fishing industry trades, divided as boat and fishing gear-making, net-making, fishing, trade, and so on. Now the local community is also engaged in agricultural and other tourism based activities.

**Need of the community:**

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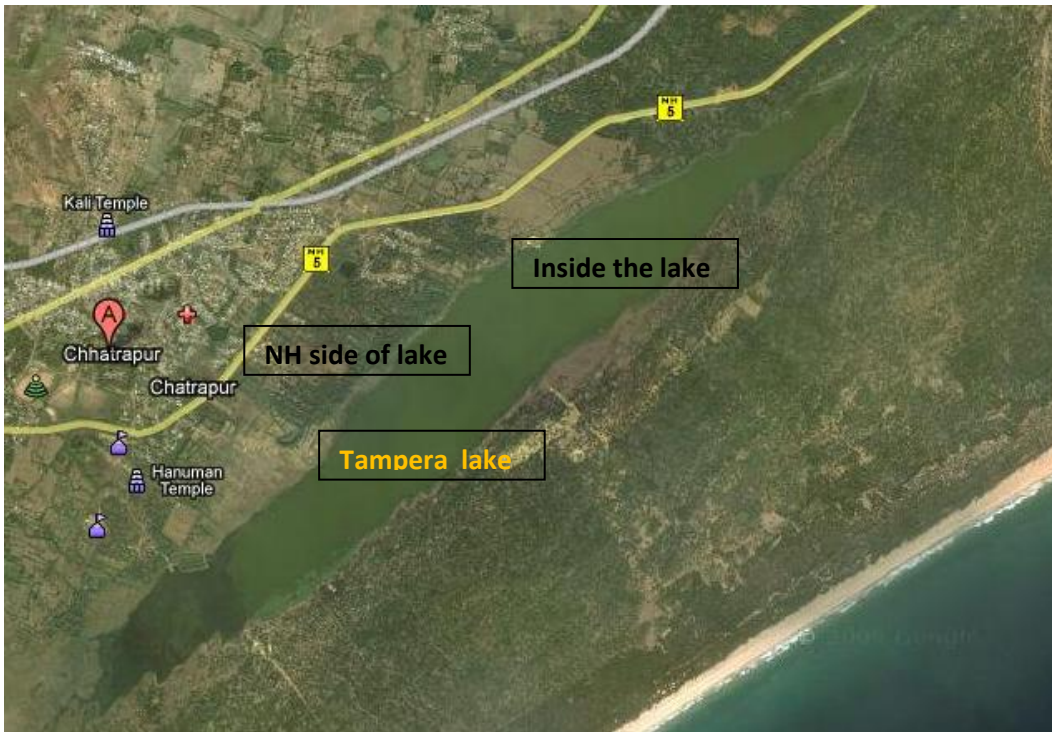
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- a. the fishermen (traditional and non-traditional),
- b. the farmers who live around the lake, and
- c. those who depend on the forest resources in the Lake catchment area for both their livelihood and to meet their fuel/timber requirements.

**Project activities:**

- Sit-out
- Jetty
- Food Court
- Pathway

**b) Tampera Lake:**



**Existing tourist flow:** Tourists who visit Rambha visit these islands.

**Dependent Communities:** Taraipatapur, Telegunuagaon and Agastinuagaon

As per local interaction, the population data is as follows:

Taraipatapur : 2300 -2500 approx.

Telegunuagaon : 1500 approx.

As per 2001 Census:

Agastinuagaon has a total population of 5504 out of which 2765 are men and 2739 are women.

These villages mostly constituted fishermen community which has gradually developed other professions such as boat and fishing gear-making, net-making, fishing, trade, and so on. Now the local community is also engaged in agricultural activities using Tampera Lake for irrigation purposes.

**Need of the community:**

Linkages with processing, marketing and sale, and distribution activities need to be developed while maintaining fishing as the primary activity in the region. Such an expansion of economic activities would facilitate sustainable management of the local community as well as increase the tourism potential. Training the local people for guides shall also add to the increase of livelihood source.

**E. PROJECT COMPONENTS & COMPONENT DESCRIPTION:**

**CHILIKA**

**1. SATAPADA**

Already we have public toilets, restaurants, boating facilities for the tourists but they are insufficient to cater to all the tourists for which we require more facilities to provide sufficient amenities to the recent tourist flow as well as to invite more number of tourists in the future.

**For the participatory ‘Eco-Tourism’, following infrastructural development and supporting activities are proposed at different sites:**

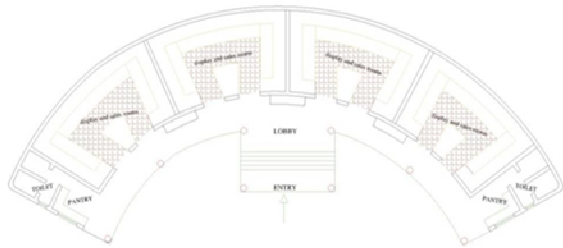
The materials used shall differ from the conventional building materials and shall be of environment and eco-friendly materials. The local people will be engaged for supplying construction materials, labour for construction and operation including maintenance.

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- i) **Handicraft, Handloom Center** – The local people are engaged with a lot of handicrafts using shells, jute work, wooden works especially cane furniture works etc. To increase the livelihood of the people and also to revive the dying local crafts etc. The handicraft centre will encase the handicrafts and will allow the selling of these handicrafts to the tourists. By this way the local community will be benefitted by earning their livelihood as well as gain publicity of their handicrafts.



PLAN & ELEVATION OF HANDICRAFT AND HANDLOOM CENTRE

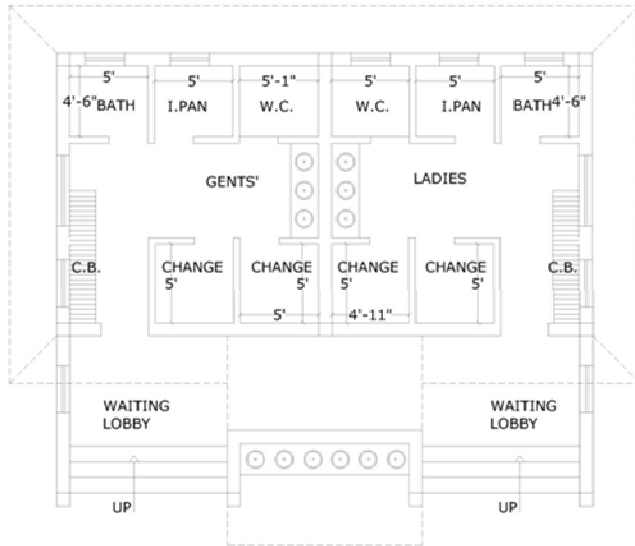
AREA = 4000 SFT.



- ii) **Boats** – Boat services will be made available for cruising and bird watching including Dolphin watching and other adventurous water based activities like rafting, kayaking etc. To make the tourists experience the nature. Local people shall be engaged in operating and maintaining the boat services.



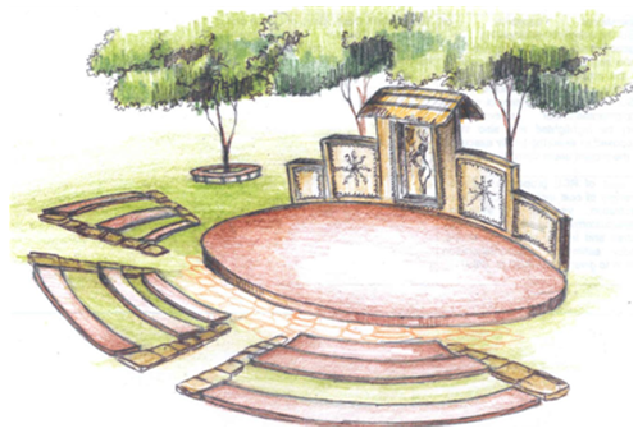
iii) **Public conveniences** – Construction of toilet blocks will be taken up using eco friendly materials like bamboo mat, mud walls, laterite stone dry flooring and thatched roofing. Bioseptic tanks will be used here. The local people will be engaged for supplying construction materials, labour for construction and operation including maintenance.



PLAN OF PUBLIC CONVENIENCE CENTRE  
AREA = 1000 SFT.

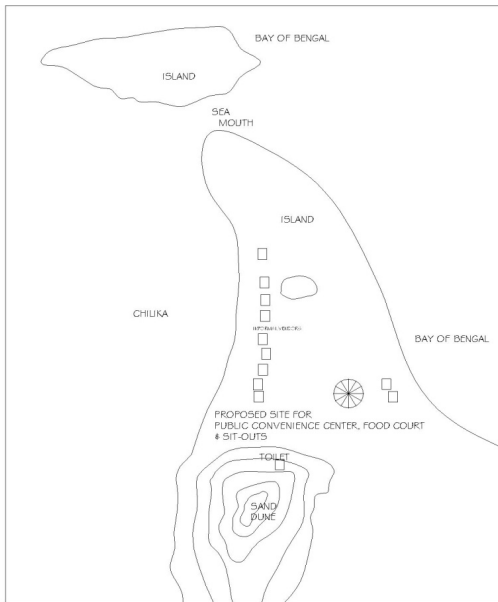
Apart from these hardware components we need to attract the tourists for natural experiences in order to have a sustainable tourism. For these kinds of activities we propose:

iv) **Open air theatre** – To organize local cultural programme for tourists by which local artists will be benefitted.



PERFORMING PLATFORM AND SITOUTS

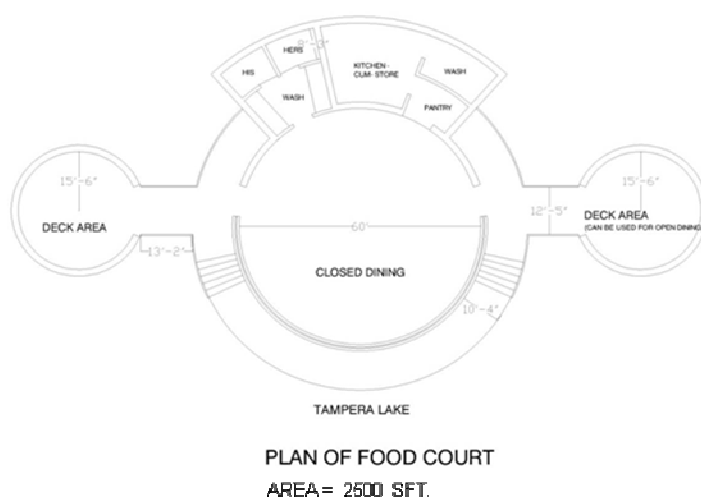
## 2. NEW MOUTH, CHILIKA



SITE SKETCH OF NEW SEA MOUTH (NOT TO SCALE)

**i) Food courts** – The food courts shall be constructed of eco-friendly materials like bamboo mat for flooring and walls, thatched/tented/earthen tile roofing. Food will be prepared by use of local food materials like crab, local fish, prawn, shrimp, and lobsters etc. available by the local inhabitants to cater the need of the Tourists.

Considering the tourist inflow at the place a food court will help to cater the basic needs of the tourists which will be constructed using locally available and environment friendly materials. The food court shall engage local people for rendering the services to the people so that the local community will be engaged for supply of building materials, labour for construction, supply of food materials, sale and operation including maintenance.

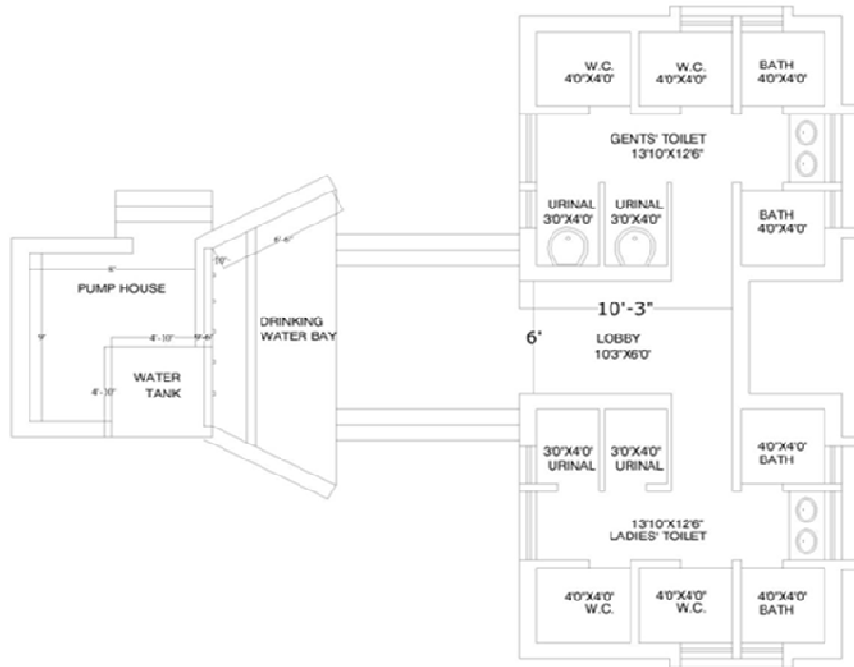


PLAN OF FOOD COURT  
AREA= 2500 SFT.



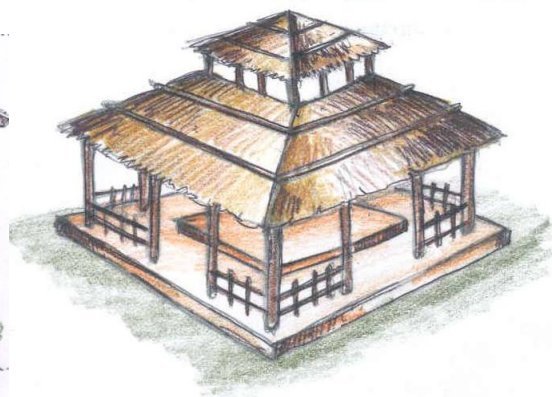
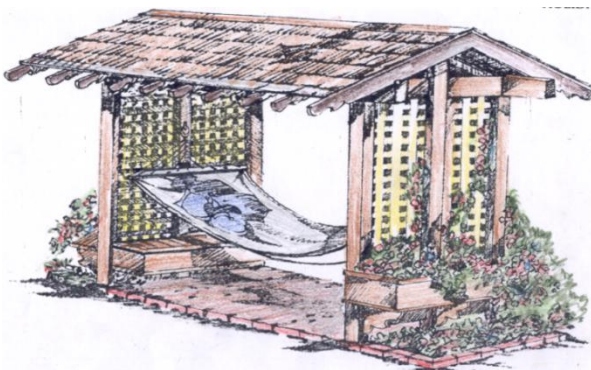
**ii) Public conveniences** – Construction of toilet blocks will be taken up using eco friendly materials like bamboo mat, mud walls, laterite stone dry flooring and thatched roofing. Bioseptic tanks will be used here.

The local people will be engaged for supplying construction materials, labour for construction and operation including maintenance.



**PUBLIC CONVENIENCE CENTRE**  
**AREA = 1200 SFT.**

iii) **Sit-outs** – Covered / Uncovered benches, chairs for tourist to rest. This will be an added attraction for the through and local traffic for relaxing sometime in the midst of Chilika environment during their long travels. The materials used will be totally of environment friendly and natural materials like wood, mat, waste tree trunks and branches. The local people will be engaged for supplying construction materials, labour for construction and operation including maintenance.

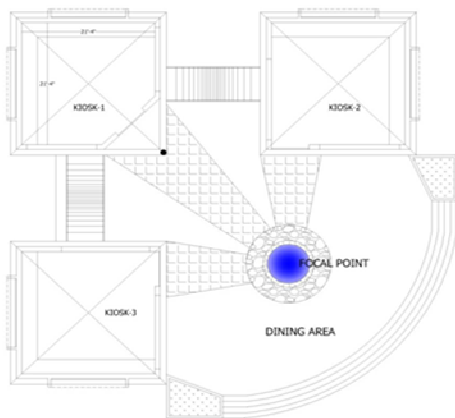


For construction of the above facilities OTDC will engage local people. The facilities then shall be handed over to the societies of local community for operation and management. They will be given expertise with regular training and workshops enabling them to handle various kinds of job. This will benefit the local community directly as well as indirectly by the inflow of the tourists.

### 3. SIPAKUDA

**i) Food courts** – The food courts shall be constructed of eco-friendly materials like bamboo mat for flooring and walls, thatched/tented/earthen tile roofing.

Food will be prepared by use of local food materials like crab, local fish, prawn, shrimp, lobsters etc. available by the local inhabitants to cater the need of the Tourists.



PLAN OF FOOD COURT

THE AREA OF ONE KIOSK = 400 SFT.  
NO. OF KIOSKS AND DINING AREA SHALL CHANGE  
ACCORDING TO THE PHYSICAL SITE REQUIREMENTS AND  
AVAILABILITY

Considering the tourist inflow at the place a food court will help to cater the basic needs of the tourists which will be constructed using locally available and environment friendly materials. The food court shall engage local people for rendering the services to the people so that the local community will be engaged for supply of building materials, labour for construction, supply of food materials, sale and operation including maintenance.

**ii) Public conveniences** – Construction of toilet blocks will be taken up using eco friendly materials like bamboo mat, mud walls, laterite stone dry flooring and thatched roofing. Bioseptic tanks will be used here. The local people will be engaged for supplying construction materials, labour for construction and operation including maintenance.

**iii) Parking** – Parking places will be developed with proper illumination to facilitate parking of tourist vehicles. Parking places will be finished with semi dressed laterite stones for flooring. These parking places will be developed by engaging local people and will be handed over to the local community for operation and maintenance.

**iv) Illumination** – To facilitate night activities at different spots.

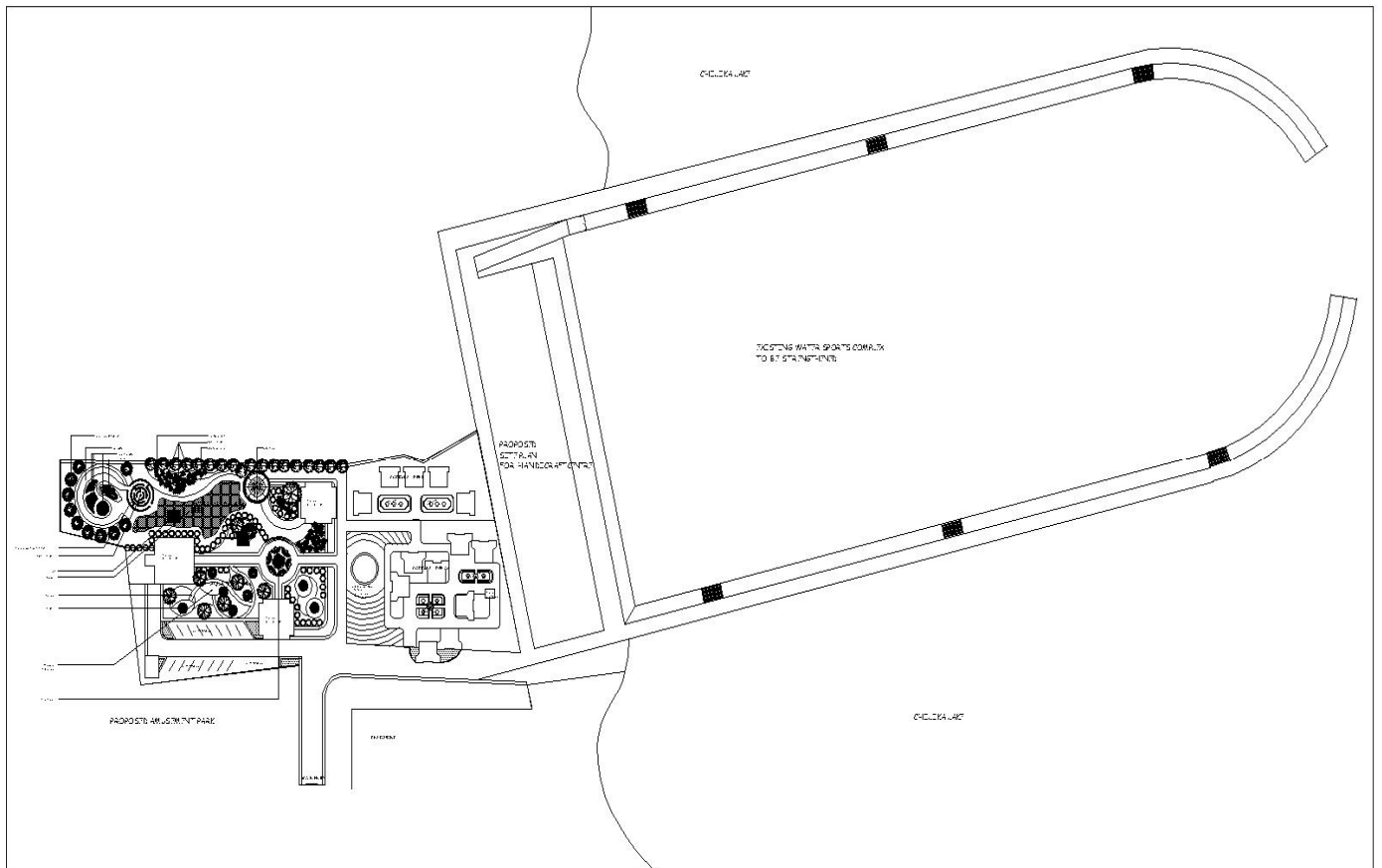
**v) Boats** – Boat services will be made available for cruising and bird watching including Dolphin watching and other adventurous water based activities like rafting, kayaking etc. to make the tourists experience the nature. Local people shall be engaged in operating and maintaining the boat services.





For construction of the above facilities OTDC will engage local people. The facilities then shall be handed over to the societies of local community for operation and management. They will be given expertise with regular training and workshops enabling them to handle various kinds of job. This will benefit the local community directly as well as indirectly by the inflow of the tourists.

#### 4. BARKUL



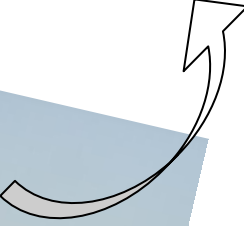
SITE PLAN OF BARKUL (NOT TO SCALE)



Proposed site for Handicrafts Centre



Existing embankment to be strengthened



**For the participatory 'Eco-Tourism', following infrastructural development and supporting activities are proposed at different sites:**

**i) Strengthening of Water Sports Complex at Barkul:** The present water sports complex at Barkul is inadequate in size and silting has decreased its carrying capacity. Moreover the complex lacks illumination, as a result of which tourists cannot utilize it during night time at present. Increasing in size, desilting and illumination will help using it during night time also. We can also provide more water sports equipments like bumping boats, water scooter etc. and allow the local people to manage it by collecting suitable charges from the users so as to make the system self sustainable.

**ii) Amusement Park** – For recreation of tourists and their off springs, the park will be developed by using local materials, entertainment at Barkul as well involvement of local community.

**iii) Illumination** – To facilitate night activities at different spots.

**iv) Tourist Guide Centre** – Local youth will be trained to serve as tourist guides.

Quality guides are also extremely important for ecotourism, requiring skills in language, natural and cultural history, environmental interpretation, communications, service, and ethical principles. Overall, according to the travel trade the setting had very critical importance, with wilderness setting in rank first, followed by: guides, outdoor activities, all-inclusive package, park/protected area, interpretive/educational programs, cultural experiences, and communication in the client's language.

The movement of conducted or guided tours shall be limited to defined circuits/routes within or connecting the tourism zone areas only. Vehicles of defined size and make shall be allowed for the purpose. For the purpose of conducted tours inside the premises, the following, components shall be adhered to strictly.

- Entry of visitors and vehicles shall be limited to carrying capacity of area concerned.
- No vehicle shall be allowed inside the area without the registered eco-guides; who will ensure the movement of vehicle on the defined routes and check the movement visitors and allow stoppage, rest and exposure at defined spots only. On foot excursions inside the area are not allowed except on eco-trails and eco-tracks specially defined for the same.
- Eco-guides and staff involved in the eco-tourism shall be specially trained in interpretation and behavioral skills and shall have to follow approved dress code and shall be registered with the Park authority and updated at regular intervals.
- Mini buses with closed windows have been prescribed for conducted tours, while open jeeps and gypsies may be allowed for guided tours.
- Charges for hired vehicles and eco-guides shall be as per approved list by authorities. Rates shall be displayed on the board at the Reception at every entry point of the area concerned.

**v) Handicraft, Handloom Center** – The local people are engaged with a lot of handicrafts using shells, jute work, wooden works especially cane furniture works etc. To increase the livelihood of the people and also to revive the dying local crafts etc.. The handicraft centre will encase the handicrafts and will allow the selling of these handicrafts to the tourists. By this way the local community will be benefitted by earning their livelihood as well as gain publicity of their handicrafts.

**vi) Training for rescue facility** – The local people will be trained to handle emergency situations; to carry out rescue operations for accidental disasters, both natural and man-made. They will act as immediate help for the victims before outside help reaches the site.

**vii) Food courts** – The food courts shall be constructed of eco-friendly materials .

Food will be prepared by use of local food materials like crab, local fish, prawn, shrimp, lobsters etc. available by the local inhabitants to cater the need of the Tourists.

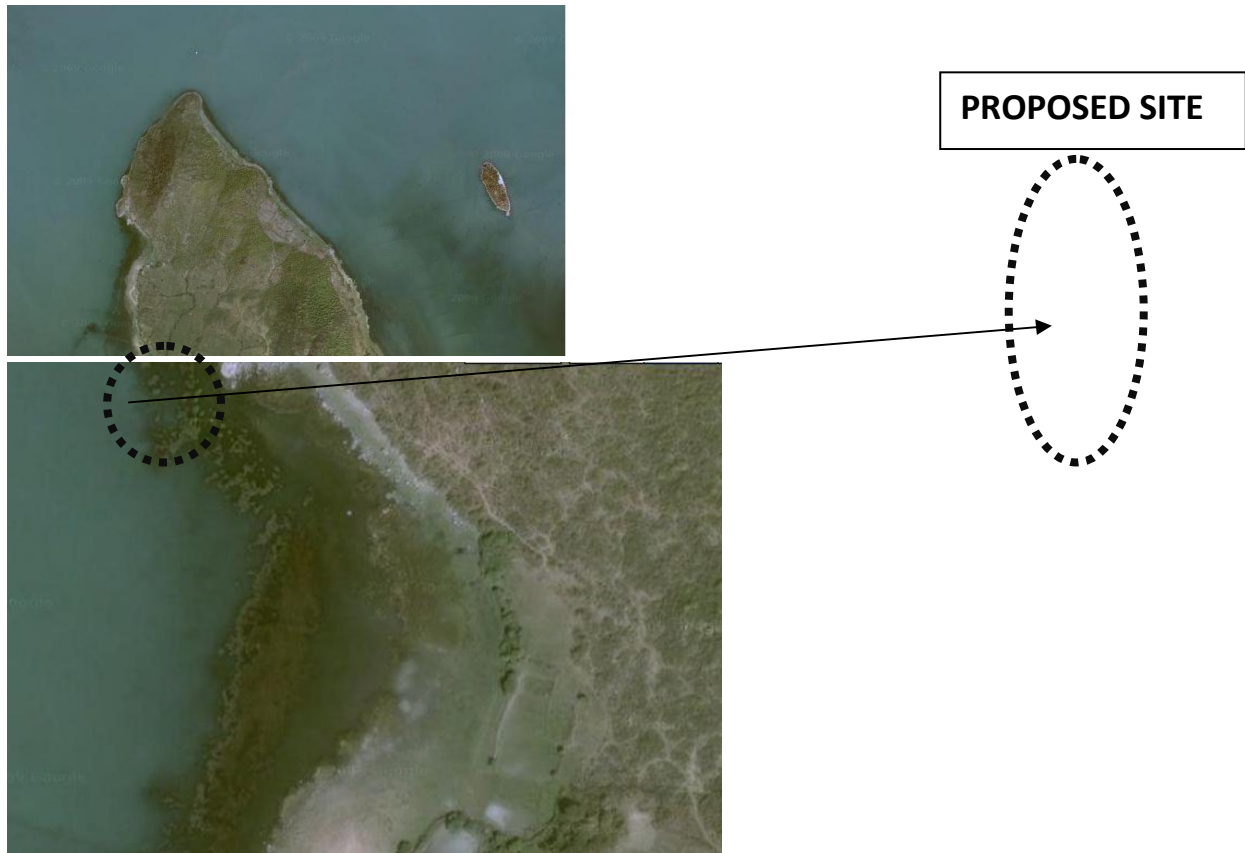
Considering the tourist inflow at the place a food court will help to cater the basic needs of the tourists which will be constructed using locally available and environment friendly materials. The food court shall engage local people for rendering the services to the people so that the local community will be engaged for supply of building materials, labour for construction, supply of food materials, sale and operation including maintenance.

### **Detailed estimates of the above mentioned proposals are enclosed in annexure-1**

For construction of the above facilities OTDC will engage local people. The facilities then shall be handed over to the societies of local community for operation and management. They will be given expertise with regular training and workshops enabling them to handle various kinds of job. This will benefit the local community directly as well as indirectly by the inflow of the tourists.



## 6. GHANTASILA & CHHELIAKUDA ISLANDS



Tourists visiting Rambha visit these two islands as a part of their trip. Hence providing basic facilities to the tourists after their boating drive is the minimum necessity. The basic facilities thus include:

**i) Sit outs** – Covered / Uncovered benches, chairs for tourist to rest. This will be an added attraction for the through and local traffic for relaxing sometime in the midst of Chilika environment during their long travels. The materials used will be totally of environment friendly and natural materials like wood, mat, waste tree trunks and branches. The local people will be engaged for supplying construction materials, labour for construction and operation including maintenance.

**ii) Jetties** – Up gradation of existing jetties for ease in embarking to and disembarking from boats.



**iii) Food courts** – The food courts shall be constructed of eco-friendly materials like bamboo mat for flooring and walls, thatched/tented/earthen tile roofing.

Food will be prepared by use of local food materials like crab, local fish, prawn, shrimp, lobsters etc. available by the local inhabitants to cater the need of the Tourists.

Considering the tourist inflow at the place a food court will help to cater the basic needs of the tourists which will be constructed using locally available and environment friendly materials. The food court shall engage local people for rendering the services to the people so that the local community will be engaged for supply of building materials, labour for construction, supply of food materials, sale and operation including maintenance.

For construction of the above facilities OTDC will engage local people. The facilities then shall be handed over to the societies of local community for operation and management. They will be given expertise with regular training and workshops enabling them to handle various kinds of job. This will benefit the local community directly as well as indirectly by the inflow of the tourists.

## **TAMPERA**

For the participatory 'Eco-Tourism', following infrastructural development and supporting activities are proposed at different sites:

### **1. ON THE NH -SIDE OF THE LAKE**

**i) Tourist Guide training camp** – Local youth will be trained to serve as tourist guides.

Quality guides are also extremely important for ecotourism, requiring skills in language, natural and cultural history, environmental interpretation, communications, service, and ethical principles. Overall, according to the travel trade the setting had very critical importance, with wilderness setting in rank first, followed by: guides, outdoor activities, all-inclusive package, park/protected area, interpretive/educational programs, cultural experiences, and communication in the client's language.

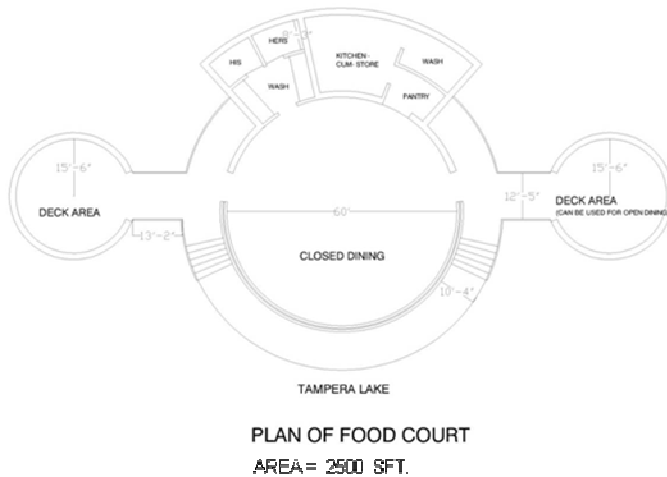
The movement of conducted or guided tours shall be limited to defined circuits/routes within or connecting the tourism zone areas only. Vehicles of defined size and make shall be allowed for the purpose. For the purpose of conducted tours inside the premises, the following, components shall be adhered to strictly.

- Entry of visitors and vehicles shall be limited to carrying capacity of area concerned.
- No vehicle shall be allowed inside the area without the registered eco-guides; who will ensure the movement of vehicle on the defined routes and check the movement visitors and allow stoppage, rest and exposure at defined spots only. On foot excursions inside the Park or PAs are not allowed except on eco-trails and eco-tracks specially defined for the same.
- Eco-guides and staff involved in the eco-tourism shall be specially trained in interpretation and behavioral skills and shall have to follow approved dress code and shall be registered with the Park authority and updated at regular intervals.
- Mini buses with closed windows have been prescribed for conducted tours, while open jeeps and gypsies may be allowed for guided tours.
- Charges for hired vehicles and eco-guides shall be as per approved list by the Park authorities. Rates shall be displayed on the board at the Reception at every entry point of the Park and the PA concerned.

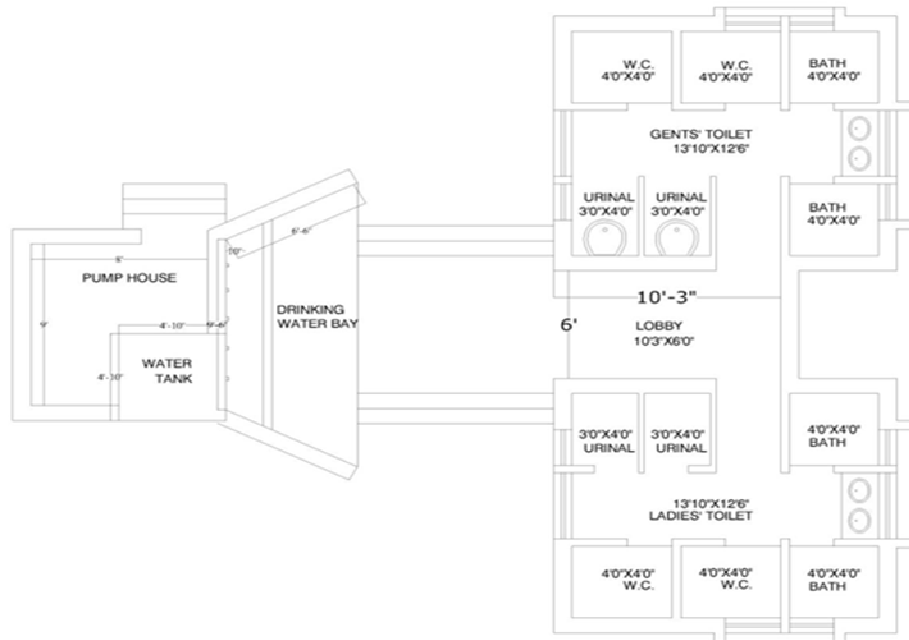
**ii) Food courts** – The food courts shall be constructed of eco-friendly materials like bamboo mat for flooring and walls, thatched/tented/earthen tile roofing.

Food will be prepared by use of local food materials like crab, local fish, prawn, shrimp, lobsters etc. available by the local inhabitants to cater the need of the Tourists.

Considering the tourist inflow at the place a food court will help to cater the basic needs of the tourists which will be constructed using locally available and environment friendly materials. The food court shall engage local people for rendering the services to the people so that the local community will be engaged for supply of building materials, labour for construction, supply of food materials, sale and operation including maintenance..

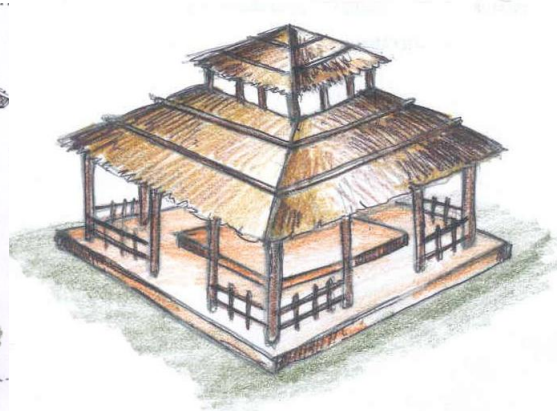
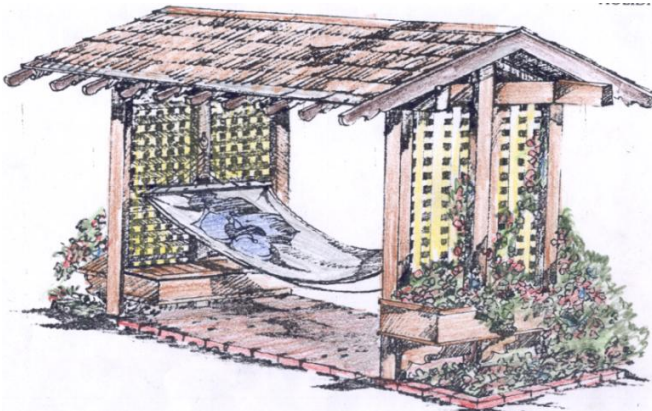


**iii) Public conveniences** – Construction of toilet blocks will be taken up using eco friendly materials like bamboo mat, mud walls, laterite stone dry flooring and thatched roofing. Bioseptic tanks will be used here. The local people will be engaged for supplying construction materials, labour for construction and operation including maintenance.



**PUBLIC CONVENIENCE CENTRE**  
**AREA = 1200 SFT**

**iv) Sit outs** – Covered / Uncovered benches, chairs for tourist to rest. This will be an added attraction for the through and local traffic for relaxing sometime in the midst of Chilika environment during their long travels. The materials used will be totally of environment friendly and natural materials like wood, mat, waste tree trunks and branches. The local people will be engaged for supplying construction materials, labour for construction and operation including maintenance.



**v) Boats** – Boat services will be made available for cruising, for facilitating reaching to the sea shore on the other side and to go to the floating cottages and restaurant.





**vi) Parking** – Parking places will be developed with proper illumination to facilitate parking of tourist vehicles. Parking places will be finished with semi dressed laterite stones for flooring. These parking places will be developed by engaging local people and will be handed over to the local community for operation and maintenance.

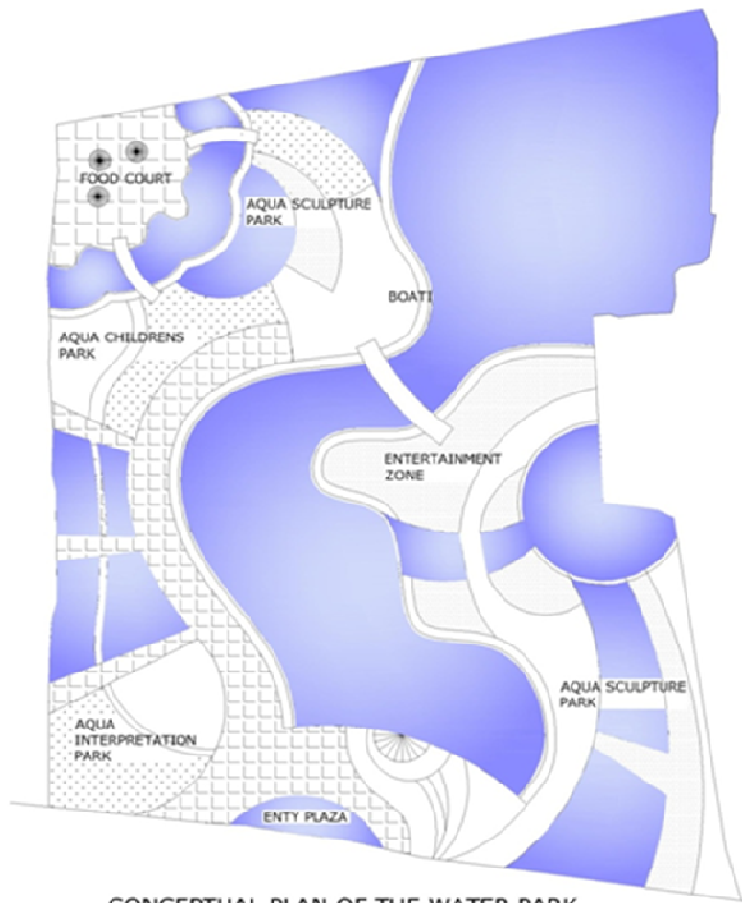
**vii) Jetties** – Up gradation of existing jetties for ease in embarking to and disembarking from boats.

The materials used will be totally of environment friendly and natural materials like wood, mat, waste tree trunks and branches. The local people will be engaged for supplying construction materials, labour for construction and operation including maintenance.



**viii) Illumination** – To facilitate night activities at different spots.

**ix) Eco-Water Park-** To provide information on aquatic life and for general amusement of the tourist and their offspring a theme based water park shall be constructed. The local people will be engaged for supplying construction materials, labour for construction and operation including maintenance.



CONCEPTUAL PLAN OF THE WATER PARK

**x) Tented Accommodation** – To facilitate tourists with accommodation facilities in tents in a natural ambience. The local people will be engaged for operation including maintenance.

**xi) Handicraft, Handloom Center** – To increase the livelihood of the people and also to revive the dying local crafts etc. The local people are engaged with a lot of handicrafts using shells, jute work, wooden works etc. . The handicraft centre will encase the handicrafts and will allow the selling of these handicrafts to the tourists. By this way the local community will be benefitted by earning their livelihood as well as gain publicity of their handicrafts.



**xii) Arrangement of cultural troupes** – To organize local cultural programme for tourists by which local artists will be benefitted. This type of arrangement will also attract the regular tourists to visit eagerly and regularly to view the variety of programmes.

## **INSIDE THE LAKE :**

**i) Floating Restaurant** – To facilitate tourists to get a taste of locally available food and drinks along with adventurous water entertainment programmes shall be made by engaging local people. The materials used will be totally of environment friendly and natural materials like wood, mat, waste tree trunks and branches. The local people will be engaged for supplying construction materials, labour for construction and operation including maintenance.

**ii) Floating cottages** – To facilitate tourist with accommodation facilities and to attract more number of tourists by making them live inside water would be a wonderful experience for the tourists. The materials used will be totally of environment friendly and natural materials like wood, mat, waste tree trunks and branches. The local people will be engaged for supplying construction materials, labour for construction and operation including maintenance.

Basically all the constructions shall consist of:

Structural and roofing materials:

Renewably grown framing and covering materials: interior-quality: canes, bamboo, woven matts; exterior-quality materials like bamboo, tree branch trimmings

Certifiable Renewable Materials (including licensed haulers) products: leaves, bamboo, cane, 'second harvest or fallen tree' lumber

Recycled plastic building materials such as decking and substructure, thatch-style roofing 'leaves,' roof laminate sheets, roof tiles and trusses, and step treads and hand rails for trails

Formaldehyde-free products

Trim and carpentry finishing

Outbuildings and storage sheds:

Reusable tarps

Insulation and isolation products:

Inner wall, ceiling and window insulation materials

Wind isolation materials

Door and window designs: thermal standards and products:

Double or triple glazed thermal products

Insulated doors; self-construction building plans

Air lock door entry; design and benefits

Screen and mesh fabrics

Finishing products:

Lead-free and no- or low-VOC paint; stain; lacquer and varnish

Adhesives: locally produced animal based or chemical

Preservatives for wood, bamboo and renewable products

Construction ideas using 'Second-Use' materials:

Aggregate made from old concrete .

'Fibro lit' wall board made with cement and rice hulls and 'wheat board' from discarded wheat shafts.



For construction of the above facilities OTDC will engage local people. The facilities then shall be handed over to the societies of local community for operation and management. They will be given expertise with regular training and workshops enabling them to handle various kinds of job. This will benefit the local community directly as well as indirectly by the inflow of the tourists.

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## **ALL THE TOURISTS SPOTS WILL BE DECLARED AS “NO PLASTIC ZONE”**

Formulation and observance of standard codes of conduct is essential for smooth and effective running of an affair associated with people. Thus, for effective and smooth conduct of eco-tourism, we shall formulate code of conduct for the visitors in the form of ‘Dos and Don’ts’. A standard list of ‘Dos and Don’ts shall be prepared for each zone and displayed at all the entry points and other prominent sites in the area concerned.

### **Drinking Water Facility :**

Drinking Water Facilities will be provided at all the tourists spots like Satapada, Sipakuda, Chilika New Mouth, Rambha and Barkul by provision of aqua guards wherever electricity supply is available and packed water supply at other places. The used water packets will be collected and will be disposed of at a safe place. The energy charges are to be borne by the food court/toilet block.

Drinking Water Facilities will also be provided at food courts, toilet complexes, rest rooms. The energy charges are to be borne by the food court/toilet block.

### **Water Supply, Treatment and Conservation**

For Short Term Goals - with small-medium costs the department shall:

Change habits by routinely monitoring and repairing any toilet leaks, faucets and showers drips, leaking pipe fittings or joints, broken garden hoses or irrigation systems, pool systems, capture tank lines and gray water drain lines.

Water meter detects leaks (in closed system)

Use biodegradable soaps and/or detergents (to filter and re-use water in gardens or toilets)

Install "Water is NOT a Renewable Resource" signs next to Turn off the Tap signs in employee areas and guest rooms

Operate dishwashers and laundry machines only when full

Use a broom to clean drives, walkways and outdoor surfaces

Compost food scraps and vegetable trimmings rather than using garbage disposals

Mulch around garden plants and trees

Control guest linen changes

Control number of guest towel offerings

Capture and re-use one-time-use soapy laundry water

Assess and install water saving devices:

Toilet tank seals

Displacement device in large toilet tanks

Rain barrels for garden watering

Continue to monitor and assess results:

Report water reduction successes and set new goals

For Long Term Goals - retrofit or initial construction, with greater expense, the Department will:

Create a short and long term water budget

Improve and/or add to water saving devices

Dual flush toilets or low flow toilets (<6 liters), and/or waterless, composting toilets

High water efficiency washers

Solar hot water panels with back up ‘On-demand’ water heater loops, nearby water use areas

Build rainwater capture and/or containment: roof gutters and cistern storage.

Install biological filtration system for gray water

Plumb filtered water for re-use in garden irrigation, toilet flushing, etc.

Drip irrigation gardening, timed outdoor automatic watering system in combination with humidity detection gauge

### **Waste Management**

**Liquid Waste Management shall include:**

Black water (bacteria-laden human or animal waste) containment and treatment:

Septic tanks (handmade or fabricated) and drain fields

Tank designs and materials lists

Tank cleaning tools or companies; licensed local dump sights

Grease trap designs; filters

Treatment plants: expansion of septic treatment systems

Gray water discharge; containment and re-use:

Rock-filled drain systems with clean out methods

Irrigation systems (for gardening): filters and screens; biodegradable soil clean up compounds (hydrogen peroxide, bacterial aerobic compounds, etc.)

Toxic and chemical spill containment and burial:

Emergency containment supplies: plastic berm overlays; spray foams; flexible bladders and tank containment; absorbent spill pads and pellets; drums; leak control and repair systems (for pipes)

### **Solid Waste Management shall involve:**

Solid Waste: Reduction:

'Minimizing Waste' consultants; case studies, with examples and data; and community hand outs and cooperation techniques

Programs promoting Reduce/Reuse/Recycle

Solid Waste: Reuse options

Community organizations to collect/redistribute reusable building products, accessories, appliances, containers

Solid Waste: Recycle

Techniques to share the storage of and transport to recycled products to city centers; case studies

Refuse containers and sorting techniques: drums, tanks, cans, barrels, magnetic screens and components

Solid Waste: Incineration

Waste-to-energy plants

Solid Waste: Non-polluting, safe disposal techniques (lacking dump sites):

Long term storage (prior to offsite safe disposal): encapsulated concrete block/metal lined toxic materials storage, or

impervious membranes, liners and weather-resistant barriers

Solid organic waste: recycle and compost

Principles, designs and suggested technical designs

Fertilizers: bi-product production and components

Principles and standards for organic fertilizers

Bacteria and culture additives; aerobic decomposition principles

Worm farm technology

Manure and composting toilet processing

Manure-produced bio-gas from food peelings and table scraps

We shall Practice environmental minimum impact:

By following International Leave No Trace Rules.

Everything that tourists bring in, including toilet paper (if there is no

Toilet) or plastic water bottles (use purification tablets or a filter) will be packed out and disposed in separate containers for disposing.

Litter that others left behind shall be removed.

### **Emergency preparedness :**

First aid medical kits, litters, canes and crutches

Fire extinguishers

Water pumps (for rural locations)

Minimum impact signage display: visibly appealing, using aesthetic yet renewable products.

## **F. PROJECT COST:**

### **1. Project's finance & fund flow arrangement:**

Project's finance is proposed to be by World Bank assistance and the funds flow arrangement is suggested for five years with yearly break up.

Cost break-up table attached and Cost break up for institutional costs have been included in **Annexure -4**.

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## SECTION-II: PROJECT IMPLEMENTATION ARRANGEMENT

### A. INSTITUTIONAL ARRANGEMENT:

#### 1. The overall Institutional Model:

The Department of Tourism will execute the project through Orissa Tourism Development Corporation (OTDC) which is a State Public Sector Undertaking. The OTDC has a mandate to operate hotel, tourist transport and create tourism infrastructure in the State. It's working model is set with a group of administrative and Engineering Units .

The OTDC will implement the project by the fund received by the Department of Tourism under ICZM Project.

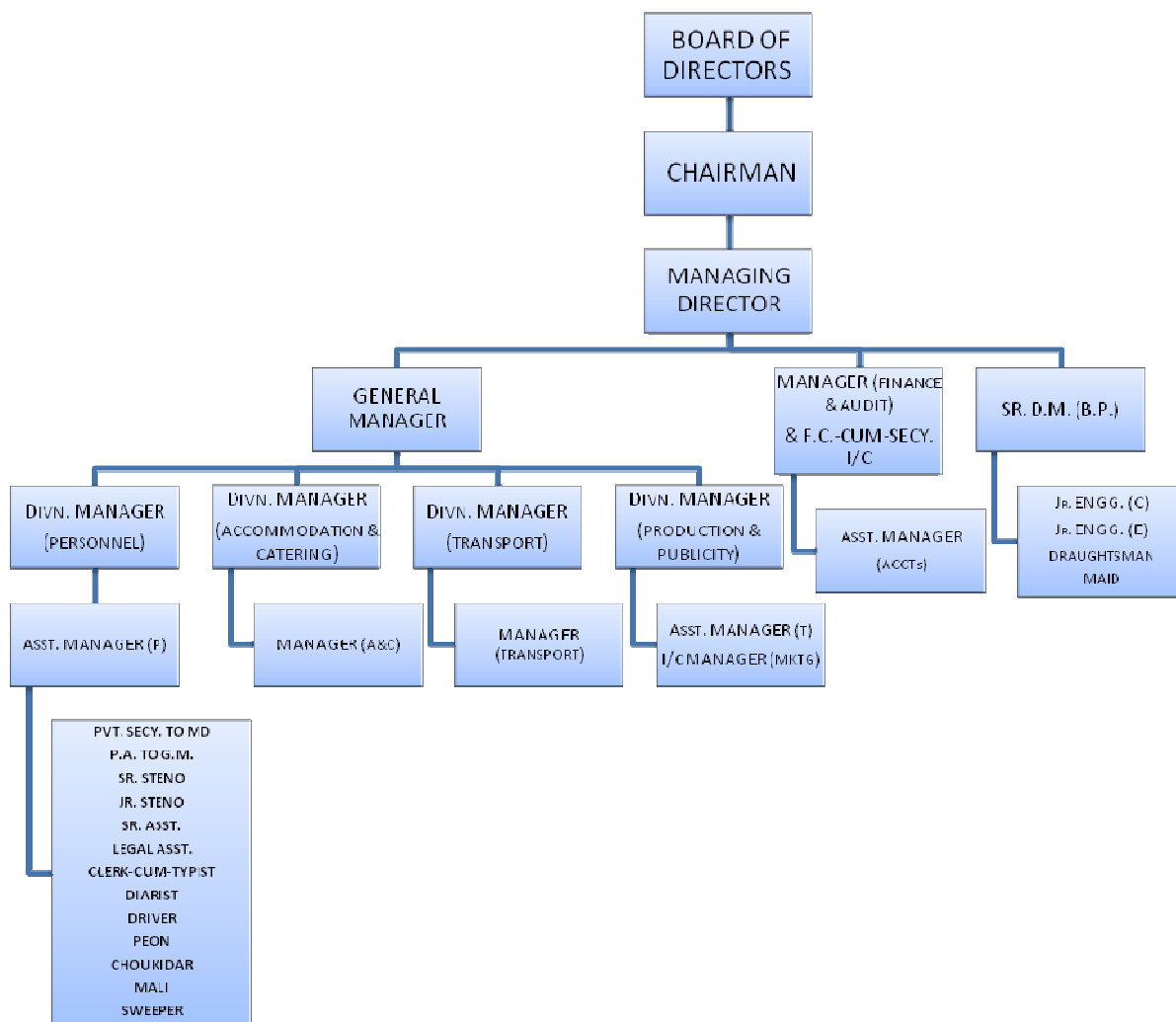
#### 2. Implementing agency- Rules and responsibilities:

Orissa Tourism Development Corporation, a Govt. of Orissa undertaking under the Department of Tourism will be the implementing agency for this project. OTDC will prepare the detailed project report, bid documents, will call for the tenders, will finalize and will implement the project by supervising and monitoring technically and financially. Utilizing certificate will be submitted for release of subsequent installments of funds. OTDC will be responsibility for carrying out the works as per specifications laid down after being finalized by the competent authorities.

#### 3. Staffing Plan: Staff strength??

OTDC having a systematic staffing pattern from Chairman, Managing Director, General Manager, Sr. Divisional Managers (Building Projects), Financial Controller-cum-Secretary for monitoring financial matters and other allied supporting staffs.

**The organizational chart is as follows:**



## B. FINANCIAL MANAGEMENT ARRANGEMENT: (Annex B)

### 1. Financial Management frame work:

The finance management unit of the corporation is manned by competent professional manpower and similar norm is followed under Tourism Department as other departments of Orissa.

### 2. Fund Flow & Disbursement Arrangement:

The fund will be allotted to the Tourism Department and will be transferred to the OTDC (the implementing agency) for the funds to implementation the project.

### 3. Accounting Policies & Procedures:

The accounting policies and procedures adopted by the Corporation for execution of the project are approval by the Finance Department of the State "Annexure –C". Apart from this the Corporation follows SAPs issued by the Institute of Chartered Accounts.

### 4. Staffing and capacity Building:

The staffing pattern is placed at "Annexure – A". Training is imparted to the staff to up- date their knowledge along with motivation at regular.

### 5. Finance Reporting:

The Financial Reporting Flow Chart is as Follows.

F.C-cum-Secretary  
 Manager (Finance)  
 Asst. Manager (Finance)



## **6. Internal Control Mechanism:**

The Corporation has adequate internal control mechanism looking at its size and nature of business. The Statutory Auditors in their report also confirm about the adequacy of the internal control system. There is sufficient check and balance within the system to prevent lapses and irregularities.

The work of the Engineering Division is verified by independent Finance division and approved by Managing Director Professional Chartered Account firm also verify and report directly to the board.

## **7. Audit Arrangement:**

The internal Audit of the Corporation is done monthly by professional Chartered Accountant firm.

The Statutory Audit is conducted by Chartered Accounts firm engaged by CLB.

The accounts of the Corporation are also subject to audit by CAG and A.G Orissa.

## **8. Retroactive Financing:**

Usually, we do not have retroactive financing, unless otherwise special provision is made in this respect.

The Corporation has experience in managing assets used by the community on cost sharing basis.

## **B. PROCUREMENT ARRANGEMENT:**

### **1. Procurement Responsibility:**

The Corporation executes the work on turnkey basis through expertise Contractors by inviting tenders and following OPWD, CPWD Code and after observing of CVC Code. Normally no materials are procured by the Corporation.

### **2. Procurement Methods:**

Procurement is based on following the standard procedures i.e. EOQ, re-ordering size of purchase .

### **3. Procurement Thresholds:**

Procurement will be made on phased manner as per requirement.

### **4. Overall Procurement Plan:**

Since most of the work is executed on term key basis, direct procurement of materials occasional and is very much linked to specified requirement.

### **5. Procurement Manual:**

Procurement is done as per OPWD/ CPWD prescribed procedure.

### **6. Annual Procurement Plan:**

The Corporation's annual budget is approved by the Board of Directors and as per the Budgetary Provision procurement is done.

### **7. Procurement of works:**

Items of the procurement of the works are carried out as per the standard procedure of the Govt.

### **8. Procurement at community level:**

Priority is given for community level procurement.

## **C. ENVIRONMENTAL & SOCIAL SAFE GUARD:**

### **1. Current regulatory frame work:**

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CRZ act is mainly operative in the proposed project sites. Besides, Orissa Marine Fisheries act and various Environmental laws are also in vogue at those sites.

## **2. Baseline Environmental Management Situation:**

Department of Tourism will follow all the existing rules including amendments from time to time.

## **3. Environment Management Frame work:**

Awareness will be created among the staff by imparting training for construction and maintenance including safe sewerage disposal, using eco friendly materials and observing safety norms. The staff in turn will educate the local inhabitants regarding maintenance of infrastructure facilities created.

## **4. Environmental Monitoring:**

With the progress of the project, steps for monitoring will be under taken periodically to update environmental Status to protect the people, locality and eco system as a whole. Social safe guard is usually be ensured through periodical contact with the people.

## **5. Institution Arrangement for Environmental Management:**

At present, Departmental engineers are entrusted with Environmental Management of the ongoing projects. However, we sought the help of Dept. of Environment & State Pollution Control Board to ensure the Environmental Management as and when required.

## **6. Capacity Building:**

To keep pace with environment and restrictions going to be implemented in future, our organization is also keen to provide training & exposure to our staff to ensure environmental safety to the people and eco-system as a whole.

## **7. Budget:**

So far, no specific budget has been allocated for environmental and social safe guard. However, department will carry out several activities to aware people regarding the understanding and practices to keep the environment safe and also will meet people for their social safe guard during implementation of projects.

## **SECTION III PROGRESS & IMPLEMENTATION SCHEDULE**

### **A. OVER ALL PROGRAMME PHASING:**

The project will be in operation within a period of 5 years. The overall phasing of the project period is as follows.

Year	Site	Activity		
1 <sup>st</sup> Year	<b>Chilika ( at Barkul &amp; Rambha)</b>	Physical-Food court, public conveniences, sit out, boat, Illumination, drinking water facilities, water sports complex, construction of jetty, open air theatre, Handicraft/Handloom outlets, training for rescue group, tourists guides ;along with institutional cost, capacity building, monitoring & evaluation, communication.		
	<b>Tampera</b>	Nil		
2 <sup>nd</sup> Year	<b>Chilika (at Satapada, New Mouth and Sipakuda )</b>	Physical-Public conveniences, Parking, boats, sit-outs, jetty; along with institutional cost, capacity building, monitoring & evaluation, communication.		
	<b>Tampera</b>	Nil		
3 <sup>rd</sup> Year	<b>Chilika (at Ghantasila &amp; Chheliakuda)</b>	Physical-Sit-outs, jetty, food courts; along with institutional cost, capacity building, monitoring & evaluation, communication.		
	<b>Tampera</b>	Physical-Eco park, floating cottages, floating restaurant ; along with institutional cost, capacity building, monitoring & evaluation, communication.		
4 <sup>th</sup> Year	<b>Chilika</b>	Nil		
	<b>Tampera</b>	Physical-Eco park, floating cottages, floating restaurant ; along with institutional cost, capacity building, monitoring & evaluation, communication.		
5 <sup>th</sup> Year	<b>Chilika</b>	Nil		
	<b>Tampera</b>	Physical-Eco park, tented accommodation; along with institutional cost, capacity building, monitoring & evaluation, communication..		

### **D. FIRST YEAR IMPLEMENTATION PLAN – Enclosed in Annexure1 & 2 (Estimate & Drawings)**

## **SECTION- IV MONITORING & EVALUATION**

### **OBJECTIVES:**

The monitoring and evolution is required for this project with following objectives.

- To ensure timely completion of the project.
- For proper utilization of resources & fund.
- To ensure quality output.
- To detect midterm problems and to seek solution for smooth completion of the project.
- To get experience for future projects.

## **A. COMPONENTS OF MONITORING:**

Our monitoring during operation of the project includes following components.

### **Component 1: Reporting**

It includes quarterly, annual and project completion reporting by field staff.

### **Component 2: Field visit & Review**

It comprises field visit and subsequent review by officers entrusted with the responsibility.

### **Component 3: Meeting & discussion with participatory group**

Visit & Discussion with local participatory group by central group entrusted with the responsibility & to report problems if any to solve for smooth completion of the project.

### **Component 4: Financial Reporting**

Financial reporting at half yearly interval will be reviewed by the competent financial officer from the central office. The project completion financial final report will be reviewed by a joint committee formed by Administration & Financial Officers.

### **Component 5: Project completion evolution.**

It will be conducted by competent authority like state project preparation cell & state government.

## **B. RESULT FRAME WORK:**

It will be under following aspects.

- Infrastructure units development for tourist in flow.
- Total direct participatory involvement of local people.
- Total indirect participatory involvement of local people.
- Total involvement & Development of secondary units in eco tourism such as boats, other vehicle – food—Craft centers etc.
- Estimation of contribution towards livelihood security.

## **C. IMPLEMENTATION ARRANGEMENT:**

1. Arrangement for result monitoring will be made by the Dept. along with the nodal agency and state government usually at a half yearly interval.
2. Programme Management reports.

Arrangement will be made to collect quarterly report by field officers to the central office. It will be kept in the custody of officer-in-Charge of the central office.

3. Programme operation Management Infrastructure system.

This facility will be provided in the central office of the implementing agency (OTDC) and will be in touch with the state nodal agency as well as Dept of Forest and Environment of the state Government.

#### 4. Data Collection

All the data generated during this project will be stored in digital form. Tools will be used during data collection includes digital still and Video Cameras. PCs and Lap Tops will be used for collection and during demonstration.

### **SECTION- V DETAILED PROJECT REPORT**

#### **A – FEASIBILITY REPORT**

##### **1. PHYSICAL (HYDROLOGICAL FEATURES)**

The project will be restricted to the Chilika- Gopalpur stretch of the Coastal region of the State. The present “Eco tourism” project is, therefore, designed to develop in and around Chilika Lagoon, which has good communication and with sizable tourist flow.

##### **2. ECONOMIC FEATURES**

Like other parts of the State, coastal region is also enriched with vast natural resources. However, the fragile eco system of the coast often create obstacles in utilizing such resources for the wellbeing of the people, inaccessibility of the area, ingression of violent sea waves, frequent natural calamities like cyclones etc.. Therefore, the people remain below poverty line and natural resources are being under used. The present scenario of Global warming has increased vulnerability to this dynamic part of the State and compelled rethinking in planning and Management of this region under the banner of integrated coastal Zone Management. Tourism is changing rapidly as nature, heritage, and recreational destinations become more important, and as conventional tourism is forced to meet tougher environmental requirements. This presents a challenge to government and private enterprise to develop new approaches to the tourism market. Successful tourism must benefit local populations economically and culturally to give them incentives to protect the natural resources which create the attraction. Strategies must be economically feasible if private investors are to support the projects. Our goal is to enable people to enjoy and learn about the natural, historical and cultural characteristics of unique environments while preserving the integrity of those sites and stimulating the economic development opportunities in local communities.

Coastal Tourism in this state is mainly managed till now by Govt. organizations. The aspects of tourism in the coastal region are accommodation, boating, bird watching, dolphin watching etc. But till now coastal tourism in association with the Eco System has not been adequately explored. Eco tourism will be done without disturbing the ecology of the surroundings. Moreover it will help in upbringing the lively hood of the local people.

##### **3. EXISTING SERVICE STATUS**

Although tourism has started since long in Chilika, but it was restricted to only few sites of this largest brackish water lagoon, such as Kalijai, Rambha, Nalabana etc. However, recent opening of tourist site at Satapada and opening of new mouth at Sipakuda has increased the tourist flow to a large extent. With the construction of recent motorable road from Puri, the tourist potential has increased many folds. Simultaneously tourists are showing interests to explore many of the islands of Chilika, with tremendous scenic as well recreational potential.

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The present “Eco tourism” project is, therefore, designed to develop in and around Chilika Lagoon, which has good communication and with sizable tourist flow. The proposed project is planned to explore the optimum tourist potential of the region to augment people’s participation and safeguard their livelihood security. This will ultimately address the empowerment of people and to face the wrath of the nature (natural calamity) in this coastal region.

**4. PLANNING ASPECTS**

- **Feasibility Alternative plans**

All the facilities given in the project for the participatory eco-tourism at Chilika and Tampera are found to be most appropriate to observe. Unusual events occur in the long run which may cause damage to the environment. the project is to minimize the negative impacts and involve local community for their better financial gain. Therefore no other alternative plan is found suitable here.

- **Broad economic analysis and financial impact**

As per 2007 Tourist bulletin,

Name of place	Tourist flow in 2005	Tourist flow in 2006	Tourist flow in 2007	Average growth rate	Projected growth rate after increasing the facilities
Satapada	56100	63280	68800	10%	20%
Barkul	261003	269545	271793	2%	10%
Rambha	69521	70571	72346	1.50%	10%

When the number of tourists increases, the facilities created shall earn more revenue and hence the dependent villages would be able to increase their economic status because there would be both direct and indirect engagement of the people.

e.g. A food court would provide a direct engagement of 8 persons (1 no. as manager, 2 nos. as cooks and assistants, 2 nos. as waiters, 1 no. as watchman/ sweeper and 2 as helpers ) and indirectly about 12 nos. of persons will be benefitted as the food court will again depend on local activities such as fishing, grocery, vegetables, transportation, agriculture where the related persons shall be benefitted.

The ratio of direct to indirect engagement in every village shall be 1:1.5. approx

- **Social screening outcome, R&R requirements, need for land acquisition**

As we are not proposing any construction in any of the private lands, hence social impacts related to land acquisition shall not be a hindrance to the project.

- **Overview of institutional issues and capacity building required**

Since OTDC does not have in house Consultants, we hire Consultants for the preparation of preliminary Project report, detailed project report and for the supervision and quality control of the project till its completion.

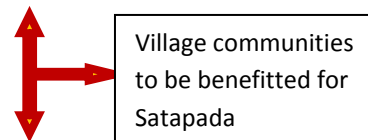
M/s Nesters , 144 ,Sahid Nagar, Bhubaneswar has been our consultant for the Preliminary and detailed project reports and they shall also be engaged for the supervision and quality control of the project till its completion.

Capacity building is required for better efficiency in the project and thereby increasing the scope of interaction with the local communities and achieve more public participation. This is applicable to the Consultants too.

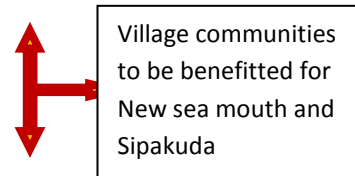
### 1. ECONOMIC AND FINANCIAL ANALYSIS

As per 2001 Census:

**Satapada** has a total population of 1962 out of which 1007 are men and 955 are women.  
**Arakhakuda** has a total population of 289 out of which 145 are men and 144 are women.  
**Brahmapura** has a total population of 175 out of which 100 are men and 75 are women.



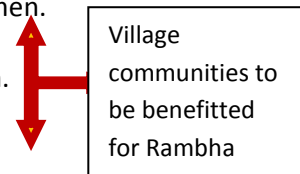
**Sipakuda** has a total population of 455 out of which 228 are men and 227 are women.  
**Banamalipur** has a total population of 297 out of which 153 are men and 144 are women.



**Balugaon** has a total rural population of 78,730 out of which 39673 are men and 39057 are women.  
**Barkul** has a total population of 1490 out of which 760 are men and 730 are women.



**Rambha** has a total rural population of 75319 out of which 38305 are men and 37014 are women.  
**Sabulia** has a total population of 5933 out of which 3017 are men and 2916 are women.  
**Madhurchuan** has a total population of 2301 out of which 1171 are men and 1130 are women.  
**Diandein** has a total population of 1237 out of which 629 are men and 608 are women

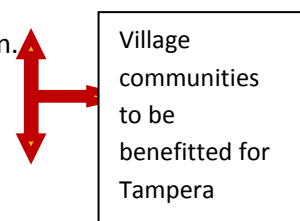


**Agastinuagaon** has a total population of 5504 out of which 2765 are men and 2739 are women.

As per local interaction, the population data is as follows:

**Taraipatapur** : 2300 -2500 approx.

**Telegunuagaon** : 1500 approx.



The additional facilities like handicrafts centre, boating facilities , tourist guides, public conivences, food courts would thus increment the per day per capita expenditure of the tourist by 25 % approximately .

The facilities created by OTDC shall be handed over to the village committees for operation and maintenance of the facilities thereby improving the livelihood of the villagers and sustainability of the eco-tourism project.

As per 2007 Tourist bulletin,

Name of place	Tourist flow in 2005	Tourist flow in 2006	Tourist flow in 2007	Average growth rate	Projected growth rate after increasing the facilities
Satapada	56100	63280	68800	10%	20%
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When the number of tourists increases, the facilities created shall earn more revenue and hence the dependent villages would be able to increase their economic status because there would be both direct and indirect engagement of the people.

e.g. A food court would provide a direct engagement of 8 persons (1 no. as manager, 2 nos. as cooks and assistants, 2 nos. as waiters, 1 no. as watchman/ sweeper and 2 as helpers ) and indirectly about 12 nos. of persons will be benefitted as the food court will again depend on local activities such as fishing, grocery, vegetables, transportation, agriculture where the related persons shall be benefitted.

The ratio of direct to indirect engagement in every village shall be 1:1.5. approx

## **2. ENVIRONMENTAL AND SOCIAL ASSESSMENTS**

### **Environmental assessments, environmental management plans**

Traditionally, the fisherman caste was stratified in terms of professional skills in the fishing industry trades, divided as boat and fishing gear-making, net-making, fishing, trade, and so on. Even among those fishermen with some education and exposure to the external world, almost 88 percent of the households reported that they have no participation in the onward fish trade. In Arakhakuda, both prawn culture and fishing are intensive. Juvenile prawns are being caught and sold to fishermen in areas where pen culture is common. In the early 1990s, the effects of globalization could be seen in the fast-rising prices of prawns compared to those of traditional fish, which made exporting commercially attractive, and attracted middlemen, politicians, and money lenders into the business. In addition to conventionally or legally assigned fishing sites, people started prawn farming in open areas and the lake periphery. Ideally, vertical linkages with processing, marketing and sale, and distribution activities would be developed while maintaining fishing as the primary activity in the region. Such an expansion of economic activities would facilitate sustainable management local community as well as increase the tourism potential.

Need of the community:

Linkages with processing, marketing and sale, and distribution activities needs to be developed while maintaining fishing as the primary activity in the region. Such an expansion of economic activities would facilitate sustainable management of the local community as well as increase the tourism potential. Training the local people for guides shall also add to the increase of livelihood source.

### **Positive impacts due to the project activities**

The project will enhance the tourism potential, utilization of the local materials, engagement of locals in hospitality for direct impacts. The facilities food courts, boats, parks, public conveniences after construction by OTDC shall be handed over to the local communities for operation and maintenance where they will be able to earn directly.



Besides the communities will also be benefitted indirectly as they will provide opportunities tourists for inter-change the ideas, rediscovering the local art and culture and financial benefit to the local inhabitants. The utmost positive impact is that the project shall reveal the scenic resources in coastal region and utilize the services of people of the region for their economic gain. This will boost the means of living for the people.

**Negative impacts due to the project activities and mitigation**

<u>Negative impacts</u>		<u>Mitigation measures</u>
<p><b>CONSTRUCTION PHASE</b> The following section contains instructions to the contractors, which should be adhered to while carrying out the construction activity. This section should be appended into the relevant bid document.</p>		
<p>Construction</p>	<p>Top soil erosion Dust during construction, and due to transport Noise pollution Water-logging and creation of mosquito breeding grounds Surface water contamination from soil run-off Possible ground water contamination (by oil and grease) Air pollution Increase in sedimentation in streams affecting fish habitat and movement. Odour due to use of bitumen Exploitation of potable water sources due to construction activities Non compliance with regulations Quarrying for materials</p>	<p>Prior to ground breaking, the Department shall take an authorization from the designated Environmental Expert that the outcome of the screening process holds good at the time of construction. The activities of construction shall be scheduled taking into consideration factors such as sowing of crops, harvesting, availability of labour during particular periods and other site specific conditions. In slopes and suitable places along the road side, bush grass should be planed, and retaining walls, water intercepting ditches, and masonry rubbles will be built to prevent soil erosion. Deploy silt fences to avoid/reduce soil erosion and run-off. Temporary and permanent drainage systems are to be designed to minimize soil erosion. Vegetation/green belt should be developed along the road side. Vehicles delivering materials should be covered to reduce spills. Locally available materials should be used as much as possible so as to avoid long distance transportation, especially that of earth and stone. Avoid developing new quarries, use existing quarries. Mixing equipment should be well sealed, and vibrating equipment should be equipped with dust-remove device. Maintenance of machinery and vehicles should be enhanced to keep their noise at a minimum. It shall be ensured that all machinery, equipment and vehicles comply with existing Central Pollution Control Board emission norms Water should be sprayed during construction phase, at the mixing sites, and temporarily roads. Storage of petrol, oil or lubricants- bricks on edge flooring or sand flooring should be provided at the storage sites to avoid soil and/or water contamination due to spillage. Proper waste management and disposal of oil, bitumen and other hazardous wastes should be adopted as per Hazardous Wastes (Management and Handling) Rules 1989. Solid/liquid/ construction/ domestic waste, contaminants (oil/ grease etc.) shall not be disposed in water bodies/ open lands. Construction debris shall be disposed separately and</p>

		<p>properly.</p> <p>Avoid burning bitumen</p> <p>In case of bituminous waste, dumping should be carried out over a 60mm thick layer of rammed clay so as to eliminate any chances of leaching.</p> <p>Use water resources without conflict</p>
Labour camps.	<p>Soil contamination.</p> <p>Pollution of drinking water sources.</p> <p>Stress on water sources</p> <p>Surface water contamination from washing, bathing, and waste disposal</p> <p>Tree felling for firewood and tents</p> <p>Air pollution from burning of toxic material like tyres and plastic waste</p> <p>Unhygienic work environment.</p>	<p>All relevant provisions of the Factories Act, 1948 and the building and the other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996 shall be followed for construction and maintenance of labour camp.</p> <p>Avoid Irrigated agricultural lands/forest land/grazing land</p> <p>Avoid Lands within 100m of community water bodies &amp; water sources as rivers</p> <p>The contractor shall also guarantee the following:</p> <p>The Contractor shall construct and maintain all labour accommodation in such a fashion that uncontaminated water is available for drinking, cooking and washing.</p> <p>Supply of sufficient quantity of potable water (as per IS) in every workplace/labour camp site at suitable and easily accessible places and regular maintenance of such facilities.</p> <p>The sewage system for the camp are designed, built and operated in such a fashion that no health hazards occurs and no pollution to the air , ground water or adjacent water courses take place.</p> <p>Separate latrines and urinals with roof and proper door and fastenings should be provided for male and female workers. Signboard displays outside latrines and urinals reading “For Men Only” and “For Women Only” as the case may be.</p> <p>Latrines and urinals shall be adequately lighted and shall be maintained in a clean sanitary condition at all times with adequate water supply.</p> <p>Toxic materials like tyres and plastic are not burnt by the labour for any purpose.</p> <p>Trees are not cut for firewood or tents.</p>

Working conditions	<p>Impact on workers health and safety</p> <p>Impact on public safety</p>	<p>The contractor will make sure that during the construction work all relevant provisions of the Factories Act, 1948 and the Building and other Construction Workers (regulation of Employment and Condition of Service) Act, 1996 are adhered to.</p> <p>The contractor will comply with all the precautions as required for ensuring the safety of the workmen as per the International Labour Organization (ILO) Convention No.62 as far as those are applicable to this contract.</p> <p>All machines to be used in the construction will conform to the relevant Indian Standards (IS) codes , will be free from patent defect, will be kept in good working order, will be regularly inspected and properly maintained as per IS provision and to the satisfaction of the Engineer.</p> <p>Where loose soil is met with, shoring and strutting shall be provided to avoid collapse of soil.</p> <p>The contractor shall supply all necessary Personal Protective Equipment (PPE) such as safety. Goggles, helmets, safety belts, car plugs, mask etc to workers and</p>
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		<p>staff.</p> <p>The contractor shall arrange for:</p> <p>A readily available first aid unit with person adequately trained in administering first aid in every work zone. The aid unit must have an adequate supply of sterilized dressing materials and appliances as per the Factories Rules.</p> <p>Availability of suitable transport at all times to take injured or sick person(s) to the nearest hospital.</p> <p>Fire fighting arrangement:</p> <p>Demarcation of area susceptible to fire should be provided , along with cautionary signage</p> <p>Portable fire exchangers and/or sand baskets shall be provided at easily accessible locations in the event of fire</p> <p>The workers should be educated on the usage of these equipments in case of emergency</p> <p>The contractor shall not employ any person below the age of 14 years for any work of painting with products containing lead in any form.</p> <p>No material will be so stacked or placed as to cause danger or inconvenience to any person or the public.</p> <p>All necessary fencing and lights will be provided to protect the public in construction zones.</p>
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<p><b>POST CONSTRUCTION/ OPERATION PHASE</b></p> <p>The following section contains instructions to the respective Line Department/Local community entrusted with the operation and maintenance of the sub-project activity to ensure long term sustainability.</p>		
Maintenance	<p>Poor drainage or flooding</p> <p>Soil erosion</p> <p>Water logging</p> <p>Deterioration of the sub-project</p>	<p>Regular inspection and periodic maintenance for cleaning of drain to remove any debris or vegetative growth that may interrupt the flow.</p> <p>The local communities may be permitted to form groups and participate regular cleaning/sweeping of roads and regular maintenance of the project site.</p> <p>Deploy silt fences to avoid/reduce soil erosion and run-off.</p>

Waste disposal and site restoration	<p>Soil contamination</p> <p>Soil erosion</p> <p>Water contamination</p> <p>Injury to personal</p>	<p>All the construction camps and facilities shall be dismantled and removed from the site, unless otherwise desired by the local community /Panchayats. The site shall be restored to a condition in no way inferior to the condition prior to the commencement of work. The following activities may be carried out for restoration</p> <p>Oil and fuel contaminated soil shall be removed, transported and buried in properly identified waste disposal areas</p> <p>At the construction camp site, saplings of plants similar to that of cut trees shall be planted. The maintenance of these saplings should be delegated to the local community or the land owner</p> <p>Soak pits and septic tanks should be covered and effectively sealed off .</p>
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		<p>Solid/ liquid/ construction/ domestic waste, contaminants (oil/ grease etc.) shall not be disposed in water bodies/ open lands.</p> <p>Construction debris shall be disposed separately and properly.</p> <p>In case of bituminous waste, dumping should be carried out over a 60mm thick layer of rammed clay so as to eliminate any chances of leaching. Deploy silt fences to avoid/reduce soil erosion and run off.</p> <p>Follow safety measures while disposing wastes.</p>
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<p><b>Operational phase</b></p>	<p>Impact on health and safety of the maintenance and operational people and environment. Impact on public safety Impact on the water body</p>	<p><b><u>Water Supply, Treatment and Conservation For Short Term Goals</u></b> - with small-medium costs the department shall:</p> <p>Routinely monitor and repair any toilet leaks, faucets and showers drips, leaking pipe fittings or joints, broken garden hoses or irrigation systems, pool systems, capture tank lines and gray water drain lines. Water meter detects leaks (in closed system) Use biodegradable soaps and/or detergents (to filter and re-use water in gardens or toilets) Install "Water is NOT a Renewable Resource" signs next to Turn off the Tap signs in employee areas and guest rooms Operate dishwashers and laundry machines only when full Use a broom to clean drives, walkways and outdoor surfaces Compost food scraps and vegetable trimmings rather than using garbage disposals Mulch around garden plants and trees Control guest linen changes Control number of guest towel offerings Capture and re-use one-time-use soapy laundry water Assess and install water saving devices such as: Toilet tank seals Displacement device in large toilet tanks Rain barrels for garden watering Continue to monitor and assess results: Report water reduction successes and set new goals</p> <p><b>For Long Term Goals</b> - retrofit or initial construction, with greater expense, the Department will: Create a short and long term water budget Improve and/or add to water saving devices Dual flush toilets or low flow toilets (&lt;6 liters), and/or waterless, composting toilets High water efficiency washers Solar hot water panels with back up 'On-demand' water heater loops, nearby water use areas Build rainwater capture and/or containment: roof gutters and cistern storage. Install biological filtration system for gray water Plumb filtered water for re-use in garden irrigation, toilet flushing, etc. Drip irrigation gardening, timed outdoor automatic</p>
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		<p>watering system in combination with humidity detection gauge</p> <p><b><u>Waste Management</u></b></p> <p><b>Liquid Waste Management shall include:</b></p> <p>Collection tanks in each cottage and restaurants for waste collection which shall then be transported to the coast into the septic tanks for disposal.</p> <p>Black water (bacteria-laden human or animal waste) containment and treatment:</p> <p>Septic tanks (handmade or fabricated) and drain fields</p> <p>Tank cleaning tools or companies; licensed local dump sights</p> <p>Grease trap designs; filters</p> <p>Treatment plants: expansion of septic treatment systems</p> <p>Gray water discharge; containment and re-use:</p> <p>Rock-filled drain systems with clean out methods</p> <p>Irrigation systems (for gardening): filters and screens; biodegradable soil clean up compounds .Toxic and chemical spill containment and burial:</p> <p>Emergency containment supplies: plastic berm overlays; spray foams; flexible bladders and tank containment; absorbent spill pads and pellets; drums; leak control and repair systems (for pipes)</p> <p><b>Solid Waste Management shall involve:</b></p> <p>-Solid Waste: Reduction:</p> <p>Programs promoting Reduce/Reuse/Recycle</p> <p>Solid Waste: Reuse options</p> <p>Community organizations to collect/redistribute reusable building products, accessories, appliances, containers</p> <p>-Solid Waste: Recycle</p> <p>Techniques to share the storage of and transport to recycled products to city centers; case studies</p> <p>Refuse containers and sorting techniques: drums, tanks, cans, barrels, magnetic screens and components</p> <p>-Solid Waste: Incineration</p> <p>Waste-to-energy plants</p> <p>-Solid Waste: Non-polluting, safe disposal techniques (lacking dump sites):</p> <p>Long term storage (prior to offsite safe disposal): encapsulated concrete block/metal lined toxic materials storage, or impervious membranes, liners and weather-resistant barriers</p> <p>-Solid organic waste: recycle and compost</p> <p>Principles, designs and suggested technical designs</p> <p>Fertilizers: bi-product production and components</p> <p>Principles and standards for organic fertilizers</p> <p>Bacteria and culture additives; aerobic decomposition principles</p> <p>Manure and composting toilet processing</p> <p>Manure-produced bio-gas from food peelings and table scraps</p>
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**Details of community consultations and agreements**

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Details of public consultation have been done for understanding of the project and its impacts and a copy of their responses towards the project has been enclosed.

**The terms of engaging the local villages shall be:**

ICZM- OTDC committee shall be formed will be headed by the local manager of the respective Panthanivas unit or the tourist officers as President and head of the village community as Secretary .

The following conditions should be met on handing over the facilities:

- 1) The village committee has to be a fixed committee i.e. a gram Sabha at village level or a Panchayat Sabha at Panchayat level.
- 2) The facilities are to be owned by a single person and the person is to be selected by the village committee in consultation with OTDC-ICZM committee. The owner should be from the local area, skilled enough to manage the facilities and should involve the local community people for operation and maintenance.
- 3) The selection criteria of the owner shall depend on the exiting situation of the village so as to decide whether the facilities unit will have a manager on salaried basis or to lease out the facilities to a particular person for a particular period. The manager to be appointed on salaried basis may be a local man or of such skill is not available it has to be outsourced.
- 4) The profit or royalty made out of operation of the facilities shall be used for the maintenance of the facilities and welfare of the community. 20% of the total revenue generated will be used for replacement of assets.
- 5) The welfare of the community shall be on priority basis where sanitation, water supply, plantation would be prioritized and next on the line should be the augmentation of the existing infrastructure.

### **3. O & M PLANNING**

As already mentioned before; for the construction of all the proposed facilities, OTDC will engage local people. The facilities then shall be handed over to the societies of local community for operation and management. The terms of their engagement by OTDC has been described above They will be given expertise with regular training and workshops enabling them to handle various kinds of job. This will benefit the local community directly as well as indirectly by the inflow of the tourists. The feasibility of the facilities created is justified below.