

***Financing Agreement N°: 81178133***

***Conservation and Sustainable Management of Coastal and  
Marine Areas in Maharashtra, India.***

***Final Report***

by

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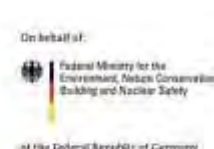
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Maharashtra Forest Department

Government of Maharashtra

Mumbai, October 2017





# **Conservation and Sustainable Management of Coastal and Marine Areas in Maharashtra, India.**

## **Final Report**

This document presents the achievements under the project “Conservation and Sustainable Management of Coastal and Marine Areas in Maharashtra, India”. The project has been funded through the Financial Agreement N° 81178133 concluded with the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH under the Project “Conservation and Sustainable Management of Coastal and Marine Protected Areas” (CMPA), of the Indo-German Biodiversity Programme. The CMPA Project is jointly implemented by the Ministry of Environment, Forests and Climate Change (MoEFCC), Government of India, and GIZ on behalf of the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB).

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## Acknowledgements

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We acknowledge the support from the members of Maharashtra Forest Department, project staff, partner organisations and NGOs and thank them for their contribution to the project. Finally, we thank all the stakeholders and members of the community in our project sites for their enthusiasm and dedication towards achieving the results of this project.

## Executive Summary

The Mangrove Cell, Forest Department, Government of Maharashtra implemented from April 2014 to April 2017 a project entitled “Conservation and Sustainable Management of Coastal and Marine Areas in Maharashtra” with funds provided by the CMPA Project through Financing Agreement N° 81178133 and matching funds provided by the Government of Maharashtra. In the course of the implementation major outcomes – either directly or indirectly linked to project activities – were as follows:

- i. **Declaration of Thane Creek Flamingo Sanctuary (TCFS).** On 6th August, 2015, Government of Maharashtra under Section 18 of the Wildlife (Protection) Act, 1972, declared a part of Thane Creek as Thane Creek Flamingo Sanctuary. The sanctuary is located between 19° 00' to 19° 15' N latitudes and 72° 55" to 73° 00" E longitudes on the western bank of the Thane Creek, Maharashtra, India and covers an area of 1,690 ha, of which 896 ha comprises of mangroves and remaining 794 ha covers the adjacent water body and mudflats. Please see GR. No. WLP – 0315/CR-76/ F-1 (Annexure 01)
- ii. **Management Plan for the Thane Creek Flamingo Sanctuary (TCFS).** A detailed Management Plan for the Thane Creek Flamingo Sanctuary (TCFS) was drafted through a participatory approach involving various stakeholders of TCFS, viz. fishermen obtaining their livelihood from the creek, people from villages near the creek, environmentalists/ NGOs/ naturalists / photographers who visit the creek, research and educational institutions and government agencies.
- iii. **Notification of Mangroves as Reserve Forests.** Government of Maharashtra, on 20th August 2015, notified 1,435.78 hectares of mangroves as Reserved Forests (under Section 3 of the Indian Forest Act, 1927). This notification covers 318.74 ha of mangroves in the Velas to Dabhol coastal stretch (295.5 ha) and Ansure Creek (23.22 ha). See GR. No. RB/Desk-2/Forest/CR-234/2015 (Annexure 02).
- iv. **Protecting the coast through the declaration of Biodiversity Heritage Sites.** The Gram Panchayats (village council) of Velas (on 5th October, 2016) and Anjarle (on 29th August, 2016) have sent a consent letter to the Maharashtra State Biodiversity Board (MSBB) requesting their respective villages be declared as Biodiversity Heritage Sites (BHS) (Annexure VII).
- v. **Implementation of Biological Diversity Act, 2002.** Through this programme, Biodiversity Management Committees (BMCs) have been formed for 19 Gram Panchayats. The process of forming People's Biodiversity Register (PBRs) was initiated in 12 Gram Panchayats of the 19 villages. PBRs for Anjarle, Aade, Padale, Kelshi and Velas villages have been completed.

- vi. **Participatory Ecotourism Plan for Thane Creek.** A plan has been prepared, wherein situational analysis and stakeholder consultations have been carried out to assess local participation and readiness towards participatory ecotourism in Thane Creek.
- vii. **Community-based conservation of sea turtles.** Capacity-building workshops were conducted for villagers from Velas and Anjarle as well as Forest Department staff for perpetual nest monitoring of the vulnerable Olive Ridley sea turtle. The workshops facilitated sharing of knowledge on sea turtle research techniques and challenges related to monitoring turtle nests.
- viii. **State-of-the-art Coastal and Marine Biodiversity Centre (CMBC).** In April 2017, the CMBC was inaugurated in Airoli, Thane Creek. While design and the actual manufacturing of the exhibits were done in Germany by Archimedes Exhibitions, a German communications agency specialising in science and research, the thematic focus and content were developed by the project in close collaboration with Indian subject matter experts. The CMBC features a mix of visual, audible and tactile elements to sensitise visitors to the beauty of coastal and marine biodiversity in Maharashtra. At the same time, visitors will be informed about the important ecological role biodiversity plays in the coastal area and the threats it is exposed to. Interactive computer screens and a cinema room for viewing documentary films complement the design.
- ix. **Information, Communication, Education.** 17 one-day general awareness workshops were conducted to sensitise more than 1,000 people from three project sites. Also, 20 workshops to raise awareness of specific target groups were conducted with more than 800 participants.

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## 1 Background

With a coastline of more than 7,500 km, India features a wide range of coastal and marine ecosystems such as mangroves, estuaries, salt marshes, rocky shores, sandy shores and coral reefs. These ecosystems are amongst the most productive in the world and provide a wide range of goods and services vital to the livelihoods of millions of people and contribute to about 10% of India's GDP.

According to the Fourth National Report to CBD (2009), more than 13,000 species of flora and fauna have been recorded in India's coastal and marine areas. Over 43% of India's coast is already occupied by settlements, commercial areas and ports. India's coastal zone has come under immense pressure due to pressures from anthropogenic activities, such as sedimentation, eutrophication, physical impact of dredging, introduction of invasive species, destructive and unsustainable fishing, and pollution from industries and oil refineries. These threats not only compromise biodiversity but also have an adverse effect on the livelihoods of millions of people who depend on resources from coastal areas.

The state of Maharashtra is located on the western side of the Indian Peninsula and is among the top five states in India in terms of overall species diversity. Maharashtra has a coastline of 720 km constituting approximately 9% of India's coast. The Zoological Survey of India (ZSI) has recorded 1,527 species of marine fauna in Maharashtra, which constitutes approximately 12% of the country's total species. Molluscs account for a large share of this diversity (581 species), followed by crustaceans (367 species), fish (287 species) and annelid worms (141 species). Threatened marine biodiversity in Maharashtra includes several species of cetaceans (whales and dolphins), sea turtles and coral. With 19 species of mangroves, Maharashtra has the most diversified mangrove flora of the states along India's western coast.

## 2 Project Set-up

In April 2014, the Government of Maharashtra entered into an agreement with GIZ to implement activities relevant to its CMPA Project in Maharashtra, viz. Velas-Dabhol coastal stretch and Ansure Creek (both in Ratnagiri district), and Thane Creek. The activities were to include studies on coastal and marine biodiversity, raising awareness, and conservation measures such as mangrove plantations, protection of turtles and flamingos and livelihood programmes for coastal communities. Implementation of the project was assigned to the Mangrove Cell, Maharashtra Forest Department.

The Mangrove Cell was created by the Maharashtra Government on 5th January 2012. The cell is headed by a Chief Conservator of Forests and functions from its office in Bandra, Mumbai. The cell has also been given the additional responsibility of conservation of coastal biodiversity in the state. Since its establishment, Mangrove Cell has made concerted efforts for better understanding of the

mangrove diversity of the state, to create awareness about the importance of mangroves and to train staff for effective conservation of mangrove areas. Mangrove Cell has also initiated regeneration efforts to enhance mangrove cover in the state.

GIZ, through its financing agreement, provided funds of up to 950.000 Euro (approx. ₹7.8 crores) to the Mangrove Cell for implementing the planned activities. The state of Maharashtra provided a matching grant of ₹4.5 crores, out of which ₹3 crores were from CAMPA funds and ₹1.5 crores from 13<sup>th</sup> Finance Commission grants available during 2014-17. The project was implemented during the period April 2014 to April 2017 (3 years).

Details of the activities to be carried out under the Financing Agreement were laid out in an operational plan, mutually agreed between GIZ and Mangrove Cell. For efficient implementation of the activities and coordination with GIZ, the Mangrove Cell employed a Project Co-ordinator, a Programme Officer, a Finance and Administrative Officer, and three Project Associates.

Government of Maharashtra constituted a Steering Committee for overall supervision of the project under the chairmanship of the Principal Secretary (Forests) on 16th April, 2014 (Annexure V). The committee consisted of the following members to ensure necessary coordination between Government of Maharashtra, Government of India and GIZ:

1. Principal Secretary (Forests) – Chairman (Mr. Vikas Kharge)
2. Secretary (Animal Husbandry, Dairy Development & Fisheries – Member (Mr. Aabasaheb Jarhad)
3. Representative of GIZ-India (Programme Director-CMPA) – Member (Dr. Konrad Uebelhör)
4. Chief Conservator of Forests (Mangrove Cell) – Member Secretary (Mr. N. Vasudevan)

A total of six meetings of the Steering Committee were conducted during the project period to ensure proper planning and resource allocation for effective implementation of the project. The minutes of the meetings are appended in Annexure VI.

### 3 Project sites in Maharashtra:

Activities carried out under the Financing Agreement concentrated on the three sites in Maharashtra, viz. Thane Creek, Velas-Dabhol coastal stretch, and Ansure Creek (see Figure 1).



**Fig. 1 Project sites in Maharashtra**

1. **Thane Creek:** Thane Creek extends over 26 kms; opening at the southwest approach to Mumbai harbour and connects in the north to Ulhas River. Despite large amounts of domestic and industrial discharge, Thane Creek supports a rich diversity of flora and fauna. It has been declared an Important Bird and Biodiversity Area and was declared as Thane Creek Flamingo Sanctuary on 6th August, 2015.



**Fig. 2 Flamingos in Thane Creek, against a backdrop of the Kharghar hills**



**Fig. 3: Flamingos in the Thane Creek Flamingo Sanctuary waters**

2. **Velas-Dabhol coastal stretch:** This is an approximately 60 kms coastal stretch in Ratnagiri district, Maharashtra. Beaches along this coast have become popular due to the presence of sea turtle nesting sites. Habitats in the region include sandy beaches, rocky shores, mangroves, estuaries, coastal plateaus and moist deciduous forests on hill slopes. Along this coastal stretch, the village of Velas has a highly conducive social environment for participatory conservation of local biodiversity.



**Fig. 4: A creek in the Velas-Dabhol coastal stretch**



**Fig. 5: A creek in the Velas-Dabhol coastal stretch**

3. **Ansure Creek:** This creek is located in the southern part of Ratnagiri district, Maharashtra, with an approximate length of 6.5 km and a width ranging from 250m to 300m. The creek includes large mud flats and mangrove-forested areas, especially along the northern bank.



**Fig. 6: Ansure Creek**



**Fig. 7: Ansure Creek**



## 4 Key Achievements of the Project

### 4.1 Declaration of Thane Creek Flamingo Sanctuary

Thane Creek Flamingo Sanctuary (TCFS) is located between 19° 00' to 19° 15' N latitudes and 72° 55" to 73° 00" E longitudes on the western bank of Thane Creek, Maharashtra, India. With support from GIZ-CMPA Maharashtra Project to carry out baseline studies, demarcate boundaries, prepare proposal for the sanctuary and its eco-sensitive zone, the sanctuary was declared under Section 18 of the Wildlife (Protection), Act, 1972, on 6th August, 2015 by Government of Maharashtra. A management plan for TCFS and a plan for various eco-tourism activities have been prepared under this Project,



Fig. 8: Thane Creek Flamingo Sanctuary

Thane Creek Flamingo Sanctuary covers an area of 1,690 ha, of which 896 ha comprises of mangroves and remaining 794 ha covers the adjacent water body and mudflats. It is an ecological continuum of the mangrove ecosystem that exists between Mumbai, Thane and Navi Mumbai. Thane Creek is endowed with rich mangrove forests and adjoining mudflats that harbour a variety of associated flora and fauna. This site acts as an Important Coastal Biodiversity Heritage Site in the middle of a metropolitan region. Its vibrant avian diversity has earned it the distinction of being declared an Important Bird and Biodiversity Area (IBA) by BirdLife International. In particular, it hosts significant populations of flamingos and several migratory and wading bird species.

### 4.2 Biodiversity Heritage Sites

During the course of the Project, the Gram Panchayats of Velas (29th August, 2016) and Anjarle (5th October, 2016) have sent consent letters to the Maharashtra State Biodiversity Board (MSBB) requesting that their villages be declared Biodiversity Heritage Sites.



### **4.3 Notification of Mangroves in Ratnagiri as Reserved Forests:**

Mangrove ecosystems are one of the most biologically-productive habitats in the coastal and marine ecosystem. The mangrove habitats are home to a variety of life-forms, including invertebrates, fish, amphibians, reptiles, birds and mammals. They are also ecologically significant as they serve as breeding and nursery grounds for many commercially important fin and shell fishes. The mangrove habitat is a rich source of commercially important fish thereby supporting scores of coastal communities. Therefore, the loss of mangroves has direct economic repercussions on coastal communities.

The Project has supported the Maharashtra Forest Department in Ratnagiri by carrying out satellite mapping of the mangrove and mudflat areas, besides several other communication, awareness and capacity-building activities. Owing to the proactive support of the project in conservation of mangroves, Government of Maharashtra, on 20th August, 2015, notified 1,435.78 ha of mangroves as Reserved Forests (under section 3 of the Indian Forest Act, 1927). This includes 318.74 ha of mangroves in the Velas-Dabhol coastal stretch (295.5 ha) and Ansure Creek (23.22 ha).

### **4.4 Institution of the Mangrove Foundation for Strategic Cooperation for the Conservation of Coastal Biodiversity**

The Mangrove and Marine Biodiversity Conservation Foundation's Memorandum of Association and Rules and Regulations have been reviewed and accepted by Government of Maharashtra. Government Resolution (GR No S-30/2015/CR 219/F-3) has been issued to approve for creation of Mangrove and Marine Biodiversity Conservation Foundation on 23rd September, 2015. The foundation has been registered under the Societies Registration Act, 1860.

### **4.5 Formation of Biodiversity Management Committees (BMC)**

According to the Biological Diversity Act, 2002, the conservation and sustainable use of bio-resources requires the formation of Biodiversity Management Committees (BMC) at the local-level to document bio-resources with the help of the People's Biodiversity Register (PBR). Through this Project, Maharashtra State Biodiversity Board (MSBB) formed 19 BMCs in villages of Dapoli, Mandangad and Rajapur tehsils in Ratnagiri district, Maharashtra.

### **4.6 Formation of Peoples' Biodiversity Register (PBR)**

PBRs for five villages, viz. Anjarle, Aade, Padale, Kelshi, and Velas have been completed and the PBRs for 14 other villages are partially complete.

#### **4.7 Coastal and Marine Biodiversity Park, Airoli, Thane Creek**

The Project facilitated the establishment of the Coastal and Marine Biodiversity Park in Airoli, Mumbai in the vicinity to the newly establish Flamingo Wildlife Sanctuary. The area features a state-of-the-art interpretation centre as well as many outdoor attractions and the possibility to explore the sanctuary by boat. It is meant to support conservation education and sensitise visitors about the coastal and marine biodiversity of Maharashtra.

#### **4.8 Livelihood support**

In order to promote mud crab farming as an alternative livelihood activity, potential sites for mud crab farming (a total of 10.063 ha) were identified in mangrove areas of Anjarle, Aade, Kelshi, Velas and Ansure villages. Projects were also commissioned for the survey of coastal sand dunes along with the associated flora and fauna and monitoring of Olive Ridley sea turtles in the Velas–Dabhol coastal stretch. Tourism is growing in the villages of Ratnagiri covered under the project sites and is leading the problem of increased solid waste in these villages. A project was commissioned to develop an integrated solid waste management plan for the villages in the Velas-Dabhol coastal stretch.

#### **4.9 Awareness**

As awareness and communication is a major component of this Project. 37 awareness programmes were carried out in all the project sites. This included awareness programmes on monitoring and conservation of Olive Ridley sea turtles, ecological importance of coastal sand dunes, eco-tourism guide training workshops for local villagers, screening of movies and presentations related to biodiversity conservation in schools. Outreach material was developed in Marathi (the local language) and English through this Project and through various sub-projects commissioned under the project. This included field guides for birds and mangroves and informative posters on ecology of turtles. A state-of-the-art coastal and marine interpretation centre has been developed in Airoli near the Thane Creek Flamingo Sanctuary. Also, two documentary films have been developed as part of the communication and awareness component of the project, namely, „The Jewels of the Thane Creek“, which showcases the rich biodiversity of Thane Creek and „Protectors of the Coast“, which showcases the interventions carried out under this Project. Project activities were regularly communicated to the public through press releases.

## 5 Implementation of Work Package I

The activities conducted under this work package were aimed at promoting participatory management processes in existing and potential coastal and marine protected areas.

In the following are listed (site-wise) the activities conducted under this work package.

### 5.1 Thane Creek

#### 5.1.1 Conducting Baseline Studies for Thane Creek

**Duration:** 14 September, 2015 to 15 January, 2016

**Agency:** Sálím Ali Centre for Ornithology and Natural History (SACON)

**Objectives:** The overall objective of the project was „to contribute to the improvement of the conservation and sustainable use of biodiversity in the pilot protected areas while taking into consideration the economic circumstances of the local population“ and to document the biodiversity of Thane Creek, especially its flora and fauna.

**Outcome:** The biodiversity study revealed 15 species of mangroves with the dominance of *Avicennia marina acutissima* and *Acanthus ilicifolius* in the creek. The phytoplankton community comprised of 44 species, whereas 24 species of zooplankton, representing eight phyla were recorded during the study. The phylum Mollusca were represented by 22 species, 72 insect species were recorded, and the order Lepidoptera was represented by six dominant families with 31 species comprising of 29 butterflies and two moth species. The avian diversity included 155 species representing 52 families with 76 wetland and shore birds. During the study, it was observed that fishing activities were restricted to the lower stretches (marine end) of the creek and commercial fishing in the Thane Creek was observed to be a dying occupation due to reduction in fish catch over the years.

This study generated base-line data for the biodiversity of Thane Creek, which will be of considerable importance for monitoring the biodiversity of the region and conducting research in the future.

**Output:** A report titled, „Conducting baseline studies for Thane Creek“.

#### 5.1.2 Carrying Out Eco-toxicology of Fishes, Crabs and Bivalves at Thane Creek

**Duration:** 29th September, 2015 to 29th January, 2016

**Agency:** Sálím Ali Centre for Ornithology and Natural History (SACON)

**Objectives:** The objective of this study was to assess the impact of pollution on biodiversity and bio resources (fishes, crabs and bivalves) of Thane Creek.

**Outcome:** To achieve the objective, samples from different biotic and abiotic components of the creek were collected. These samples were processed for detection of heavy metals and pesticides in different laboratories. The heavy metals detected in fish, crab and bivalve samples included cadmium, cobalt, chromium, copper, iron, mercury, lead, and nickel. The level of heavy metals like iron, zinc, arsenic, and mercury were found to be above permissible levels. Iron, mercury, and arsenic were also reported from the feathers of three bird species: Flamingo, brown-headed gull, and black kite, which is evidence of bioaccumulation of heavy metals. Organochlorine pesticides like Alpha BHC (alpha HCH), gamma BHC, beta BHC, delta BHC, heptachlor, aldrin, dieldrin, endrin, endosulphan, DDE, DDT, and methoxychlor appeared in water and sediment samples but were below the detection limits of 0.500 mg/gm. This study has generated base-line data on eco-toxicology of various abiotic and biotic components of Thane Creek, which will be of considerable importance with respect to monitoring biodiversity of this region and for future research.

**Output:** A report titled, „Carrying out Ecotoxicology of Fishes, Crabs and Bivalves at Thane Creek“

### 5.1.3 Identification and Training of Ecotourism Guides in Thane Creek

**Duration:** March 2016 to January 2017

**Agency:** Bombay Natural History Society (BNHS)

**Objectives:** In the last few years, fishermen in Thane Creek are taking people for rides in their fishing boats to watch flamingos that frequent the area every year. This inflow of tourists for watching flamingos has been on the rise and this project was an effort to train fishermen, and other local community members involved in these tourism activities, as ecotourism guides to generate increased awareness among tourists about biodiversity and improve their experience. This was expected to synergistically boost tourism in the area and provide an alternative means of livelihood for local communities in the Thane Creek region. A similar activity was planned for Elephanta island, which is near Mumbai and is a popular tourist spot, and has rich mangrove vegetation cover, intertidal fauna and diverse birdlife.

**Outcome:** The ecotourism guide training workshop was held from 28th March to 1st April, 2016 at the interpretation centre in Airoli with 25 participants, who were mostly fisher folks and other members of the local communities living in the Thane Creek area. A second workshop was held in Elephanta island from 17th to 18th January, 2017 with 20 participants, who were trained to identify local flora and fauna and were taught the ethics of ecotourism. The workshop included indoor and outdoor sessions. BNHS prepared training material such as booklets on local birds and mangroves, which were distributed to the participants during the workshop.

**Output:** A report titled „Eco-tourism Guide Training Programme at Thane Creek & Elephanta Island“ and outreach material such as booklets on local birds and mangroves (in English and Marathi).

#### **5.1.4 Preparation of Management Plan for Thane Creek Flamingo Sanctuary**

**Duration:** January 2016 to April 2017

**Agency:** Wildlife Institute of India, Dehradun

**Objectives:** The objective of the project was to prepare a ten-year management plan for the newly notified Thane Creek Flamingo Sanctuary (TCFS) through protection, conservation, restoration and management of biodiversity and the ecosystem of Thane Creek Flamingo Sanctuary.

**Outcome:** A detailed management plan considering various aspects of the Thane Creek Ecosystem was prepared using a participatory approach involving various stakeholders of TCFS. Several consultative dialogues were conducted to formulate conservation actions to minimise or remove existing threats to conserve biodiversity and the ecological integrity of TCFS through protection, restoration and management. Information related to status and distribution of various habitats and species of TCFS have been provided and threats to conservation have been identified. A major part of the management plan, including component-wise management strategies, administrative setup, framework for monitoring and a management budget has been collated in a separate summary report.

**Output:** Management Plan of the Thane Creek Flamingo Sanctuary.

#### **5.1.5 Preparation of a Participatory Ecotourism Plan for Thane Creek**

**Duration:** January to April, 2017

**Agency:** Terracon Ecotech Pvt. Ltd.

**Objectives:** The objective of the project was to assess the potential and carrying capacity of Thane Creek with respect to ecotourism and development of an integrated community-based eco-tourism plan for Thane Creek.

**Outcome:** Situational analysis and stakeholder consultations were carried out to assess local participation and readiness for participatory ecotourism in Thane Creek. Ecotourism strategies were developed taking into account the carrying capacity of the ecosystem and additional low-impact ecotourism activities in the creek. The approach, access points and ways of integrating boating trips with the functioning of the Coastal and Marine Biodiversity Centre in Airoli were also considered. Potential ecotourism activities like boating, nature-trails, boardwalks were identified, and implementation and financial plans were prepared.

**Output:** Participatory Ecotourism Plan for Thane Creek.

### 5.1.6 Using Nualgi for bioremediation of creek waters

**Duration:** May 2016 (3 weeks)

**Agency:** Viraj Clean Sea Enterprises Pvt. Ltd.

**Objectives:** The objective of the project was to analyse and conduct a test case on the potential of using Nualgi, a nano-technology product mixture, to treat sewage-affected waters. Another objective of the project was to develop a comprehensive and effective solution for cleaning Thane Creek waters.

**Outcome:** One of the inlets of Thane Creek in Bhandup was dosed four times on 4th, 6th, 10th, and 17th May, 2016. Test samples were collected and sent for testing to pollution control lab at Thane Municipal Corporation. The following results were observed:

- i. Nitrogen: Decrease of Nitrogen levels from 11ppm to 8ppm. That was a 72% reduction after four doses of Nualgi was recorded eight days after the last dose was administered.
- ii. Dissolved Oxygen (DO): Increase in DO levels from 5.5ppm to a healthy 8.4ppm was recorded more than a week after the last dose was administered.
- iii. Total Phosphates: A 24% decrease in total phosphates was observed.
- iv. Electrical Conductivity of water decreased by 96% in two doses. EC represents the presence of positively and negatively charged ions from dissolved salts and inorganic materials such as alkalis, chlorides, sulfides and carbonate compounds. Pure water does not conduct electricity.

**Output:** The pilot project successful reduced levels of critical parameters such as nitrogen and phosphates with a consequent increase in dissolved oxygen levels in water after the administration of just four doses. Regular treatment will help keep the waters clean and may help solve the problem of pollution problems in Thane Creek, and augment conservation efforts.

## 5.2 Velas-Dabhol coastal stretch and Ansure Creek

### 5.2.1 Strategic Assessment of Mud Crab Farming Potential

**Duration:** April 2015 to March 2016

**Agency:** Central Marine Fisheries Research Institute, Kochi

**Objectives:** The main objective of the project was to assess the potential for mud crab farming in brackish water stretches between Velas and Dabhol villages and around Ansure village. The study was also meant to identify suitable sites for sustainable mud crab culture in GIS environment based on

various physical and environmental criteria including topography, soil types, land-use systems, vegetation, water quality, water availability etc.

**Outcome:** Detailed field surveys were conducted in brackish water areas of Anjarle, Kelshi, Aade, Velas and Ansure in Ratnagiri district, Maharashtra. After completing field studies, a stakeholder workshop was held in Dapoli on 15th March, 2016 to discuss the results of the studies with stakeholders and get their inputs. A total of 10.063 ha were identified along the brackish water stretches of Anjarle (1.91 ha), Aade (2.069 ha), Kelshi (1.77 ha), Velas (0.538 ha), and Ansure (3.776 ha) as areas suitable for mud crab farming. This study will help future government endeavours to promote crab farming as a sustainable livelihood activity along this coastline.

**Output:** A report titled, „A Strategic Assessment of Mud Crab Farming Potential in Brackish water Stretches between Velas and Dabhol in the Ratnagiri District of Maharashtra.“

### 5.2.2 Implementation of Biological Diversity Act 2002 in Ratnagiri/Thane district

**Duration:** August 2015 to March 2017

**Agency:** Maharashtra State Biodiversity Board (MSBB)

**Objectives:** The objective of the project was to establish Biodiversity Management Committees (BMC) in the villages in the project sites and then prepare People's Biodiversity Register (PBR) for each village. As part of the project, MSBB was to hold regular meetings with relevant local bodies and conduct workshops for the preparation of PBRs and the functioning of BMCs.

**Outcome:** MSBB has set up 19 BMCs in the villages in the project sites. In 16 of these villages, MSBB started the process of preparing the PBR and out of which five villages, viz. Anjarle, Aade, Padale, Kelshi and Velas were completed, while the others are still underway. During the implementation of the project, the Gram Panchayats of Velas and Anjarle villages wrote a letter to MSBB asking for their villages to be declared Biodiversity Heritage Sites.

**Output:** A report titled, Implementation of Biological Diversity Act 2002 in Ratnagiri/Thane district“.

**Table 1: Villages in the project site where BMCs have been formed and the status of their PBR**

Sr.	Villages in which BMC have been formed	Status of PBR
1.	Aade	completed
2.	Aasood	on-going
3.	Anjarle	completed
4.	Ansure	not initiated
5.	Dabhol	on-going
6.	Harnai	on-going
7.	Javale	not initiated
8.	Karde	on-going
9.	Kelshi	completed
10.	Kolthare	on-going
11.	Ladghar	on-going
12.	Mandivali	not initiated
13.	Murud	on-going
14.	Padale	completed
15.	Pachpandhari	on-going
16.	Panchnadi	on-going
17.	Sagave	on-going
18.	Umbarshet	on-going
19.	Velas	completed

### 5.2.3 Effective and Equitable Solid Waste Management at Velas

**Duration:** September 2015 to December 2015

**Agency:** Civic Response Team (CRT)

**Objectives:** The objective of the project was to study and understand current trends with regard to generation and management of solid waste in Velas and develop possible interventions for effective solid waste management solutions in Velas.

**Outcome:** Detailed information was collected about villager's perception of the waste issue and their understanding of waste segregation, disposal, and the current management system. When this data was analysed, it was revealed that the village community was keen to address the issue of solid waste as they understand its impact on the surrounding environment and biodiversity. They want to develop and implement the most sustainable solution and practice that will help tackle the problem of solid waste generation. During the course of the project, Mangrove Cell received communication from



Velas Gram Panchayat that they would support the Forest Department in formalising a solid waste management system for their village. During the project duration, the Velas Gram Panchayat passed a resolution discouraging the use of Thermocol cutlery in the village.

**Output:** A report titled, „Effective & Equitable Solid Waste Management (SWM) at Velas“

#### **5.2.4 Desk Review on Best Practices in Management of Coastal and Marine Protected Areas**

**Duration:** January 2017 to March 2017

**Agency:** Terracon Ecotech Pvt. Ltd.

**Objectives:** This project was a desk review to prepare a „best practices“ manual for the sustainable management of coastal and marine protected areas that can serve as a resource document to facilitate the development of training modules for officials and field staff of Mangrove Cell and associated organisations.

**Outcome:** The manual has been divided into three parts. The first part deals with marine ecosystems in general, Marine Protected Areas (MPAs), and the roles of MPAs. The second part deals with various best practices for management of MPAs like active participation of communities, development of conservation-oriented infrastructure, implementation of sustainable fishing methods, and management through establishment of zones. The third part describes 27 different case studies of MPA management from around the world.

**Output:** A report titled, „Desk Review of Best Practices in Management of Coastal and Marine Protected Areas“.

#### **5.2.5 Ecotourism Guide Training for Local Communities**

**Duration:** January 2017 to March 2017

**Agency:** Bombay Natural History Society (BNHS)

**Objectives:** The objective of the project was to identify interested local youths from villages in the project sites in Ratnagiri district and train them as ecotourism guides to assist tourists who visit the area. This project was seen as a step towards creating a source of income for local communities through ecotourism activities.

**Outcome:** The ecotourism guide training workshop was conducted in Anjarle village from 20th March to 22nd March, 2017 with 19 participants from Anjarle, Velas and Kelshi villages. The participants were trained to identify local flora and fauna of the area and taught about the ethics of ecotourism. The workshop included indoor and outdoor sessions. BNHS prepared training materials

such as booklets on local birds, mangroves and informative posters on Olive Ridley sea turtles (in English and Marathi), which were distributed to the participants during the workshop.

**Output:** A report titled, „Ecotourism Guide Training for Local Community at the CMPA project sites in Ratnagiri, Maharashtra“, and outreach material such as booklets on local birds and mangroves (in English and Marathi), and informative posters on Olive Ridley sea turtles (in English and Marathi).

### **5.2.6 Sand Dune Stabilization and Rehabilitation of Ecologically Important Beach Habitats**

**Duration:** November 2016 to March 2017

**Agency:** Gujarat Institute of Desert Ecology (GUIDE)

**Objectives:** The objectives of the study were to identify beach habitats with sand dunes along the Velas–Dabhol coastline, survey the beaches to suggest and identify measures to stabilise sand dunes in collaboration with local state agencies (Forest Department), investigate natural and anthropogenic threats to the sand dunes, including erosion and encroachment., and strengthen the capacities of local state agencies (Forest Department) to carry out effective sand dune protection, conservation and beach habitat restoration.

**Outcome:** Field surveys were conducted to identify locations of sand dunes in the Velas–Dabhol coastal stretch and their geo-coordinates and locations were recorded. The final report includes information about the substratum type, slope, turtle-nesting and other details gathered for the sites surveyed during the project. The project found that incipient sand dunes on the beaches of Velas, Kelshi, Aade, Kolthare, and Ladghar. GUIDE suggested measures to stabilise and conserve these sand dunes. GUIDE has also reported the occurrence of 177 bird species and 12 mangrove species in the Velas–Dabhol coastal stretch. GUIDE also reported information on the occurrence of turtle nests in the study area. GUIDE also conducted an awareness workshop on the ecological importance of sand dunes in Anjarle, which was attended by villagers from the Velas–Dabhol coastal stretch and Ansure village.

**Output:** A report titled, „Sand Dune Stabilization and Rehabilitation of Ecologically important Beach Habitats in Ratnagiri District“ and a brochure regarding ecological importance of sand dunes (bilingual) which was prepared as an outreach material for the local people in the project site.

### 5.2.7 Long-term monitoring and community based conservation of sea turtles

**Duration:** December 2016 to March 2017

**Agency:** Dakshin Foundation

**Objectives:** The objectives of the project were to initiate a locally-managed monitoring programme in the project sites, monitor some key ecological aspects of sea turtles, and create awareness about sea turtles and their habitat.

**Outcome:** During the project, two workshops were organised in Ratnagiri and Anjarle along with short-term nest monitoring in Velas and Anjarle. The workshops focussed on sharing knowledge on sea turtle research techniques and problems associated with monitoring sea turtle nests. Additionally, data loggers were deployed at three nests each in Velas and Anjarle.

The data loggers will provide nest incubation temperatures to assess the effects of rising temperatures on the hatchling sex ratio. In addition, communication and outreach material in English and Marathi were developed.

**Output:** A report titled, „Long term monitoring and community based conservation of sea turtles in Maharashtra, India“, and outreach material such as a poster on the life history of sea-turtles (in Marathi), a poster on identification of different species of sea turtles (in Marathi), a manual titled, „Sea Turtles of India – Hatchery & Beach Management Programmes“ (in English), and a brochure titled, „Sea-Turtles: The Ambassadors of the Ocean“ (in English). Awareness programmes were conducted in Anjarle and Ratnagiri for local villagers and the Forest Department staff.

### 5.2.8 Mapping of Mangroves in Coastal Areas of Ratnagiri District

**Duration:** March, 2015 to April 15, 2017

**Agency:** Maharashtra Remote Sensing Applications Centre (MRSAC)

**Objectives:** The objective of the project was to create a baseline mangrove assessment to measure the impact of conservation efforts undertaken under CMPA with 2015 as the base year.

**Outcome:** As part of the mapping exercise, high resolution datasets were procured and satellite data analysis was carried out by MRSAC to map mangroves in the Ratnagiri district. The mangrove map of Ratnagiri will be used by the Maharashtra Forest Department to prepare specific conservation and management plans for mangrove areas in the project sites.

**Output:** Maps of mangrove areas across the entire coastal stretch of Ratnagiri.

### 5.2.9 Preparation of a Solid Waste Management Plan for coastal villages

**Duration:** January to April, 2017

**Agency:** Civic Response Team (CRT)

**Objectives:** The objective of the study was to prepare a comprehensive and integrated solid waste management plan for 16 villages in the Velas-Dabhol coastal stretch.

**Outcome:** The report explains the current trends of solid waste management in the villages in the Velas-Dabhol coastal stretch. It describes an integrated solid waste management plan with specific interventions for different sectors of solid waste management. The study found that residents in the study area were willing to segregate their waste at source and store materials that can be recycled. The informal sector (informal scrap dealers) is willing to participate by providing a collection system and local bodies are willing to pass relevant resolutions to help manage solid waste. For instance, the Velas Gram Panchayat has passed a resolution discouraging the use of thermocol cutlery in the village. A detailed plan includes the idea of introducing the concept of storing waste at source, providing drop-off points for recyclables, ensuring decentralised waste treatment process are accessible, building skills and capacities of the informal sector, and generating livelihoods from waste.

**Output:** A report titled, „Preparation of Solid Waste Management Plan for coastal villages in the Velas to Dabhol coastal stretch“.

## 6 Implementation of Work Package II

Work Package II is related to the Human Capacity Development component of the Project and deals with activities aimed at capacity development of the Forest Department staff and local communities, which will support participatory management of coastal and marine protected areas. Most activities under this work package were directly commissioned by GIZ and Mangrove Cell facilitated (through its financial agreement) the following activities under this work package:

### 6.1.1 Training expedition on coastal and marine biodiversity in Maharashtra

This Training Expedition on 'Coastal and Marine Biodiversity and Protected Area Management' was organised for frontline staff of Maharashtra Forest Department from 4th to 7th October, 2016 in Malvan. The training expedition was organised jointly by GIZ, Wildlife Institute of India, and Mangrove Cell, Maharashtra Forest Department. A total of 19 staff members participated in this expedition. Inputs were provided by trainers and experts from Wildlife Institute of India, GIZ, IISDA, and GEER Foundation, Gujarat (as part of inter-state knowledge network initiative of the CMPA

project). The training engaged participants in discussions, role-plays, games on MPA management, quizzes, visits to specific MPA sites, mangrove areas, and interpretation centres, sessions on connectedness to nature, and expert inputs.



**Fig. 9: The team during the training expedition in Malvan**



**Fig. 10: Indoor sessions during the training expedition in Malvan**



**Fig. 11: Outdoor sessions during the training expedition in Malvan**



**Fig. 12: Participants in a group discussion during the training expedition in Malvan**

### **6.1.2 Support to training measures of the HCD component of the CMPA Project**

Staff of the Mangrove Cell regularly assisted in the preparation and conducting of training measures organised by the HCD component of the CMPA Project in Maharashtra and served as resource persons during the events for subjects related to the conservation of mangroves.

## **7 Implementation of Work Package III**

The activities carried out under this work package can be categorised as follows: 1) General awareness programmes conducted as a part of special days dedicated to conservation of biodiversity and the environment 2) Specific programmes aimed at raising awareness in a target group 3) Support to scientific conferences regarding conservation of biodiversity and environment.

In an effort to generate awareness about Wildlife Week, International Biodiversity Day and World Environment Day, 10 one-day programmes were held in different villages on the coastal stretch from Velas to Dabhol (Table 4), four were held in Thane Creek (Table 2) and three in Ansure Creek (Table 6). In addition to this, 11 workshops were conducted in the coastal stretch between Velas and Dabhol (Table 5), four in Thane Creek (Table 3) and five in Ansure Creek (Table 6) and surrounding areas.

As a part of outreach activities, press releases of the declaration of Thane Creek Flamingo Sanctuary (supported through the GIZ-CMPA Maharashtra Project) and inauguration of Coastal and Marine Biodiversity Centre, Airoli were sent to all leading newspapers in Mumbai Metropolitan Region viz. *Indian Express*, *Daily News and Analysis* (DNA) and *The Hindu* (Annexure 3 – News clippings).

In the following are listed (site-wise) the activities conducted under this work package.

## 7.1 Thane Creek

### 7.1.1 General Awareness programmes

Awareness programmes were conducted as a part of the World Wetland Day, International Biodiversity Day and International Mangrove Day at various places along the Thane Creek (Table 2). The activities carried out during these programmes included mangrove walks, street plays, painting competitions, interactions with Forest Department officials, and presentations on various aspects of biodiversity conservation. The main target group for these programmes were school and college students, and members of the general public.

**Table 2: Awareness programmes in Thane Creek region**

Sr. No.	Event	Date	Place	Language of communication	No. of Participants
1	World Wetland Day	Jan. 31, 2015	Navi Mumbai	Marathi & English	150
2	International Biodiversity Day	May 22, 2015	Airoli	Marathi & English	63
3	International Mangrove Day	July 26, 2015	Airoli	Marathi & English	200
4	International Mangrove Day	July 26, 2016	Airoli	Marathi	80



**Fig. 13: Celebrating International Biodiversity Day in Airoli**



**Fig. 14: Mangrove walk in Vashi on World Wetland Day**



**Fig. 15: Mr. N. Vasudevan speaking on International Mangrove Day at an event organised in Airoli**



**Fig. 16: Group discussion during International Mangrove Day in Airoli**

### 7.1.2 Special programmes organised for specific target groups

- An eco-tourism guide training programme was conducted by BNHS in Airoli and Elephanta islands for local villagers to enhance their skills for interacting with tourists more effectively and to communicate information about biodiversity of the surrounding region (Work Package D).
- As a part of Swachh Bharat Abhiyan, a workshop on solid waste management was conducted at the Coastal and Marine Interpretation Centre in Airoli, which was attended by students from nearby colleges and volunteers from NGOs.
- The Project team participated in an exposition organised for participants in Standard Chartered Mumbai Marathon 2016. Exhibits about conservation of mangroves, flamingos, and marine ecosystems were arranged in stalls along with interactive games, which included species/bird call identification and information about other marine organisms.





**Fig. 17: BNHS staff speaking on ethics of ecotourism**



**Fig. 18: Elephanta island villagers during the guide training workshop**



**Fig. 19: Mumbai Marathon: Spreading awareness about mangrove conservation efforts**



**Fig. 20: Mumbai Marathon: Felicitating participants at the marathon event.**

**Table 3: Details of specific programmes aimed at raising awareness in Thane Creek region**

Sr. No.	Event	Date	Place	Language of communication	No. of Participants
1	Stall at Mumbai Marathon Expo	8-10 January, 2016	Mumbai	Marathi & English	300 +
2	Ecotourism Guide Training Program	28 March – 1 April, 2016	Airoli	Marathi	20
3	Workshop on solid waste management	14 June, 2016	Airoli	Marathi	35
4	Ecotourism Guide Training Program	17 & 19 January, 2017	Elephanta Island	Marathi	25

### 7.1.3 Publications related to Thane Creek

A pocket field guide titled, „The Birds of Thane Creek“, which gives information on various bird species of birds in Thane Creek and a coffee table book titled, „Thane Creek: A slice of Emerald“, which showcases the biodiversity of Thane Creek encompassing different species of flora and fauna were produced under this Project.





Fig. 21: Birds of Thane Creek booklet

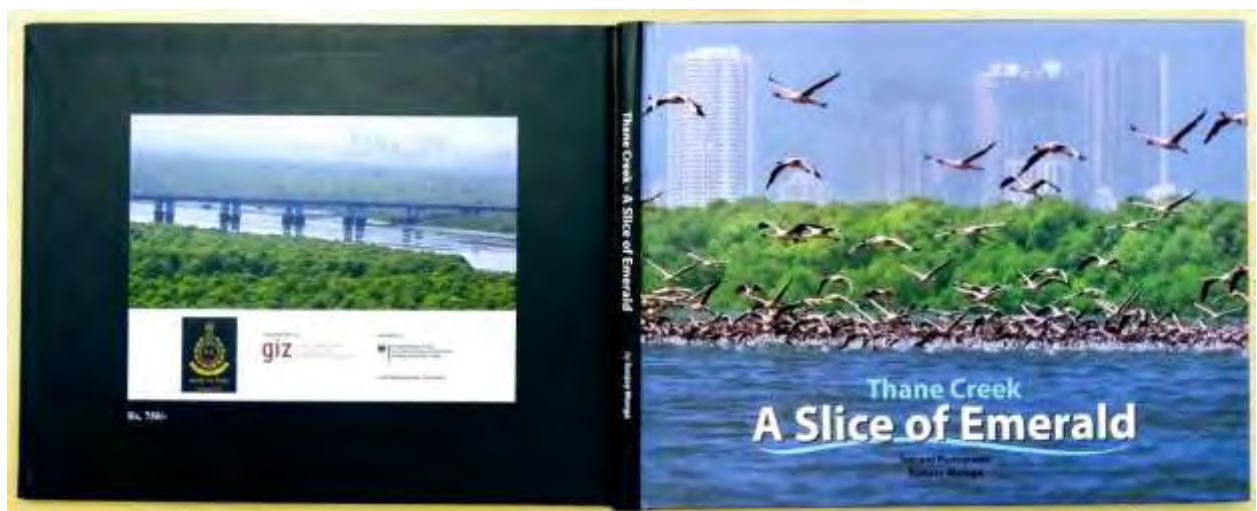


Fig. 22: Coffee table book „Thane Creek: A slice of Emerald“

## 7.2 Velas-Dabhol

### 7.2.1 Programmes conducted to increase awareness and mark special days dedicated to biodiversity conservation and the environment.

Awareness programmes were conducted for school children and the general public in villages along the Velas-Dabhol coastal stretch as part of the effort to increase awareness and mark days such as International Biodiversity Day, World Environment Day and Wildlife Week. During these awareness programmes, films on conservation of Olive Ridley sea turtles and conservation of mangroves were

screened, presentations on various aspects of biodiversity conservation were delivered, and painting and drawing competitions were organised for school children.

**Table 4: Awareness programmes conducted in the Velas-Dabhol coastal stretch**

Sr. No.	Event	Date	Place	Language of communication	No. of participants
1	Awareness programme: International Biodiversity Day	22 May, 2015	Velas	Marathi	30
2	Awareness programme: World Environment Day	5 June, 2015	Velas	Marathi	30
3	Awareness programme: International Biodiversity Day	18 May, 2016	Velas	Marathi	18
4	Awareness programme: International Biodiversity Day	19 May, 2016	Padle	Marathi	31
5	Awareness programme: International Biodiversity Day	22 May, 2016	Anjarle	Marathi	36
6	Awareness programme: Wildlife Week	3 October, 2016	Padle	Marathi	53
7	Awareness programme: Wildlife Week	7 October, 2016	Murud	Marathi	95
8	Awareness programme: Biodiversity Conservation	27 January, 2017	Velas	Marathi	36
9	Awareness programme on importance of mangroves	17 March, 2017	Umroli	Marathi	43
10	Awareness programme on importance of mangroves	18 March, 2017	Velas	Marathi	24



**Fig. 23: Students in Murud watching the film on turtle conservation**



**Fig. 24: Celebrating International Biodiversity Day in Anjarle**



**Fig. 25: Awareness programme: International Biodiversity Day, Padle**



**Fig. 26: International Biodiversity Day, Velas**

### 7.2.2 Specific programmes aimed at raising awareness of a target groups

In the Velas-Dabhol coastal stretch, the following programmes were conducted to raise awareness for various target groups:

- Report Finalisation workshop for “A strategic assessment of mud crab farming potential in brackish water stretches from Velas to Dabhol and Ansure Creek in the Ratnagiri District of Maharashtra”: This workshop was organised by Central Marine Fisheries Research Institute (CMFRI) in Dapoli, Ratnagiri. Scientists from CMFRI, 61 representatives from surveyed villages, representatives from Forest Department and CMPA Maharashtra Project staff participated in this workshop to discuss the findings of the project and its implications for mud crab farming in the region.
- Sand Dunes and Ecologically Important Coastal Habitats awareness workshop: A workshop was conducted by Gujarat Institute of Desert Ecology (GUIDE) on 29th March, 2017 in Anjarle. The main aim of this workshop was to create awareness about coastal sand dunes and their ecological role and importance. The participants were also taken for a field visit to observe flora and fauna along the coastline and discuss methods to stabilise sand dunes. A total of 35 villagers participated in the workshop.
- Eco-Tourism Guide Training Programme: A three-day workshop was conducted in Anjarle by Bombay Natural History Society to train local villagers from Anjarle, Kelshi, and Velas as ecotourism guides. The training involved indoor and outdoor sessions to help participants learn about coastal ecology, cultural and natural heritage of the sites, and about local flora and fauna and their significance. This workshop was attended by 19 participants.
- Workshop on monitoring and conservation of sea turtles: This workshop was organised by Dakshin Foundation in Anjarle. Villagers from Anjarle and Velas participated in this one-day workshop. Participants were given general information on ecology of Olive Ridley sea turtles,

including nesting, hatching, food requirement, and life cycle. In the second half of the session, participants were trained for tagging of turtles and using data loggers.

- Exposure visit for local communities from Anjarle and Kelshi to study mud crab and oyster farming: In this workshop, local communities from Anjarle and Kelshi, who were interested in mud crab and oyster farming, were taken to Sindhudurg (Malvan and Devgad) for an exposure visit. The main objective of this workshop was to impart knowledge about mud crab and oyster farming to the participants.
- Workshops on Biodiversity Management Committee formation and People's Biodiversity Register by Maharashtra State Biodiversity Board (MSBB): MSBB conducted several workshops in the villages along the Velas-Dabhol coastal stretch to facilitate the formation of the BMCs and preparation of PBRs, while also increasing awareness in those villages about local biodiversity.



**Fig. 27: Workshop on coastal sand dune and ecologically important coastal habitats**



**Fig. 28: Participants during the workshop on coastal sand dunes**



**Fig. 29: BNHS staff explaining identification techniques of local flora**



**Fig. 30: Guide training programme participants in Anjarle**





**Fig. 31: Forest Department staff at the Ratnagiri workshop on sea turtles**



**Fig. 32: Parth Bapat from Dakshin Foundation speaking at the workshop on sea turtles in Anjarle**

**Table 5: Details of specific programmes aimed at raising awareness in the Velas–Dabhol coastal stretch (held in Marathi)**

Sr. No.	Event	Date	Place	No. of Participants
1.	Workshop on Biodiversity Management Committee formation and implementation of Biological Diversity Act 2002	2 November, 2015	Dapoli	55
2.	Workshop on People's Biodiversity Register	8 February, 2016	Kelshi	34
3.	Crab and oyster farming exposure visit for Anjarle and Kelshi communities to Sindhudurg	13-14 January, 2016	Anjarle, Kelshi to Sindhudurg	19
4.	Workshop report finalisation for the mud-crab farming study*	15 March, 2016	Dapoli	61
5.	Capacity building workshop on monitoring and conservation of sea turtles	9 February, 2017	Anjarle	42
6.	Workshop on People's Biodiversity Register	3 March, 2017	Kelshi	37
7.	Workshop on People's Biodiversity Register	4 March, 2017	Asude	14
8.	Workshop on People's Biodiversity Register	6 March, 2017	Velas	21
9.	Workshop on People's Biodiversity Register	7 March, 2017	Kolthare	23
10.	Ecotourism Guide Training Programme by BNHS	20-22 March, 2017	Anjarle	26
11.	Awareness workshop on Sand Dune Stabilisation by Gujarat Institute of Desert Ecology*	29 March, 2017	Anjarle	35

\* People from Ansure village also participated in these workshops

### 7.3 Ansure Creek and other places in Ratnagiri district

#### 7.3.1 Awareness programmes to mark special days dedicated to biodiversity conservation and the environment.

Awareness programmes were conducted for school children and the general public in Ansure and Guhagar as part of the effort to increase awareness and mark days such as International Biodiversity Day and Wildlife Week. During these awareness programmes, films on conservation of Olive Ridley sea turtles and conservation of mangroves were screened, and presentations on various aspects of biodiversity conservation were delivered.

**Table 6: Awareness Programmes conducted in the Ansure and other places in Ratnagiri District**

Sr. No.	Event	Date	Place	No. of Participants
1	Awareness programme: International Biodiversity Day	7 May, 2015	Ansure	18
2	Crab and oyster farm visit of Ansure group to Sindhudurg	7 December, 2015	Ansure to Sindhudurg	22
3	Turtle conservation workshop	27 January, 2016	Marban (Near Ansure)	18
4	Workshop on People's Biodiversity Register (MSBB)	23 February, 2016	Ansure	21
5	Awareness programme: Wildlife Week	6 October, 2016	Guhagar	100
6	Awareness programme: Wildlife Week	7 October, 2016	Ansure	55
7	Workshop on monitoring and conservation of sea turtles by Dakshin Foundation	4 February, 2017	Ratnagiri	24
8	Workshop on People's Biodiversity Register (MSBB)	28 February, 2017	Sagave (Near Ansure)	11

#### 7.3.2 Specific programmes aimed at raising awareness of a target group

- Exposure visit for local communities from Ansure to study mud crab and oyster farming in Sindhudurg: In this workshop, local communities from Ansure, who were interested in mud crab and oyster farming, were taken to Sindhudurg (Malvan and Devgad) for an exposure visit. The main objective of this workshop was to impart knowledge about mud crab and oyster farming to the participants.
- Turtle conservation workshop in Marban (Near Ansure): This workshop was conducted for villagers from Marban, which is a nesting site for Olive Ridley sea turtles, and Forest Department staff from Rajapur. It focussed on sensitising people about conservation of turtles

and on-going conservation activities. It also included outdoor demonstrations for construction and maintenance of a hatchery, shifting of eggs to a hatchery, and releasing juveniles in the sea.

- Training workshop on monitoring and conservation of sea turtles, Ratnagiri: This workshop was organised by Dakshin Foundation for Forest Department officials, local volunteers from various coastal villages in Ratnagiri, and people interested in sea turtles such as college students. The main aim of the workshops was to impart knowledge on sea turtle monitoring, techniques of monitoring, and various aspects of sea turtle ecology.
- Workshops on Biodiversity Management Committee formation and People's Biodiversity Register by Maharashtra State Biodiversity Board (MSBB): MSBB conducted several workshops in Ansure and Sagave villages to facilitate the formation of the BMCs and preparation of PBRs, while also generating awareness about local biodiversity.



**Fig. 33: Meeting about Biological Heritage Site at Anjarle Gram Panchayat**



**Fig. 34: Participants during a briefing session on mud crab farming**



**Fig. 35: Training for oyster farming**



**Fig. 36: Discussions during a workshop on turtle conservation**



**Fig. 37: Field interaction at a turtle rescue centre in Anjarle**

#### **7.4 Exposure visit for Management of Protected Areas and turtle conservation**

As a part of the awareness generation activities of the CMPA-GIZ Project, a five-day exposure visit was organised by Mangrove Cell, Maharashtra and GIZ for its officers and staff involved in the CMPA Project to Odisha from 13th to 17th February, 2017. The team was led by Mr. N Vasudevan, APCCF Mangrove Cell and Dr. Aaron Lobo and Ms. Supriya Jhunjhunwala from GIZ. This exposure visit enabled the 14 participants to gain exposure to different management and tourism models through interactions with their contemporaries in Odisha. During the exposure visit, the team visited Bhitarkanika National Park (pristine mangrove forest), Chilika Lake (India's largest brackish water lagoon), Rushikulya beach (a mass nesting site of Olive Ridley sea turtles), and Mangalajodi (a wetland with large congregations of waterfowl that is a model for community-based ecotourism).



**Fig. 38: Participants visiting Chilika Development Authority**



**Fig. 39: Visit to Interpretation Centre, Mangalajodi**





**Fig. 40: Participants visiting Mangalajodi**



**Fig. 41: Visit to Rushikulya beach to observe Olive Ridley sea turtle nesting**

## 7.5 Audiovisual documentation of project activities

A project to develop a short documentary on the biodiversity of Thane Creek was commissioned to Wild Tiger Productions. The project was awarded after a call for Expressions of Interest advertised in leading dailies followed by a technical evaluation by a panel of experts. The film is meant to disseminate information about Thane Creek's unique mangrove ecosystem, its biodiversity, conservation need and value, and the impact of human activities on the estuarine ecosystem. The title of the film is "Jewels of Thane Creek".

This Project has also undertaken several interventions from April 2014 to April 2017 to meet its goals of participatory conservation of biodiversity, capacity building of local institutions, and programmes to generate awareness about coastal and marine biodiversity in the project sites. A decision was taken to develop a film to document various project activities. In this regard, a filmmaking company based in Jharkhand, Foot Prints India was given the contract. The film is called "Protectors of the Coast" and covers the interventions carried out by this Project.

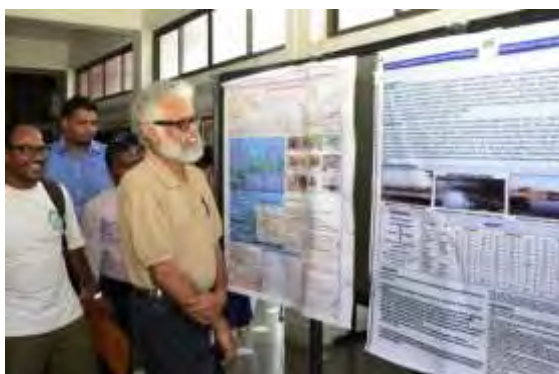
## 7.6 Support to scientific conferences

During the course of the project, the following conferences were supported by the Mangrove Cell:

- „National Conference on Mangroves of Konkan Coast“ held on 2nd and 3rd February, 2015: This conference was organised by R.P. Gogate College of Arts and Science, Ratnagiri. In the conference papers were presented on mangroves, coastal biodiversity, microbiology, biochemistry, conservation, and utilisation of mangroves. The conference was attended by 253 delegates from different parts of India.
- „International Conference on Ecosystem Services of Wetlands – Ardrabhumi 2016“ held on 16–17 February, 2016: This conference was organised by Vidya Prasarak Mandal's B.N. Bandodkar College of Science, Thane in collaboration with the Mangrove Cell, Salim Ali

Centre for Ornithology and Natural History, Mangrove Society of India and HOPE Nature Trust. The conference was attended by 221 academics, researchers, and scientists from India, Sri Lanka, and New Zealand.

- „International Conference on Recent Trends in Environment Technology and Economy – Swayazas 2017“ held on 10–11 February 2017: The Conference was organised by SIES College of Arts, Science and Commerce, Nerul in collaboration with Mangrove Cell, and Bombay Natural History Society. The conference was attended by 186 delegates from different countries.



**Fig. 42: Dr P. A. Azeez (Director, SACON) judging the poster presentation**



**Fig. 43: Keynote speech by Dr. Arvind Untawale, Secretary of Mangrove Society of India**



**Fig. 44: SWAYAZAS conference on “Recent trends in environment, technology and economy”**



**Fig. 45: SWAYAZAS conference on “Recent trends in environment, technology and economy”**

**Table 7: Scientific Conferences Supported by the Project**

<b>Sr. No.</b>	<b>Event</b>	<b>Date</b>	<b>Place</b>	<b>No. of Participants</b>
1	National Conference on Mangroves of Konkan Coast	2-3, February, 2015	Ratnagiri	253
2	International conference on ecosystem services of wetlands	16-17, February, 2016	Thane	221
3	International conference on recent trends in environment technology and economics	10-11, February, 2017	Nerul	183

## **8 Coastal and Marine Biodiversity Park, Airoli**

The Coastal and Marine Biodiversity Park (CMBP) with state-of-the-art interpretation facilities was developed as part of the project at the Thane Creek site to support conservation education, sensitise visitors about the coastal and marine biodiversity of Maharashtra, especially Thane Creek and the need to conserve this unique ecosystem.

The park aims to preserve and help regenerate the natural biodiversity of the region with indigenous plants, help visitors transition from the city to the creek and create visitor engagement spots that blend in with the surrounding ecology of the creek. The design elements of the park, surrounded by the creek and dense mangroves, help visitors travel from an urban mindset to the creek ecosystem.

### **8.1 Interpretation Centre**

The interpretation centre is located right at the entrance to the Coastal and Marine Biodiversity Park. The building and its renovation was provided by the State of Maharashtra. Interior design and manufacturing of the exhibits was made possible through additional funds provided by GIZ in the context of its CMPA Project. GIZ employed the services of Archimedes Exhibitions, a German communications agency specialising in science and research, which designed and produced the exhibits in Germany. Thematic focus and content were developed by the CMPA Project in close collaboration with the Mangrove Cell and Indian subject matter experts. The aim of the concept was to use a mix of visual, audible and tactile elements to sensitise visitors to the beauty of coastal and marine biodiversity in Maharashtra. At the same time, visitors will be informed about the important ecological role biodiversity plays in the coastal area and the threats it is exposed to. Interactive computer screens and a cinema room for viewing documentary films complement the design. The centre was inaugurated on 30th April 30, 2017 by Mr. Sudhir Mungantivar, Hon'ble Minister, Finance and Planning, Forests, Maharashtra.



**Fig. 46: The Coastal and Marine Biodiversity Park in Airoli**



**Fig. 47: Inauguration of the Coastal and Marine Biodiversity Centre in Airoli**





**Fig. 48: Visitors at the Coastal and Marine Biodiversity Centre in Airoli**



**Fig. 49: Visitors at the Coastal and Marine Biodiversity Centre in Airoli**



**Fig. 50: Interpretation elements at the Coastal and Marine Biodiversity Centre in Airoli**



**Fig. 51: Administration block of the Coastal and Marine Biodiversity Centre in Airoli**

## 8.2 Developing a landscaping master plan for CMBC, Airoli

A contract was awarded to Grassroots Research & Consultancy to develop a landscape design plan for the outdoor area in the Coastal and Marine Biodiversity Park.



**Contract:** Consultancy Services for Landscaping of the Coastal and Marine Interpretation Park in Airoli, Navi Mumbai

**Duration:** October 2015 to June 2016

**Output:** Landscaping master plan for the outdoor areas of the interpretation centre; technical drawings, design and estimates of individual works for the first phase of the landscaping.

**Fig. 52: Landscaping master plan for the Coastal and Marine Biodiversity Park, Airoli**

## 8.3 Improvement to the administrative building of the CMBP

The building adjacent to the Interpretation Centre houses the administration and reception area for visitors. In an effort to make the interiors more appealing to visitors, a contract was awarded to architect, Mr Devendra Bawdane to suggest modifications and renovations to the interior of the building, which then were realised with funds provided by the Mangrove Cell and the Marine Biodiversity Conservation Foundation.



**Contract:** Consultancy for interior modifications of building no. 2 at the Coastal and Marine Interpretation Centre in Airoli

**Duration:** February 2017 to April 2017

**Output:** Technical designs, drawing and specifications, for additional elements to be installed in the interpretation centre building. Final graphics and designs for the interior walls of the reception area at the centre.

**Fig. 53: Interior modifications in the administrative building**

## 8.4 Boardwalk design for the CMBP, Airoli

In addition to interpretative and educational activities, the trails in the CMBP would provide tourists with a number of nature-based tourism activities focussed on observing birds and wildlife. The



mangrove trails, marine mammal interpretation centre, flamingo-watch station, and boardwalks would provide visitors an opportunity to experience the mangrove ecosystem in its natural beauty.

A decision was taken to develop a boardwalk through the mangroves in Airoli to provide visitors to the interpretation centre the experience of walking through the mangrove ecosystem. It was envisioned that the circuitous boardwalk would allow visitors to walk through the mangroves to a raised platform at the edge of the creek. This contract was awarded to CoBOL Architects and Planners Design Pvt. Ltd.



**Fig. 54: Layout for a boardwalk at the Coastal and Marine Biodiversity Centre, Airoli**

**Contract:** Preparation of a boardwalk design for the interpretation centre, Airoli

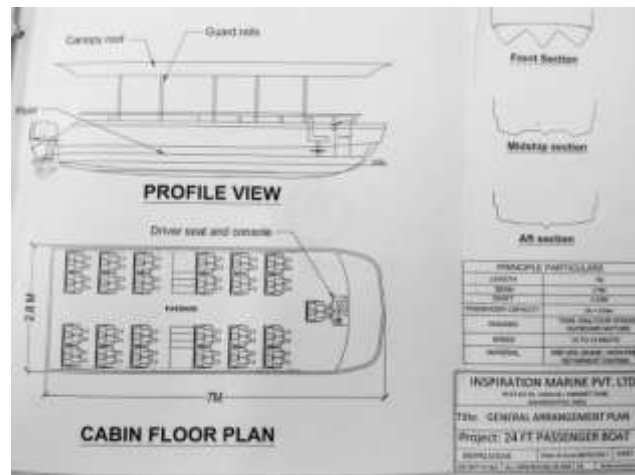
**Duration:** February 2017 to April 2017

**Output:** 1) Conceptual design and proposed boardwalk layouts were designed after observing and analysing site conditions. 2) Draft and final design and technical documents for the boardwalk after incorporating comments from the Mangrove Cell.

## 8.5 Procurement of a tourist boat for the CMBP

To achieve the goal of developing community awareness about biodiversity conservation under the project, a decision was taken to procure a boat to ferry visitors as part of ecotourism in Thane Creek. It was envisaged that the purchase of a boat would increase the engagement and education of visitors and generate revenue for the centre.





**Fig. 55: Specifications and general arrangement plan for the tourist boat**



**Fig. 56: The tourist boat “Flamingo” moored at the jetty in CMBP**

A contract for the manufacture of a 24-seater tourist boat was awarded through an online tendering process to Inspiration Marine Pvt. Ltd. Since budget available under the Financing Agreement was limited, the two 40hp engines for the pontoon boat were provided by Mangrove and Marine Biodiversity Conservation Foundation.

# Annexures

# **Annexure I: Declaration of Thane Creek Flamingo Sanctuary**

## **NOTIFICATION**

Revenue and Forests Department,  
Mantraleya, Madam Cama Marg,  
Hutatma Rajguru Chowk,  
Mumbai -400032,

Dated the 6<sup>th</sup> August, 2015

**Wild Life (Protection) Act, 1972.** No. WLP - 0315/CR-76/ F-1 - Whereas, the Government of Maharashtra considers that the area described in Schedule appended hereto (hereinafter referred to as "the said area") being the area other than the area comprised in a reserved forest by reasons of its adequate ecological, faunal, floral, geomorphological, natural and zoological significance for the purpose of protecting, propagating and developing wild life therein and its environment, shall be a sanctuary;

Now, therefore, in exercise of the powers conferred by sub-section (1) and (2) of section 18 and section 18B of the Wild Life (Protection) Act, 1972 (53 of 1972), and of all the powers enabling it in this behalf, the Government of Maharashtra hereby, -

- (a) declares its intention to constitute the said area as a Sanctuary to be known as the "Thane Creek Flamingo Sanctuary" and defines the limits thereof as set out in the said Schedule; and
- (b) appoints the Sub-Divisional Officer, Mumbai Suburban District to act as the Collector under the said Act to inquire into and determine the existence, nature and extent of rights of any person in or over the land within the limits of the said area and proposed to be notified as "Thane Creek Flamingo Sanctuary" as provided under sections 19 to 25 (both inclusive) of the said Act:-

### Schedule

Situation and limits of the "Thane Creek Flamingo Sanctuary" in Mumbai Suburban District.

1. Name of the Sanctuary : Thane Creek Flamingo Sanctuary
2. Name of the Division : Mumbai Mangrove Conservation Unit
3. Name of original Forest Division : Thane Forest Division.
4. Name of Districts : Mumbai Suburban District.
5. Particulars of area to be included in the Sanctuary:

Sr. No	District	Tahsil	Village	Survey Number / City Survey Number	Area in ha.	Remark
1	2	3	4	5	6	7
1	Mumbai Suburban	Kurla	Mulund	New 1327	143.16	Area along western side of creek
2			Vikhroli	New 209	257.35	
3			Bhandup	New 1049	94.92	
4			Kanjur	New 1351	264.87	
5			Mandale	Survey Number 91 Part (City Survey Number 1 Part)	34.500	
				Survey Number 89 Part (City Survey Number 2)	28.95	
				Survey Number 90 Part (City Survey Number 3)	14.720	
				Survey Number 91 Part (City Survey Number 4)	10.730	
				Survey Number 80 Part (City Survey Number 6)	15.260	
				New 82	0.540	
				New 83	0.090	
				New 84	30.9485	
				<b>Total</b>	<b>896.0385</b>	
6			Mulund, Vikhroli, Bhandup, Kanjur, Mandale		794.487	Area of creek
				<b>Total</b>	<b>1690.5255 ha.</b>	



Area along western side of creek: - 896.8385 Ha. Creek Area (Revenue Land):- 794.687 Ha  
Total: - 1690.5255 Ha. or 16.905 Sq. Km.

Boundaries of proposed "Thane Creek Flamingo" Sanctuary.

Village/ City Survey Number	North	East	South	West
Mahund New 1327	Village Boundary of Kopari	Creek	Village Boundary of Bhandup	City Survey Number 1321, 1320, 1319, 1318
Vikhroli New 209	Village Boundary of Kanjur and Creek	Creek	Creek	City Survey Number 1
Bhandup New 1049	Village Boundary of Nahur	Creek	Creek	Survey Number 63
Kanjur New 1351	Village Boundary of Bhandup	Creek	Village Boundary of Vikhroli	Survey Number 275
Mandale Survey No. 91 Part (City Survey Number 1 Part) Survey Number 89 Part (CTS No. 2, ) Survey Number 90 Part (City Survey Number 3,) Survey Number 91 Part (City Survey Number 4,) Survey Number 80 Part (City Survey Number 6,) New 82, New 83, New 84.	Creek	Creek	Sion- Panvel Highway, Village Boundary of Turbhe	City Survey Number 6 Part

By order and in the name of the  
Governor of Maharashtra,

  
(Prakash Mahajan)

Joint Secretary to Government

## महसूल व वनविभाग

मंत्रालय, मादाम कामा रोड, हुतात्म राजपुरु चौक, मुंबई ४०००३२, दिनांक ०६ ऑगस्ट, २०१५

### अधिसूचना

वन्यजीव (संरक्षण) अधिनियम, १९७२

क्रमांक डब्ल्यूएलपी ०३१५/प्र.क्र.७६/फ-१- ज्याअर्थी, या सोबतच्या अनुसूचीमध्ये वर्णन केलेल्या क्षेत्राला (यात यापुढे ज्याचा निर्देश "उक्त क्षेत्र" असा करण्यात आला आहे) परिस्थितीकीय, प्राणीशास्त्रीय, वनस्पतीशास्त्रीय, भूरूपीकीय, नैसर्गिक व प्राणीशास्त्रविषयक पुरेसे महत्त्व असल्यामुळे त्यामधील वन्यजीवांचे संरक्षण, त्याची पैदास व वाढ करण्याच्या प्रयोजनासाठी व त्याच्या पर्यावरणासाठी या क्षेत्राचा एका अभयारण्यात समावेश करणे महाराष्ट्र शासनास इष्ट वाटते;

त्याअर्थी, आता, वन्यजीव (संरक्षण) अधिनियम, १९७२ (१९७२ चा ५३) चे कलम १८ व कलम १८ बी चे उप-कलम (१) व (२) या बाबतीत त्यास समर्थ करणाऱ्या सर्व अधिकारांचा वापर करून, महाराष्ट्र शासन, याद्वारे, -

- (अ) "ठाणे खाडी फ्लेमिंगो अभयारण्य" या नावाने ओळखले जाणारे वन्यजीव अभयारण्य म्हणून अनुसूचित नमूद केलेले क्षेत्र गठीत करण्याचा आपला इरादा घोषित करित आहे. आणि उक्त अनुसूचित जाहीर केल्याप्रमाणे त्याच्या हद्दी सीमांकित करित आहे; आणि त्या प्रयोजनासाठी;
- (ब) प्रस्तावित "ठाणे खाडी फ्लेमिंगो अभयारण्य" अधिसूचित करण्यासाठी उक्त क्षेत्रातील जमिनीमध्ये किंवा त्यावर कोणत्याही व्यक्तीच्या नावे असलेल्या कोणत्याही अभिकथित अधिकारांचे अस्तित्व, स्वरूप व व्याप्ती यांची चौकशी करण्यासाठी व ते निश्चित करण्यासाठी आणि उक्त अधिनियमाची कलमे १९ ते २५ (बोन्ही धरून) या अन्वये तरतूद केली असेल तशीच कार्यवाही करण्यासाठी, भिल्लाधिकारी म्हणून, उपविभागीय अधिकारी, मुंबई उपनगर, जिल्हा मुंबई उपनगर यांची नियुक्ती करित आहे.

### अनुसूची

मुंबई उपनगर जिल्ह्यातील "ठाणे खाडी फ्लेमिंगो अभयारण्याची स्थिती आणि हद्दी :-

१. अभयारण्याचे नाव :-
२. वनविभागाचे नाव :-
३. मूळ प्रादेशिक वन विभागाचे नाव :-
४. जिल्ह्याचे नाव :-

ठाणे खाडी फ्लेमिंगो अभयारण्य  
मुंबई कांदळवन संवर्धन बटक  
ठाणे वन विभाग.  
मुंबई उपनगर

५. अभयारण्यामध्ये समाविष्ट केलेल्या क्षेत्राचा तपसिल :-

अ.क्र.	जिल्हा	तालुका	गावाचे नाव	सर्वे क्रमांक / सिटी सर्वे क्रमांक	क्षेत्र (हे.अ.मै.)	शेरा
१	२	३	४	५	६	७
१	मुंबई	कुर्ला	मुलुंड	नवीन १३२७	१४३.१६	खाडी लगतचा पश्चिमेकडील भाग
२	उपनगर	कुर्ला	विक्रोळी	नवीन २०९	२५७.३५	
३			भांडुप	नवीन १०४९	९४.९२	
४			कांजूर	नवीन १३५१	२६४.८७	
५			मंडाले	स.न. ९१ पैकी, (सि.स.न. १ पैकी)	३४.५००	
				स.न. ८९ पैकी (सि.स.न. २)	२८.९५	
				स.न. ९० पैकी (सि.स.न. ३)	१४.७२०	
				स.न. ९१ पैकी (सि.स.न. ४)	१०.७३०	
				स.न. ८० पैकी (सि.स.न. ६)	१५.२६०	
				नवीन ८२	०.५४०	
				नवीन ८३	०.०९०	
				नवीन ८४	३०.९४८५	
				एकूण	८९६.०४८५	
६			मुलुंड, विक्रोळी, भांडुप, कांजूर, मंडाले		७९४.४८७	खाडी क्षेत्र
				एकूण	१६९०.५२५५	

"छाने खाडी सर्वेक्षणे" अभयारण्यात समाविष्ट होणारे खाडी लगतचे पश्चिमेकडील क्षेत्र :- ८९६.०४८५ हे.

खाडी क्षेत्र (मंडाले क्षेत्र) :- ७९४.४८७ हे.

एकूण क्षेत्र :- १६९०.५२५५ हे.

दिना

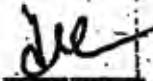
१६.१०.५ चौ.कि.मी.



**खाडी खाडी जलेशिमो अक्षयारण्यका खडु सिमा :-**

गाव/स.नं.	उत्तर	पूर्व	दक्षिण	पश्चिम
१	२	३	४	५
मोजे मुलुंड नवीन १३२७	मोजे कोपरीची शीव	खाडी	मोजे भांडुपची शीव	सि.स.नं. १३२९, १३२०, १३२९, १३२८
मोजे विक्रोळी नवीन २०९	मोजे कांजूर शीव व खाडी	खाडी	खाडी	सि.स.नं. १
मोजे भांडुप नवीन १०४९	मोजे नाहूरची शीव	खाडी	खाडी	स.नं. ६३
मोजे कांजूर नवीन १३५१	मोजे भांडुपची शीव	खाडी	विक्रोळीची शीव	स.नं. २७५
मंडाले स.नं. ९९ पैकी, (सि.स.नं. १ पैकी) स.नं. ८९ पैकी, (सि.स.नं. २) स.नं. ९० पैकी, (सि.स.नं. ३) स.नं. ९१ पैकी, (सि.स.नं. ४) स.नं. ८० पैकी, (सि.स.नं. ६) नवीन ८२, नवीन ८३ नवीन ८४	खाडी	खाडी	सायन-पनवेल महामार्ग आणि तुर्गे गावाची शीव	सि.स.नं. ६ पैकी

महाराष्ट्राचे राज्यपाल यांचे आदेशानुसार व नाबाने,

  
प्रकाश महाजन  
शासनाचे सहसचिव

## **Annexure II:**

# **Notification of Mangroves as Reserve Forests in Ratnagiri district**

## THE OFFICE OF THE COMMISSIONER, KONKAN DIVISION

Konkan Bhavan, 1st Floor, CBD Belapur,  
Navi Mumbai, dated 20th August 2015

## NOTIFICATION

INDIAN FOREST ACT, 1927.

No. RB/Desk-2/Forest/CR-2347/2015.—Whereas, the Government of Maharashtra has, in exercise of the powers conferred by section 3 of the Indian Forest Act, 1927 (16 of 1927), decided to constitute "the forest land/waste-land which is the property of Government, or over which the Government has proprietary rights, or to the whole or any part of the forest-produce of which the Government is entitled, more specifically mentioned in the Schedule appended hereto (hereinafter referred to as "the said land"), to be a reserved forests.

Now, therefore, in exercise of the powers conferred by section 4 and 17 of the Indian Forests Act, 1927 (16 of 1927), read with the Government Notification, Revenue and Forests Department, No.FLD.1081-F, dated the 21st October 1981 (issued in exercise of the powers conferred by sub-section (4) of section 3 of the Bombay Commissioners of Divisions Act, 1957 (Bom. VIII of 1958), the Divisional Commissioner of Konkan Division hereby,—

(a) declares that the Government of Maharashtra has decided to constitute the said land as reserved forests;

(b) specifies the situation and limits of reserved forests as per the Schedule appended hereto; and

(c) Appoints the "Sub- Divisional officer Rajapur in charge of the respective Taluka, to be the forest Settlement Officer to inquire in to land determine the existence nature and extent of any rights alleged to exist in favour of any person in or over any land comprised within the limits of the reserved forest, of in or over any forest produce and to deal with the same as provided in chapter II of the said act.

(d) appoints the Collector, Ratnagiri, to hear appeals from any orders passed by the Forest Settlement Officer under sections 11,12,15 and 16 of the said Act.

## Schedule

## Taluka Rajapur, District Ratnagiri

Sr. No.	Name of Village	New Survey No./Gat No.	Area (Ha.)	Boundries			
				North	East	South	West
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Rautwadi	208	5.97.70	Sr. No. 39,40, 32, 31,25	Khadi	Khadi	Khadi
		<b>Total ..</b>	<b>5.97.70</b>				
2	Keravale	23	0.18.41	Sr. No.12,13	Khadi	Khadi	Khadi
		24	0.32.60	Khadi	Khadi	Khadi	Khadi
		<b>Total ..</b>	<b>0.51.01</b>				
3	Kondsar Budruk	162	0.80.95	Khadi	Sr. No.66	Khadi	Khadi
		163	0.42.68	Khadi	Sr. No.70, 71	Khadi	Khadi
		164	24.00.00	Khadi	Khadi	Sr. No. 71, 72,73,81, 86, 160	Khadi
		<b>Total ..</b>	<b>25.03.61</b>				
4	Dhanvalli	169	0.46.98	Khadi	Khadi	Khadi	Khadi
		170	0.95.37	Sr. No.138,142	Khadi	Khadi	Khadi
		<b>Total ..</b>	<b>1.42.35</b>				

## THE OFFICE OF THE COMMISSIONER, KONKAN DIVISION

KonkanBhavan, 1st floor, CBD Belapur, Navi Mumbai,  
dated the 20th August 2015.

## NOTIFICATION

INDIAN FOREST ACT, 1927.

No RB/Desk-2/Forest/CR-2301/2012.—Whereas the Government Maharashtra has, in exercise of the powers conferred by section 3 of the Indian Forest Act, 1927 (16 of 1927) decided to constitute "The forest land/wasteland which is the property of government, or over which the Government has proprietary rights, or to the whole or any part of the forest produce of which the government is entitled, more specifically mentioned in the Schedule appended here to (hereinafter referred to as 'the said land') to be a reserved forests.

Now therefore in exercise of the powers conferred by section 4 and 17 of the Indian Forest Act, 1927 (16 of 1927), read with the Government Notification, Revenue and Forest Department, No FLD. 1081-F, dated the 21st October 1981 (issued in exercise of the powers conferred by sub-section (4) of section 3 of the Bombay Commissioners of Divisions Act 1957 (Bom. VII of 1958). The Divisional Commissioner of Konkan Division hereby.

(a) declares that the Government of Maharashtra has decided to constitute the said land as reserved forests .

(b) specifies the situation and limits of reserved forests as per the Schedule appended hereto; and

(c) appoints the \*Sub Divisional Officer Rajapur In charge of the respective Taluka, to be the forest settlement Officer to inquire into and determine the existence, nature and extent of any rights alleged to exist in favour of any person in or over any land comprised within the limits of the reserved forest, of in or over any forest produced , and to deal with the same as provided in chapter II of the said Act.

(d) appoints the Collector Ratnagiri, to hear appeals form any orders passed by the Forest Settlement Officer under sections 11,12,15 and 16 of the said Act.

## Schedule

## Taluka Rajapur, District Ratnagiri

Sr.	Name of Village	Gat No.	S. No.	H. No.	Area (Ha)	Boundaries				Remarks
						East	West	South	North	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	Dandewadi		38	1/10	0.07.60	2	35	38	38	
				Partly						
			38	1/1	10.00.88	38				
				Partly		1/1	5, 7	Creek	37, 36,	
						Partly	Partly		35, 2, 4	
						Boundary of Ansure				
				Total	10.08.48					
2	Burambe-wadi		84	0	2.82.28	84	Creek	83	Creek	
				Partly		Partly				
			84	0	0.30.35	84	84	83	Creek	
				Partly		Partly				
				Total	3.12.63					

## **Annexure III:**

# **News clippings with respect to Project activities**



# Airoli flamingo sanctuary will open to public in April

ANKITA SENGUPTA

Published : Feb 3, 2016, 4:02 am IST

By April, Mumbaikars would be able to take a walk through a mangrove forest and observe a flamboyance of flamingos and other migratory birds right within the heart of the Thane creek.

By April, Mumbaikars would be able to take a walk through a mangrove forest and observe a flamboyance of flamingos and other migratory birds right within the heart of the Thane creek. The state's much awaited flamingo sanctuary will be thrown open to the public in April, said sources from the state forest department. The information was provided at an exhibition, organised by the mangrove cell at Airoli, to celebrate World Wetland Day on Tuesday.

The state had on August 2015 announced that 1,690 hectares of the western bank of the Thane creek between Airoli and Vashi bridge would be preserved as a flamingo sanctuary. The forest department had also tied up with a German government agency, GIZ, to create a marine interpretation centre (MIC) along the coast of the creek. The project was supposed to be completed by January this year but due to technical reasons the deadline was missed.

The building and other infrastructure requirements of the MIC have been put in place by the forest department and they are waiting for GIC to bring in equipments for the centre. The MIC is slated to have mechanical and multisensory exhibits of crabs crawling out of mudflats and even of turtles laying eggs, said a source from the mangrove cell. "We will soon install airconditioners and there are a few other minor works that needs to be completed before we get the equipments from Germany," said the source.

Speaking further on plans for the sanctuary, Sanjay Madi, divisional forest officer said, "Landscaping will be done in the area around MIC. Also, the boardwalk will be extended further into the creek. There will also be boat rides from Diva jetty and other parts of the creek to enable tourists get a closer look at the migratory birds. And we are confident that all the work will be completed and the sanctuary will be opened to the public in April."

The boardwalk is a bamboo bridge that has been built on stilts and it runs across a part of the mangrove forest at the creek. It opens out to the mudflat where scores of flamingos and others birds feed. However, Mr Madi assured that its extension and the boat rides would be planned in a way so that the birds are not disturbed.

Commenting on the matter, bird watcher and environmentalist Nandakumar Pawar said that it is unlikely that flamingos would be adversely affected by the presence of people in the vicinity. "Usually flamingos do not bother if there are people nearby. They take some time to get used to the human presence and afterwards are unaffected by it," Mr Pawar said. He also stated that letting people visit the sanctuary is a step towards sensitising people about the importance of mangroves and its role in the ecosystem.

## Airoli marine interpretation centre opens for tourists today

The Maharashtra government Sunday also announced that it would replicate the famous “Dubai Garden Glow” in Navi Mumbai by the end of 2018.

By: Express News Service | Mumbai | Published: May 1, 2017 12:22 am



Forest and Revenue Minister Sudhir Mungantiwar at the inauguration of the Coastal and Marine Biodiversity Centre in Airoli. (Narendra Vaskar)

The state-of-the-art Coastal and Marine Biodiversity Centre (CMCB) was on Sunday inaugurated in Airoli, making it the country's third marine interpretation centre after Port Blair and Rameswaram. The Navi Mumbai centre, which is just off the Thane Creek, is part of the planned Thane Flamingo Sanctuary. The centre aims to provide a glimpse into the marine and coastal biodiversity around Mumbai. The state government Sunday also announced that it would replicate the famous “Dubai Garden Glow” in Navi Mumbai by the end of 2018. In August 2015, the Maharashtra government had declared an area of 1,690 hectares on the northern stretch of Thane Creek between Airoli and Vashi bridges as a wildlife sanctuary and later as a ‘flamingo sanctuary’. The newly opened 7,000-square-foot construction is the first phase of CMCB, which would provide information to visitors in unique ways. For instance, visitors can stand against a large wall and compare their height with some turtles. The other features of the information centre includes watching a ‘turtle’ lay eggs, smell mangroves, see what a crab looks like from all angles and hear what a bird sounds like while singing to attract a mate.

All these can be experienced through multi-sensory and mechanical exhibits at the Airoli centre. The creek, which is a haven for almost 200 species of resident as well as migrator birds, including rare Osprey and Greater Spotted Eagle, will also be opened for boat rides. At Rs 250, visitors will be able to take a boat ride through the thick mangrove cover, towards Diva and Vashi. Officials said over 600 marine species would be displayed at the CMCB and all the exhibits had been built in Germany and shipped to Airoli. Here, tourists visiting the collaboration with the Indo-German (GIZ) Project on Conservation and Sustainable Management of Marine Protected Areas.

According to officials, the venue will be opened for tourists on May 1 and boat rides will begin after May 15. The entry fee for tourists will be ₹50.

The minister also revealed that the state would set up a 'Garden Gloe' in Navi Mumbai just like the renowned Dubai Garden Glow. This project is expected to be completed in 18 months. Dubai Garden Glow is a leading family entertainment destination in the Middle East that attracts local and international visitors. According to state officials, the second phase of the information centre in Airoli, which is pegged at Rs 10 crore, is envisaged to be India's first marine mammal museum with skeletal remains of whales, dolphins and porpoises. Additional facilities like a mangrove trail using a boardwalk on one end of the site, a separate centre for educating students about crab-farming, a bird-hide to spot and photograph avifauna and an artificial water body will soon be set up, officials added. The other marine interpretation centres in the country are Mahatma Gandhi Marine National Park at Port Blair in Andaman, and Gulf of Mannar Marine Interpretation Centre near Rameswaram in Tamil Nadu.



# Coastal and Marine Biodiversity Centre inaugurated in Airoli

**VIRAT A SINGH**

Sun, 30 Apr 2017-09:33pm ,

DNA webdesk

Calling it one of its kind centre that will not only prove significant for students and researchers but also tourists to understand the need for conservation of wetlands, Forest Minister Sudhir Mungantiwar inaugurated the state-of-the-art Coastal and Marine Biodiversity Centre (CMCB) at Airoli.

Speaking at the event Mungantiwar said that conservation of mangroves and wetlands was extremely crucial and every Mumbaikar had a role to play and not just the Forest Department.

"Monday being Maharashtra Day we will keep a free entry for any person visiting the CMCB. Also we plan to keep a special scheme under which students from BMC schools can visit the centre for creating awareness without any charges," announced Mungantiwar.

## The Coastal and Marine Biodiversity Centre



The CMCB boasts of several interactive features as well as displays that have been built in Germany.

According to Additional Principal Chief Conservator of Forest (APCCF) Mangrove Cell, N Vasudevan the 7000 square feet centre has been divided into two parts the first section is dedicated to coastal biodiversity that will house exhibits on mangroves and the aquatic life found on the coast while the second section will showcase marine biodiversity and will have exhibits on whales, dolphins, turtles and others.

“There are over 600 marine species that will be displayed at the CMCB and all the exhibits have been built in Germany and shipped to Airoli. Tourists visiting the centre can hear the sounds of whales, maningos, dolphins as well as other species to get a better understanding of their life as well as information about marine ecology,” he said adding that the centre was a result of the Indo-German (GIZ) Project collaboration on Conservation and Sustainable Management of Marine Protected Areas.

## In a first on western coast, Airoli to get a marine interpretation centre

The centre will provide a glimpse into the marine and coastal biodiversity around Mumbai.

Anjali Lukose (Mumbai)

Published: January 15, 2015 12:19 pm

Watch a 'turtle' lay eggs, smell mangroves, see what a crab looks like from all angles and hear what a bird sounds like while singing to attract a mate — all in one room. Such robotic turtles or other coastal animals, audios and videos of birds and the smell of mangroves can be experienced through multi-sensory and mechanical exhibits at an upcoming marine interpretation centre at Airoli.

The centre will provide a glimpse into the marine and coastal biodiversity around Mumbai. "We wanted visitors, especially children, to see the marine plants and animals and experience something like a turtle laying eggs, or what a crab look like with a 360 degree view of it.

Chief conservator of forests, mangrove cell. "Usually, we see charts and movies, but when we experience a turtle laying eggs, we rarely forget. And that's what we wanted at our marine interpretation centre."

The centre, first one on the western coast, should be ready by the year end, said officials from the mangrove cell. This project is funded by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), an international agency that has set aside around ₹80 crore for sustainable management of eight coastal and marine protected areas in the country, of which Thane creek is a site.

# Maharashtra government declares northern part of Thane Creek as flamingo sanctuary

The Indian Express had first reported about the mangrove cell's marine wildlife sanctuary proposal in Thane in March last year.

Indian Express (Mumbai) - August 7, 2015 9:04 pm



## Flamingoes at the Thane Creek (Source: Mangrove cell)

The Maharashtra government on Thursday issued a notification declaring the northern part of Thane Creek as a flamingo sanctuary. This will be the state's second marine sanctuary after Malvan.

The 1,690 hectares sanctuary will include 896 ha of mangroves and 794 ha of adjacent water body and is located on the western bank, between the Airoli and Vashi bridges that connect Mumbai with Navi Mumbai. The Indian Express had first reported about the mangrove cell's marine wildlife sanctuary proposal in Thane in March last year.

"Declaration of the Thane Creek Sanctuary, located right in the midst of a mega city, is a very significant step for the conservation of this unique natural environment with its eclectic mix of mangroves, mudflats and threatened species of birds. The ecosystem will be closely monitored and shielded from serious threats like discharge of effluents, dumping of sewage and other biotic interferences. At the same time, the scientific community, wildlife enthusiasts and the general public could enjoy access to this natural wonder in a regulated manner. Suitable amenities will be provided for such regulated access to the site, without causing disturbance to the ecosystem," said N Vasudevan, chief conservator of forests, mangrove cell.



The mangrove cell has already initiated baseline studies and rapid biodiversity assessment of the Sanctuary area with assistance from the Indo-German (GIZ) Project on “Conservation and Sustainable Management of Marine Protected Areas (CMPA)”. These studies would in turn help in the preparation of a scientific management plan for the Sanctuary and for its sustainable management.

The eco-sensitive zone of the sanctuary will be the adjoining mangrove areas on either side of the creek, which are already notified as Reserve Forests. The ‘Mumbai Mangrove Conservation Unit’ under the Mangrove Cell will be responsible for the management of the Sanctuary.

Since 1994, the Thane Creek has been attracting flamingos in large numbers. By November, more than 30,000 of these beautiful birds, along with their chicks occupy the mudflats and the bordering mangroves and remain there until May.

Almost 90% of the Flamingo population consists of Lesser Flamingos and the remaining are Greater Flamingos. Besides supporting a large congregation of flamingos, the area is a refuge for many other resident and migratory birds. In all, about 200 species of birds have been reported from this area, which include Globally Threatened Species like the Greater Spotted Eagle (IUCN Category-Vulnerable) and others like Osprey (listed in Schedule I of Wildlife Protection Act). Other bird species include the Pied Avocet, Western Reef Heron, Black-headed Ibis, Common Redshank, Marsh Sandpiper, Common Greenshank, Curlew Sandpiper, Brown-headed Gull, Whiskered Tern, Gull-billed Tern, Caspian Tern, Little Tern, White Bellied Sea Eagle and Eurasian Marsh Harrier. ‘Birdlife International’ has already declared Thane Creek as an Important Bird Area (IBA).

## Mumbai gets a flamingo sanctuary

The Indian Express had first reported about the mangrove cell's marine wildlife sanctuary proposal in Thane in March last year.



**Indian Express** (Mumbai) AUGUST 08, 2015 00:38 IST

A flamingo sanctuary in a bustling metropolis. Mumbai is setting another record after being home to a national park for decades. If the Sanjay Gandhi National Park is right in the heart of the city, the Thane Creek Flamingo Sanctuary, which came into being on Friday, is on its periphery.

On Thursday, the Maharashtra Revenue and Forest Department notified the northern part of the creek as a wildlife sanctuary under Section 18 of the Wildlife (Protection Act), 1972.

The sanctuary will be the State's second marine sanctuary after the one at Malvan. The 1,690- hectare bird haven — 896 hectares of mangrove forests and 794 hectares of a waterbody — is on the western bank of the creek, between the Airoli and the Vashi bridges connecting Mumbai and Navi Mumbai. Its eco-sensitive zone will be the adjoining mangrove areas on either side of the creek, which are already notified as reserve forests.

"Declaration of the sanctuary, located right in the middle of a mega city, is a very significant step for the conservation of this unique natural environment with its eclectic mix of mangroves, mudflats and threatened species of birds," N. Vasudevan, Chief Conservator of Forests, Mangroves Cell, said. The Mumbai Mangrove Conservation Unit of the Mangrove Cell of the Forest Department will manage the sanctuary.



The cell has initiated baseline studies and a rapid biodiversity assessment of the sanctuary area with assistance from an Indo-German project on conservation and sustainable management of marine protected areas. "These studies would, in turn, help in the preparation of a scientific management plan for the sanctuary and its sustainable management. The ecosystem will be closely monitored and shielded from serious threats such as discharge of effluents, dumping of sewage and other biotic interferences," Mr. Vasudevan said.

The creek has been attracting flamingos in large numbers since 1994. By November every year, over 30,000 of these birds, along with their chicks, descend here and occupy the mudflats and the bordering mangroves. They stay here till May, after which most of them migrate to Bhuj in Gujarat for breeding, leaving a small resident population. A large number of waders are also spotted along with them.

Besides supporting a large congregation of flamingos, the area is a refuge for many resident and migratory birds. In all, 200 species have been reported, even globally threatened species such as the greater spotted eagle and others. such as osprey.

Pied avocet, western reef heron, black-headed ibis, common redshank, marsh sandpiper, common greenshank, curlew sandpiper, brown-headed gull, whiskered, gull-billed, Caspian and little terns, white-bellied sea eagle and Eurasian marsh harrier have been spotted. BirdLife International has declared the creek an important bird area.

# Navi Mumbai to get Glow Garden in 18 months, just like in Dubai

THE ASIAN AGE. NEHA L.M. TRIPATHI

Published : May 1, 2017, 2:13 am IST



**Maharashtra Forest Minister Sudhir Mungantiwar at the Coastal and Marine Biodiversity Centre in Airoli. (Photo: Shripad Naik)**

Mumbai; State forest minister Sudhir Mungantiwar on Sunday announced that Navi Mumbai will have a 'Glow Garden' akin to the one in Dubai in the next 18 months. The minister said the aim is to enable Mumbaikars who cannot afford to visit Dubai to enjoy a similar experience by visiting the garden in Navi Mumbai.

Mr Mungantiwar was speaking after inaugurating the state's first Coastal and Marine Biodiversity Centre in Airoli. Mr Mungantiwar said that on Monday, which is Maharashtra Day, anyone visiting the sanctuary or the centre would not be charged. The minister also announced that once a week, children from a municipal school would be taken to the centre for free.

This centre, which is a part of the Thane Flamingo Sanctuary, will not only provide nature enthusiasts a better understanding of the marine biodiversity but also offer visitors boat rides to savour the sight of the flamingos.

The 7,000 square feet centre's first phase, which was thrown open for the public on Sunday, will have a second phase that will include various marine biodiversity exhibiting whales, dolphins and turtles. As part of the first phase, a total of 600 species will be displayed at the centre. Some of the exhibits were made in Germany and have been shipped to the city.



**Flamingos take flight at the flamingo sanctuary at Airoli.**

**(Photo: Shripad Naik)**

Though the visitors will be able to visit the sanctuary for free on Monday, an adult from Tuesday will be charged Rs 50, a senior citizen Rs 40, a school student Rs 25 (ID compulsory) for the interpretation centre. However, the boat ride from Tuesday onwards will cost Rs 250 per person. The one-hour ride will cover the majority of the sanctuary area.

Mr Mungantiwar, who inaugurated a biodiversity centre in Mahabaleshwar too on Sunday, appealed to people to help save biodiversity. He said, "The forest department is trying its best to conserve biodiversity and marine life."

The centre is 2.3 kilometre away from Airoli station and is less than a kilometre from Airoli bridge. Visitors visiting the centre may take either of the two to reach. While coming from Chhatrapati Shivaji Terminus, one has to take a train to Thane and change to harbour line to reach Airoli station. If one is coming from western line, he/she has to change to Central line at Dadar to continue till Thane and change to harbour for Airoli.

### **How to get there**

The centre is 2.3 km from Airoli station and is less than a km from Airoli bridge. Visitors may take either of the two to reach the centre. While coming from Chhatrapati Shivaji Terminus, one has to take a train to Thane and change to harbour line to reach Airoli station. If using western line, he/she has to change to central line at Dadar to continue till Thane and change to harbour for Airoli.

**Annexure IV:**

**Government Resolution:**

**Implementation of Indo-German**

**CMPA Project in Maharashtra**



Approval for Implementation of Indo-German (GIZ) Project on "Conservation and Sustainable Management of Existing and Potential Coastal and Marine Protected Areas (CSM-CMPA)" in Maharashtra.

**Government of Maharashtra**  
Revenue & Forests Department  
**Government Resolution No. S-10/2014/C.R.50/F-3**  
Mantralaya, Mumbai 400 032  
**Date: 2<sup>nd</sup> August, 2014.**

**Preamble**

The Governments of India and Germany have entered into a technical cooperation agreement to work towards improving conservation of marine biodiversity under the Project, "Sustainable Management of Coastal and Marine Protected Areas" (SM-CMPA). The project, which will extend up to March 2017, is being jointly implemented by the Ministry of Environment and Forests (MoEF), Government of India, and the **Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)** on behalf of the German Federal Ministry for Environment, Nature Conservation and Nuclear Safety (BMU). The specific objectives of the project are (i) Participatory management of Coastal and Marine Protected Areas (ii) Capacity development for key stakeholders (iii) ICT strategies for awareness raising, public relations and policy dialogue.

Maharashtra is one of the selected coastal States, which will be implementing this project in three project sites viz., Thane Creek, Velas-Dabhol Coast and Ansure Creek, Ratnagiri. The assistance from GIZ will be in the form of 100% grants to the tune of 950,000 Euros (approximately 7.8 crores). The contribution from the State Government will be to the tune of 4.5 crore during the project period (2014-17). Chief Conservator of Forests (Mangrove Cell) is the Nodal Officer of the Project and the Member secretary of the State Level Steering committee under the Chairmanship of the Principal Secretary (Forests).

In order to successfully implement the Indo-German Project on Conservation and Sustainable Management of Existing and Potential Coastal and Marine Protected Areas (CSM-CMPA), it is necessary for the Maharashtra Govt. to enter into an agreement with the GIZ. The Financial Agreement and Special Agreement to be signed between the two were under the consideration of the government.

**Government Resolution**

1. Government is pleased to approve the implementation of the GIZ-MOEF project, "Sustainable Management of Coastal and Marine Protected Areas" (SM-CMPA) in the three selected sites in the State.
2. The project shall be implemented by the Mangrove Cell of Forest Department during the period, 2014-17. Chief Conservator of Forests, Mangrove Cell is authorized to sign the Financial Agreement (Annexure - I) and Special Agreement (Annexure - II) on behalf of the Government and to open a separate bank account for the purpose, so as to receive the funds directly from GIZ and keep a tab on the expenditure.

3. The works will be planned and implemented by the Mangrove Cell under the overall supervision of the State Steering Committee for GIZ project.

This Government Resolution is issued with concurrence of Law & Judiciary Department, Planning Department and Finance Department.

By order and in the name of Governor of Maharashtra.

  
(Praveen Pardeshi)  
Principal Secretary (Forest)

**Copy to:**

The Chief Secretary, Government of Maharashtra, Mantralaya, Mumbai  
The Secretary, Ministry of Environment and Forests, Government of India, New Delhi  
Additional Chief Secretary, Finance, Mantralaya, Mumbai  
Additional Chief Secretary, Planning Mantralaya, Mumbai  
Additional Chief Secretary, Tourism, Mantralaya, Mumbai  
Principal Secretary, Law & Judiciary, Mantralaya, Mumbai  
Secretary, (Animal Husbandry, Dairy Development and Fisheries Department), Mantralaya, Mumbai  
Programme Director-CMPA, GIZ Biodiversity Programme Office, A-2/18, Safdarjung Enclave, New Delhi-29  
Principal Chief Conservator of Forests (HOFF), Maharashtra State, Nagpur  
Principal Chief Conservator of Forests (Wildlife), Maharashtra State, Nagpur  
The Additional Principal Chief Conservator of Forests (Budget, Planning and Development), Maharashtra State, Nagpur  
The Additional Principal Chief Conservator of Forests (CAMP), Maharashtra State, Nagpur  
The Additional Principal Chief Conservator of Forests (Conservation), Maharashtra State, Nagpur  
Chief Conservator of Forests, Mangrove Cell, Mumbai  
Chief Conservator of Forests (Territorial), Thane / Kolhapur  
Deputy Conservator of Forests (Territorial), Thane, Ratnagiri,  
Select File, Desk F-3



Annexure - I

**FINANCING AGREEMENT**

between the

**Deutsche Gesellschaft für Internationale  
Zusammenarbeit (GIZ) GmbH**  
Dag-Hammarskjöld-Weg 1-5  
65760 Eschborn

- "GIZ" -

and the

Chief Conservator of Forests  
Mangrove Cell  
Ministry of Forest  
Government of Maharas  
A Wing, 2<sup>nd</sup> Floor  
S R A Building  
Mumbai - 400 051, India

- "Recipient" -

Brief Project Title, Country: Conservation and Sustainable  
Management of Coastal and Marine  
Areas in Maharashtra, **INDIA.**

On the basis of the Government Arrangement by exchange of notes/agreement dated 15.10.2013 between the Government of the Federal Republic of Germany and the Government of India concerning the project Conservation and Sustainable Management of existing and potential Coastal and Marine Protected Areas ("Government Arrangement"), the Recipient and the GIZ hereby enter into the following Financing Agreement.

The basis for the subsidies for Chief Conservator of Forests, Mangrove Cell, Ministry of Forests, Government of Maharashtra, is the commission from BMU of August 3, 2012. GIZ shall provide the subsidies pursuant to this agreement exclusively on behalf of and for the account of BMUB.

**Article 1**

**Amount and Designated Use**

1.1 The GIZ shall grant the Recipient a financial contribution not exceeding

**€ 950,000,-**

**(in words: Euro Nine hundred fifty thousand only).**

- 1.2 The Recipient shall use the financial contribution exclusively for Conservation and Sustainable Management of Coastal and Marine Areas in Maharashtra ("Project").
- 1.3 Taxes and other public charges incurred in connection with the implementation of the project measures and for which the Recipient is legally liable, in addition to import duties, shall not be financed from the financial contribution.

## **Article 2**

### **Disbursement**

- 2.1 The GIZ shall disburse the financial contribution upon call for disbursement by the Recipient in accordance with the progress of the Project.
- 2.2 The GIZ shall have the right to refuse to make disbursement after April 30, 2017.
- 2.3 The Recipient shall repay any funds remaining from the financial contribution, including any interest accrued, to the GIZ immediately on completion of project activities.

## **Article 3**

### **Suspension of Disbursements, Termination and Repayment**

- 3.1 The GIZ shall be entitled to suspend disbursements if
  - a) the Recipient shall fail to meet financial obligations when due to the GIZ under this Agreement or under other legal relationships;
  - b) the Recipient shall not be able to furnish evidence proving the use of sums disbursed for the purpose stipulated in this Agreement;
  - c) any other obligations under this Agreement or under the special agreement pertaining to this Agreement pursuant to Article 6 shall have been violated;
  - d) any extraordinary circumstances shall arise which shall preclude or seriously jeopardize the implementation, the operation or the purpose of the Project.
- 3.2 The GIZ shall be entitled to terminate the Agreement with immediate effect and to demand repayment of the disbursed amounts if any of the circumstances referred to in Article 3.1 b) to d) arise. Where Article 3.1 b) and d) shall apply, only those amounts shall be repaid for which the Recipient is unable to furnish evidence of the use for the purpose stipulated in this Agreement.

## **Article 4**

### **Public Charges**

The Recipient shall bear all taxes and other public charges accruing in connection with the conclusion and administrative processing of this Agreement outside the Federal Republic of Germany.

## **Article 5**

### **Obligations of the Recipient**

The Recipient shall

- a) ensure that the persons entrusted by her/him with the preparation and implementation of the project and the awarding of contracts for the provision of materials and services to be financed shall not demand, accept, provide, grant, promise or accept promises for illegal payments or any other advantages in connection with these tasks;

- b) prepare, implement, operate and maintain the Project in conformity with sound financial and engineering practices and with the project concept discussed and agreed upon with the GIZ;
- c) furnish its counterpart contributions in full and in due time;
- d) secure the full financing of the Project and, upon request, furnish the GIZ with evidence proving that all costs not financed from the present financial contribution are covered;
- e) keep, or have kept, books and records - clearly identifying all costs of the services and supplies for the Project and those services and supplies financed from the financial contribution;
- f) enable the representatives of the GIZ at any time to consult such books and any other records and documents relevant for the implementation and operation of the Project and to visit all installations related thereto;
- g) supply any information and reports on the Project and the progress thereof which the GIZ may request;
- h) of its own accord promptly inform the GIZ of any circumstances precluding or seriously jeopardizing the implementation, the operation or the purpose of the Project.

#### **Article 6**

##### **Special Agreement Pertaining to the Financing Agreement**

The Recipient and the GIZ shall lay down in a special agreement the details pertaining to this Financing Agreement and the Project, in particular the supplies and services to be financed from the financial contribution, the counterpart contributions to be provided by the Recipient, the disbursement procedure including the evidence to be furnished regarding the use of the financial contribution for the purpose stipulated in this Agreement, as well as details of the Project implementation and further obligations of the Recipient pursuant to Article 5.

#### **Article 7**

##### **Miscellaneous**

- 7.1 Amendments of and additions to this Agreement as well as any essential statements and notices shall be in writing. Any such statement or notice shall be deemed to have been received as soon as it shall have been delivered to the following address of the contracting party or at such other address as notified to the other contracting party:

For the GIZ:

Postal address: Deutsche Gesellschaft für Internationale  
Zusammenarbeit (GIZ) GmbH  
Dag-Hammarskjöld-Weg 1-5  
D-65760 Eschborn  
Federal Republic of Germany

For the Recipient:

Postal address: Chief Conservator of Forests, Mangrove Cell  
Ministry of Forest  
Government of Maharashtra  
A Wing, 2<sup>nd</sup> Floor  
S R A Building  
Mumbai -400 051, India.



- 7.2 In the event of a provision of this Agreement being invalid, this shall not affect the validity of the remaining provisions. Any gap in consequence thereof shall be filled by a provision consistent with the purpose of this Agreement.
- 7.3 The Recipient shall not assign or transfer, pledge or mortgage any rights under this Agreement.
- 7.4 This Agreement shall be governed by the law applicable in the Federal Republic of Germany. In case of doubt as to the proper interpretation of this Agreement, the German text shall prevail.
- 7.5 Any disputes arising under this Agreement shall be finally decided in accordance with the Rules of Arbitration of the International Chamber of Commerce (ICC), Paris. The court of arbitration shall sit in Frankfurt am Main.
- 7.6 In the event of any modifications to the Project arising from the Government Arrangement yet to be entered into, in particular with regard to the amount of the financial contribution or the measures to be financed, the GIZ and the Recipient shall adapt this Financing Agreement accordingly. If the Government Arrangement is not executed, this shall constitute a circumstance in the meaning of Article 3.1 d).

In four originals, two texts each in the German and (English) languages.

Eschborn, (date)

Mumbai (date)

**Deutsche Gesellschaft  
für Internationale  
Zusammenarbeit (GIZ)  
GmbH**

**Chief Conservator of  
Forests, Mangrove Cell,  
Ministry of Forests,  
Government of Maharashtra**

**Annexure - II**

**SPECIAL AGREEMENT**

between

**Deutsche Gesellschaft für Internationale  
Zusammenarbeit (GIZ) GmbH**  
Dag-Hammarskjöld-Weg 1-5  
65760 Eschborn

- „GIZ“ -

And  
**Chief Conservator of Forests**  
Mangrove Cell, Forest Department  
Government of Maharashtra  
Mumbai, India.

- "Recipient" -

for the implementation of the  
Financing Agreement entered into  
between the GIZ and the Recipient  
under Agreement No. ....  
for up to Euro 950,000.-

Brief Project Title, Country: **Conservation and Sustainable  
Management of Coastal and Marine  
Areas in Maharashtra, India.**

In accordance with Article 6 of the aforementioned Financing Agreement on the granting of a financial contribution, the Recipient and the GIZ hereby enter into the following Special Agreement:

**1. Implementing Bodies, Other Participants**

- 1.1 The Recipient itself shall implement the Project and ensure that it is properly executed.
- 1.2 Insofar as provided for in this Special Agreement, the Recipient shall call in the GIZ Principal Advisor. Furthermore, the Recipient can be advised by Expert Consultants to an appropriate extent in the planning and implementation of the Project.
- 1.3 The financial handling of the financial contribution for the GIZ shall be carried out by the GIZ Head Office in Eschborn, Germany. All documents pursuant to Section 6 including Annex 3 (Disbursement Procedure) shall be submitted to the GIZ Head Office in Eschborn.



## **2. Project, Designated Use of the Financial Contribution**

- 2.1 The overall objective of the Project promoted by the financial contribution is "The conservation and sustainable use of biodiversity in selected marine and coastal areas in Maharashtra are improved, taking into consideration the economic condition of the local population"

The project aims at achieving the following outputs:

1. Participatory management processes are implemented in the pilot areas.
2. A capacity strengthening system for supporting participatory management of marine and coastal areas is developed for Maharashtra.
3. Relevant stakeholders have information on – and are aware of – the importance of conserving biodiversity in marine and coastal areas.

- 2.2 In order to achieve the objective and intended outputs, the following measures are planned to be implemented by the Recipient:

### **A) Overall Project coordination**

1. Hiring the necessary personnel to oversee and conduct site based activities and ensuring proper administrative procedures in the implementation of the project;
2. Preparation, in consultation with GIZ, of annual work plans for all sites and organization of bi- annual meetings of the project's Steering Committee;
3. Ensuring monitoring of all activities based on the result based monitoring and evaluation system, and proper reporting and documentation.

### **B) Activities to be conducted in all pilot areas**

1. Involvement of stakeholders to facilitate a participatory, consensus-building process to increase their support for establishing the proposed marine and coastal conservation areas. This will include formulation of micro-plans using participatory rural assessment methods;
2. Conducting baseline studies in respect to relevant biological, ecological and socio-economic parameters. Rapid biodiversity surveys will be carried out in the pilot areas, in collaboration with NGOs and research organisations to guide conservation action;
3. Preparation of required Biodiversity Checklists and facilitating the formulating of People's Biodiversity Registers;
4. Planning and conducting restoration of mangrove forests, complemented by setting up dedicated nurseries for restoring local species to the selected mangrove areas;
5. Development of master plans for phasing out identified exotic species known to negatively affect coastal ecosystems;
6. Assessment of all pilot areas in respect to possible approaches to the conservation of designated areas and initiation of the process to realize the most appropriate conservation regimen;
7. Preparation of management plans for selected marine and coastal areas, taking into consideration existing formal or informal management regimens;
8. Improvement of existing - and development of supplementary or alternative - livelihood opportunities for local communities;
9. Involvement of the private sector for strategic cooperation on the conservation of coastal biodiversity;
10. Planning and conducting capacity building activities at both the state and site level, in consultation with the GIZ Human Capacity Development Adviser;
11. Conducting community based awareness campaigns with marine and coastal biodiversity and its benefits as the central theme. Innovative media will be used and events will be held locally in collaboration with NGOs;
12. Establishing interpretation centres (the Maharashtra Forest Department will contribute the land and buildings using its own resources);
13. Organisation of programmes, events and conferences for relevant stakeholders or ensuring their participation in similar events organized by other agencies.

**C) Additional activities specific to Thane Creek**

1. Constituting of a dedicated stakeholder committee tasked to address aspects of environmental degradation in Thane Creek due to pollution;
2. Conducting a feasibility study on the reduction of the pollution load in Thane creek;
3. Development of a comprehensive pollution control strategy and action plan;
4. Commissioning a study on the ecotoxicology of crabs and other marine organisms harvested from Thane creek;
5. Strengthening the Recipient's capacity for patrolling the protected area in Thane Creek through provision of a patrol boat.
6. Investigating the potential of integrating Thane Creek's wild life (especially flamingos) into Mumbai's tourism development concept.

**D) Additional activities specific to Velas to Dabhol coastal stretch**

1. Conducting a study on best practices for turtle conservation;
2. Formulating a strategy and action plan to phase out the exotic species of Casuarina trees and replacing them with endemic dune stabilising vegetation;
3. Planning and conducting restoration of dune vegetation, complemented by setting up dedicated nurseries for restoring local species to the dune belt;
4. Enhancing the homestay model at Velas and expanding it to other suitable villages within the Velas to Dabhol coastal stretch.

The project begins on May 1, 2014 and ends on April 30, 2017. Costs incurred outside of this time period cannot be financed from the financial contribution.

- 2.3 On the basis of the cost estimate dated ..... / and the planning documents dated ..... the measures shall be financed as follows:

Schedule of costs and financing (in Euro\*)

Cost category	Total costs	Financing		
		by the Recipient		from the financial contribution by the GIZ up to
		Own input up to	Co-financing according to Section 3.2	
1	2	3	4	5
1. Overall Project coordination, (including personnel cost, travel for local project team, capacity development and steering committee meetings)	150.000	20.000	-	130.000
2. Site-based activities in Thane Creek	845.000	385.000	-	460.000
3. Site-based activities in the Velas to Dabhol coastal stretch	350.000	90.000	-	260.000
4. Site-based activities in Ansure Creek	180.000	80.000	-	100.000
Total	1.525.000	575.000		950.000

\* Conversion of the Recipient's own contribution into EURO is an approximation, based on an exchange rate of INR 84 = 1 Euro



- 2.4 The approved planning documents including the cost estimate as well as the schedule(s) in Section 2.3 represent the binding framework for implementation of the project and use of the financial contribution.

The Recipient shall report any changes becoming apparent in the measures immediately to the Expert Consultant and submit amended planning documents to the Expert Consultant for approval prior to commencement of the measure concerned. Individual items in accordance with Section 2.3, which are covered in whole or in part by the financial contribution, may be exceeded by up to 20 % insofar as the excess can be compensated by savings in other items. Any further increases require an amendment of this Special Agreement, and if appropriate of the Financing Agreement.

- 2.5 The financial contribution may only be used for verifiable, reasonable and customary local costs. In addition, the precondition for financing third party supplies and services from the financial contribution is the award, conclusion and processing of contracts for supplies and services in accordance with the provisions of Section 5.
- 2.6 The Recipient shall use the objects procured or manufactured for the Project exclusively for the Project. The earmarking applies until all financed measures are completed.
- 2.7 At the earliest possible date, the Recipient shall determine the annual budget necessary for the proper technical and financial implementation of the Project and submit this budget to the Expert Consultant. The annual budget shall be broken down in accordance with Section 2.3. The annual budget should indicate the anticipated timing of the individual measures, the associated costs and the amount and timing of financing needed as a result; in the case of co-financing, the share of financing allocated to the Recipient and the GIZ should also be shown.
- Should deviations from this annual budget become necessary when implementing the Project, the Recipient shall submit revised budget planning to the Expert Consultant for approval without delay.
- 2.8 The financial contribution may be used only for expenditure not already financed under other subsidies or long-term loans.
- 2.9 The recipient must follow the rules in the information sheet "Construction" attached as Annex 9, which forms a constituent part of this Special Agreement.

### **3. Counterpart Contributions**

- 3.1 The Recipient's counterpart contributions to the project encompass its inputs as stipulated in the Schedule of Costs and Financing as per Section 2.3 (own inputs and co-financing) and any additional project costs not covered by the financial contribution of the GIZ.
- 3.2 The Recipient shall provide evidence that the aforementioned counterpart contributions have been made, insofar as these comprise own inputs, within the scope of the reports pursuant to Section 4. Further evidence shall be submitted to the Expert Consultant on the latter's request in a suitable form agreed with the Expert Consultant. In the event of co-financing, the Recipient shall provide evidence of payment of its share of financing within the scope of the calls for disbursement in the form stipulated in Annex 3 hereto (Disbursement Procedure).

### **4. Reporting**

- 4.1 The Recipient shall submit project progress reports to the Expert Consultant at six-monthly intervals (for the first time on November 30, 2014); the points stipulated in the specimen (attached as Annex 7 hereto) shall be taken into account when drafting the reports. The reports shall be countersigned by the Recipient.

- 4.2 At the latest three months upon completion of all the financed measures (as per Section 2.2), the Recipient shall draw up a final report (pursuant to the specimen in Annex 8 hereto) describing the implementation and results of the Project in the light of the set objective and outputs. This final report shall also contain a summary and explanation of the costs of the Project and their financing, for each of the measures broken down in accordance with the Schedule of Costs and Financing as per Section 2.3.

Special details shall be given regarding the outcome of the acceptance inspection of the buildings, the settlement of any warranty claims and also the following-up and enforcement of contractual guarantee periods. Furthermore, photographs of all buildings and facilities constructed shall be attached.

The final report shall be signed by the Recipient and shall be submitted to the Expert Consultant 3 months after completion of all the financed measures, but no later than 6 months after the last disbursement from the GIZ.

## **5. Supplies and Services**

- 5.1 When awarding contracts for supplies and services to be financed in whole or in part from the financial contribution, the Recipient shall observe the regulations which apply in India and the provisions in Annex 1 (Award Procedure), which forms a constituent part of this Special Agreement. The corresponding documents shall be kept with the accounting vouchers pertaining to the Project (see Section 7.1).

- 5.2 The Recipient shall ensure that the following declaration of self-obligation is an integral part of the offer of the supplier as well as the contract to be concluded between the supplier and the Recipient:

"We underscore the importance of a free, fair and competitive procurement process that precludes fraudulent use. In this respect we have neither offered nor granted, directly or indirectly, any inadmissible advantages to any public servants or other persons in connection with our bid, nor will we offer or grant any such incentives or conditions in the present procurement process or, in the event that we are awarded the contract, in the subsequent execution of the contract. We also underscore the importance of adhering to minimum social standards ("Core Labour Standards") in the implementation of the project. We undertake to comply with the Core Labour Standards ratified by the country, India. We will inform our staff about their respective obligations and about their obligation to fulfil this declaration of undertaking and to obey the laws of the country of India."

- 5.3 The Recipient shall ensure, upon entering into contracts for supplies and services to be financed in whole or in part from the financial contribution, that
- the prices and terms of payment of these contracts conform to customary trade practices;
  - import duties are to be shown separately in the contracts and in the invoices;
  - the supplies are insured against transportation risks to an adequate and customary extent, imported items being insured in freely-convertible currencies, as far as possible.
- 5.4 The Recipient shall ensure that any reimbursements, insurance, bank guarantee or similar payments in connection with the supplies and services, are reemployed for the Project. If a special bank account exists for the project, the Recipient shall agree with the contractors that these payments be transferred to the special bank account. The Recipient shall notify the GIZ of the amount of and reason for such payments within the scope of the project reports stipulated in Section 4.



## **6. Disbursement Procedure; Evidence of Use of Funds**

- 6.1 Upon fulfilment of the contractual prerequisites, the GIZ shall pay the financial contribution on call for disbursement by the Recipient. The size of the payments and the disbursement procedure shall be governed by the rules stipulated in Annex 3 (Disbursement Procedure), which forms a constituent part of this Special Agreement.

The advance payment procedure is agreed for payment of the financial contribution.

On the basis of the funds required for the first 3 months of the project implementation, the GIZ shall, in response to a call for disbursement, transfer an advance payment of

to the special account referred to in Annex 3, Section 1.1.

- 6.2 All payments shall be made exclusively within the scope of the schedule of costs and financing (cf. Section 2.3) and with consideration given to the other provisions for the designated use of the financial contribution pursuant to Section 2.
- 6.3 If the GIZ makes payments in currencies other than Euro, the GIZ shall deduct from the financial contribution the amount in Euro which it spent on purchasing such other currency, including incidental costs. All costs incurred for the bank processing of the financial contribution shall likewise be deducted from the financial contribution.

## **7. Accounting, Auditing**

- 7.1 The Recipient shall keep a separate project journal within the scope of its bookkeeping. All project-related receipts and expenditures shall be recorded in chronological order and in accordance with the cost categories/measures stipulated in Section 2.3. For this purpose, the Recipient shall observe the regulations for correct bookkeeping which apply in the recipient country. The Project journal shall be subdivided into the items stipulated in Section 2.3 and shall contain at least the following details:

### Receipts:

- a) Entry number
- b) Date of receipt
- c) Origin of receipt
- d) Amount
- e) Reason for receipt

### Expenditures:

- a) Entry number
- b) Date of payment
- c) Recipient of payment
- d) Amount
- e) Reason for payment

The original vouchers for each payment and entry operation shall be kept in chronological order and numbered consecutively with the respective entry number. They shall be kept separate from other vouchers not associated with the Project to be implemented. If the Recipient cannot reasonably keep the original vouchers separately, it is sufficient to keep certified photocopies separately, indicating where the original vouchers are filed in the accounts kept by the Recipient. All original vouchers and any photocopies shall be kept for at least 10 years after submission of the final report pursuant to Section 4.2.

The project journal is to be balanced monthly. The Project Journal is the basis for the Statements of Expenditures (Annex 6) which are to be submitted.



- 7.2 The GIZ can have the Project audited at its own expense at any time by an independent chartered accountant commissioned by the GIZ, by its own experts or by its own audit authority. The audit shall cover the correctness and regularity of the cash-in-hand and invoicing of the Project, the use of the financial contribution and the award of contracts for supplies and services pursuant to Section 5.1.

After completion of the audit report the GIZ shall inform the Recipient of the essential results of the report. The Recipient shall implement the recommendations of the GIZ ensuing from the results of the audit report promptly and shall furnish proof of this to the GIZ on request.

- 7.3 The Recipient shall have the Project audited at its own expense at the close of each fiscal year after disbursement of the first instalment of the financial contribution by a certified chartered accountant appointed by the Recipient or by its own audit authority. The audit shall cover the correctness and regularity of the cash-in-hand and invoicing of the Project, the use of the financial contribution and the award of contracts for supplies and services (cf. Section 5.1).

Before the chartered accountant is appointed, the Recipient shall obtain the approval of the GIZ Head Office stipulated in Section 1.3 and shall submit evidence to this Office on request with respect to the certification of the chartered accountant.

The Recipient shall submit the audit report to the GIZ Head Office stipulated in Section 1.3 immediately on completion, but no later than 6 months after the end of the period covered by the audit / the close of the fiscal year, along with the brief comments of the Recipient. The Recipient shall implement the recommendations of the GIZ ensuing from the results of the audit report promptly and shall furnish proof of this to the GIZ on request.

## **8. Miscellaneous**

- 8.1 The Recipient shall grant the GIZ an irrevocable, non-exclusive and transferable right of use in all areas and fields, including the processing and translation and use in electronic media; this applies to the reports pursuant to Section 4 and all studies, documents or other work results, including computer programs, resulting from the project implementation and financed in whole or in part from the financial contribution. The Recipient shall hand over one copy of the materials to the GIZ promptly on request by the GIZ. The GIZ is entitled to grant simple sub-user rights to third parties.
- 8.2 This Special Agreement shall only come into effect after the Financing Agreement has entered into force. It shall end on termination of the Financing Agreement, without the need for separate notice of termination. In the event of any modifications to the Financing Agreement, the GIZ and the Recipient shall adapt this Special Agreement accordingly.
- 8.3 Unless otherwise agreed, the provisions of Articles 7.1 to 7.5 of the Financing Agreement shall also apply mutatis mutandis to this Special Agreement.

In two originals in English language.

Eschborn (date)

Mumbai, (date)

Deutsche Gesellschaft für Internationale  
Zusammenarbeit (GIZ) GmbH

Chief Conservator of Forests,  
Mangrove Cell.

#### **Annexes**

- Annex 1: Contract Award Procedure
- Annex 2: Specimen documentation of contract awards
- Annex 3: Disbursement procedure
  - Advance Payment Procedure and Direct Payment Procedure
  - Reimbursement Procedure and Direct Payment Procedure
- Annex 4: Specimen Calls for Disbursement
  - Call Advance Payment Procedure
  - Call Reimbursement Procedure
  - Call Direct Payment Procedure
- Annex 5: Specimen Statement of Accounts
  - Statement of Accounts Advance Payment Procedure
  - Statement of Accounts Reimbursement Procedure
- Annex 6: Specimen List of Expenditures
- Annex 7: Specimen Project Progress Report
- Annex 8: Specimen Final report
- Annex 9: "Construction" Information Sheet (only for Projects with a construction component)

#### **Declaration by the Project Executing Agency**

The Project Executing Agency confirms that it has been commissioned by the Recipient to implement the Project to be financed from the financial contribution. It declares that it has taken note of the contents of the Financing Agreement entered into between the GIZ and the Recipient and the above Special Agreement pertaining hereto and that it will comply with the provisions hereof on implementing the Project. Insofar as the Project Executing Agency has assumed fulfilment of the Recipient's tasks pursuant to Section 1.1 of the Special Agreement, it recognises the obligations of the Recipient under the Financing Agreement and the Special Agreement, including any obligations pertaining to repayment, as its own obligations to the GIZ.

..... (date)

.....  
(Project Executing Agency)

**Annexure V:**  
**Government Resolution for**  
**constituting a Steering Committee for**  
**Project implementation**



Constitution of State Steering Committee for Implementation of Indo-German (GIZ) Project on Conservation and Sustainable Management of Existing and Potential Coastal and Marine Protected Areas (CSM-CMPA).

**Government of Maharashtra**

Revenue and Forests Department

**Government Resolution No.: S-10/2014/Part-I/CR 50/F-3**

Mantralaya, Mumbai 400 032.

Date: 16 April, 2014.

**Preamble:**

India and Germany have entered into a technical cooperation for Conservation and Sustainable Management of Existing and Potential Coastal and Marine Protected Areas (CMPA) in India. The project funded by GIZ, Germany will extend up to June 2017. It aims at conservation and management of selected existing and potential coastal and marine protected areas through strengthened participatory management, capacity development and information, communication and training. Three sites have been selected in Maharashtra for implementation of the project. Chief Conservator of Forests, Mangrove Cell, Mumbai will be the Nodal Officer for this project. In order to successfully implement the project and to steer it in the right direction, it is necessary to have a State level Steering Committee (SSC).

**Government Resolution**

Government is pleased to constitute a Steering Committee for monitoring the project for Conservation and Sustainable Management of Existing and Potential Coastal and Marine Protected Areas (CMPA) in Maharashtra. The composition of the Committee is as under:

- |                                                                |                    |
|----------------------------------------------------------------|--------------------|
| 1. Principal Secretary (Forests)                               | - Chairman         |
| 2. Secretary (Animal Husbandry, Dairy Development & Fisheries) | - Member           |
| 3. Representative of GIZ-India (Programme Director-CMPA)       | - Member           |
| 4. Chief Conservator of Forests (Mangrove Cell)                | - Member Secretary |

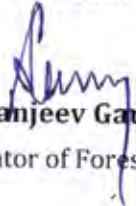
**Terms of Reference of the Committee**

1. The SSC shall ensure proper planning and resource allocation for effective implementation of the CSM-CMPA project and approve its Annual Work Plans.
2. The SSC shall monitor the progress of the project and oversee the disbursement, allotment and re-appropriation of funds received from GIZ, and address any other matter to achieve the desired objectives of the project.

3. The SSC shall ensure necessary coordination between Government of Maharashtra, Government of India and GIZ.
4. The SSC would meet at least twice every year at a convenient place to be decided by the Chairperson.
5. The term of the SSC would be coterminous with the project.
6. The SSC may co-opt. other experts/officials, with the prior approval of the Chairperson, whenever necessary.
7. All expenditure for the meetings of the SSC would be met from the budget allocated under the Project.

This Government Resolution of Maharashtra Government is available on its website [www.maharashtra.gov.in](http://www.maharashtra.gov.in). Reference no. for this is <Enter Reference No>. This order has been signed digitally.

By order and in the name of the Governor of Maharashtra.

  
(Sanjeev Gaur)

Chief Conservator of Forests (Mantralaya)

Copy to:

The Chief Secretary, Government of Maharashtra, Mantralaya, Mumbai.  
The Secretary, Ministry of Environment and Forests, Government of India, New Delhi.  
The Secretary (Animal Husbandry, Dairy Development and Fisheries Department), Mantralaya, Mumbai.  
The Principal Chief Conservator of Forests ( HOFF), Maharashtra State , Nagpur.  
The Additional Principal Chief Conservator of Forests (Budget, Planning and Development), Maharashtra State , Nagpur.  
The Additional Principal Chief Conservator of Forests (Conservation), Maharashtra State , Nagpur.  
The Director GIZ, GIZ Office, 21, Jor Bagh, New Delhi-110003.  
The Chief Conservator of Forests (Mangrove Cell), Mumbai.  
The Chief Conservator of Forests (Territorial), Thane / Kolhapur.  
Deputy Conservator of Forests (Thane, Dahanu, Alibag, Roha, Sawantwadi)  
Select File, Desk F-3.



# **Annexure VI:**

## **Consent letters for declaring Velas and Anjarle as Biodiversity Heritage Sites**

स्थापना)

(१९६८)

# ग्रुप ग्रामपंचायत वेळस

समाविष्ट गावे : वेळस, नारायण नगर

मु.पो. वेळस, ता. मंडणगड, जि. रत्नागिरी.



आ.क्र. १५९.

दिनांक ५/१०/२०१६.

ग्रुप ग्राम पंचायत वेळसची ग्राम सभा दिनांक २३/०८/२०१६ रोजी ग्राम पंचायत कार्यालयात घेव्यात आली.

ठराव क्र ११ ची खरी नकल.

विषय वेळस गावला जागतिक वारसा स्थळ घोषित करण्या बाब  
ठराव क्र. ११ :- वेळस हे मंडणगड तालुक्यातील, रत्नागिरी जि.  
मधील समुद्र किनाऱ्या जवळचे गाव आहे. सदर गावमध्ये  
सन २००० सालापासून सागरी कासवांचे संरक्षण व संवर्धन  
उपक्रम सुरू आहे, त्याच प्रमाणे गावातील परिसरात जैवविविध  
मोठ्या प्रमाणात असून वेगवेगळ्या जातीचे पक्षी, प्राणी, झाडे,  
फुले, वनस्पती, खेचपुटि, मासे, किडे, असून मूळा कुर्मि  
जातीचा खेळडा किनाऱ्यावर आढळतो असे हि समजले आहे  
समुद्र कासवांची मोठी विषा वसाहत किनाऱ्यावर आहे. त  
आमच्या गावाचे ग्रामसभेमध्ये सर्वानुमते गावला जागतिक वा  
रसा स्थळ म्हणून मूळ नवीन मोठ्या मिळाली ज्या मुळे  
गावातील जैवविविधता टिकवण्यासाठी आम्हाला मदत होई  
तरी आपण या संदर्भात आमच्या सदर प्रस्तावावर विचार  
करावा व जागतिक वारसा स्थळामध्ये गावाचा समावेश  
करावा

सुचक :- श्री किशोर दत्तात्रय सावंत.

अनु. :- श्री. प्रविण दत्तात्रय दरिपका.

ठराव सर्वानुमते मंजूर.

ग्रामपंचायत वेळस  
म.पो. वेळस, ता. मंडणगड, जि. रत्नागिरी

ग्रामपंचायत वेळस  
म.पो. वेळस, ता. मंडणगड, जि. रत्नागिरी

स्थापना

# ग्रुप ग्रामपंचायत वेळार

८७९४८

समाविष्ट गावे : वेळार, नारायण नगर

मु.पो. वेळार, ता. तंडपगड, जि. अकोला.



क्र. १४८

दिनांक ५/१०/२०१६

प्रति

भा. मधुसूदन कुंजीवार

महाराष्ट्र राज्य न्यायिक शिक्षण मंडळ पुणे

विषय :- वेळार गावाला जागतिक वारसा स्थळ घोषित करणेबाबत.

माहिती

ग्रुप ग्राम पंचायत वेळार गाव हे महाराष्ट्र राज्याच्या अकोला जिल्ह्यातील मधुसूदन कुंजीवार यांच्या सहाजी कायद्याने नोंदवलेल्या व संवर्धन केले आहे व त्यामध्ये अनेक प्रकारच्या औषधी वनस्पती आढळून येतात. त्यामुळे त्या गावाला जागतिक वारसा स्थळ म्हणून घोषित करण्यात यावे.

हि. विनंती.

प्रमाणित  
करिता

ग्रामपंचायत वेळार  
भा. मधुसूदन कुंजीवार



दिनांक: 22/05/2016.

निष्कर्ष : दास्ता ब्याह लेखिन क रणे बावत

महदय

वरेल्ले जेदमीय विषयवबये १३मापणाचे  
कहाविण्यात येने की आजले येथील समूह विंगारा जेवि  
ज्यायन संपत्तीहे समूहय संपत्तीये दि १५/१२/२०१६ जेजिन्  
ग्रामल्लेगन ब्यदर समूह विंगारा वारता ब्यद मरणून जेवि  
करण्यास मंगुशे डेप्यात आली आहे तशि ब्यदर  
वारता ब्यदर जेजिन् करण्याब्राह्मणी कार्यवधि सापणाचे  
१३वगन ब्यदली ही निवडली

कल

सिप्रा सिप्रा



ता. द्वापादी. वि. जन्मादिभिः।





ग्रामपंचायत आंजर्ले  
ता. दापोली, जि. रत्नागिरी

दिनांक :

ग्रामवमा दि. १५/०८/२०१६

उत्तर कु. ए(५) - यी असिल बगल

०६/०३) नमानच्या असेल तडीसले तमूडकिमारा  
जेविक साधनसंपत्तीने समुद्रा तसक्याने समुद्र किमारा  
'वारदा' व्यक्त म्हणून घोषित करणेकरिता समुद्र किमारा  
'वारदा' करणारा तडीसले न तडीसले तमूडकिमारा वारदा  
व्यक्त म्हणून घोषित करण्यास तसक्याने मंजूर  
दुसरा तडीसले

वसुधैव कुटुम्बकम्

डा. श्री. विजय शंकर केडवूर

इराव लवविमो नमः

सुभाषचन्द्र

INDIAN: 10/10/10

१. अथर्ववेद, ३३ अथर्वश्रुतिः

आदर्श

प्रायश्चित्तः श्रावणः

ब्रह्म कृष्णार्जुनसंवादे



**Annexure VII:**  
**List of Workshops conducted in**  
**Thane Creek, Velas to Dabhol, and**  
**Ansure Creek**

## Details of specific programmes aimed at raising awareness at Project Sites

Sr. No.	Event	Date	Place	Language of communication	No. of Participants
1	Stall at Mumbai Marathon Expo	January 8–10, 2016	Mumbai	Marathi & English	300 +
2	Eco-Tourism Guide Training Program	March 28 – April 01, 2016	Airoli	Marathi	20
3	Workshop on solid waste management	June 14, 2016	Airoli	Marathi	35
4	Eco-Tourism Guide Training Program	January 17 & 19, 2017	Elephanta Island	Marathi	25
5	Workshop on Biodiversity Management Committee formation & implementation of Biodiversity Act 2002	November 02, 2015	Dapoli	Marathi	55
6	Workshop on People's Biodiversity Register	February 08, 2016	Kelshi	Marathi	34
7	Crab & Oyster farming exposure visit of Anjarle and Kelshi communities to Sindhudurg	January 13 -14, 2016	Anjarle, Kelshi – to Sindhudurg	Marathi	19
8	Workshop-Report finalization for the mud- crab farming study*	March 15, 2016	Dapoli	Marathi	61
9	Capacity building workshop on monitoring and conservation of sea turtles	February 09, 2017	Anjarle	Marathi	42
10	Workshop on People's Biodiversity Register	March 03, 2017	Kelshi	Marathi	37
11	Workshop on People's Biodiversity Register	March 04, 2017	Asude	Marathi	14
12	Workshop on People's Biodiversity Register	March 06, 2017	Velas	Marathi	21
13	Workshop on People's Biodiversity Register	March 07, 2017	Kolthare	Marathi	23
14	Eco-Tourism Guide Training Program by BNHS	March 20 – 22, 2017	Anjarle	Marathi	26
15	Awareness workshop on Sand Dune Stabilization by Gujarat Institute of Desert Ecology	March 29, 2017	Anjarle	Marathi	35
16	Crab & Oyster farming visit of Ansure group to Sindhudurg	December 07, 2015	Ansure to Sindhudurg	Marathi	22
17	Workshop on People's Biodiversity Register (MSBB)	February 23, 2016	Ansure	Marathi	21
18	Turtle Conservation Workshop	January 27, 2016	Marban (Near Ansure)	Marathi	18
19	Workshop on monitoring and conservation of sea turtles by Dakshin Foundation	February 04, 2017	Ratnagiri	Marathi	24
20	Workshop on People's Biodiversity Register (MSBB)	February 28, 2017	Sagave (Near Ansure)	Marathi	11

## Aware ness programmes conducted at Project Sites

Sr. No.	Event	Date	Place	Language of communication	No. of Participants
1	World Wetland Day	January 31, 2015	Navi Mumbai (Sanpada)	Marathi & English	150
2	International Biodiversity Day	May 22, 2015	Airoli	Marathi & English	63
3	International Mangrove Day	July 26, 2015	Airoli	Marathi & English	200
4	International Mangrove Day	July 26, 2016	Airoli	Marathi	80
5	Awareness programme: International Biodiversity day	May 22, 2015	Velas	Marathi	30
6	Awareness programme: World Environment Day	June 05, 2015	Velas	Marathi	30
7	Awareness programme: International Biodiversity day	May 18, 2016	Velas	Marathi	18
8	Awareness programme: International Biodiversity day	May19, 2016	Padle	Marathi	31
9	Awareness programme: International Biodiversity day	May 22, 2016	Anjarle	Marathi	36
10	Awareness programme: Wildlife Week	October 03, 2016	Padle	Marathi	53
11	Awareness programme: Wildlife Week	October 07, 2016	Murud	Marathi	95
12	Awareness programme: Biodiversity Conservation	January 27, 2017	Velas	Marathi	36
13	Awareness programme: Importance of mangroves	March 17, 2017	Umroli	Marathi	43
14	Awareness programme: Importance of mangroves	March 18, 2017	Velas	Marathi	24
15	Awareness programme: International Biodiversity day	May 07, 2015	Ansore	Marathi	18
16	Awareness programme: Wildlife Week	October 06, 2016	Guhagar	Marathi	100
17	Awareness programme: Wildlife Week	October 07, 2016	Ansore	Marathi	55



Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH is a German government-owned not-for-profit enterprise supporting sustainable development.

This publication has been developed under the project titled 'Conservation and Sustainable Management of Coastal and Marine Protected Areas (CMPA) of the Indo-German Biodiversity Programme (GIZ).