

SIR MOHAMED YUSUF SEAMEN WELFARE FOUNDATION



Project Report

ECOLOGY CONSERVATION PROGRAMME IN NHAVA THROUGH **MARINE MUSEUM, NHAVA**



PROJECT FINANCED BY MMR-EIS

CONTENTS

Topic	Page No.
Synopsis	
Background information: Sir Mohamed	
Yusuf Seamen Welfare Foundation	1-2
Objectives of the Project	3
Reed Bed Plant for Waste water treatment	4-7
Dry Dock Repairs & Boat Displays	8
Interactive Quiz Station	9
Remodeling of Eco Gallery	10-11
Workshop on World Wetland Day	12

Synopsis

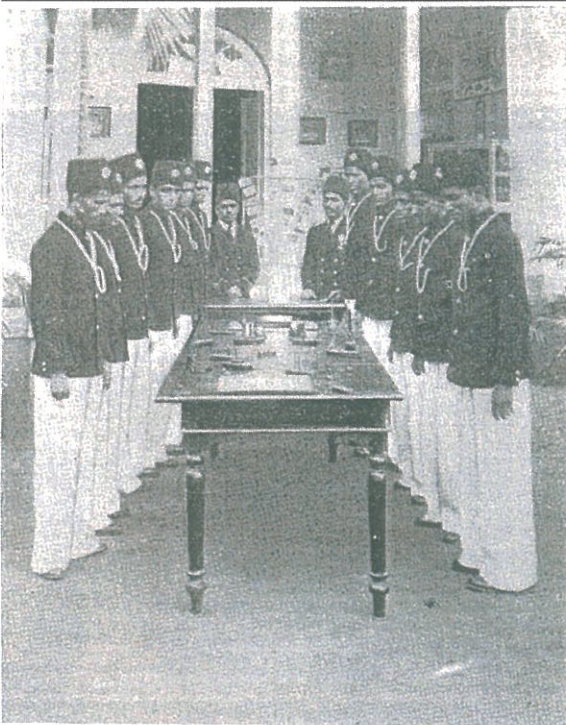
In December 2005, Sir Mohamed Yusuf Seamen Welfare Foundation applied to the MMR EIS in response to their advertisement seeking grant for a Project on ecology conservation in the environs of Nhava. This was driven in the wake of large scale degradation of the fragile mangrove eco system around Nhava. It was also proposed to raise awareness regarding the Country's rich maritime heritage. The Project was to be executed under the aegis of the Marine Museum of the Foundation at Nhava.

The said Project was subsequently sanctioned at a total cost of Rs. 20.20 lakhs. The major component of this Project was installation of a waste water treatment plant which had low maintenance cost, remodelling already established ecology gallery and a boat shed, installing computerised interactive stations for conduct of quiz shows and organising publicity through holding workshops and seminars.

ECOLOGY CONSERVATION PROGRAMME IN NHAVA THROUGH MARINE MUSEUM NHAVA

BACKGROUND INFORMATION: SIR MOHAMED YUSUF SEAMEN WELFARE FOUNDATION

A CLASS ON SEAMANSHIP IN 1933



1. Sir Mohamed Yusuf Seamen Welfare Foundation has its beginnings in the year 1910. The Late Haji Ismail Yusuf, Proprietor of Bombay Steam Navigation Company established a number of charitable Institutions as a debt of gratitude to the seafaring community who had served with loyalty on the Company's ships. The main purpose was to enable and encourage the orphans and sons of the Indian Seafarers irrespective of cast, creed or religion to follow the footsteps of their forefathers. These Institutes included - Marine Training School, later named 'Training Ship Rahaman'.

Training Ship Rahaman at Nhava

2. The orphanage established in Worli (Mumbai) subsequently shifted to the Island of Nhava in 1912 and nautical education for these students commenced in 1915. Training Ship Rahaman thus came to be established as the pioneering institution for Maritime Training in India. The



DR. LEO BARNES PRE SEA ACADEMY

Institution now conducts Pre Sea Training Courses that includes Maritime Catering Technology and Hotel Management for students and prepares them for a career in merchant marine. These courses recognised by the Directorate General of Shipping, Government

of India. The Pre Sea Courses vary in duration from six months to three years. Approximately, 400 Pre sea trainees are thus undergoing training at any given time in Dr Leo Barnes Pre Sea Academy of the Institution.

3. This shore establishment also conducts (Post Sea) Professional Courses for seafarers from home and abroad. These include amongst others, Fire Fighting, First Aid, Navigation, Radars, Distress Signalling and Personal Survival, Safety and Social Responsibility. At any given time, around 200 Post sea trainees are undergoing courses of varying durations from one and a half days to four months.



FATMA BANU HOSPITAL

provides round the clock medical cover to the trainees, employees' family members and the School children.

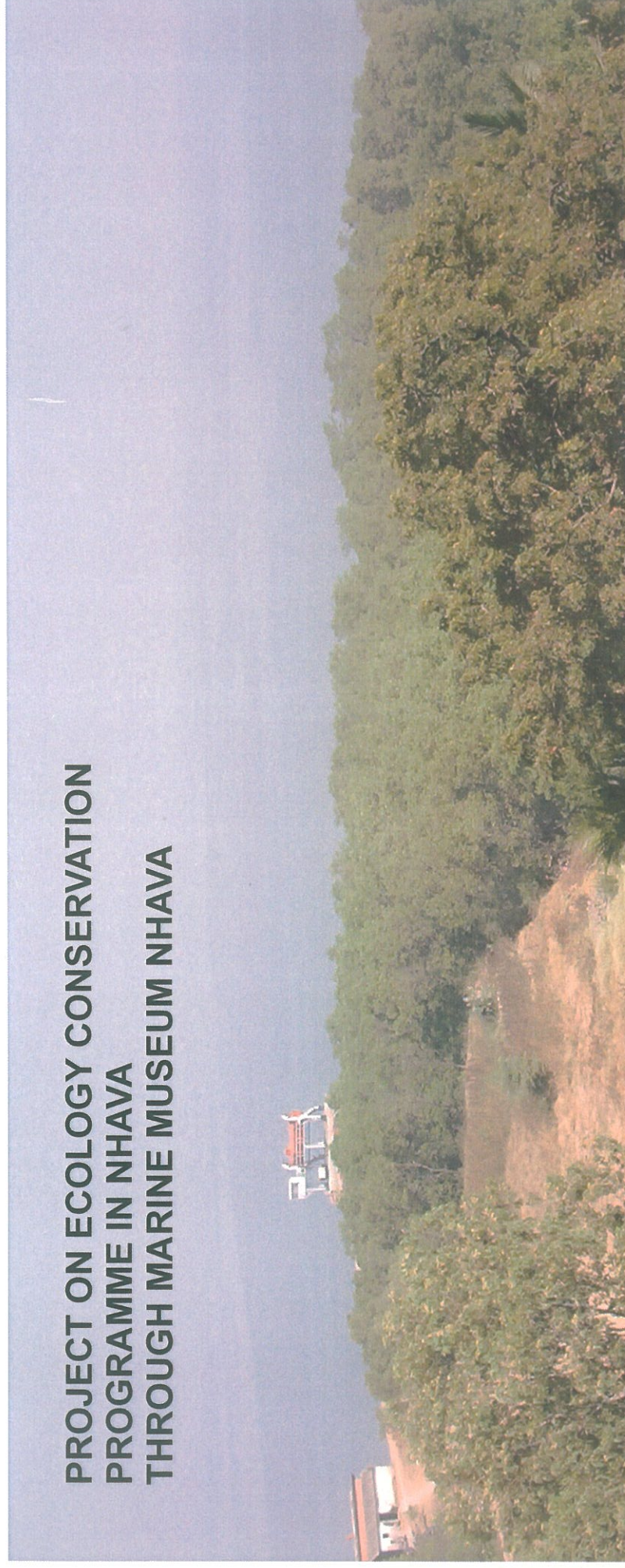
5. Lady Khatun Marium Navik School on the Campus is an English medium School affiliated to the Central Board of Secondary Education (up to Class X) and to the State Board of Secondary and Higher Secondary Education, Maharashtra State up to Class XII in Science Stream. The School essentially caters for the educational needs of Nhava and its adjoining villages. The School has on its roll more than 650 children now.



LKM JUNIOR COLLEGE

6. The Marine Museum that started off as an institutional Museum in 1912 is housed in a vintage building and is a tribute to the rich maritime heritage of the Country spanning more than 4000 years of history.

**PROJECT ON ECOLOGY CONSERVATION
PROGRAMME IN NHAVA
THROUGH MARINE MUSEUM NHAVA**



SIR MOHAMED YUSUF SEAMEN WELFARE FOUNDATION

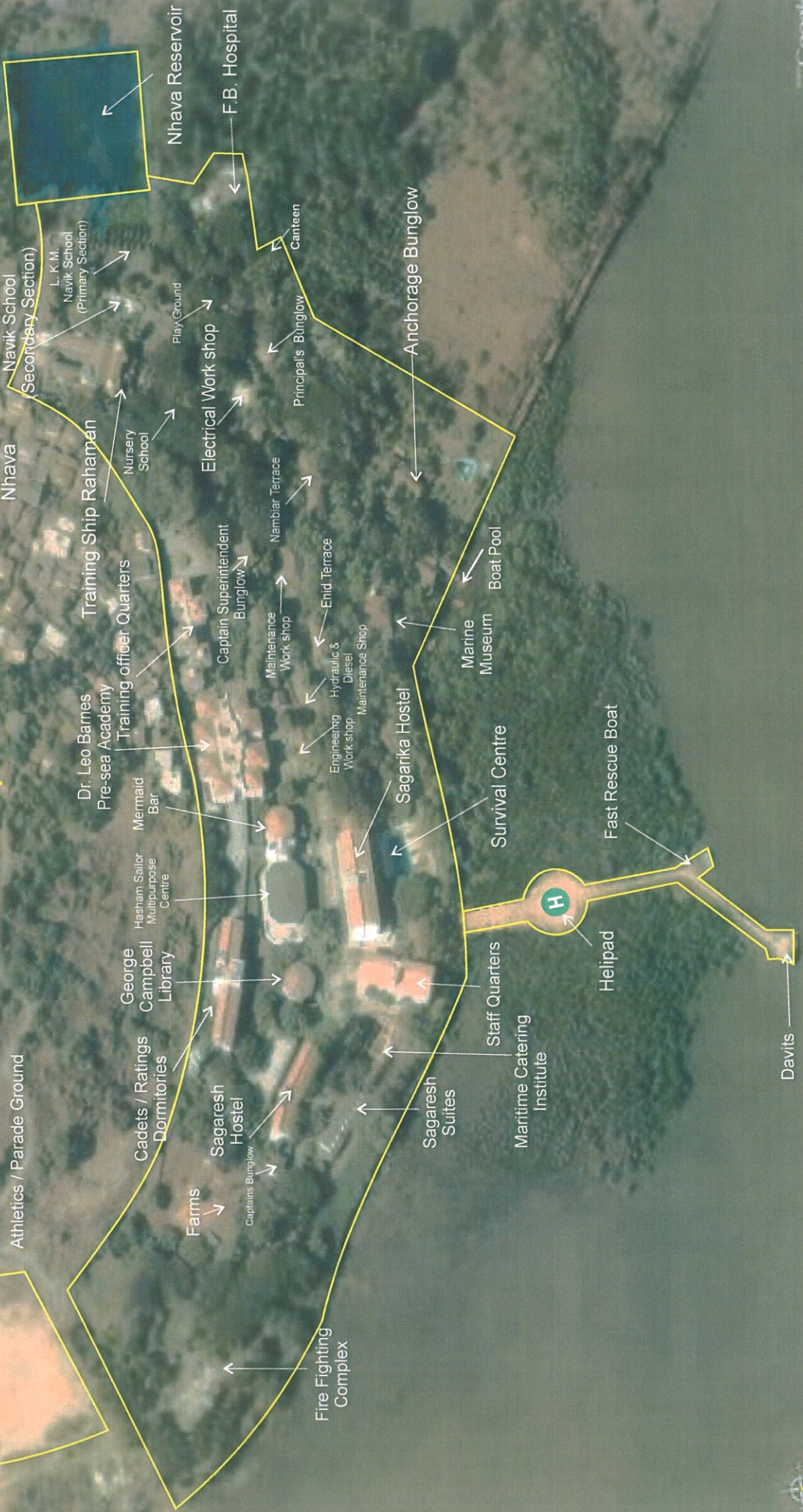
Training Ship Rahaman

Nation's oldest Maritime Training Establishment

Campus Nhava



Established in 1910



OBJECTIVES OF THE ECOLOGY CONSERVATION PROJECT

1. The main Objectives of the Project were as follows:-
 - 1.1 Conservation of fragile ecology of the environs Nhava
 - 1.2 Preservation of precious Mangrove cover of Nhava
 - 1.3 Promote awareness regarding marine ecology and the Country's rich maritime heritage.
 - 1.4 Promote tourism and develop sustained economy of this backward region.

REVISION OF THE SCOPE AND COST OF THE PROJECT

2. The Project was initially conceived in late March 2006 at a total cost of Rs. 20.20 lakhs (MMR EIS Letter No MMR-EIS/SOC/8-2005/252/2006 dated 27 March 2006 refers). However, due to our underestimation of the total cost of waste water treatment Plant and consequent representation by us, the MMR EIS consented to revise the Scope of Project to include re-appropriation of funds and sanctioned additional grant amounting to Rs. 1.10 lakhs thereby raising the total allocation to Rs. 21.30 lakhs.

3. Revised allocation of grant including own contribution as indicated in the Table below was conveyed to us vide MMR EIS letter No. MMR-ENV/SOC/8 – 2005/19/2007 dated 12th April 2007 refers):-

S. No	Component	Total Cost	Own Commitment	Approved cost
1	Reed Bed System	18,64,048.00	6,58,188.00	12,05,860.00
2	Dry Dock Repair and Boat Display	8,00,000.00	0	8,00,000.00
3	Computer/Server	41,200.00	0	41,200.00
4	Panels	72,940.00	0	72,940.00
5	Workshops	10,000.00	0	10,000.00
	Total	27,88,188.00	6,58,188.00	21,30,000.00

DURATION

The Project was to be completed in 12 months from the time of sanction.

REED BED SYSTEM OF WASTE WATER MANAGEMENT AT NHAVA



REED BED SYSTEM OF WASTE WATER MANAGEMENT

Introduction

1. The system employs natural methods of passing the domestic waste water through layers of filtering media resulting into clear water that could be recycled thus conserving this precious source.

2. The septic tanks are connected to this Reed Bed through an inlet chamber. The reed bed medium has plants with deeper roots at the deeper layer and shallow ground cover in several centimetres of top layer. The roots in deeper region form an association with aerobic and facultative bacteria which consume the complex organic matter into molecules. The aerobic bacteria prevalent in the upper region convert this simple organic matter into CO₂ and water thus completing the digestion process and treating the waste water. The maximum digestion process happens in the first 25 to 30% of the bed area and volume, and the remaining area functions as the 'polishing' area. The excess bacteria are consumed by the earth worm introduced in the system. Thus the sludge management does not remain problematic issue in this type of system. Trimming of any excess or unwanted growth of plants is required to be regularly carried out.

3. Please see the attached Schematic representation of the system.

Contract

4. The contract was awarded to M/S Jal Rasayan Corporation, Kalyan, Maharashtra on 29th January at a total cost of Rs. 18, 64, 048.00 after competitive bidding and with permission from MMR EIS (MMR EIS Letter NO MMR-ENV/SOC/8-2005/211/2007 dated 29th January 2007 refers).

Scope of Work

5. The scope of work included inter connecting septic tanks to an inlet chamber, laying out a reed bed of the dimension 55 m x 10m x 1.8 m system with required sand and filter media, saplings, required culture and constructions of a skirting wall around the bed to prevent water run off, provision of a treated water collection chamber and, chemical dosing as and when required.

Schedule of Inclusion & Exclusions

6. The inclusion schedule stipulated undertaking required excavation, Plastic liner to cover the bed, filtering media, saplings and culture, Inlet and outlet chambers and a skirting wall 2 ft high along the Reed bed to prevent water run off.

The schedule of exclusion (own responsibility) stipulated the disposal of excavated soil, internal piping, provision of a Pump for pumping out water and laying distribution pipeline network for reutilisation of the cleared water.

Schedule of Execution

7. The entire installation was to be completed in 160 days from the time of placing of firm order.

8. Payment Schedule

- Rs. 8, 38, 820.00 representing 45% of the Project cost to be paid in advance along with placing of firm order.
- Payment of Rs. 3, 90,000.00 on the 75th Day or on completion of the filling Reed Bed with stipulated media and the erection of skirting wall.
- Rs. 3, 75,000.00 to be paid on the 93rd Day after filling the bed with water.
- Balance payment of Rs. 2, 60, 228.00 on the 160th day or on completion of plantation, de-weeding, installation of plumbing and commissioning of the Plant whichever is later.

PROGRESS OF WORK

Excavations

9. The excavations commenced on 8th March and carried on till 25th March.

Due to excessive rains in the months of July and August, work of filling up the media was held up.

Media Filling

10. First Layer of Sea sand – 75 mm height – 26th and 27th March.

Second Layer of Grain Husk across the bed to protect the HDPE Lining – 28th to 30th March

Third Layer of HDPE sheet – 30th and 31st March

Fourth Layer of Sea sand – 75 mm height 2nd and 3rd April

Fifth Layer of supporting media size 40 cm to 25 cm, 200 mm height – 3rd April to 28th April

Sixth Layer of supporting media size 25 cm to 15 cm, 200 mm height – 29th April to 12th May

Seventh Layer of Filter media size 12 cm to 6 cm, 250 mm height – 13th May to 22nd May

Eighth Layer of Filter media, size 6 cm to 3 cm, 250 mm height – 23rd May to 30th May

Ninth Layer of Top sand soil media, 100 mm height – 30th May to 10th June

11. Civil Works

- This included construction of
- An inlet water collection chamber 1m x 1m x 1m
- An Outlet water collection chamber – 1m x 3m x 1m
- intermediate chambers from septic tanks to the reed bed system
- Construction of skirting wall across the root zone

Piping Work

12. Piping work undertaken to connect septic tanks to the reed bed for inlet (raw water) and additional pipelines (outlet) for treated water.

Preparation of the Reed Bed

13. The upper layer was inoculated with bacterial culture and assorted species of acclimatised plants to include Travellers' Palm, Cycus, Fan Palm, Pissonia Alba, Spider Lilly, Golden Aralia, Adathoda Vasica, Canna and Acorus Calamaus, were planted.

14. These plants after planting were supplied fresh water for allowing them to adapt to the new culture. Septic tank was connected to the inlet chamber of reed bed system and pumping out of approximate equivalent quantity of water was commenced from treated water compartment to establish continuum of water movement from inlet end to outlet end.

15. The Plants grew to cover considerable part of reed bed system. Some weeds also appeared and had to be removed by carrying out de-weeding three times within a span of two months. This permitted spread of ground cover plants on the entire surface of the reed bed.

16. Weeding was carried out in accordance with the following schedule:-
First weeding and training of local operators – 3rd week of July 2007
Second weeding – 1st week of August
Third weeding – 4th week of August

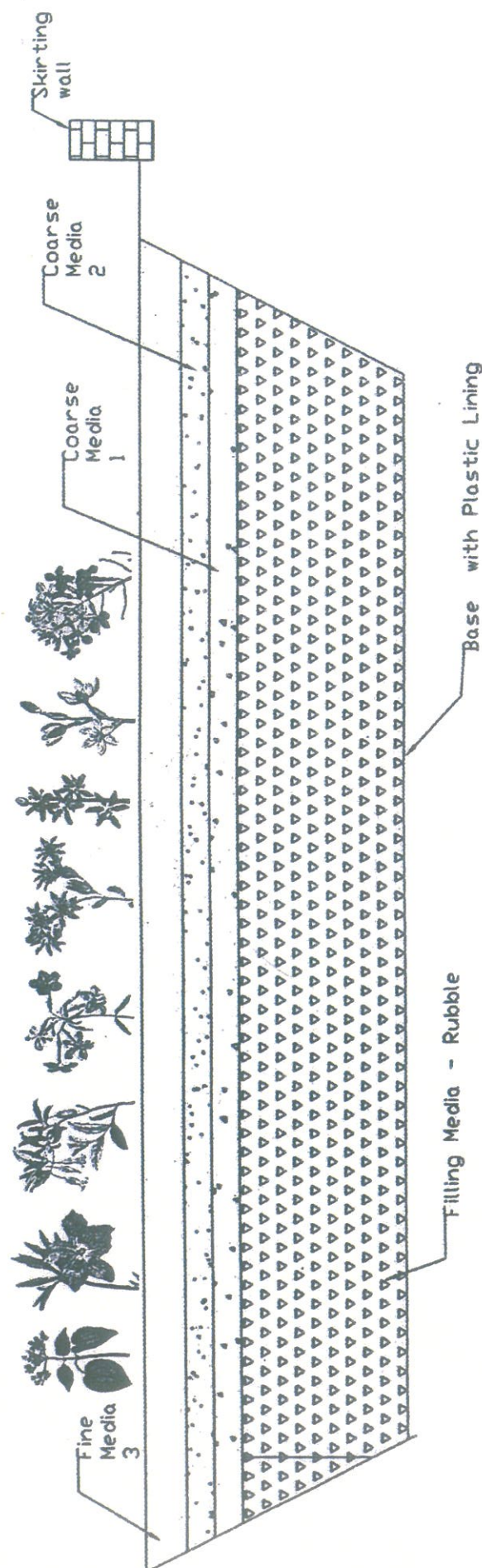
17. The treated water collection sump has been planted with water Lilies and populated with 'Guppi' fish to prevent mosquito menace.

Water Analysis

18. It may also be appreciated that the Reed Bed was completed in the face of the monsoons and thus collection of water samples for analysis had to be restricted to a comparatively longer dry spell.

19. Water samples were independently tested and the results are attached. These are within the acceptable limits for the water to be utilised for gardening purposes. The comparison statement of the pollutants at the inlet and outlet end is attached. A total of 55 CuM of water is thus being conserved everyday.

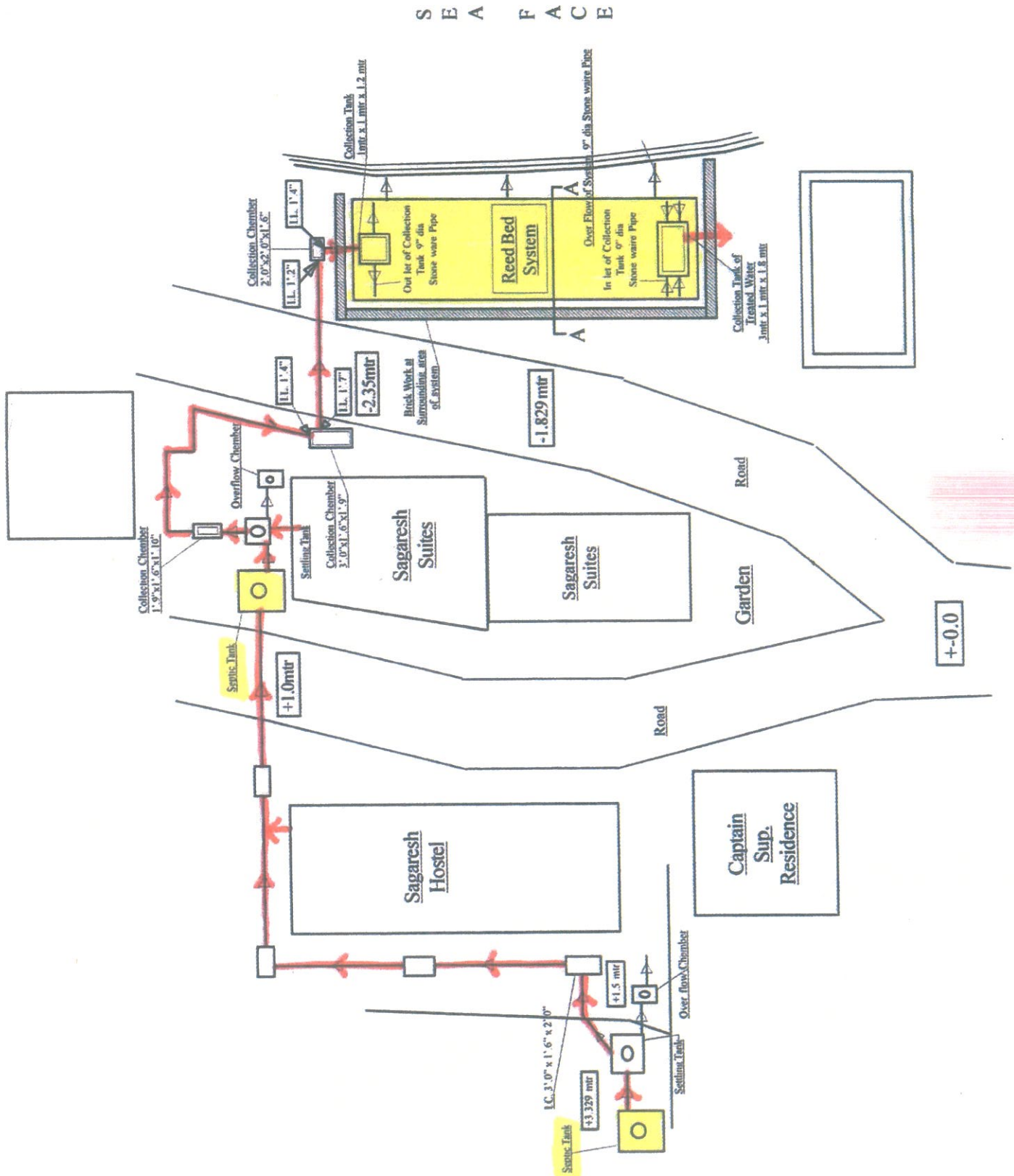
SCHEMATIC REPRESENTATION OF REED BED SYSTEM



Plants

Travelers Palm
 Cycus
 Fan Palm
 Pissonia Alba
 Spider Lily
 Golden Aralia
 Adathoda Vasica
 Canna
 Acorus Calamus

SKETCH SHOWING REED BED SYSTEM OF WASTE WATER MANAGEMENT AT TRAINING SHIP RAHAMAN, NHAVA.



REED BED SYSTEM OF WASTE WATER MANAGEMENT AT NHAVA. .



I.S.O. 9001 : 2000
CERTIFIED COMPANY

PAPL

WE ENSURE QUALITY



HEALTH & ENVIRONMENT

PADMAJA

AEROBIOLOGICALS (P) LTD.

'NANDAN' PLOT NO.36 , SEC.-24,
NEAR BANK OF INDIA, TURBHE,
NAVI MUMBAI - 400 705.

TEL : 2783 2532 / 2783 2817

TELEFAX : 2783 2818

E-Mail : padmaaero@vsnl.net

WTR-F-001

CERTIFICATE OF ANALYSIS


Ref No. : 90/EW-18/08-07
Name of Industry : JAL Rasayan Corporation, Kalyan
Name of Sample : Water Sample
Sample Quantity : 2000 ml
Date of Collection : 07/08/07
Sample Collected by : Party
Date of Receiving : 07/08/07

Sr. No.	Test Parameters	Results	Units	Test Method
1.	Suspended solids	26	mg/l	APHA
2.	COD	20	mg/l	APHA
3.	BOD 3 days, 27°C	08	mg/l	APHA

Remark:

Report Date: 10/08/07


ANALYSED BY


FOR PADMAJA AEROBIOLOGICALS (P) LTD



Dr. Ajit S. Gokhale
Consultant

Date : August 31, 2007
Ref : TSR Report - 01

To,
Brig. (Retd.) A.S. Adhikari, VSM,
M/s. Training Ship Rehaman.
Nhave.

Subject: Results of Reed Bed System Installed.

Dear Sir,

Given below is compilation of analysis reports for the inlet and outlet of the Reed bed System installed at your premises.

Sr. No.	Test parameter and unit	Inlet	Outlet	Percentage reduction
1	Color	Blackish	Colorless	
2	Odor	Offensive	Odorless	
3	Total Suspended Solids... mg/l	50	26	48
4	COD ...mg/l	360	20	94
5	BOD, 3 days at 27 °C ... mg/l	120	08	93

From the above results it is clear that the system is functioning efficiently.

Thanking you, we remain,

Yours Eco friendly,
- Dr. Ajit Gokhale

301, Sudama Chhatra C.H.S., Pandurang Wadi, Near Saibaba Mandir, Dombivli (East) 421 201
Tel. 91 251 881173 Mobile —98209 32969
E mail — naturalsolutions@rediffmail.com



DRY DOCK REPAIRS AND BOAT SHED DISPLAYS



DRY DOCK REPAIRS AND BOAT DISPLAYS

The old Boat Shed Structure



1. This part of the Project entailed modifying the existing Boat Shed by raising its roof to height of 60 ft on high rise steel trusses and stanchions, a roof of asbestos sheeting, covering the sides of the shed with Galvanised iron sheets to prevent rain water and channels for water run off, cemented plinth for Boat displays and repairs of some old boats to prepare them for displays. Please see the attached

Photographs.

2. The work commenced in December 2006 and was completed in the month of August 2007.

3. Five vintage Boats have been repaired and displayed with appropriate write ups for the information of general public (see Photographs attached). Arrangements have also been made for teaching simple rigging of sails thus combining information with some 'hands on training' and arousing interest in the seafaring career.

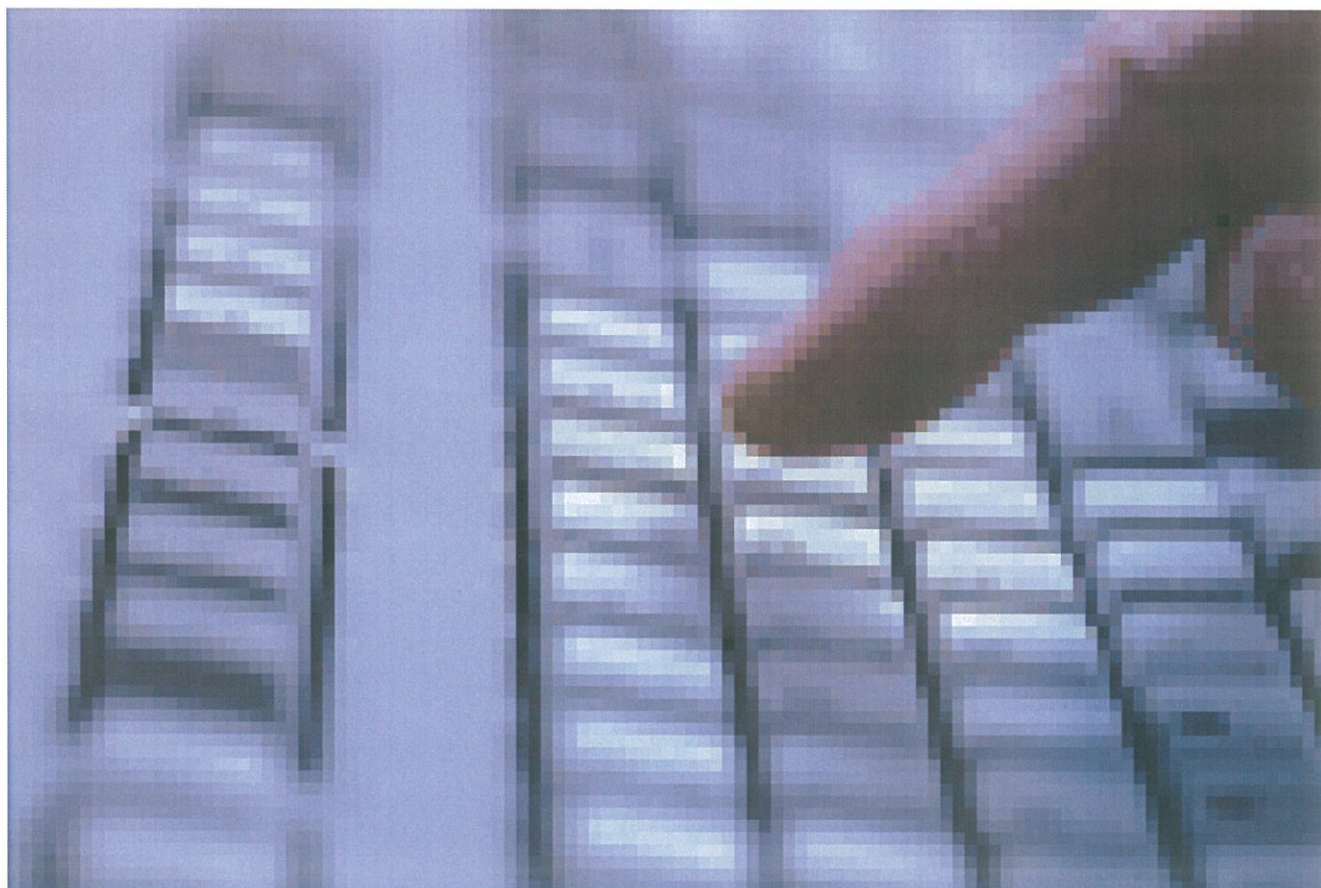
BOAT SHED & BOAT DISPLAYS



BOAT SHED & BOAT DISPLAYS



INTERACTIVE QUIZ STATION



INTERACTIVE QUIZ STATION

One Computer station has been procured and connected to an LCD Projector procured through own resources and a large TV (see the attached Photograph) now being utilised for holding interactive quiz station for the visiting School children. Educational CDs/VCDs have been procured at our own expense and shown to the students followed by interactive sessions.

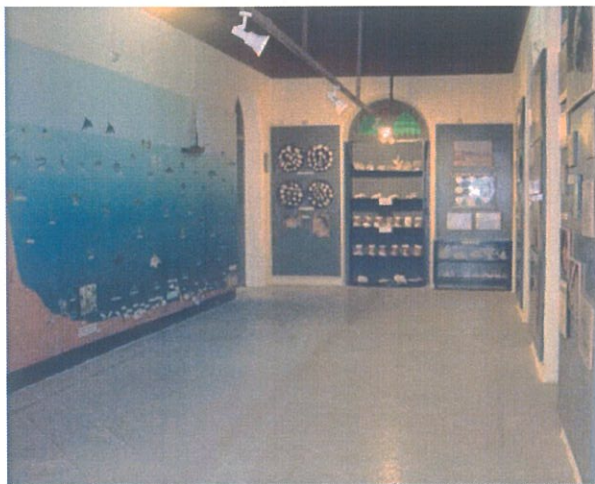
INTERACTIVE QUIZ STATION



MARINE MUSEUM ECOLOGY GALLERY



REMODELING OF ECOLOGY GALLERY



OLD ECOLOGY GALLERY

1. The Marine Museum's Ground Floor Gallery displayed sparse information on ecology and particularly mangroves and the available information needed to be better organised and displayed. The Campus is surrounded by a veritable mangrove swamp which incidentally serves as a live gallery. Help of experts in this field was thus sought to create awareness regarding this fragile eco system.

2. A Total of five large formatted Panels were designed with the help of experts in this field and digitally printed.

3. In the wake of these newly introduced displays certain other old displays had to be modified and or relocated. Please see the attached Photograph of the newly renovated eco gallery.

4. With a view to further kindling the curiosity, a Fibre Glass model of mangrove was designed with the help of the qualified experts to facilitate understanding. Later the visitors are taken around the adjoining mangroves by specially trained resource persons to facilitate a close look at the live mangroves and reinforce the knowledge gained through the displays.

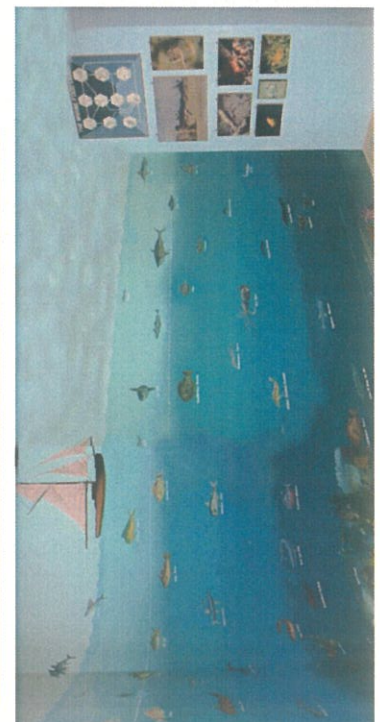
5. Awareness and curiosity is further whetted through illustrated literature specially written for different levels of School children. The Fibre Glass model and the publicity material have been exclusively financed by the Foundation.

6. A total of 12 Schools and more than 1000 students have visited the Museum ever since the introduction of this learning aid and the renovated ecology gallery. Around 7000 children and visitors on an average visit this great learning centre and have greatly appreciated and benefited by it.

7. The learning experience of the School children is enhanced by arranging for them demonstrations on useful life saving skills such as Fire Fighting Techniques, Personal Survival at Sea and First Aid. The students are also imparted basic cooking knowledge including Table manners to ensure all round personality development.

8. The work commenced in January 2007 and was completed in February 2007.

REMODELLED ECOLOGY GALLERY AND PANELLED DISPLAYS



Mangrove communities of Mumbai

Mangrove communities of Mumbai are a rich and diverse ecosystem. They are found in the coastal areas of the city, particularly in the areas of the Arabian Sea. The mangroves are a vital part of the city's ecology, providing a natural barrier against the sea and a habitat for many species of plants and animals. They are also a source of food and medicine for the local people.

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Save Mangroves

The map shows the distribution of mangroves across Mumbai. Key areas include the Arabian Sea to the west, the Thane Creek to the east, and various localities such as Bandra, Colaba, and Fort. The map is surrounded by illustrations of mangrove plants and animals.

Mangroves in Mumbai

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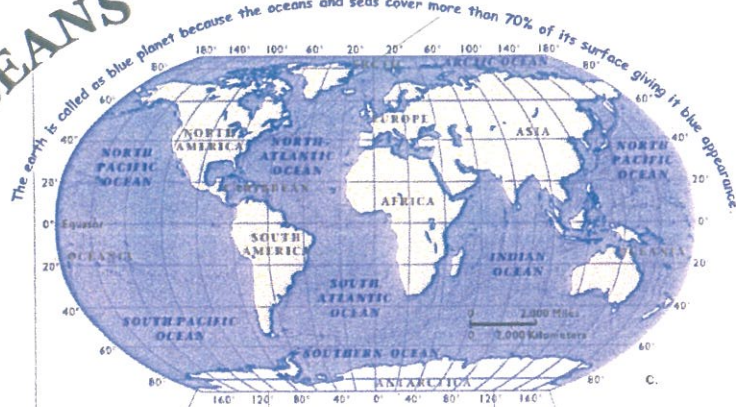
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PANEL 2

OCEANS



Home for many

- The oceans are home for a number of living organisms and harbor the richest biodiversity on the planet.
- They provide support to different marine algae, weeds and animals.

Marine habitats differ from each other on the basis of their physical, chemical and biological parameters.

Oceans

A limitless volume of salt water that constitutes a principal part of total water on the earth and has occupied the depressions on the earth's surface. A sea is a subdivision of an ocean.

Where oceans meet land

The place where oceans meet land is called as a coast. The intermediate ecosystem between land and water is called as wetlands. In case of land and sea interaction, the wetlands is classified as marine / coastal wetlands.

Human being, since ages, has been using oceans as resources for sustaining his life.



Chemicals, Drugs, Ores, Oil and Gas



Travel, Transport, Luxury, Sports



Medicines, Show-pieces



Misuse, Pollution



Food



Minerals and Salts



Research



Aquaculture

World's annual food harvest from oceans is 80 million tonnes

Global warning?

Exponential increase in greenhouse gas emissions has led to global warming, which is a major concern. Global warming is a process by which the average temperature of the earth's surface increases. This is caused by the greenhouse effect, where certain gases in the atmosphere trap heat from the sun. The greenhouse effect is a natural process, but human activities have increased the concentration of these gases, leading to a faster rate of warming. This has led to a number of problems, including rising sea levels, more frequent and severe weather events, and the melting of glaciers and ice sheets. Global warming is a serious threat to the environment and to human health, and it is important that we take action to reduce greenhouse gas emissions as soon as possible.

PANEL 3

COASTS

Coastal Ecosystems:

There are different types of coasts on the basis of the type of terrestrial ecosystem coming in contact with sea water.

- Rocky and sandy sea shores
- Marine mud flats / mud plains
- Mangroves
- Coastal lagoons and backwaters
- Seasonal saline wetlands
- Inland saline lakes
- Harbours / ports - man modified ecosystems



World's coastline is over 1 million kilometers long.

India has world's 7th largest coastline measuring over 7500 kilometers

Which indian state has longest coastline?

Coral reefs have existed for about 500 million years, making them earth's one of the oldest ecosystems

Arabian Sea

Bay of Bengal

The Coastalites:

Over 4 Lakh kilometers of the world's coastline is occupied by human settlements that contain about 55% of the world's population. People are highly dependant on coastal resources either directly or indirectly. There are many types of communities that reside on the coastline for food, employment and income. On one hand there are tribal communities which solely depend on coastal resources for their livelihood and on the other hand, there are urbanites and industrialists that use coastal resources for development. Half of the world depends on coastal and marine resources for food.

Coastlines have become tourism places and recreation centres.



Useful Coasts:

Coastal ecosystems are very resourceful as both marine as well as terrestrial available in this area.

Mangrove flora and fauna give us timber, wood, tannin from the bark of the tree, honey from flowers, fodder, wood for ship building, fish, crabs, prawns, etc.



Delicious food and marketable fancy items are prepared from the parts of coconut and banana plants which are abundantly found in our entire coastal area except in Gujarat.



Minerals and oils are extracted from mines on the coastline.



Small towns and villages are growing rapidly for industry.



Threats:

- Domestic and Industrial Pollution
- Reclamation Projects
- Mining
- Construction on Coasts
- Over Harvesting of Natural Resources
- Hunting and Poaching of Wild life



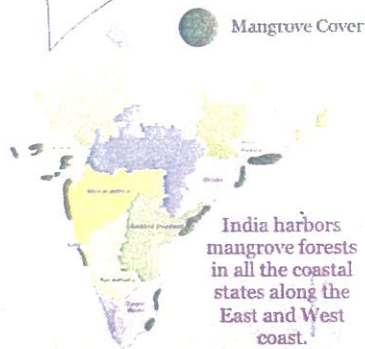
Indian Ocean

Tsunami Devastation killed over 15000 people on the east coast of India and millions of people were affected. Only one ecosystem could have saved Indian coastline from destruction due to tsunami wave!



Mangroves

Over 43 % of the world's total mangroves are distributed only in 4 countries. India has about 3140 square kilometers of mangrove cover.



Importance of mangroves

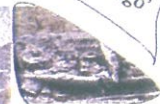
- Mangroves are buffers between the land and the sea. They protect the shoreline from erosion and help in reclaiming land from sea.
- They are breeding and nursery grounds for a number of marine organisms
- They are used commercially for the production of timber for building, firewood and charcoal.
- Mangroves are substitutes for fodder.
- They are main source of tannin for leather industries.
- They are places for tourism and recreation.
- Mangroves are now looked after by scientists as saviors in the today's scenario of global warming and consequent sea level rise.
- Mangroves are worshipped by fisher folk.

Mangrove is one of the tropical coastal ecosystems which occurs in the inter-tidal zone in the estuarine regions. Mangrove vegetation consists of the salt tolerant woody trees and shrubs, which can grow on clayey, water logged soil and show adaptations like breathing roots, stilt roots and vivipary for withstanding partly submerged saline conditions. They are found in tropical and sub-tropical regions, i.e., between the 30° N and 30° S latitudes. Mangrove ecosystem is highly productive and diverse while extremely sensitive and fragile.

Mangroves are evolved about 114 million years ago

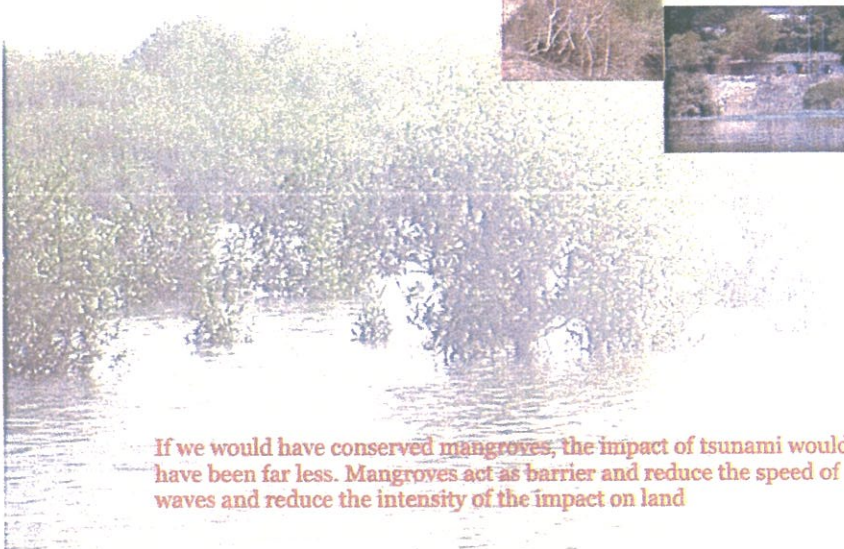
Mangrove ecosystem is commonly known as Mangal. The words mangrove and mangal are evolved from Senegalese language.

The name mangrove is not related to 'man' or 'mango'



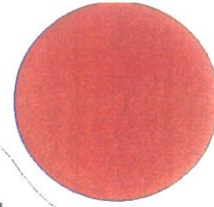
Threats to Mangroves

- Habitat Destruction
- Land reclamation
- Domestic and Industrial Pollution
- Dumping of garbage and rubble
- Over exploitation of resources
- Deforestation



If we would have conserved mangroves, the impact of tsunami would have been far less. Mangroves act as barrier and reduce the speed of waves and reduce the intensity of the impact on land

Mangrove Adaptations



Hello, I am a mangrove. Probably, about 114 million years ago, I started rooting in this salty and marshy area along the coasts. As the competition for place, nutrients and sunlight was fierce in the tropical rainforest, that time, some of us decided to migrate towards the intertidal mudflats where flowering plants had not settled due to the extreme climate. We are the true coastal warriors and fight extreme conditions like loose soil, water logging lack of oxygen, hurricane winds and strong waves and currents. Many of us have died while protecting you from cyclones, tidal waves and tsunamis. Some of our special skills enable us to withstand the environmental hostilities. We have also developed new organs that help us survive in the difficult conditions. I shall introduce them to you now.



Salt glands on my leaves help us expelling the excess salt out of our body

Our fruits germinate while attached to our body and immediately hold on to the soil after detaching to prevent itself from getting washed away with the strong currents

My roots absorb a very large amount of water so that the salt contents in our by get a diluted

Some of my friends does not allow entry of salt in their body by the process of reverse osmosis

My Stilt roots help me fight the worst conditions like the sea level rise. These hanging roots also help me in breathing, salt removal and getting to stand erect in loose soil.

The long cable roots of some of my friends help in securing us against loose soil and strong currents.

These prop roots and cable roots give me support and help me stand firm in the marshy area

As a boat show puts Mumbai's seafront in focus, a look at a museum that provides glimpses of the island city's seafaring culture

ALAKA SAHANI

A HUGE iron anchor and a motif of a mast on top of the Marine Museum's entrance are clear hints of what's in store for visitors. For those who miss these clues, there is a huge model of an ancient vessel in the portico of the over 100-year-old building, at Nhava, near Uran. Still for most of the people dropping in at the oldest marine museum in the country, it is a tad difficult to guess that it treats evidences of 4,000 years of maritime culture—from the pre-Maurya period to the Raj.

But then everything about the museum—not just the artifacts on display—is steeped in history. It is set up in the Gothic-style building that once belonged to the famous shipbuilding family—the Wadias. And the brain behind this is the late Sir Mohamed Yusuf, who was conferred with knighthood in 1917. He opened the museum in 1912, as a part of the Training Ship Rahaman, a training ground for the merchant navy. He even donated all his personal collections, including stamps and coins, to the museum.

Thanks to him, the three-storied building possesses enough material to tell a layman how Ghodbunder—which used to be a bustling port where horses from Arab countries were afforded—got its name. And

special sections show Mumbai before reclamation, exploits of Chhatrapati Shivaji's naval force and a peek into Maratha maritime trade.

Take a closer look at

the items on the museum walls, and more anecdotes tumble out. They reveal that it was on

warship HMS Minden, which was built by the Wadias for the British Empire, that Francis Scott Key composed the American national anthem, *The Star-Spangled Banner*. Vasco da Gama's journey to

India is depicted, complete with an artistic impression of his fleet. Also on display are signal flags, nautical chart and shipbuilding tools.

Yet the museum

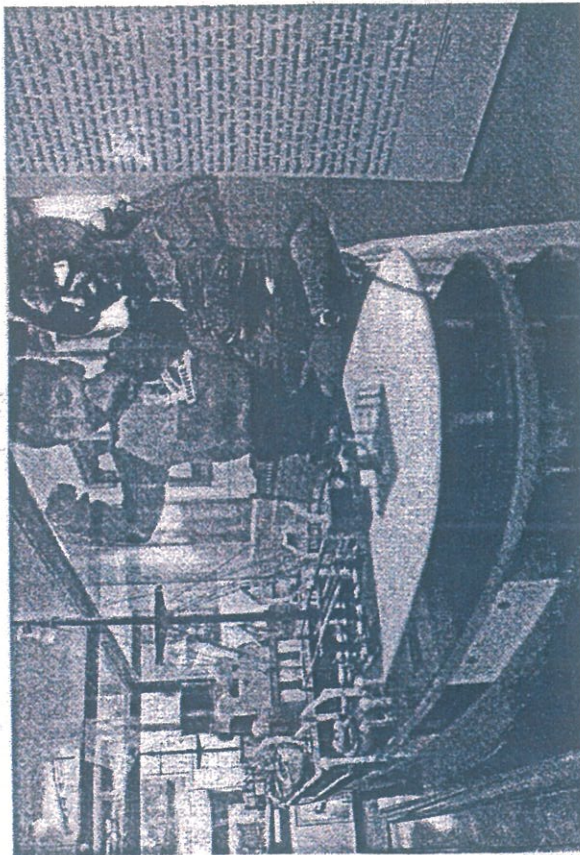
tucked away near Uran, favourite beach destinations—remains largely unexplored. This, of course

is changing now. With the educational tour packages offered by Training Ship Rahaman for school children, the footfall has increased considerably.

"In fact, the museum received around 9,000 visitors in 2006," says curator Bandana Singh. She goes on to add that visitors don't comprise students alone. Lots of holidaymakers and senior citizens also seem interested in exploring the growth of India's shipping trade and technology since 321 BC.

The ecological gallery—which is currently being developed with aid from the MMRDA—might add to the pull. "The gallery will focus on marine life and its role in protecting environment," says Singh.

COASTAL call



PRADIP DAS

Special kids get special treatment

Challenged children of School of Remedial Education visited Marine Museum, Nhava

Sameera Kapoor, Mumbai

For the students of School of Remedial Education situated at Haji Ali, Mumbai the one-day visit to Marine Museum, Nhava was an exhilarating experience. The visit on August 31 provided the students suffering with learning disability some of the picturesque glimpses and unique insights of India's Maritime Heritage spanning 4000 years. The students along with their vice-principal witnessed activities and events that were outrightly fascinating and inspiring. Right from live demonstration, visit to some of the most enigmatic areas of the museum and tactics to be used to survive on sea were also shown to the troupe.

The visit was aimed at providing the students an atmosphere and an experience that they have never witnessed till date. In this one-day visit we ensured that the students were given much exposure to the vibrant aspect of Maritime. The students were also given live demonstration of fire fighting by trained mariners and industry experts. They were then taken to visit the newly revamped museum and ecology gallery," said Museum in-charge Bandana Singh. Likewise, the students were also

taken on a nature trail which was aimed at showcasing the wonderful aspect of nature which man is trying to destroy by playing havoc with it. The mirth of the visit reached an all time high when the students were taken to visit the actual mangrove plantation growing to a height of 14 to 15 inches. "The students were visibly excited about gaining insight into a world that is not only unique from the kind of environment that they are living in, but also for its historical significance. Needless to mention, I was

questioned by the excited students," Singh added. The one-day study tour concluded with the live demonstration of Survival at Sea wherein the mariners showcased techniques to be incorporated while they are caught in a bad sea. "This visit was certainly rewarding experience for the kids in specific. It was a study tour that was coupled with aspects of fun and thrill which is the best formula for proper education. Like the fire-fighting demonstration which was equal to hours of lectures on the safety measures, the nature trail was a 'classroom' which was better than any classroom for the children," said school vice-principal Sheetalata Desai.



PUBLICITY

WORKSHIOP ON ECOLOGY CONDERVATION AND GLOBAL WARMING

A workshop on the occasion of 'World wetland Day' was conducted in the Campus on 20th February 2007. Brochures and publicity material was also distributed free of cost.

Publicity

A number of visitors have been unsparing in their praise for the MMR EIS's efforts in promoting ecology consciousness as well as the rich experience gained through this heritage display. Please see the attached collage. Due to this increasing awareness, felling of mangroves has considerably reduced and not only the mangroves in the vicinity are well protected but fresh outcrop of mangroves seem to be taking roots. Thus in the years to come, the danger of loosing this precious cover will recede.

Brigadier (Retd) A. S. Adhikari, VSM
Secretary Governing Council