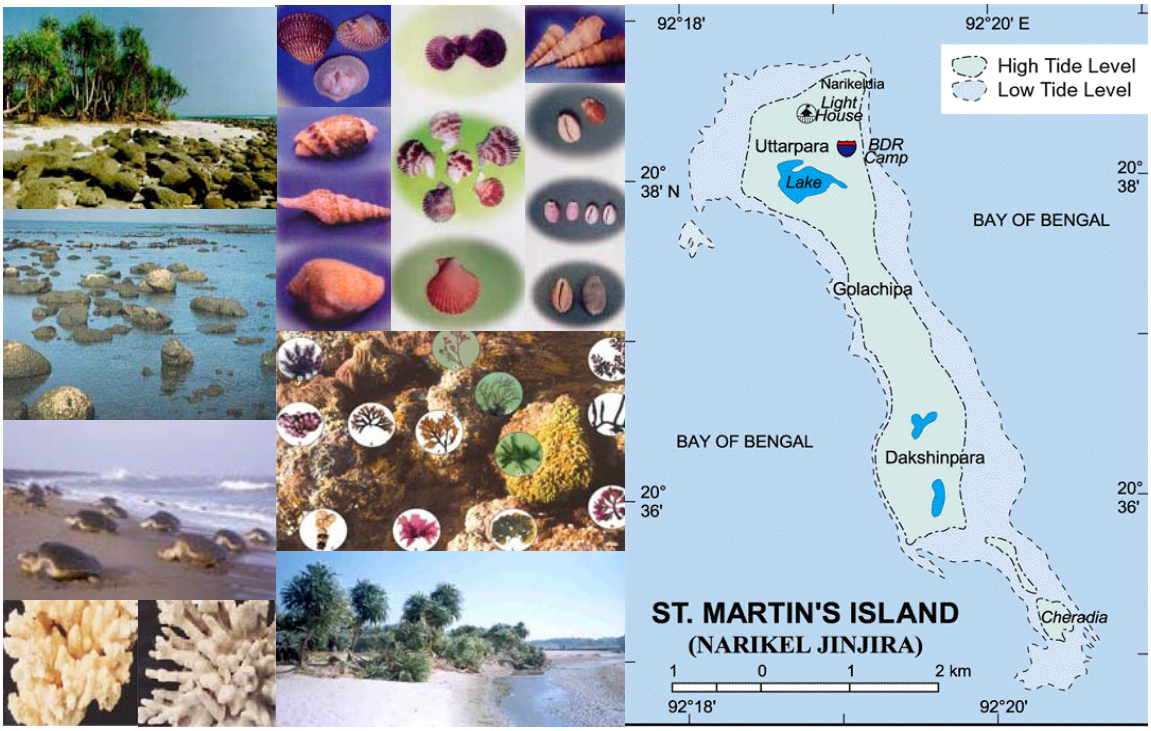
Government of the People's Republic of Bangladesh
Ministry of Water Resources
Water Resources Planning Organization (WARPO)

(jointly organized with the Department of Fisheries)

INTEGRATED COASTAL ZONE MANAGEMENT PLAN PROJECT

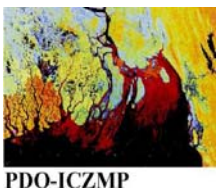
Proceedings of
The Round Table Discussion on Holistic Approach
for Sustainable Management of St. Martin's Island



Working Paper
WP038

Dhaka
May, 2005

Program Development Office
Sponsored by the Government of the Netherlands and the United Kingdom
Executed by ARCADIS Euroconsult, the Netherlands



Program Development Office
for
Integrated Coastal Zone Management Plan
(PDO-ICZMP)

Proceedings of the Round Table Discussion on Holistic Approach for Sustainable Management of St. Martin's Island

Working Paper
WP038

Prepared by
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Dhaka, May 2005

- All activities should be formulated on the basis of careful evaluation of carrying capacity of the island;
- Endangered and aesthetic species like sea horse, colorful reef, fishes should be preserved;
- Complete restriction and control for human habitation should be executed in the southern side extending from Golachipa to Konapara and Seradia;
- Laboratory should be facilitated with equipment and appliances to perform/ conduct academic research;
- As a signatory of the Convention of Migratory Species; Bangladesh is promised bound to protect and conserve the marine turtle species and the breeding spots for turtle should be protected on priority basis;
- The dog population of the island should be reduced for protecting predation of turtle eggs and hatchlings;
- An advisory committee will be formed comprising the project management personnel of different projects working in the island to frame an integrated and holistic management paradigm;
- Natural trail in lieu of walkway will be established around the island to enjoy the aesthetic view of the island by the tourist;
- Encourage less water demanding cropping (rabi) like wheat, nut, and vegetables;
- Seasonal fish culture with suitable species should be developed without altering the current nature of wetland ecosystem;
- Eco-friendly tourist cottage type accommodation should be facilitated by complete restriction of multi-storied structures;
- To restrict blast water discharge, the movement of merchant ships and vessels should be strictly controlled for entry within 30m depth zone from the shoreline
- Collection of corals and selling of corals, mollusks, bivalves etc. by vendors should be completely stopped by shifting them to other trades like tour guides;
- Generation of electricity by solar and wind mills should be encouraged involving local people;
- Coconut based alternative income generating options will be included in the existing projects.
- Water & Sanitation must be ensured in the island
- Crop intensity be raised
- Biological monitoring shall be a continuous process in view of ECA declaration
- ICZM should facilitate coordination of activities going-on by different agencies

The roundtable ended with a recommendation for an immediate follow-up meeting.

Follow up meeting

A follow up meeting was held on April 4,2005 at 3.00 pm at PDO-ICZMP with representatives form MoEF, DoF, BPC, ECFC, CWBMP and IUCN- Bangladesh.

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EXECUTIVE SUMMARY

A Round Table discussion on 'Holistic Approach for Sustainable Management of St. Martin's Island' was held at the BRAC Centre Inn on March 31, 2005. The Round Table discussion was organized by the Department of Fisheries (DOF) and Water Resources Planning Organization (WARPO). Program Development Office - Integrated Coastal Zone Management Project (PDO-ICZMP) provided facilities for holding the Round Table discussion.

The inaugural session was chaired by Mr. Hossain Shahid Mozaddad Faruque, Director General, Water Resources Planning Organization (WARPO). Advocate Goutam Chakraborty MP Hon'ble State Minister, Ministry of Water Resources, attended the session as Chief Guest. Mr. Md. Abdul Aziz, ndc, Secretary, Ministry of Water Resources, was the Special Guest and Mr. Nasir Uddin Ahmed, Director General, Department of Fisheries (DoF) was the Guest of Honour. During the inaugural session, Dr. M.Rafiqul Islam, Team leader of PDO-ICZMP, presented the Keynote Paper 'Towards Holistic Approach for Sustainable Management of St. Martin's Island'.

A total of 31 participants representing ministries and agencies (MoWR, DoF, FD, BPC, DoE, WARPO), universities (DU, CU) and NGOs (CNRS, IUCN) and PDO-ICZMP attended the round-table.

Dr. Rafiqul Islam, in his keynote paper, gave an over-view of St. Martin's Island. He also mentioned problems facing the island regarding critical biodiversity and vulnerable eco-system. He stressed the need for proper use of existing resources of the island with a proposal of possible integration for its management.

Dr. Ainun Nishat, Country Representative, IUCN Bangladesh chaired and moderated the technical session and open discussion.

The following 4 papers were presented during the technical session.

1. Marine Biodiversity and its Conservation Measures - Prof. Dr. A K M Abdul Matin, Institute of Marine Sciences, University of Chittagong, Bangladesh.
2. Holistic Assessment of the Faunal Changes; Impact on Fisheries Livelihoods in St. Martin's Island - Dr. Giasuddin Khan, DoF, Dhaka.
3. Empowerment of Coastal fishing Communities of St. Martin Island for Responsible fishing and biodiversity conservation - Dr. Dilip Kumar, TL, ECFC Project, DoF.
4. Development of Tourism and Employment Generation - Mr. Ziaul Haque Howlader, Bangladesh Parjatan Corporation.

In addition, Mr. Osman Ghani of the Forest Department gave a detailed description of involvement of the department in St. Martin's island.

ISSUES DISCUSSED :

- St. Martin's Island is a rare island where coral and algae grow side by side and these need to be conserved and preserved;
- Planned aforestation both in the island and upstream with mangrove vegetation should be developed to reduce the damages caused by natural calamities like tidal surges, tsunami etc.
- Activities should be developed on the basis of a Master Plan (to be prepared involving relevant agencies & islands) avoiding unplanned and uncoordinated development activities;
- Aware and motivate local inhabitants about the danger of environmental degradation and facilitate AlGAs;

- Do not to allow building of any establishment without prior permission from the authority and stop fish catch around the Island.

While these decisions were made public, protests erupted in St. Martin's island over the decision to remove illegal establishments. Fear that St. Martin's island will be depopulated exists among its inhabitants.

The case of St. Martin's offers a crucial test for establishing a co-ordination mechanism among many institutional actors in a remote small island. It can be turned into a demonstrable model for ICZM.

This Round Table Discussion is a step towards formulation for proper coordination of activities and sustainable management of St. Martin's Island.

Inaugural Session

2 INAUGURAL SESSION

The inaugural session was opened with the recitation from Holy Quran, performed by Mr. Hasan Shariar, Scientific Officer of WARPO. Mr. Mohiudin Ahmad, Co team Leader of PDO-ICZMP conducted this session.

The inaugural session started at 10.00 and was chaired by Mr. Hossain Shahid Mozaddad Faruque, Director General, Water Resources Planning Organization (WARPO). Advocate Goutan Chakraborty MP Hon'ble State Minister, Ministry of Water Resources, attended the session as Chief Guest. Mr. Md. Abdul Aziz, ndc, Secretary, Ministry of Water Resources, was the Special Guest and Mr. Nasir Uddin Ahmed, Director General, Department of Fisheries (DoF) was the guest of honour. During the inaugural session, Dr. M.Rafiqul Islam, Team leader of PDO-ICZMP, presented the Keynote Paper 'Towards Holistic Approach for Sustainable Management of St. Martin's Island'.

Mr. Md. Ekramullah, Senior Scientific Officer of WARPO made vote of thanks

1 INTRODUCTION

St Martin's Island is a small island in the northeast of the bay of Bengal, about 9 km south of the Cox's Bazar-Teknaf peninsular tip and forming the southernmost part of Bangladesh. It is about 8 km west of the northwest coast of Myanmar at the mouth of the river Naf. The local people call it Narikel Jinjira. It is almost flat and is 3.6m above the mean sea level. The island is 7.315 km long and is geographically, divided into three parts.

Fishing is the main livelihoods of >5000 people living in this island. St. Martin's Island is very much resource rich and one of the most biologically diverse area of this region. It is the only coral bearing island of Bangladesh. Recently trades and tourism are emerging.

The National Conservation Strategy (NCS) in Bangladesh was started in 1986. One of the NCS recommendation was 'Declaration of Narikel Jinjira (St. Martin's) island and Jinjira coral reefs as Protected Areas and development of a management plan'. The MoEF, under the NCS Implementation Project –1 prepared 'Management Plan for Coral Resources of Narikel Jinjira in 1997 (Tomas Tomascik report). In 1999, the Government of Bangladesh declared St. Martins Island as one of the 9 Ecologically Critical Areas.

The MoEF initiated the following 2 projects to enforce ECA and facilitate conservation of biodiversity.

- St. Martin's Biodiversity Conservation Project (SMBCP)
- Coastal Wetland Biodiversity Management Project (CWBMP)

Further, many NGOs have undertaken turtle conservation program on this island.

Meantime, the MoFL, through its 'Empowerment of Coastal Fishing Community (ECFC) Project' initiated activities for the large fisher community in the St. Martin's island.

In order to conserve rich fish biodiversity around St. martin's island, the DoF has started promotion of a proposal for fish sanctuary. In order to meet energy demand of this remote island, LGED has also developed a green energy model using wind, solar and coconut biomass.

Bangladesh Tourism Corporation promotes St. Martin's island as a key tourism destination. Domestic tourism has increased manifold in recent years. Unplanned hotel infrastructures are being constructed by private sectors. Introduction of 'safer' ferries has attracted further development of tourism. Many overseas entrepreneurs, including from Saudi Arabia, Malaysia have offered to develop St. Martin's as an exclusive tourist place.

St. Martin's has also strategic importance due to proximity to Myanmar.

St. Martin's is at the cross road of development despite being declared as an ECA.

Being requested by the Department of Fisheries vide letter No. 503 dated 28-12-2003 to facilitate a dialogue among relevant projects and agencies, the MoWR concurred to such facilitation and resulted into this roundtable discussion.

While arrangements and scheduling for this roundtable discussions were going on, a high level Ministerial meeting was held on January 16, 2005. The meeting decided to:

- Formulate a master plan for development and protection of bio-diversity of St Martin's Island. LGED has been entrusted to prepare this master plan.
- Build several establishments for the tourism development at St Martin"s Island.
- All illegal establishments, including the dry fish market, as well as slums, will be removed from the Island.

Address of Welcome

Mr. Hasan Parvez, Principal Scientific Officer, WARPO

Bismillahir Rahmanir Rahim

Respected Chairman, Mr. Hossain Shahid Mozaddad Faruque, Director General, WARPO,

Honourable chief guest Advocate Goutam Chakraborty, MP, State Minister, Ministry of Water Resources, Government of the People's Republic of Bangladesh,

Special guest Mr. Md. Abdul Aziz, ndc, secretary, Ministry of Water Resources,

Guest of Honour Mr. Md. Nasir Uddin Ahmed, Director General, Department of Fisheries

Distinguished Guests, Experts, Participants

Ladies and Gentleman

Assalamualaikum and a very good morning to you all.

It is indeed a great pleasure for me to be present here this morning to welcome you all in the round table discussion on Holistic Approach for Sustainable Management of the St. Martin's Island.

St. Martin's Island is located about 9 km south of the Cox's Bazar-Teknaf and has been formed though a slow process of deposit of numerous species of corals, stones etc. over many years. This is why this island is known as 'coral island'.

The island is very much resourceful in terms of its biodiversity. Coral, numerous species of fisheries, turtles, shells, wild animals and trees are the main elements of this bio-diversity. These ecosystems are not only bio-diversity hotspots but also provide ecological balance.

Bangladesh has several ecosystems but coral ecosystem of St. Martin's island has a special conservation value as well as economic importance. This ecosystem attracts tourists from home and abroad. Everyday about 400 tourists visit the island. Other than fisheries, economic activity of this island is based mainly on tourism.

Due to population pressure in recent years, people are found to be engaged in different unwanted activities like collecting valuable corals, killing the rare species of mammals, marine turtles and other aquatic resources by collecting their eggs, skins and sometimes destroying their natural habitats.

This continuous environmental degradation already resulted the process of declining marine reserve and the island has become highly critical. Realizing this situation, the government has declared the island as Ecologically Critical Area (ECA) in the year 1999.

To protect biodiversity and maintain marine ecosystem in and around St. Martin's Island, this is the time to take necessary measures to conserve the resources of this island.

Today we are proud to have such a good gathering of experts and professionals like you to discuss on such an important issue of national interest and hope to come up with useful suggestions and recommendations for sustainable management of St. Martin's island. We hope your active participation and valuable contribution would make this discussion a meaningful and successful one.

I thank you all for taking trouble to be present here in this auspicious gathering this morning and wish the successful completion of today's discussion.

Allah Hafez.

Keynote presentation

Towards Holistic Approach for Sustainable Management of St. Martin's Island

Dr. M Rafiqul Islam, Team Leader, PDO-ICZMP

Dr. M Rafiqul Islam said, in his key note presentation, that 19 districts and EEZ comprises the coastal zone of Bangladesh. If we look into the St Martins Island we can see a tiny island, which is only 7.3 km long, divided into three parts and in between the northern and southern part there is a small tiny belt and tiny island Cheradia. He provided some basic information before giving the detail. He said, human settlement began in St. Martins Island back in 1000 AD and the current population is near about 6,000. There is no information of cyclone havoc; no causalities have taken place so far after the recent Tsunami. This island is rising at a rate of 19 mm/ year. In absence of electricity supply, this island remains as a typical remote island with immense natural beauty.

St. Martins is known as Narikel Zinzira as there are plenty of coconut trees around the island. Most of the people here are fishers. Then come agriculture with main crops watermelon, onion, nuts etc. Recently trades and tourism is emerging. But the most alarming issue here is the over extraction/collection of sea cucumber, coral etc.

PDO-ICZMP has already held some discussion and paper published in the media to raise concern about the alarming situation in St. Martins. As the island has multidimensional attraction and only coral bearing island of Bangladesh, people visit there.

However, Carbon dating shows that it is nearly a 30,000 old island. Coral reef, marine turtles are the most precious resources of this island. Marine turtles come here for nesting and breeds regularly. But there is no data on this marine turtles who visits when. This day's populations of marine turtles are coming down, but efforts are there to protect the biodiversity.

Back in 1999, this island was declared as ECA. Since then it has became a tourist zone. A lot of people visit this island during November to February month. Lot of academic studies have been done and continuing. Several institutions are active there i.e., Bangladesh Navy, Coast Guard and NGOs. Government efforts are also emerging.

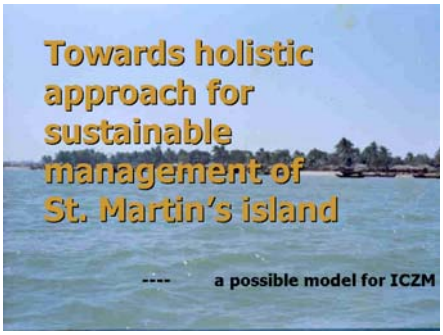
All the ongoing activities need to be integrated to achieve the economic growth, to ensure sustainable livelihoods and biodiversity conservation. These dimensions should be achieved through conserving the uniqueness and the natural beauty of the St. Martins Island. So, we must work all together.

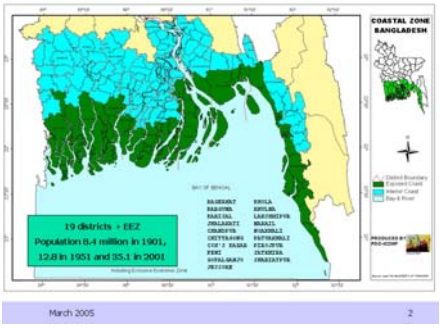
Employment opportunities for the fishers and tourism need to be developed. But the question is, St. Martins without its natural beauty is simply an island. So if we destroy this beauty all goes out. We need to enforce ECA and conserve environment and coordinate all the activities. LGED has taken initiative to produce green energy in the St. Martins. There is huge scope of ecotourism opportunity. Children work as local guides. We can create professional guides also. Local houses can be modified and used as the tourist /guest houses like Maldives.

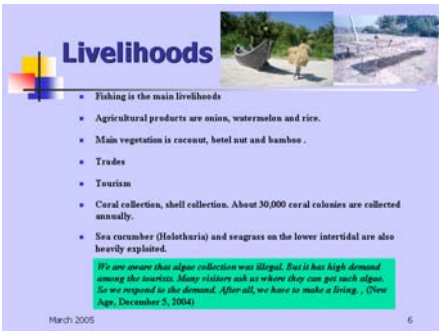
To promote tourism, conservation of nature is a must. Tourism effort can contribute to the local and regional economy. There are 9 ECA's in Bangladesh, but the St. Martins ECA is the most important and it can be enforced. Efforts are there, but enforcement is needed. Opportunistic livelihood options could be fishing, new trades, dry fish processing and cottage industries development i.e., net and boat making.

However, we need to combine all the efforts and try to avoid the duplication. PDO offers facilitation. We can build on existing plan of 1997. It can be a demonstrable model for ICZM. Thank you all.

Presentation of St. Martin's Island by Dr. M. Rafiqul Islam, Team Leader, PDO-ICZMP







Marine Turtles

- Marine Turtles are highly migratory and play most significant role in maintaining marine ecosystem especially the 'food chain'.
- Turtle population has come down and been recorded in the IUCN Red Data Book as endangered.
- It is well recognized that St. Martin's Island is the only spot where Hawksbill *(Eretmochelys imbricata)*, among others; comes to nest in the country. The sandy curved beach on the western coast is the best place (70% nests recorded) for turtle nesting.

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Ecologically rich and critical

- One hundred eighty-two species of wildlife recorded. Of these, 4 species are amphibians, 28 reptiles, 130 birds and 20 mammals.
- Declared as ECA in 1999

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Tourist zone

- **Tourism is the main attraction of. St. Martin's Island especially the northern part of the area during November to February.**
- **This is due to its diverse natural and biological settings. Of them; coral, turtles, shells, wild animals, trees are important.**

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Stakeholders

- **People**
- **Union Parishad**
- **Agencies (DoE, FD, DoF, BPC, LGED, BMD, BIWTA and others)**
- **Universities (CU, DU)**
- **Bangladesh Navy, Coast Guard**
- **Private Sector**
- **NGOs**

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Projects

- **Coastal & Wetland Biodiversity Conservation Project**
- **Empowerment of Coastal Fisher Community Project**
- **'Conservation of Biodiversity, Marine Park Establishment and Eco-tourism Development at Saint Martin's Island'**
- **St Martin's Island Sea Turtle Conservation Project**

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Integration desirable & achievable

Accommodating

- **Economic growth**
- **Sustainable livelihoods**
- **Environmental conservation**

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Our desired goal

- **Conservation of uniqueness and aesthetic beauty**
- **Conservation of pristine environment**
- **Employment opportunities, specially for fisher**
- **Development of nature tourism**

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Key Questions

- **Do we realize that St. Martin's islands without its natural beauty is simply an island**
- **Is people participating in all these?**
- **Do we not need to go to enforce ECA?**
- **Can we not co-ordinate our acts together in this small remote island?**

March 2005 16

Win-win situation for all in St. Martin's

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Green Energy for St. Martin's – model available

- The renewable resources in St Martin's Island could fulfill its electricity demand.
- Total demands of electricity in the island could be fulfilled with its renewable resources including wind power and biomass like coconut oil.
- Coconut coir, coconut frond, and coconut shell could also be used as a source of power generation.
- Bio-diesel can be produced from the coconut oil to run a diesel engine successfully.
- Need for coconut will support coconut cultivation, a possible income opportunity
- Available energy will facilitate small scale cottage industries

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Eco-tourism

- **Tourism in St. Martin's is basically nature or eco-tourism**
- **Conservation of St. Martin's nature, beauty, life, livelihoods and environment is must to promote tourism**
- **Local people can be trained as professional guides**
- **Local residents can be supported to refurbish guest rooms and houses, as in Maldives and elsewhere**
- **Tourist should be made aware of 'Do's and Do nots'.**
- **Long term tourism benefit lies in conserving nature**

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Regional tourism

- **Teknaf can be developed as modern tourism hub to promote regional tourism**
- **Through negotiations with Myanmar & Thailand, ship cruising linking St. Martin's island of Bangladesh, similar coastal towns in Myanmar, extended to Thailand can be negotiated**
- **Teknaf can be promoted as national hub facilitating day trips to St. Martin's, cruise in the Bay, to hill tracts etc.**
- **This will contribute to local and regional economy and employment**

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ECA enforcement

- **Efforts to enforce ECA activities are nowhere more important than St. Martin's**
- **St. Martin's is facing multi- dimensional pressure**
- **Local people should be made part and parcel of this enforcement**
- **In the long term, ECA enforcement is beneficial for promoting tourism, promoting green energy, ensuring sustainable and continuous employment opportunities**

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Livelihoods and alternative livelihoods

- **Support to main livelihoods – fishing**
- **Empowerment of fisher community through on-going activities**
- **Opportunities for new trades in tourism – as guides, service delivery in guest houses**
- **Dry fish processing**
- **Cottage industries in boat making, net making, coconut processing etc.**
- **St. Martin's can offer possibilities of employment for all**

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What's needed?

- **Change from working individually to working together**
- **Combine strengths, avoid duplications**
- **A multi-agency/ministry platform**
- **PDO-ICZMP offers facilitation of this platform**

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Build on existing plan

- **A 1997 management plan exists**
- **Revise and accommodate present day context**

March 2005


Build on existing decisions –
A master plan for the development of St. Martin's island
An inter-ministerial meeting on January 16, 2005 decided to formulate a master plan for development and protection of bio-diversity of St Martin''s Island.
The meeting also decided to build several establishments for the tourism development at St Martin''s Island.
Sources said all illegal establishments, including the dry fish market, as well as slums, will be removed from the Island.
The meeting also decided not to allow building of any establishment without prior permission from the authority and stop fish catch around the Island.
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A model of ICZM
Through participation of relevant agencies in both planning & implementation
Through co-ordination at both national and local level
Through involving local people
St. Martin's can be turned into a demonstrable model for ICZM
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THANK YOU

Address by the Guest of Honour

Mr. Nasir Uddin Ahmed, Director General, DoF

Chairperson Director General of WARPO,
Honorable Chief Guest, the State Minister Gautam Chakraborty,
Honorable special guest Mr. Md. Abdul Aziz, ndc, Secretary of MoWR.

From his experience of my visit to the St. Martins Island, there are 5000 people living in the St. Martins Island. Most of them are fishers who are very poor. Tourism is growing in a much-unplanned way. Local people think their heritage and culture are being destroyed due to the emerging tourism business. Land, Biodiversity, plantation are in a threat of destruction. Regarding biomass and marine water following are the main thrusts to be taken in concern.

- What are the species composition
- What is quantity of the total biomass
- What is the oceanological changes are there occurring gradually.

These are the important issues to study and it is a continuous process. With one/two days effort it cannot be achieved. Changes in this island can be seen through concentrating these three major areas.

Water pollution is a major factor to destroy the natural habitat of St. Martins. As tourism business is growing, number of mechanized boats is increasing, which is creating immense water pollution and this has to be stopped for the sake of the biodiversity conservation. Creation of sanctuaries could be one of the best solutions to prevent water pollution in this island.

Not only that, this island is the best area for turtle breeding. But the dogs of the island are destroying hundreds and thousands of eggs. Recently American authority imposed one condition on shrimp export that under any circumstances turtles cannot be killed. If we kill turtle then they will not buy shrimp. I hold series of meetings with the Deputy Commissioners of Khulna, Bagerhat and Satkhira on this matter. This should be controlled anyhow to protect the turtles. If we cannot ensure it, shrimp export will suffer a lot.

We are trying to import turtles excluded device to fasten net for not to capture turtles. Not only that mollusk is also suffering from the water pollution threat in the St. Martins. To stop water pollution universally accepted tool is sanctuary. If we can declare sanctuary area in the 5 metres depth area around the island, alternative livelihoods will be ensured along with preventing the water pollution.

If we can retain shallow water alternative livelihoods options will be strengthened. So we need to involve community people in sanctuary development, only sanctuary declaration cannot help to protect water pollution. I hope from the discussion session valuable suggestions will come up and we will jointly work for the better management of the St Martins Island. Thank you all.

Address by the Special Guest

Mr. Md. Abdul Aziz, ndc, Secretary, MoWR

Mr. Hossain Shahid Mozaddad Faruque Chairperson of the session and Director General of WARPO, Honorable Chief Guest, Advocate Gautam Chakraborty the State Minister, Ministry of Water Resources,
Guest of honour Mr. Nasir Udddin Ahmed, Director General, Department of Fisheries,

Ladies and Gentlemen.

I am not fortunate to visit St. Martin's Island. But I have gathered some knowledge and information form experts like you, websites and media. My very personal view is that to-day's topic of discussion is very much important and deserves considerable approaches to develop for sustainable management of the St. Martin's Island. The discussion, I hope, should cover some major areas like;

- Status of habitation
- Economic activities
- Risks and problematic areas and
- Finally a plan that we need to take for the management.

Critical analysis of these can provide sustainable management of the island. Regarding the location of this island, Cox's Bazar and Peninsula tip is very important. It is above the minimum sea level, which is 3.6 metre. This should be taken into consideration for any plan or to make suggestions.

Coral island consists of various limestone's. Shell, limestone, coral and permeable makes home for the water aquifer. The island is more than 30,000 years old. It is a coral island, where coral deposition is emerging. So shall we jump for massive development effort right now?

There are 182 different species and we are actually disturbing their lifecycle. Director General, DoF has mentioned rightly that 90% people are fishers. So their source of livelihood should be considered also. Soil of this island is not so fertile, people can only grow watermelon and rice.

There is no record of major risk. But we cannot say, after experiencing the recent tsunami. That this island will not suffer from tidal surge in future Common IT network to the mainland is needed. Regulatory framework for over exploitation is required to protect the biodiversity. He further mentioned that, regarding the plan of Action, MoWR has already formulated CZPo 2005. This is a guideline for all the Ministries. The ministries will do the sustainable development. This discussion session will focus within ICZM umbrella how best can Ministries act to evolve action plan effectively.

We have ECA 1999; we have also the Management plan of 1997. These frameworks need to be reinforced rather formulating new plan. This discussion session can make the basis for further progress. We know human habitation there which is 1000 years old. So the people of the area are more important.

We will have to decide to utilize the people living there. We must take them into the fold of management. Thank you.

Address by the Chief Guest

Advocate Goutam Chakrabarty MP Hon'ble State Minister, MoWR

Ladies and Gentlemen,

I am happy to participate in this round table discussion session. St. Martins is situated in the extreme Southern part of Bangladesh, which is full of seaweeds, and corals. The island is rich with its natural resources varied characteristics. It is famous and important to the researchers and academicians for its diverse natural resources.

However, marine fishing has a long history. It started since the human settlement. Since then fishing based economy was established in this island. Every year around 1650 MT fishes are being captured from the sea worth of Tk. 4.0 crore It is enriched with biodiversity, agricultural practices also exists here.

Number of tourists in this island is increasing. Due to the population pressure; people are destroying forest resources to meet the fuel need. Infrastructure construction is destructing the habitat. It is best place of turtle breeding.

Since 1960's coral collection has started commercially. Unplanned extraction of coral is declining its species and it is creating pressure to other species' also. ICZM has created the opportunity to work together on this issue. About 12 ministries and 35 departments/ agencies are working on the ICZM platform. Therefore we will have to emphasize on the followings

- Livelihoods development
- Biodiversity conservation and
- Economic development

We will have to work together on the overall development of this island. Prime Minister will extend her support on to it. Not only that, other agencies will contribute to conserve biodiversity in the St. Martin's Island.

We will have to conserve the natural beauty of this island for the sake of our future generation. I truly agree with the Team Leader of PDO-ICZMP that without people's awareness it cannot be done properly. I also agree with the DG, DOF, that this island should be better managed not only for its beauty and resources but also for the research and educational purposes.

Though I have some practical experiences on this island but still so far I understood, we will have to be proactive to protect the ecological balance in that place. Partnership and alliances is a must to embark on to this process and with the cooperation and coordination of the agencies this can be done very smoothly.

Our Honorable Secretary has already explained the CZPo and considering all the dimensions this workshop remain very important as it can provide valuable suggestions. Hoping that all of us will work together in near future. We will have to take over the government decisions, which are based on the prospective suggestions. We must work together on it for the better management of this island.

With these I inaugurate the session and wish success of the Round table discussion. Thank you all.

Address by the Chairperson

Mr. Hossain Shahid Mozaddad Faruque, Director General, WARPO

Chief Guest, the Honorable State Minister Advocate Gautam Chakraborty
Special guest Mr. Md. Abdul Aziz ndc, Secretary of MoWR,

I am honored to be part of the round table discussion on "Holistic Approach for Sustainable Management of St. Martins Island'. Coral Island or St. Martins is very rich in terms of the biodiversity which provides the ecological balance. St Martin's ecosystem is the most special amongst the other ecosystems of Bangladesh. About 400 persons per day visit this island of beauty. But the over exploitation of the coral reef and marine turtles is declining the natural habitat. The Government of Bangladesh has declared St Martins as Ecologically Critical Area (ECA) in 1999.

We should emphasize on to the importance of managing the island's fragile resources in a sustainable manner. We have to protect its biodiversity. Only declaration of ECA is not enough. As the Team Leader of PDO-ICZMP and the DG, DoF have mentioned earlier, sanctuary can be a better option to protect the biodiversity in the St Martin's Island.

CZPo has been passed and we will have to put together all these considerations. As a result St. Martins could be the first step towards the operationalization of the CZPo. To stop the destruction of the biodiversity, we will have to work together.

However, from the technical session many more suggestions on the methodology, technology, ways and strategies and ecosystems will hopefully come up. I thank you all.

Technical Session

3 TECHNICAL SESSION

Dr. Ainun Nishat, Country Representative, IUCN Bangladesh Country office, chaired the technical session. Dr. Ainun Nishat commenced the technical session by mentioning that the keynote paper has been presented already, which has reflected the thoughts of PDO-ICZMP on the sustainable management of the resources of St. Martins Island.

The following 4 papers were presented during the technical session.

1. Marine Biodiversity and its Conservation Measures - Prof. Dr. A K M Abdul Matin, Institute of Marine Sciences, University of Chittagong, Bangladesh.
2. Holistic Assessment of the Faunal Changes; Impact on Fisheries Livelihoods in St. Martin's Island - Dr. Giasuddin Khan, DoF, Dhaka.
3. Empowerment of Coastal fishing Communities of St. Martin Island for Responsible fishing and biodiversity conservation - Dr. Dilip Kumar, TL, ECFC Project, DoF.
4. Development of Tourism and Employment Generation - Mr. Ziaul Haque Howlader, Bangladesh Parjatan Corporation.

In addition, Mr. Osman Ghani of the Forest Department gave a detailed description of involvement of the department in St. Martin's island.

Suggestions were received soon after the completion of each presentation.

However, all participants contributed the open discussion session.

Marine biodiversity (of the St. Martin's Island) and its conservation measures

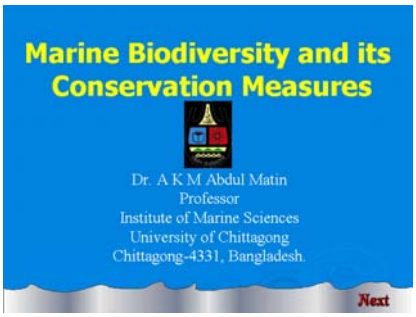
Dr. A K M Abdul Matin, Professor, Institute of Marine Sciences, University of Chittagong

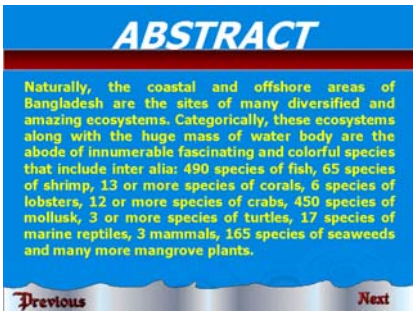
The synopsis of this presentation was that to defer the definition of St. Martins Island. He said, it is not a Coral Reef island rather a Coral Helimida Reef Island. His presentation was comprised with many photographs of the existing and extinct biodiversity of the island.

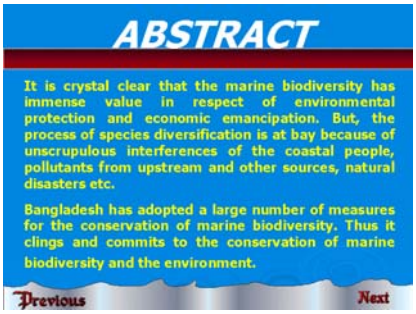
Recommendations:

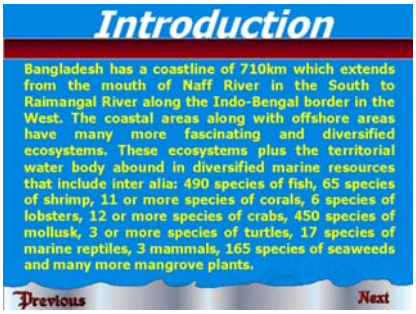
- Artificial propagation to stop extinction is a must to conserve the biodiversity in St. Martins Island.
- Special attention to be given on the intense effort to make lime from the oyster shells.

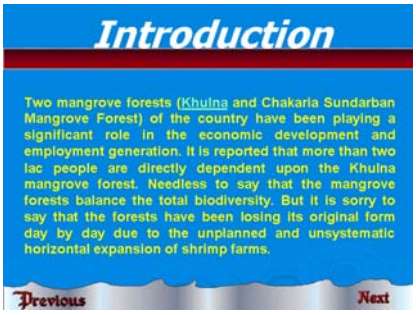
Presentation of Marine Biodiversity and its Conservation Measures

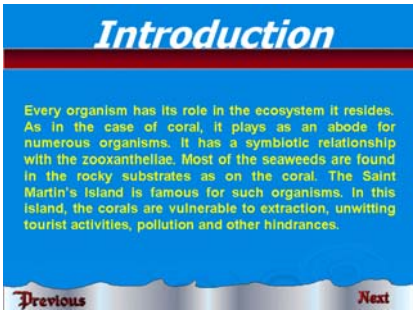












Introduction

Same is the case for other resources. The coastal fisher folk depend on artisanal fisheries for their livelihood. Besides, industrial fisheries also play substantial role in the country's economic development. But, these fisheries resources have been destroyed through various ways. Along the coastal areas, the fry collectors mercilessly destroy thousands of planktonic organisms round the year.

Surely, these are the acute indications of the loss of marine biodiversity and diversity of the ecosystem as a whole.

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Objective

This article has been written to draw further attention of the government, non-government, other concerned agencies and the people from all walks of life to give more emphasis on regarding the well understanding of the value of marine biodiversity and the conservation of the same for the future generation.

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Research on Biodiversity

A considerable of number of research works regarding the biodiversity have so far been done in Bangladesh with the participation of governmental and non-governmental organizations. Some of those are:

- Zafar (1988-89) has studied on zooplankton abundance in the Kutubdia Channel, Bay of Bengal (BOB). Thirteen major taxonomic groups were studied, among which Copepods being the most abundant group (94.3%). *Machrobrachium rosenbergii* PL was dominant among the caridean PL of the study area, representing 45.8% and 10.5% of the average annual population of shrimp PL and 0.02% of the total zooplankton. During the study, maximum density of zooplankton was 3, 26,146.36/100m3.

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Research on Biodiversity

- Mahmood (1990) compiled a list of fisheries resources existing in the Sundarban Mangrove Forest.
- World Bank has one research project named "4th fisheries project" that has been attributed to estimate the species diversity along the coastal areas of Bangladesh.
- Biodiversity Research Group of Bangladesh (BRGB) in association with the British American Tobacco Bangladesh has been doing research works on overall biodiversity of the country.

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Map of St. Martin

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Natural View of of St. Martin

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Biodiversity of Flora & Fauna

Some Important Mollusks

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Biodiversity of Flora & Fauna

Classification	:	
Phylum	:	Mollusca
Class	:	Bivalvia
Order	:	Arcoida
Family	:	Arcidae
Genus	:	*Anadara*
Species	:	*Anadara* sp. (Above) (28. *Anadara granosa* (Below)
English Name	:	Ark

Salient Feature : Shell medium, solid, equivalved, outer surface sculptured by 20 smooth radial ribs, interspaces of the radial ribs smooth, inner surface smooth.
Habitat : On muddy bottom of the infra-littoral zone.
Distribution : Confined to the Indo-Pacific, Texas, United States, Brazil.

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Biodiversity of Flora & Fauna

Classification	:	
Phylum	:	Mollusca
Class	:	Bivalvia
Order	:	Arcoida
Family	:	Arcidae
Genus	:	*Scapharca*
Species	:	*Scapharca sp.*
English Name	:	Ark

Salient Feature : Shell small, inflated, squarish, outer surface sculptured by radial ribs, interior surface of outer margin marked by impression of radial ribs.
Habitat : On sandy and muddy bottom of the infra-littoral zone.
Distribution : Central India Ocean to tropical Western Pacific.

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Biodiversity of Flora & Fauna

Classification	:	
Phylum	:	Mollusca
Class	:	Bivalvia
Order	:	Arcoida
Family	:	Arcidae
Genus	:	*Barbatia*
Species	:	*Foliata*
English Name	:	Decussate Ark

Salient Feature : Maximum shell length 7.5 cm. Commonly to 5 cm.
Habitat : Attached by byssus among rocks, underside of coral slabs, or nesting in crevices.
Distribution : Widespread in the Indo-West Pacific.

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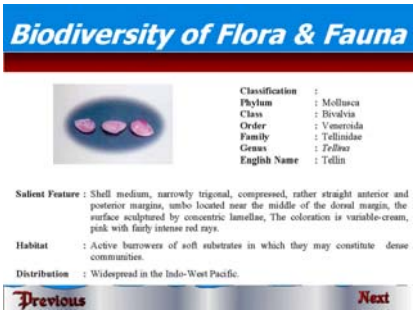
Biodiversity of Flora & Fauna
Classification :
Phylum : Mollusca
Class : Bivalvia
Order : Veneroida
Family : Tellinidae
Genus : Tellina
English Name : Tellin
Salient Feature : Shell medium, narrowly trigonal, compressed, rather straight anterior and posterior margins, umbo located near the middle of the dorsal margin, the surface sculptured by concentric lamellae, The coloration is variable-cream, pink with fairly intense red rays.
Habitat : Active burrowers of soft substrates in which they may constitute dense communities.
Distribution : Widespread in the Indo-West Pacific.
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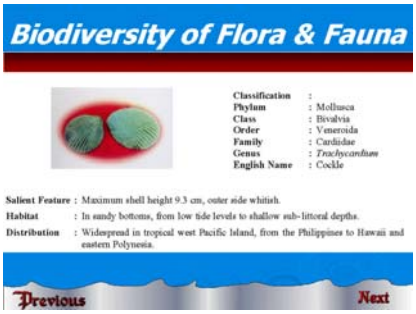
Biodiversity of Flora & Fauna
Classification :
Phylum : Mollusca
Class : Bivalvia
Order : Veneroida
Family : Cardiidae
Genus : Trachycardium
English Name : Cockle
Salient Feature : Maximum shell height 9.3 cm, outer side whitish.
Habitat : In sandy bottoms, from low tide levels to shallow sub-littoral depths.
Distribution : Widespread in tropical west Pacific Island, from the Philippines to Hawaii and eastern Polynesia.
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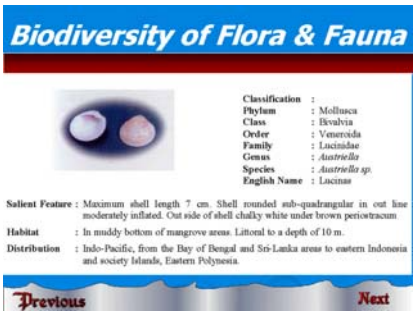
Biodiversity of Flora & Fauna
Classification :
Phylum : Mollusca
Class : Bivalvia
Order : Veneroida
Family : Lucinidae
Genus : Austriella
Species : Austriella sp.
English Name : Lucinas
Salient Feature : Maximum shell length 7 cm. Shell rounded sub-quadrangular in out line moderately inflated. Out side of shell chalky white under brown periowtracum
Habitat : In muddy bottom of mangrove areas. Littoral to a depth of 10 m.
Distribution : Indo-Pacific, from the Bay of Bengal and Sri-Lanka areas to eastern Indonesia and society Islands, Eastern Polynesia.
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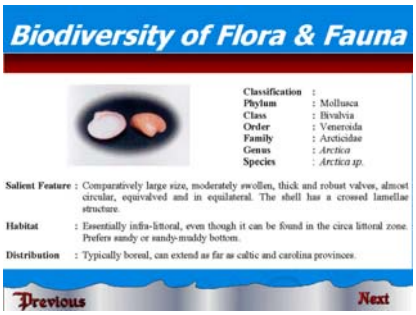
Biodiversity of Flora & Fauna
Classification :
Phylum : Mollusca
Class : Bivalvia
Order : Veneroida
Family : Arcticidae
Genus : Arctica
Species : Arctica sp.
Salient Feature : Comparatively large size, moderately swollen, thick and robust valves, almost circular, equivalved and in equilateral. The shell has a crossed lamellae structure.
Habitat : Essentially infra-littoral, even though it can be found in the circa littoral zone. Prefers sandy or sandy-muddy bottom.
Distribution : Typically boreal, can extend as far as caltic and carolina provinces.
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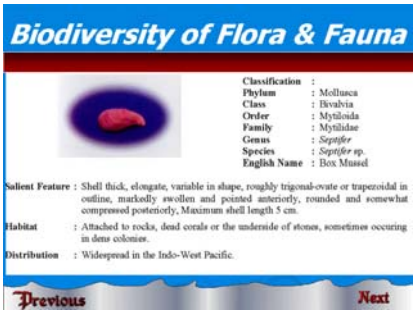
Biodiversity of Flora & Fauna
Classification :
Phylum : Mollusca
Class : Bivalvia
Order : Mytiloida
Family : Mytilidae
Genus : Septifer
Species : Septifer sp.
English Name : Box Mussel
Salient Feature : Shell thick, elongate, variable in shape, roughly trigonal-ovate or trapezoidal in outline, markedly swollen and pointed anteriorly, rounded and somewhat compressed posteriorly, Maximum shell length 5 cm.
Habitat : Attached to rocks, dead corals or the underside of stones, sometimes occuring in dens colonies.
Distribution : Widespread in the Indo-West Pacific.
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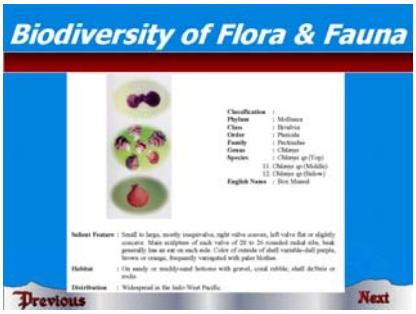
Biodiversity of Flora & Fauna
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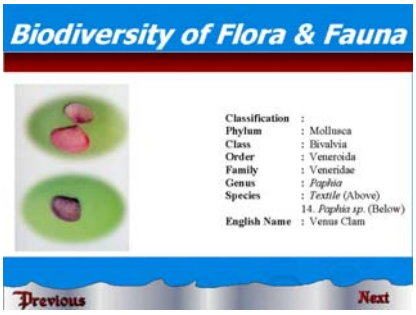
Biodiversity of Flora & Fauna
Classification :
Phylum : Mollusca
Class : Bivalvia
Order : Veneroida
Family : Veneridae
Genus : Paphia
Species : Textile (Above)
14. Paphia sp. (Below)
English Name : Venus Clam
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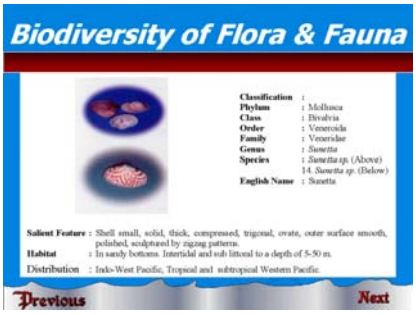
Biodiversity of Flora & Fauna
Classification :
Phylum : Mollusca
Class : Bivalvia
Order : Veneroida
Family : Veneridae
Genus : Sunetta
Species : Sunetta sp. (Above)
14. Sunetta sp. (Below)
English Name : Sunetta
Salient Feature : Shell small, solid, thick, compressed, trigonal, ovate, outer surface smooth, polished, sculptured by zigzag patterns.
Habitat : In sandy bottoms. Intertidal and sub littoral to a depth of 5-50 m.
Distribution : Indo-West Pacific, Tropical and subtropical Western Pacific.
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Biodiversity of Flora & Fauna
Classification :
Phylum : Mollusca
Class : Bivalvia
Order : Veneroida
Family : Veneridae
Genus : Paphia
Species : Textile (Above)
14. Paphia sp. (Below)
English Name : Venus Clam
Salient Feature : Shell large, round, flat, surface pearly and white color, two hinge teeth on right valve. They are most flat shells of all bivalves.
Habitat : On the surface of soft muddy to sandy-mud bottoms, from low tide levels to a depth of about 100m.
Distribution : Widespread in the tropical Indo-West Pacific.
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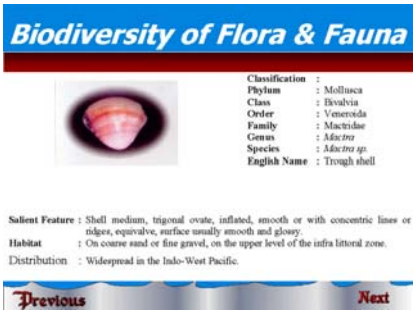
Biodiversity of Flora & Fauna
Classification :
Phylum : Mollusca
Class : Bivalvia
Order : Veneroida
Family : Mactridae
Genus : Mactra
Species : Mactra sp.
English Name : Trough shell
Salient Feature : Shell medium, trigonal ovate, inflated, smooth or with concentric lines or ridges, equivalve, surface usually smooth and glossy.
Habitat : On coarse sand or fine gravel, on the upper level of the infra littoral zone.
Distribution : Widespread in the Indo-West Pacific.
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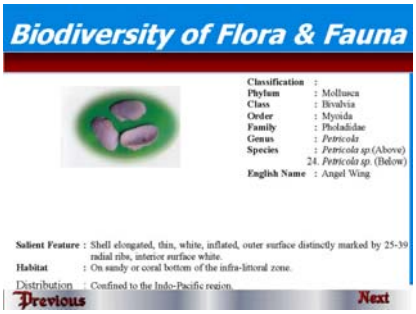
Biodiversity of Flora & Fauna
Classification :
Phylum : Mollusca
Class : Bivalvia
Order : Myoida
Family : Pholadidae
Genus : Petricola
Species : Petricola sp.(Above)
24. Petricola sp. (Below)
English Name : Angel Wing
Salient Feature : Shell elongated, thin, white, inflated, outer surface distinctly marked by 25-30 radial ribs, interior surface white.
Habitat : On sandy or coral bottom of the infra-littoral zone.
Distribution : Confined to the Indo-Pacific region.
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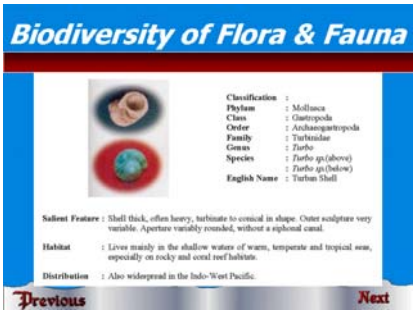
Biodiversity of Flora & Fauna
Classification :
Phylum : Mollusca
Class : Gastropoda
Order : Archaeogastropoda
Family : Turbinidae
Genus : Turbo
Species : Turbo sp.(above)
: Turbo sp.(below)
English Name : Turban Shell
Salient Feature : Shell thick, often heavy, turbinate to conical in shape. Outer sculpture very variable. Aperture variably rounded, without a siphonal canal.
Habitat : Lives mainly in the shallow waters of warm, temperate and tropical seas, especially on rocky and coral reef habitats.
Distribution : Also widespread in the Indo-West Pacific.
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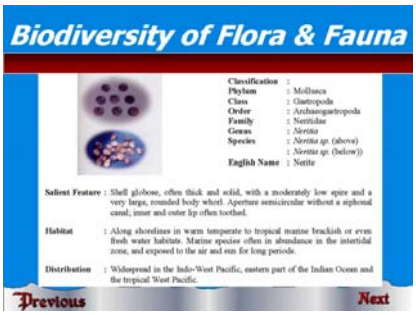
Biodiversity of Flora & Fauna
Classification :
Phylum : Mollusca
Class : Gastropoda
Order : Archaeogastropoda
Family : Neritidae
Genus : Nerita
Species : Nerita sp. (above)
: Nerita sp. (below))
English Name : Nerite
Salient Feature : Shell globose, often thick and solid, with a moderately low spire and a very large, rounded body whorl. Aperture semicircular without a siphonal canal; inner and outer lip often toothed.
Habitat : Along shorelines in warm temperate to tropical marine brackish or even fresh water habitats. Marine species often in abundance in the intertidal zone, and exposed to the air and sun for long periods.
Distribution : Widespread in the Indo-West Pacific, eastern part of the Indian Ocean and the tropical West Pacific.
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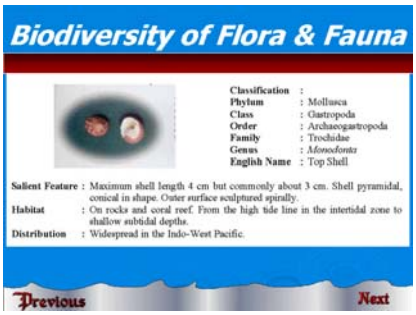
Biodiversity of Flora & Fauna
Classification :
Phylum : Mollusca
Class : Gastropoda
Order : Archaeogastropoda
Family : Trochidae
Genus : Monodonta
English Name : Top Shell
Salient Feature : Maximum shell length 4 cm but commonly about 3 cm. Shell pyramidal, conical in shape. Outer surface sculptured spirally.
Habitat : On rocks and coral reef. From the high tide line in the intertidal zone to shallow subtidal depths.
Distribution : Widespread in the Indo-West Pacific.
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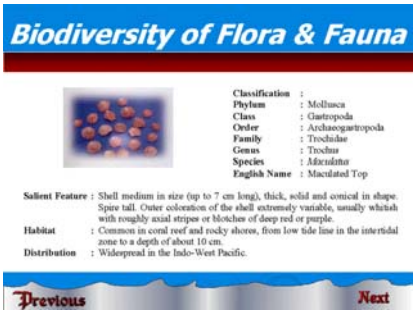
Biodiversity of Flora & Fauna
Classification :
Phylum : Mollusca
Class : Gastropoda
Order : Archaeogastropoda
Family : Trochidae
Genus : Trochus
Species : Maculatus
English Name : Maculated Top
Salient Feature : Shell medium in size (up to 7 cm long), thick, solid and conical in shape. Spire tall. Outer coloration of the shell extremely variable, usually whitish with roughly axial stripes or blotches of deep red or purple.
Habitat : Common in coral reef and rocky shores, from low tide line in the intertidal zone to a depth of about 10 cm.
Distribution : Widespread in the Indo-West Pacific.
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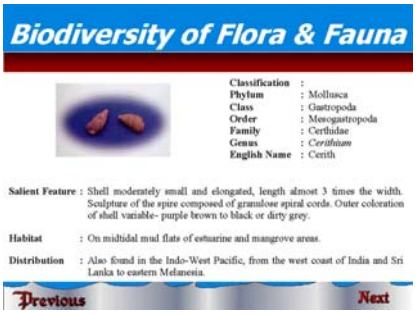
Biodiversity of Flora & Fauna
Classification :
Phylum : Mollusca
Class : Gastropoda
Order : Mesogastropoda
Family : Cerithidae
Genus : Cerithium
English Name : Cerith
Salient Feature : Shell moderately small and elongated, length almost 3 times the width. Sculpture of the spire composed of granulose spiral cords. Outer coloration of shell variable- purple brown to black or dirty grey.
Habitat : On midtidal mud flats of estuarine and mangrove areas.
Distribution : Also found in the Indo-West Pacific, from the west coast of India and Sri Lanka to eastern Melanesia.
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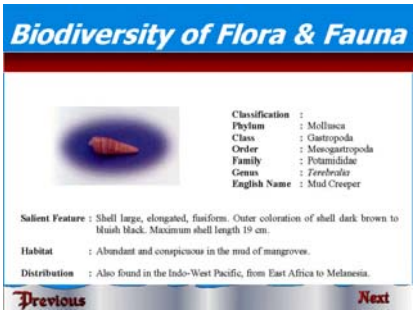
Biodiversity of Flora & Fauna
Classification :
Phylum : Mollusca
Class : Gastropoda
Order : Mesogastropoda
Family : Potamidae
Genus : Terebralia
English Name : Mud Creeper
Salient Feature : Shell large, elongated, fusiform. Outer coloration of shell dark brown to bluish black. Maximum shell length 19 cm.
Habitat : Abundant and conspicuous in the mud of mangroves.
Distribution : Also found in the Indo-West Pacific, from East Africa to Melanesia.
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Biodiversity of Flora & Fauna
Classification :
Phylum : Mollusca
Class : Gastropoda
Order : Mesogastropoda
Family : Turritellidae
Genus : Turritella
Species : Acutangula
English Name : Turret shell
Salient Feature : Medium or large in size (1 to 6 inches). Usually light but fairly strong and very high conical spire. The coloration is variable but always based on whitish or brown hues.
Habitat : Lives on sandy, muddy and fairly coarse detrital bottoms in the infralittoral and also in the circalittoral zones.
Distribution : Found in all seas.
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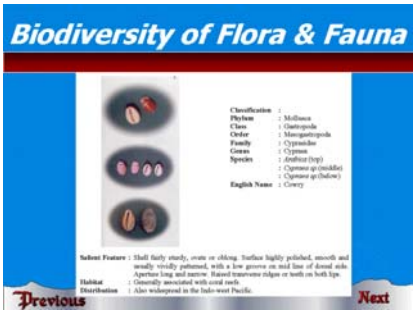
Biodiversity of Flora & Fauna
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Biodiversity of Flora & Fauna
Classification :
Phylum : Mollusca
Class : Gastropoda
Order : Mesogastropoda
Family : Fasciolariidae
Genus : Fusinus
English Name : Nicobar Spindle
fusiform
Salient Feature : Shell moderately strong, reaching a large size. Narrowly fusiform in shape, with a high, pointed spire and moderately long siphonal canal. Outer coloration of shell dark brown.
Habitat : On sandy bottoms and sub-littoral, from shallow subtidal water to a depth of about 40 m.
Distribution : Widespread in the Indo-West Pacific.
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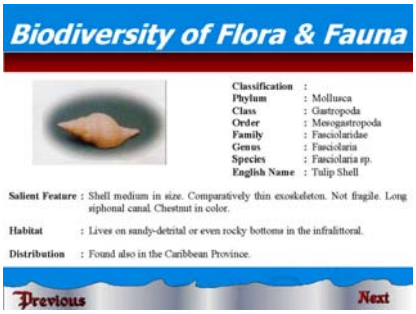
Biodiversity of Flora & Fauna
Classification :
Phylum : Mollusca
Class : Gastropoda
Order : Mesogastropoda
Family : Fasciolaridae
Genus : Fasciolaria
Species : Fasciolaria sp.
English Name : Tulip Shell
Salient Feature : Shell medium in size. Comparatively thin exoskeleton. Not fragile. Long siphonal canal. Chestnut in color.
Habitat : Lives on sandy-detrital or even rocky bottoms in the infralittoral.
Distribution : Found also in the Caribbean Province.
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Biodiversity of Flora & Fauna
Classification :
Phylum : Mollusca
Class : Gastropoda
Order : Mesogastropoda
Family : Fasciolaridae
Genus : Latirus
Species : Latirus sp.
English Name : Many Angled Spindle
Salient Feature : Shell thick, more or less elongated, fusiform. Generally elevated spire and long siphonal canal.
Habitat : Common on coral reefs and rocky shores.
Distribution : Also widespread in the Indo-West Pacific.
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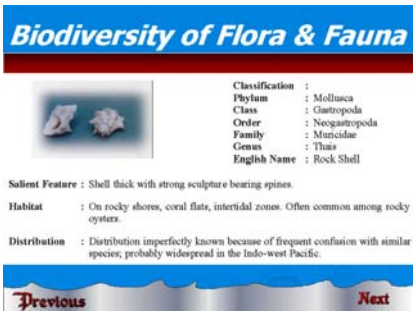
Biodiversity of Flora & Fauna
Classification :
Phylum : Mollusca
Class : Gastropoda
Order : Neogastropoda
Family : Muricidae
Genus : Thais
English Name : Rock Shell
Salient Feature : Shell thick with strong sculpture bearing spines.
Habitat : On rocky shores, coral flats, intertidal zones. Often common among rocky oysters.
Distribution : Distribution imperfectly known because of frequent confusion with similar species; probably widespread in the Indo-west Pacific.
Previous
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Biodiversity of Flora & Fauna
Classification :
Phylum : Mollusca
Class : Gastropoda
Order : Neogastropoda
Family : Muricidae
Genus : Murex
Species : Murex sp.
English Name : Murex Shell
Salient Feature : Shell fairly thin with solid spinose. Elongated siphonal canal- longer than the combined length of the spire and aperture. Long spines present on the body.
Habitat : On sandy to muddy bottoms of coral reef and on the continental shelf, littoral, sublittoral and offshore, to a maximum depth of about 340 m.
Distribution : Also widespread in the Indo-West Pacific.
Previous
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Biodiversity of Flora & Fauna
Classification :
Phylum : Mollusca
Class : Gastropoda
Order : Neogastropoda
Family : Turridae
Genus : Lophiotoma
Species : Indica
English Name : Turrit Shell
Salient Feature : Shell generally fusiform with a high slender spire. Characteristic slit or notch along the posterior part of outer lip.
Habitat : Common in muddy bottom.
Distribution : Indo-West Pacific.
Previous
Next


Biodiversity of Flora & Fauna
Classification :
Phylum : Mollusca
Class : Gastropoda
Order : Neogastropoda
Family : Olividae
Genus : Oliva
Species : Oliva sp. (top)
: Oliva sp. (middle)
: Oliva sp. (below)
English Name : Olive Shell
Previous
Next


Biodiversity of Flora & Fauna
Classification :
Phylum : Mollusca
Class : Gastropoda
Order : Neogastropoda
Family : Conidae
Genus : Conus
Species : textile (above)
: Conus ranonilla (below)
English Name : Cone Shell
Previous
Next


Biodiversity of Flora & Fauna
Perna viridis
Previous
Next


Biodiversity of Flora & Fauna
Some Important Algae
Previous
Next


Biodiversity of Flora & Fauna
Hydroclathrus clathratus
Previous
Next


Biodiversity of Flora & Fauna
Colpomenia sinuosa
Previous
Next


Biodiversity of Flora & Fauna
Halimeda discoidea
Previous
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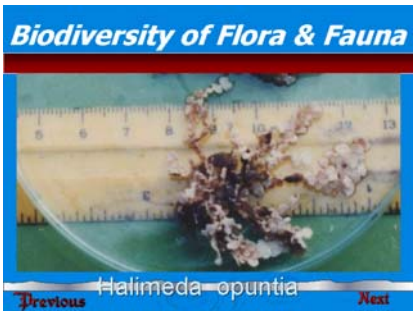
Biodiversity of Flora & Fauna
Halimeda opuntia
Previous
Next


Biodiversity of Flora & Fauna
Caulerpa racemosa
Previous
Next


Biodiversity of Flora & Fauna
Codium sp.
Previous
Next


Biodiversity of Flora & Fauna
Ulva sp.
Previous
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Biodiversity of Flora & Fauna
Dictyota ciliolata
Previous
Next


Biodiversity of Flora & Fauna
Dictyota dichotoma
Previous
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Biodiversity of Flora & Fauna
Padina sp.
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Biodiversity of Flora & Fauna
Sargassum sp.
Previous
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Biodiversity of Flora & Fauna
Previous
Hypnea cornuta
Next


Biodiversity of Flora & Fauna
Previous
Amphiroa fragilissina
Next


Biodiversity of Flora & Fauna
Previous
Dictyota ciliolata
Next


Biodiversity of Flora & Fauna
Corals-The Natural Beauty
Previous
Next


Biodiversity of Flora & Fauna
Previous
Montipora spongodes
Next


Biodiversity of Flora & Fauna
Previous
Porites lutea
Next


Biodiversity of Flora & Fauna
Previous
Platygyra lamellina
Next


Biodiversity of Flora & Fauna
Previous
Leptastrea transversa
Next


Biodiversity of Flora & Fauna
Previous
Cyphastrea serailia
Next


Biodiversity of Flora & Fauna
Previous
Hydnophora sp.
Next


Biodiversity of Flora & Fauna
Previous
Stylophora pistillata
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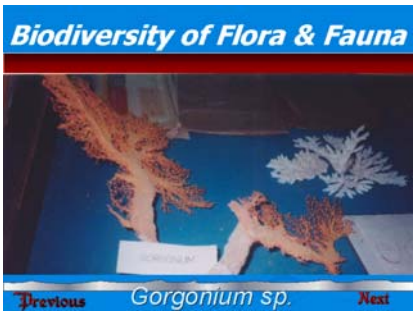
Biodiversity of Flora & Fauna
Previous
Acropora aculeus
Next


Biodiversity of Flora & Fauna
Previous
Acropora glauca
Next


Biodiversity of Flora & Fauna
Previous
Gorgonium sp.
Next


Other Important Biodiversity
Previous
Next

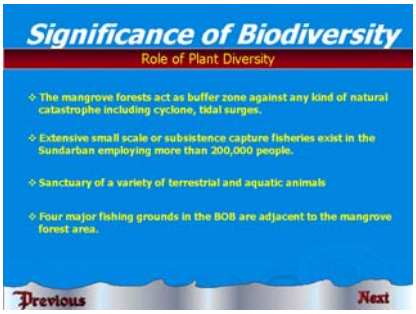

Biodiversity of Flora & Fauna
Previous
Lobster
Next


Biodiversity of Flora & Fauna
Previous
Lumulus
Next


Biodiversity of Flora & Fauna
Previous
Some Shell of Mollusca
Next


Biodiversity of Flora & Fauna
Previous
Next


Biodiversity of Flora & Fauna
Previous
Corals
Next


Significance of Biodiversity
Role of Plant Diversity
The mangrove forests act as buffer zone against any kind of natural catastrophe including cyclone, tidal surges.
Extensive small scale or subsistence capture fisheries exist in the Sundarban employing more than 200,000 people.
Sanctuary of a variety of terrestrial and aquatic animals
Four major fishing grounds in the BOB are adjacent to the mangrove forest area.
Previous
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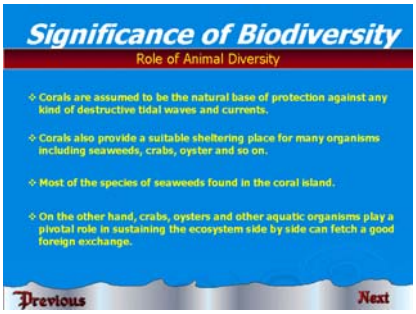
Significance of Biodiversity
Role of Animal Diversity
Corals are assumed to be the natural base of protection against any kind of destructive tidal waves and currents.
Corals also provide a suitable sheltering place for many organisms including seaweeds, crabs, oyster and so on.
Most of the species of seaweeds found in the coral island.
On the other hand, crabs, oysters and other aquatic organisms play a pivotal role in sustaining the ecosystem side by side can fetch a good foreign exchange.
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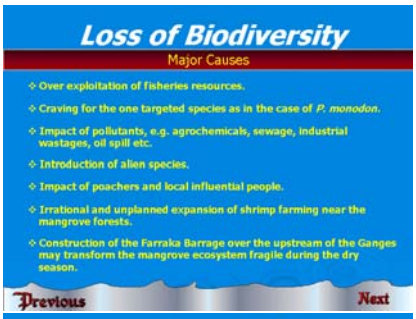
Loss of Biodiversity
Major Causes
Over exploitation of fisheries resources.
Craving for the one targeted species as in the case of P. monodon.
Impact of pollutants, e.g. agrochemicals, sewage, industrial wastages, oil spill etc.
Introduction of alien species.
Impact of poachers and local influential people.
Irrational and unplanned expansion of shrimp farming near the mangrove forests.
Construction of the Farraka Barrage over the upstream of the Ganges may transform the mangrove ecosystem fragile during the dry season.
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Conservation of Biodiversity
Steps taken by the government and other agencies
Bangladesh has initiated the preparation of Biodiversity Strategies and Action Plan (BSAP) for conservation of biodiversity under the sponsorship of the GEF.
The country has prepared National Conservation Strategy (NCS) and the National Environment Management Plan (NEMAP). Both NCS and NEMAP contain national strategy and national program for conservation of sites important from biodiversity consideration.
The Department of Environment (DoE) has Environmental Impact Assessment (EIA) rules, which applied for conservation of biodiversity in the country.
Previous
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Conservation of Biodiversity
Convention/Protocols Signed or Ratified By Bangladesh
International Convention for the prevention of pollution of the sea by oil, 1981.
Basel Convention on the control of Transboundary Movements of Hazardous Wastes and their disposal, 1989.
Plant Protection Agreement for the South East Asia and Pacific Region, 1974.
Convention on Wetlands of International Trade in Endangered species of Wild Fauna and Flora (CITES), 1973.
Plant Protection Agreement for the South East Asia and Pacific Region, 1974.
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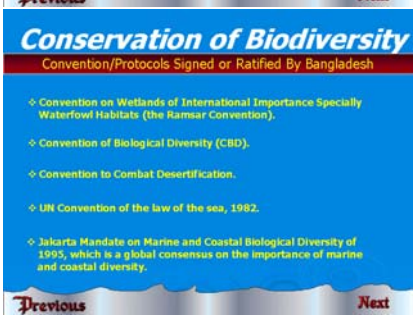
Conservation of Biodiversity
Convention/Protocols Signed or Ratified By Bangladesh
Convention on Wetlands of International Importance Specially Waterfowl Habitats (the Ramsar Convention).
Convention of Biological Diversity (CBD).
Convention to Combat Desertification.
UN Convention of the law of the sea, 1982.
Jakarta Mandate on Marine and Coastal Biological Diversity of 1995, which is a global consensus on the importance of marine and coastal diversity.
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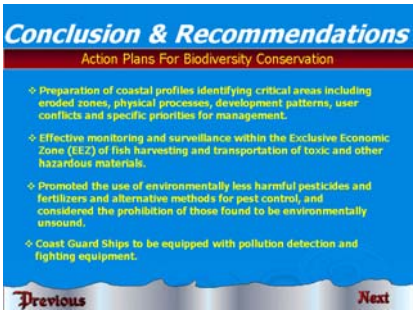
Conclusion & Recommendations
Action Plans For Biodiversity Conservation
Preparation of coastal profiles identifying critical areas including eroded zones, physical processes, development patterns, user conflicts and specific priorities for management.
Effective monitoring and surveillance within the Exclusive Economic Zone (EEZ) of fish harvesting and transportation of toxic and other hazardous materials.
Promoted the use of environmentally less harmful pesticides and fertilizers and alternative methods for pest control, and considered the prohibition of those found to be environmentally unsound.
Coast Guard Ships to be equipped with pollution detection and fighting equipment.
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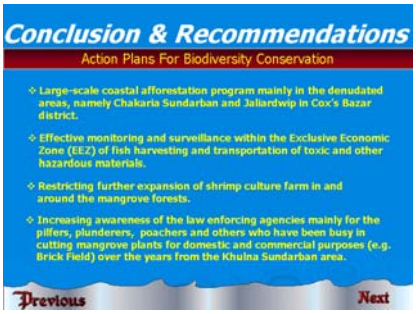
Conclusion & Recommendations
Action Plans For Biodiversity Conservation
Large-scale coastal afforestation program mainly in the denudated areas, namely Chakaria Sundarban and Jallardwip in Cox's Bazar district.
Effective monitoring and surveillance within the Exclusive Economic Zone (EEZ) of fish harvesting and transportation of toxic and other hazardous materials.
Restricting further expansion of shrimp culture farm in and around the mangrove forests.
Increasing awareness of the law enforcing agencies mainly for the pilfers, plunderers, poachers and others who have been busy in cutting mangrove plants for domestic and commercial purposes (e.g. Brick Field) over the years from the Khulna Sundarban area.
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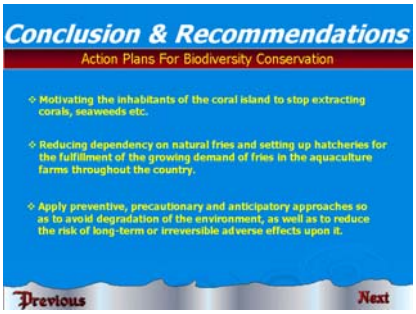
Conclusion & Recommendations
Action Plans For Biodiversity Conservation
Motivating the inhabitants of the coral island to stop extracting corals, seaweeds etc.
Reducing dependency on natural fries and setting up hatcheries for the fulfillment of the growing demand of fries in the aquaculture farms throughout the country.
Apply preventive, precautionary and anticipatory approaches so as to avoid degradation of the environment, as well as to reduce the risk of long-term or irreversible adverse effects upon it.
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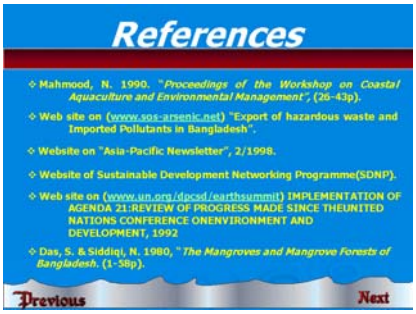
References
Mahmood, N. 1990. "Proceedings of the Workshop on Coastal Aquaculture and Environmental Management", (26-43p).
Web site on (www.sos-arsenic.net) "Export of hazardous waste and Imported Pollutants in Bangladesh".
Website on "Asia-Pacific Newsletter", 2/1998.
Website of Sustainable Development Networking Programme(SDNP).
Web site on (www.un.org/dpcsd/earthsummit) IMPLEMENTATION OF AGENDA 21:REVIEW OF PROGRESS MADE SINCE THEUNITED NATIONS CONFERENCE ONENVIRONMENT AND DEVELOPMENT, 1992
Das, S. & Siddiqi, N. 1980, "The Mangroves and Mangrove Forests of Bangladesh. (1-58p).
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Holistic Assessment of the Faunal Changes: Impact on Fisheries Livelihood in St. Martins Island

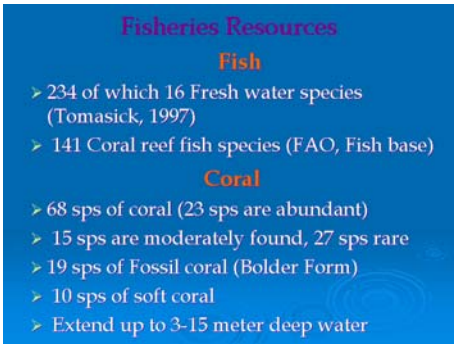
Md.Sirajul Islam, Assistant Chief, DoF, Dhaka

This presentation entailed the fisheries resources in the St. Martins Island. Seaweed cultivation, pearl culture, aquaculture in the wetland body, cage culture in the northern part of this island has been described as the potential alternative livelihoods for the fishers. Tourism can be promoted by ensuring cottage/huts, tourist guides, ornamental fish trade, jobs in Marine Park, electricity supply, solar energy usage, sanctuary establishment, restriction of the mechanized boats etc.

Recommendations:

- Holistic approach to attain sustainable management.
- Stop the destructive growth of tourism.
- Uses of local peoples house for the tourists rather then constructing hotels.
- To examine the importance of the rare species sea horse.
- Jurisdiction of the marine turtles need to be clarified.
- Assessment of the carrying capacity of the island.

Presentation Impact on Fisheries Livelihood in St. Martin's Island



Contd. Lobstar

- 3 sps of lobstar

Sea weed

- 10 sps of algae/sea weed (Nurul Islam, 1998)
- 22 sps (Another survey)

Mollusc/Bivalves

- 154 sps of Molluscs (Tomasick, 1997)

Oyster/Pearl/Crab

- 3 sps of oysters. Pearl bearing sps. 7 sps crab

Others

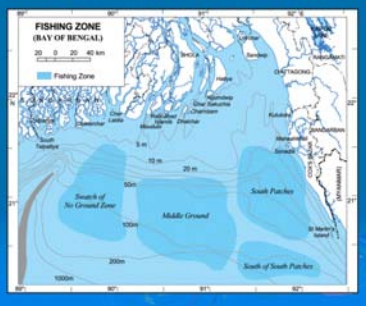
- Amphibian- 5sp, Turtle- 5sp, Snail -5sp

Fisheries Resources

Reef Fish Species for Bangladesh compared to the world

Rank	Area	Reef Fish Species
1	Indonesia	1920
2	Australia	1872
3	Philippines	1693
4	Papua New Guinea	1572
5	Japan	1521
6	Taiwan	1390
7	Palau	1259
8	New Caledonia	1125
9	Micronesia	1044
10	Maldives	908
95	New Zealand	171
96	El Salvador	156
97	Jordan	153
98	**Bangladesh**	**141**
99	Johnston Island	140
100	Tuvalu	130
101	Cape Verde Islands	119
102	Bahrain	110
103	Netherlands Antilles	107
104	Kuwait	94
105	Sao Tome and Principe	92
106	United Arab Emirates	92
107	Senegal	90
108	Tokelau	83
109	Qatar	81
110	East Timor	78

Breeding Ground of Prawn (Bagda, etc.)



Fisheries activities and livelihood

- 90% households engage in fishing and fish traders.
- Some others engage in crab, mollusc collection, sea weed collection and coral collection.
- 150 no. of boats (Motorized) and some non motorized boats.
- Fish production 1650 mt./year, 4 core tk.
- Net use: Drift gill net, Fixed gill net, Gill net, Seine net, Hook line, etc.
- Most of the women and children engage in fish drying (6 fish drying industries are present).
- Marketing to the other areas is not possible due to lack of electricity, ice factory, communication, etc.

Economic Activities

Historical Changes in Faunal Composition and Abundance

- Both species and quantity wise fishes have drastically declined primarily for over fishing
- Not only by Bangladeshis but also by Thailand and Mayanmar fishermen.
- About 25 years back fishes were in abundance near the coast of the island but they are now only available in the deep sea.
- Some of the species have completely extinguished while some others on the verge of extinction. (14 available, 65 moderately, 89 rarely, and 5 extinct)
- Other molluscs, bivalves, seaweeds, turtle, etc. are declined over decade.
- Coral production is also under threatened condition.

Use and impact chart for the St. Martin Island

Use category	Existent or not	Level of use	Nature of damages
A. Living resources			
1. Commercial fishing within reef areas	yes	Moderate	Unknown
2. Commercial fishing in offshore waters	yes	High	Unknown
3. Subsistence fishing in reef areas	yes	Moderate	Habitat destruction
4. Recreational fishing	N.E.		
5. Commercial coral collection	Yes	High	Live coral cover loss. Habitat destruction. Increase in sediment load leading to further coral mortality.
6. Commercial shell collection	Yes	Was high. Presently at low level	Overexploitation
7. Aquarium fish collection	Yes	Low	Risk factor for extinct organism
8. Aquaculture	N.E.		
9. Turtle hunting	Yes	Modest	Damage to recruitment
10. Bird hunting	Yes		
11. Plant harvesting-terrestrial	Yes	High	Severe erosion of shoreline and transfer of silt and clay into the coastal waters
12. Plant harvesting-marine	Yes	Modest	
13. Other resources	Yes	High for algae	Extinct position
14. Destructive fishing methods	N.E.		

Contd.

B. Non-living resources			
1. Oil and gas mining	N.E.		
2. Limestone mining	Yes	High	Habitat destruction
3. Other minerals	N.E.		
C. Developmental activities			
1. Discharge of effluents	Yes	Low to moderate	Pollution
2. Offshore mining	N.E.		
4. Harbor/navigational works (dredging, blasting, filling etc.)	Yes	High	Erosion, topography changes, pollution, habitat destruction
5. Domestic sewage	Yes	Less	Localized algal growth
6. Industrial sewage	N.E.		
7. Ocean water dumping	Yes	Less	Dumping of dredged material can kill corals
8. Research and development	Yes		Encouraging Formulations of measures for conservation
9. Offshore navigation and oil spills	Yes		Occasional mortalities of corals
D. Non-extractive uses			
1. Resident tourism	Yes	Modest	Visible damage
2. Sea-borne tourism	N.E.		
3. Air-borne tourism	N.E.		
4. Water sports (SCUBA, snorkeling etc.)	N.E.		
5. Rest walking	Yes	Low	Visible damage
6. Constructional activities related to tourism	Yes	Modest	Over crowding and waste generate

Resource Distribution

Major threats to environment and coral & associated resources

Anthroogenic Threats	Relative Threat Level
Coastal erosion	4
Turbidity and sedimentation	5
Coral extraction	5
Shell extraction	5
Intertidal boulder removal	5
Coral use for construction and lime	1
Destructive fishing techniques	3
Tourism activities	5
Domestic pollution	2
Agricultural pollution	3
Oil pollution from boats	3
Boat anchoring	2
Fish processing	3
Boat building	2
Overfishing	5
Natural Threats	
Cyclones and storms	3
Sedimentation and resuspension	5
Freshwater flooding	5
Earthquakes	1

Source: Tomascik, 1997
Threat level 0 (low) to 5 (high)

Probable Alternative Livelihood

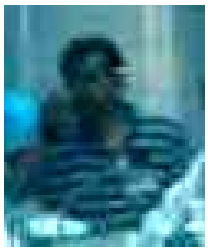
- Sea weed culture (Not harvest from Wild)
- Pearl culture
- Aquaculture in fresh water bodies
- Cage culture
- Rent Cottage/Hut (Highly decorated) to tourist
- Tourist Guide (Literate people VIII, SSC)
- Snorkeling facilitator rather than Scuba diving
- Tourist boat operator (Motorized/Non motorized)
- Ornamental fish trader by Artificial breeding technique (Not collection from Wild)
- Job in Marine park (If applicable)
- Electricity supplier (By using solar cell rather than using diesel)

Recommendations

- Establishment of sanctuary upto 5-10 m water depth around the St. Martin's Island
- Restrict the expansion of inhabitants from Galachipa to Seradia
- Protect fishing during low tide upto 20 m
- Restrict movement of merchant ship, vessels, etc. upto 30 meter depth from SS, West and Eastern part of Island
- Stop collection of coral, sea weeds, turtle, molluscs, bivalves, etc. by enforcement of law
- Taking initiative for intensive survey of the fish resources and giving permission of limited number of fishing boats depends on survey result
- Banning of beach seine net to protect invertebrate

- Ensure the enforcement of fisheries law
- Completely prevention of building construction or any other brick infrastructure
- Assessment of coral reef carrying capacity and monitoring of the activities for sustainable environment
- Restrict collection of rocks, coral, etc. by tourist
- Cooperation with the coastguard and BN to protect the biodiversity of the island
- Development of ecotourism in lieu of multistoried hotel, motel, etc.
- Banning of Jinok shop (Mollusc shop) in the island
- Wastage (Waste paper, bags, bottles, etc.) should bring back from the island by responsible tourist boats/tourist.
- Consider the island as a marine museum so that Govt. can earn revenue from the tourist entrance in the island

Thankyou



Empowerment of Coastal Fishing Communities of St. Martin's Island

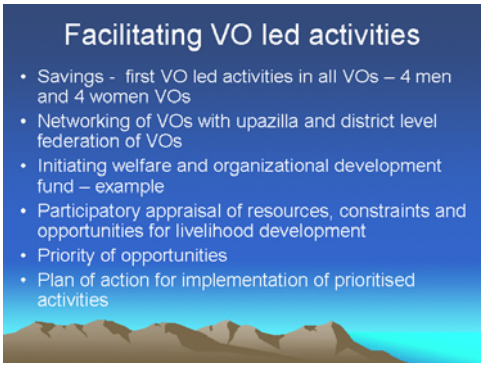
Dr. AKM Nowsad Alam, Sr. National Expert, ECFC Project, Cox's Bazar

To empower the fisher folk community in the St. Martins Island village organization was formed through appraisal, problems and opportunities analysis, prioritization and then making of the Action Plan. Community interaction has been increased through this process.

Recommendations:

- To impose ban the use, production and collection of the current net.
- To protect acquatic resources from water pollution.

Presentation of Empowerment of the Fisheries Community of St. Martins Island

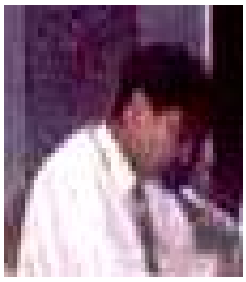



Empowerment…
• Awareness programme related to voting rights, women's right, marriage, protection of environment, etc.
• Preparation of PAPD
• Starting radio community oriented radio programme – by the communities for the communities.
• Developing CCRF for the island with focus on conservation of coastal biodiversity and natural resources through stakeholders' participation
• Constituting committee for periodical review of compliance


Future priority
• Issue of identity cards to VO members
• Registration of boats
• Discarding destructive fishing gears and practices – e.g.
• Keeping the island and the beach clean and free from plastics and other solid wastes brought by visitors
• Starting another school exclusively through their own resources


Future priority….
Taking benefit from tourism – so far communities are kept away
• Starting production of quality dried fish without using any insecticide – High value St. Martin dried fish
• Production of packed coconut based food items which is a traditional delicacy of the island.


Future priority….
• Developing facilities for accommodating visitors as paying guests
• Training community members to serve as eco-tourist guide
• Initiating eco-friendly livelihood activities.



Tourism for Employment Generation in St. Martin's Island

Mr. Ziaul Haque Howlader, Bangladesh Parjatan Corporation

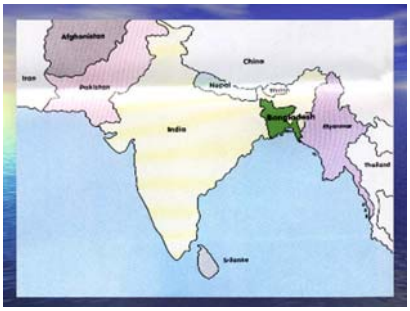
Sustainable livelihoods can be ensured through opting fishing and tourist guide side by side. To do so LGED is developing the master plan, which will be implemented by the MoE. Agency cooperation is needed to promote tourism for the employment generation.

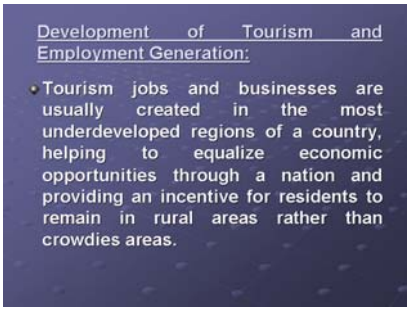
Recommendations:

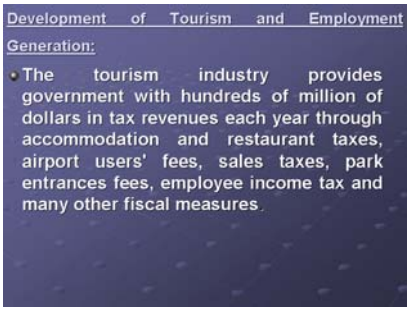
- Involvement of the COAST Guard and the Bangladesh Navy.
- Plan for the rainy seasons.
- Land ownership development in the southern part of the island.

Anthropogenic threats needs to be considered regarding the floral diversity. Tourism must be developed in a sustainable manner, as there is close linkage between human and the nature.

Presentation of Tourism and Employment Generation






Development of Tourism and Employment Generation:
• The tourism industry provides government with hundreds of million of dollars in tax revenues each year through accommodation and restaurant taxes, airport users' fees, sales taxes, park entrances fees, employee income tax and many other fiscal measures.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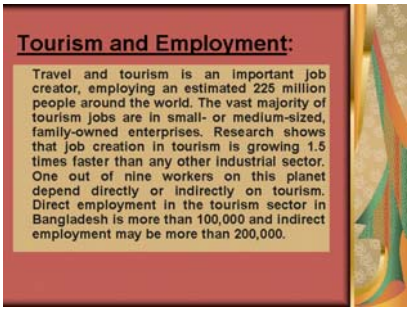
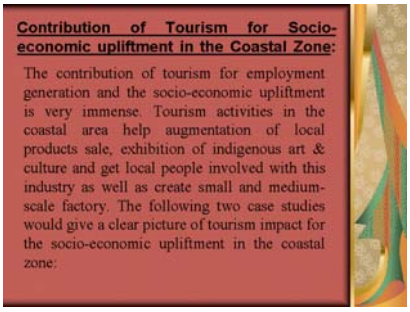
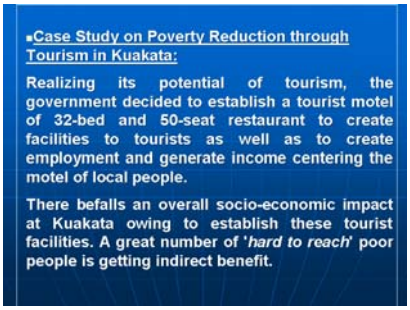
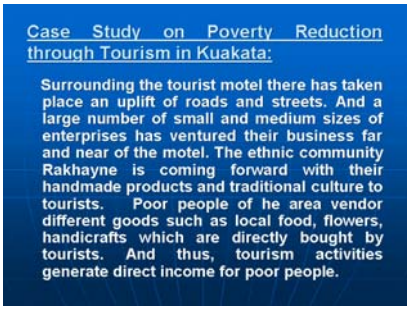
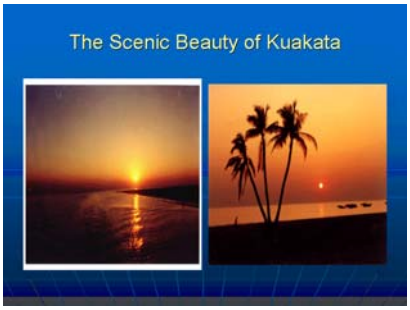
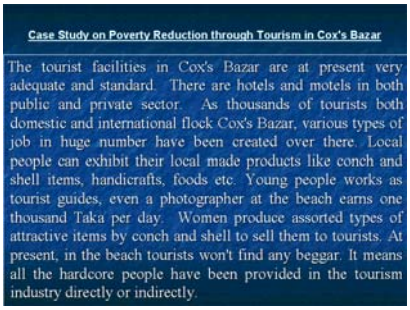

Tourism and Employment:
Travel and tourism is an important job creator, employing an estimated 225 million people around the world. The vast majority of tourism jobs are in small- or medium-sized, family-owned enterprises. Research shows that job creation in tourism is growing 1.5 times faster than any other industrial sector. One out of nine workers on this planet depend directly or indirectly on tourism. Direct employment in the tourism sector in Bangladesh is more than 100,000 and indirect employment may be more than 200,000.

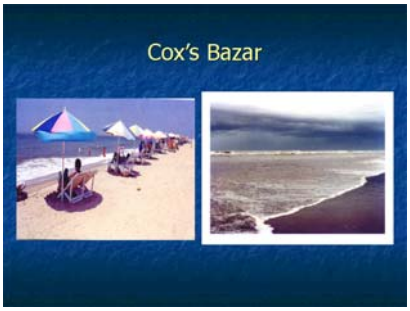

Contribution of Tourism for Socio-economic upliftment in the Coastal Zone:
The contribution of tourism for employment generation and the socio-economic upliftment is very immense. Tourism activities in the coastal area help augmentation of local products sale, exhibition of indigenous art & culture and get local people involved with this industry as well as create small and medium-scale factory. The following two case studies would give a clear picture of tourism impact for the socio-economic upliftment in the coastal zone:


•Case Study on Poverty Reduction through Tourism in Kuakata:
Realizing its potential of tourism, the government decided to establish a tourist motel of 32-bed and 50-seat restaurant to create facilities to tourists as well as to create employment and generate income centering the motel of local people.
There befalls an overall socio-economic impact at Kuakata owing to establish these tourist facilities. A great number of '*hard to reach*' poor people is getting indirect benefit.


Case Study on Poverty Reduction through Tourism in Kuakata:
Surrounding the tourist motel there has taken place an uplift of roads and streets. And a large number of small and medium sizes of enterprises has ventured their business far and near of the motel. The ethnic community Rakhayne is coming forward with their handmade products and traditional culture to tourists. Poor people of he area vendor different goods such as local food, flowers, handicrafts which are directly bought by tourists. And thus, tourism activities generate direct income for poor people.


The Scenic Beauty of Kuakata


Case Study on Poverty Reduction through Tourism in Cox's Bazar
The tourist facilities in Cox's Bazar are at present very adequate and standard. There are hotels and motels in both public and private sector. As thousands of tourists both domestic and international flock Cox's Bazar, various types of job in huge number have been created over there. Local people can exhibit their local made products like conch and shell items, handicrafts, foods etc. Young people works as tourist guides, even a photographer at the beach earns one thousand Taka per day. Women produce assorted types of attractive items by conch and shell to sell them to tourists. At present, in the beach tourists won't find any beggar. It means all the hardcore people have been provided in the tourism industry directly or indirectly.


Cox's Bazar


Tourism Activities in the St. Martin Island:
Tourism activities are taking place in the St. Martin Island both by the Public and Private Sector. The peak season for tourism activities is 'October to March'.
During the last Peak season Bangladesh Parjatan Corporation conducted only 5-6 package tours with limited number of tourists (The total number of tourist was only 85). These package tours were conducted by professionally trained up and environmentally sensitized guides of BPC.
The number of package tours and tourists conducted by the private sector are a bit higher than these.
BPC did not establish any structure here considering ecologically critical bio-diversity of the island. BPC conducts day-trip package tour to St. Martin from Teknaf. BPC created tourist facilities at Teknaf for easy smooth day-trip to St. Martin Island.

Beautiful Pictures of St. Martin Island

Tourism for Employment Generation in St. Martin's Island:

The following types of tourism activities in the Island can help creation of employment for alternative livelihood and reduce poverty –

- tour guide technique training of the educated local youth of the Island,
- promotion of local culture and heritage,
- creation of proper technique for exhibition and marketing the local handicrafts,
- easy Micro-credit System
- awareness build up of local people for pollution
- free environment etc.

Tourism for Employment Generation in St. Martin's Island:

- As the island is declared an Ecologically Critical Area (ECA) in 1995, limited number of tourism activities i.e. eco-tourism can help immensely for creation alternative livelihood for the local people. Here a strong coordination among the departments like Bangladesh Parjatan Corporation, Department of Environment and Forest, Water Development Board etc. is needed.
- Ignorance and misconception among the department activities create barrier of the smooth work of the tourism development of the island.
- For a better coordination and smooth and eco-friendly tourism development, the Ministry of Civil Aviation and Tourism convened an inter-ministerial Meeting on 16/01/2005, where Hon'ble Minister for Local Government and Rural Development, Hon'ble State Minister for Environment and Forest and Hon'ble State Minister for Civil Aviation and Tourism and other concerned representatives were present.

Tourism for Employment Generation in St. Martin's Island:

- In the meeting, eco-tourism activities like Maldives can be promoted here. In the Inter-ministerial meeting following decisions were taken:
- 1. LGED will prepare a Master Plan in collaboration with M/E & F, M/CAT. Ministry of Environment will organize fund for preparation of the Master Plan.
- 2. Construction of Walkway around the St. Martin Island for tourists.
- 3. Prior permission will have to be taken from the DC, Cox's Bazar for construction of any pucca/mud road. DC, Cox's Bazar would give permission upon seeking opinion from the M/E & F as well as M/CAT.

Tourism for Employment Generation in St. Martin's Island:

- 4. Existing Dry-fish village and all kinds of land encroachers would have to be evicted by concerned DC with the help of Police Administration.
- 5. The surfaced shoal/land accreditation should be recorded to khas land no-1 by the DC. DC would inform the M/CAT regarding the total area of the surfaced shoal. Help from the Land Record and Survey Office would be sought in this regard.
- 6. BIWTA would take initiative to identify the safe river route to St. Martin Island.
- 7. DC would inform the Local Government Department regarding the dissolve of St. Martin Union Parishad.

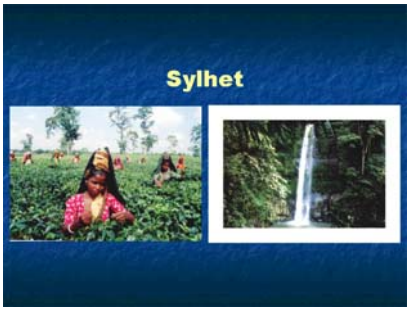
More Attractions in the Coastal Area and other places of Bangladesh

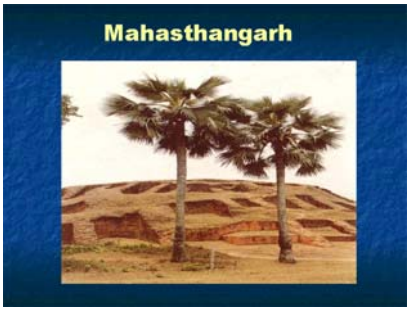
Chittagong

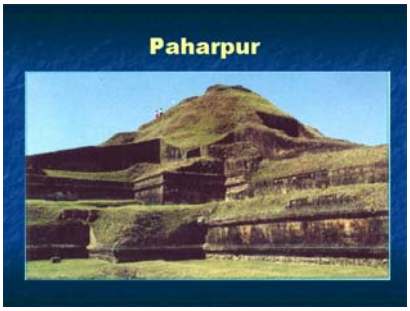
Sundarbans

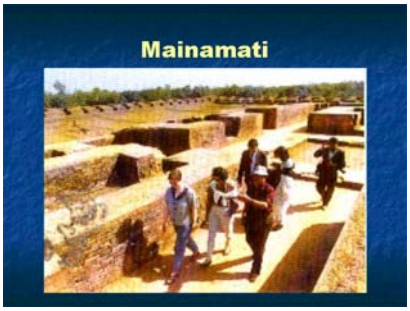
Kaptai Lake

Rangamati

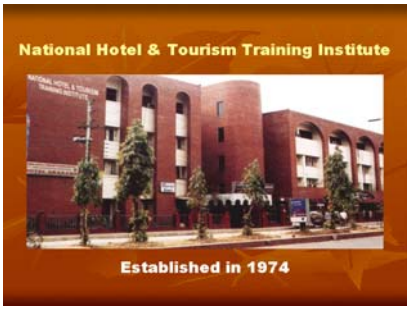

Sylhet


Mahasthangarh

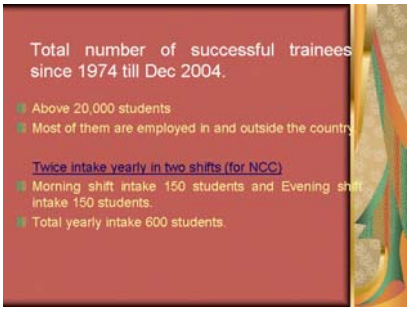

Paharpur


Mainamati


BPC's HRD Activities in Tourism


National Hotel & Tourism Training Institute
Established in 1974


Courses Offered by NHTTI
A. Diploma in Hotel Management
B. National Certificate Courses
1. Food & Beverage Production
2. Food & Beverage Service
3. Bakery & Pastry Production
4. Housekeeping & Laundry Operations
5. Front Office & Secretarial Operations
6. Travel Agency & Tour Operations
7. Computer Literacy


Total number of successful trainees since 1974 till Dec 2004.
Above 20,000 students
Most of them are employed in and outside the country
Twice intake yearly in two shifts (for NCC)
Morning shift intake 150 students and Evening shift intake 150 students.
Total yearly intake 600 students.


Awareness Creating Activities by BPC for Local People in The Tourism Spots

Conclusion:

Like before, BPC would like to reiterate that a proper and strong coordination, exchanges of ideas and sharing of knowledge among the concerned ministries, departments and agencies for the promotion of tourism and create alternative livelihood for the local people of the St. martin island are badly required. St. Martin Island can be an ideal spots for promotion of tourism and reduce poverty like the islands of Maldives. Dispute of ownership, mud slinging and blaming game on the island through the media seriously halt any kind of development activities in the St. Martin, let alone tourism.

Open Discussion & Concluding Session

4 OPEN DISCUSSION

Dr. Md. Liakath Ali, PDO-ICZMP

Mr. Ziaul Huq from BPC has mentioned in his presentation that involvement of BWDB is also important in tourism development in St. Martin's Island. Why?

Dr. Ainun Nishat

BWDB's involvement has been mentioned to undertake any types of protection measures from Teknaf to the St. Martin's Island.

Dr. S.M.A Rashid, Coastal & Wetland Biodiversity Management Project, DoEnvironment

I have noticed that one thing is missing and/or has not been mentioned in this round table discussion and that is about the ongoing Coastal & Wetland Biodiversity Management Project (CWBMP). We all know about the ECA declaration and CWBMP is a GEF funded project for ECA management. Although this project has been delayed due to some miss initiatives and decisions. Hopefully within the next five years this project will work out effectively.

As ICZM has taken an effective initiative to discuss together on Sustainable management of St. Martins Island, they should also contact with Department of Environment who are executing CWBM Project.

On information availability, Secretary of the Ministry of Environment has mentioned that we have huge amount of information. Kamal Sheikh emphasized on the zonation of St. Martins Island in one of his famous writing. Besides, the ongoing St. Martin's project also establishing Marine Park to do the zoning. That means there are many initiatives going on and we can take examples from them rather inventing new things to this island.

For national interest we all must have to work together. CWBMP is linked with other projects like ECFC, St. Martins Project. Not only that, some components of SEMP are also linked with CWBMP and this project has good linkage with LGED's energy related component. However, it has been told in this session that 12 Ministries and 35 agencies are linked with ICZMP. So, why cannot we bring all the works and examples together in this discussion session? Decision from the highest body is crucial to work on sustainable management of the island.

All though Prince of Saudi Arabia has shown keen interest in the tourism development of this island, but as the St. Martin's is already a declared ECA, thoughtful actions are required before intervene anything new in this island.

On marine turtle conservation issue, I must tell you that as GEF emphasizes on the globally endangered species and St. Martins is the only island where three types of turtles do their nesting. We do not find any nesting record of Horn bill turtle since 1992.

Moreover as the DG of DoF have already mentioned about TDE (Turtle exclusion Device), I have not seen this example yet. In India this is made at a cost of Taka 500-700. If we can make it also, then our fishers will be able to use this.

On diversity issue, it must be mentioned that many of the species are declining. I am going to this Island since 80's and now *keora* trees cannot be seen like before, as the investors are buying land and fencing boundary by cutting *keora* trees. In southern part of this island in Cheradia we will not find any *keora* trees.

Dr. Ainun Nishat

We would like to hear from you about the sustainable management of this island. We have not acknowledged your project, is not correct. Because Dr. Rafiq, team leader of ICZMP has mentioned in his presentation about ongoing projects including your one.

Can you please elaborate on the present status of the project. As NPC, you can directly recommend for introducing TED.

Dr. S.M.A Rashid

We have actually started from the last year. We have field office in Cox' Bazar. We are going to open a Teknaf field office by next month and this office will look after the St. Martins Island also. More over, we are trying to establish communication and coordination mechanism by contacting with ECFC's village group organizations

Dr. Ainun Nishat

For the sustainable management of the St. Martins Island, coordination amongst the 4 ongoing projects is very important. We expect your cooperation in that particular issue.

Dr. S.M.A Rashid

I can tell you that for the sake of the sustainable management of this island, coordination among the relevant Ministries, agencies and project will be established soon. Yesterday I had a meeting with the Secretary of MoEF and I have mentioned all the issues I discussed here and he assured me that if I can provide the ECA related steps to him, then he will peruse it to the other Ministries. Therefore, today's session is very important to chalk out the expert opinion and recommendations.

Dr. Ainun Nishat

To add with your comment it should be mentioned here that, we will have to find out whether there are any other projects going on in addition to mentioned projects. I hope that the new Chairman of BPC will cooperate with the theme we are discussing here. For the sustainable management of St. Martins Island, we will certainly need the involvement of DoF, FD, LGED, and BPC. In this regard, ICZM can collect and compile the study/survey reports of the St. Martin's project to make it as a baseline report. You can also collect the Tomas Tomascik report from IUCN library. Therefore I would request Dr. Rafiq and Dr. Rashid to sit together and discuss today's suggestions and take the written decisions to the Secretary of the Ministry of Environment to ensure effective coordination.

Professor AKM Abdul Matin, Institute of Marine Sciences, Chittagong University

We will have to think about the monitoring issue as well.

Dr. Ainun Nishat

From IUCN's part I will take this responsibility.

Dr. S.M.A Rashid

For the conservation of Marine turtles, we should concentrate on the identified breeding grounds in St. Martins Island. So far 20 breeding grounds have been identified and we will have to prioritize the effective breeding grounds and provide adequate and proper protection there.

Mr. Abu M Kamal Uddin, PDO-ICZMP

To me, selection of effective breeding place can come later on as it requires a bit detail works. However, I propose we can form a body from today's discussion, who will work further on to this issue and I am quite sure that all the projects have resources.

We have already contacted with the project directors of the mentioned projects and Dr. Rafiq has already mentioned that ICZM could be the platform.

Dr. Ainun Nishat

Only offer to act as a platform is not enough. Dr. Rafiq will have to knock on Mr. Mushfiq and Mr. Kamruzzaman. We need to communicate with them for effective actions. I also will go with him if necessary.

I fully agree with your proposal for platform. Committee/ group power will be needed. That is why we will have to go to the Secretary of the MoEF. We will have to cooperate with Dr. Rashid to get the government's assurance.

Mr. Osman Ghani, Chief Conservator of Forest, Forest Department

I want you to think about the "Nature Trails" rather than making walk way around the beach.

Ms. Nahid Sultana, Scientific Officer, WARPO

We have talked a lot about the existing tourist and fisheries resources and potential in St. Martins Island, but not about agriculture. Can we suggest cultivating specific less water demanding crops like soybeans, peanuts, and wheat according to the soil types? It can be done as an alternative to the traditional rice cultivation system.

Mr. Hasan Shariar, Scientific Officer, WARPO

I have been to Kutubdia Island few days back and found the ground water crisis. Water is crucially needed to any kind of development intervention. Therefore, we will have thought about the existing aquifer of this island.

Dr. Abdullah Harun Chowdhury, Khulna University

What type of tourism we will promote for the St. Martins Island? During the on and off-seasons, carrying capacity of this island vary. It is hard to find an inch of place in the beach area during on season. This entails the risks of the carrying capacity of this island. Moreover we will have to investigate that whether the construction of multistoried building and safety tanks are polluting seawater ?

It has been suggested that seaweed culture and fresh water aquaculture could be the major alternative livelihoods in this island. But we must think about the risks underneath of aquaculture. Aquaculture will eliminate most of the species (out of 16 existing species) as it allows only 3-4 species cultivation.

As seaweeds can be found densely in the northwestern beach of the island. People will certainly concentrate on to that area. Therefore, it may repeat the land grabbing stories of Satkhira, Khulna and Bagerhat. So we will have to be more careful to pick the area for seaweed culture. We must ensure that EIA will take place before any types of intervention.

Dr. Ainun Nishat

Three strong points have been identified by him and these are

- to develop and enforce socially and environmentally responsive tourism guide.
- regulatory framework for the sustainable management of the natural resources.
- proper zoning is needed for program or any kind of intervention and Environmental assessment should be done beforehand.

Mr. Mokhlesur Rahman, CNRS

St Martins Island is comprised with small area and if we want establish Eco-park there, Laboratory or Hatchery establishment may harm the entire process. Because the use of heavy metals and bio

undegradable materials in the laboratory will certainly pollute the seawater. We do have same types of ecological conditioned areas elsewhere in Bangladesh, we can produce and nurture the species there also. We will not be able to recycle the pollutants once that laboratory will be on.

Dr. Ainun Nishat

Persons with research interest on seaweeds, algae, and coral will use this laboratory. We do have hatchery in Cox's Bazaar and still we are not habituated to eat mollusks, so we will have to think abut these issues as well. We will have to perform the environment assessment in terms of ensuring sustainability and harmful activities in this island should be controlled strongly. Social control needs to be strengthened to stop in migration in this island. People who are already there shall be prohibited far to move further in the south of Galachipa. If necessary we can ask the government to buy out the *khas* land. As far I know the island was entirely under *khas* land, local investors made the *Dalil* (agreement) later on. In a sense we can take it up with the high officials.

Md. Sirajul Islam, Department of Fisheries

We have much more options over there. Shark watching is rather profitable than to collect shark fins. But, people are collecting shark fin in an unplanned manner. If we can plan for the next 15-20 years we can go for shark watching. Propagation of marine ornamental fishes is not possible. Because within salinity level of an aquarium, ornamental marine fish species never survive.

Mr. Mokhlesur Rahman, CNRS

Most of the fisheries research institutes and the training centers are mal functioned and mismanaged. We have heard that some of the scientists had to sell the fishes of the research pond for their living. Because they had no money. My point is that it is not so easy to run research activities in such a remote area like St. Martins island. So, level of researchers is matter of question.

Dr. Ainun Nishat

We are quite unsure about the sustainability of the laboratory set up. Those who are building this should keep it in their mind. Not only that, they can also think about the possibility of shifting the physical facility to Teknaf-Shah Parir Dwip. Shah Parir Dwip could be a proper place for research and eco-tourism development.

Mr. Nawshad has mentioned that the people of St. Martins Island have the idea that, they will be evacuated some day from the island. But we are saying that it will not bring benefit to those people. So, consultation with the local people is a big factor. Population limit of the settlement is also necessary.

Mr. Mokhleur Rahman

ICZM is a platform during its lifetime. But what will happen when ICZM will be phased out?

Mr. Nuruzzaman, DoF

I have mentioned earlier to do the seaweed and pearl culture experimentally, as we know that 200 tons of red seaweed goes to the Myanmar illegally per year. So we will have to think about it also.

Dr. Abdullah Harun Chowdhury, Khulna University

For the sustainable management of this island, Social and Environmental Impact Assessments are must. We should also think about the risk of ballast water discharge. If many vessels move around the island, disastrous situation may occur. So restriction is needed. Another alarming issue is the extensive collection of shark fin. Dr. Nawshad has mentioned about introducing solar tunnel drier into the St. Martins Island, which will ultimately reduce the excessive use of insecticides in fish drying.

Dr. Ainun Nishat

Approach, motivation and recommendations are needed to stop shark fin collection rather than to say stop or ban it.

Ms. Rehana Akhter, PDO-ICZMP

People can have alternative livelihood from the coconut by-product. Family planning activities must be given proper attention as most of the families in St. Martin's are large with 8-10 members.

Ms. Akhteruzzaman, Deputy Director, DoF

EIA is essential before initiating any sorts of intervention in the St. Martin's island. We will have to think about the solid waste management along with the sewerage water treatment.

Mr. Mohiuddin Ahmad, Co Team Leader, PDO-ICZMP

If I had the decisive and implementing power I could have done the following

- We do not actually understand the social dynamics. We say that, many things are needed for the livelihoods. This is vague. Because, people who are doing fish drying, shell trades are not the local people. These investors are from Teknaf and Cox's Bazaar. People are very poor in St. Martins. If we can stop the commercial extraction of these resources, local people will not loose much. They are already looser stakeholders. Big stakes belong to Teknaf /Cox's Bazaar. Therefore, commercial extraction of natural resources must be stopped and government should have strong political will to this issue. We need to plan how the local people can sustain.
- Pleasing nature should be conserved. People go to the island to enjoy its natural beauty. We can work along with Government's sanitation program (2010) and the sanitation goal can be covered before 2010. We do not need to go for new programmes.
- We will have to impose higher *toll* to every tourist. Tourist who can effort the *toll* will visit the island.

5 CONCLUDING REMARKS

Dr. M Rafiqul Islam, Team Leader PDO-ICZMP made concluding remarks by saying that, "we must move forward with a common understanding/view on the issues we have already agreed upon. In doing so,

- This exercise has to be linked to Master Plan, assigned to LGED.
- By next week, a formulation will be prepared for the Secretary, MoEF.
- A follow-up meeting is scheduled on April 4, 2005 at the PDO..

6 FOLLOW-UP MEETING

As per decision of the round-table discussion, a follow-up meeting was held on April 4, 2005. Proceedings of the meeting is presented in Annex-C.

ANNEX-A: PROGRAMME

Venue : BRAC INN Center, Mohakhali, Dhaka **Date :** 31 March 2005, Thursday

9:30 - 10:00 Registration

OPENING SESSION

10:00 - 10:05	Recitation from the Holy Quran
10:05 - 10:10	Welcome address by Mr. Md. Hasan Parvez, PSO, WARPO
10:10 - 10:25	Key note paper: Towards holistic approach for sustainable management of St. Martin's Island by Dr. M. Rafiqul Islam, Team Leader, PDO-ICZMP
10:25 - 10:40	Address by the Guest of Honour Mr. Nasir Uddin Ahmed, Director General, Department of Fisheries
10:40 - 10:45	Address by the Special Guest Mr. Md. Abdul Aziz ndc, Secretary, Ministry of Water Resources
10:45 - 10:55	Inaugural Address by the Chief Guest Advocate Goutam Chakraborty MP Hon'ble State Minister, Ministry of Water Resources
10:55 - 11:00	Address by Chairperson Mr. Hossain Shahid Mozaddad Faruque, Director General, Water Resources Planning Organization (WARPO)
11:00 - 11:05	Vote of Thanks

11:05 - 11:30 Refreshment

TECHNICAL SESSION

Session Chair: Dr. Ainun Nishat, Country Representative, IUCN-Bangladesh Country Office

11:30	:	Marine biodiversity (of the St. Martin's Island) and its conservation measures - Prof. Abdul Matin, Institution of Marine Science (IMS) Chittagong University, Chittagong
11:45	:	Holistic Assessment of the faunal changes; impact on fisheries livelihoods in St. Martin's Island - Dr. Md. Giasuddin Khan, District Fisheries Officer, Department of Fisheries (DoF)
12:00	:	Empowerment of Coastal Fishing Communities of St. Martin's Island - Dr. Dilip Kumar, TL, ECFC Project, Department of Fisheries (DoF).
12:15	:	Tourism for Employment Generation in St. Martin's Island - Mr. Ziaul Haque Hawlader, Executive Officer (Planning), Bangladesh Parjatan Corporation (BPC).
12:30	:	Open discussion
14:25	:	Closing remarks by the chairperson
14:30		**Lunch**

Rapporteurs of the discussion: 1) Mr. Nasiruddin Md. Humaun, DOF
2) Dr. Shamim Ara, WARPO

ANNEX-B: LIST OF PARTICIPANTS

Name	Designation	Address, Telephone & E-mail
Ministry of Water Resources (MoWR)		
Advocate Goutam Chakrabarty MP	Hon'ble State Minister	Ministry of Water Resources Bangladesh Secretariat Dhaka
Mr. Md. Abdul Aziz ndc	Secretary	
Department of Fisheries (DoF)		
Mr. Md. Nasiruddin Ahmed	Director General	Department of Fisheries Matshya Bhaban Park Avenue, Ramna, Dhaka
Mr. Nasiruddin Md. Humayun	District Fisheries Officer	
Mr. Md. Sirajul Islam	Assistant Chief	
Ms. Yasmeen Ara Ahmed	Statistical Officer	
Dr. Arne Anderson	Team Leader, Fourth Fisheries Project	
Mr. Md. Nuruzzaman	Shrimp Specialist, Fourth Fisheries Project	
IUCN-Bangladesh Country Office		
Dr. Ainun Nishat	Country Representative	IUCN-Bangladesh Country Office House 11, Road 138, Gulshan-1, Dhaka
Chittagong University (CU)		
Dr. A. K. M. Abdul Matin	Professor	Institute of Marine Science Chittagong University, Chittagong
Khulna University (KU)		
Dr. Abdullah Harun Chowdhury	Environmental Science Discipline	Khulna University, Khulna
Center for Natural Resource Studies (CNRS)		
Mr. Mokhlesur Rahman	Executive Director	Center For Natural Resource Studies House# 14, Block #E, Road 13/C, Banani, Dhaka-1213
Forests Department (FD)		
Mr. Mohammad Osman Gani	Deputy Chief Conservator of Forests	Social Forest Wing Forests Department Ban Bhaban, Mohakhali, Dhaka
St. Martin's Project, MoEF		
Mr. G. M. Jaglul Islam	Marine Biologist	St. Martin Project, MoEF 4/5, Iqbal Road, Mohammadpur Dhaka-1207
Department of Environment (DoE)		
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Mr. Md. Shahjahan Mian	Environmental & Resources Economist	
Mr. Abu M. Kamal Uddin	Knowledge Management Expert	
Dr. Md. Liakath Ali	Project Development Facilitator	
Mr. Muinur Rashid	Coastal & Marine Engineer	
Ms. Begum Rehana Akhter	Bio-diversity Conservation and Environmental Expert	

ANNEX-C: MINUTES OF THE FOLLOW-UP MEETING ON 4 APRIL, 2005

Facilitated by the PDO-ICZMP, the follow-up meeting was attended representatives of three on-going projects and relevant agencies

- Coastal & Wetland Biodiversity Management Project (DoE)
- Empowerment of Coastal Fisher Community Project (DoF)
- St. Martin's Biodiversity Conservation Project (DoE)
- Department of Fisheries
- Bangladesh Parjatan Corporation
- IUCN

This was the first ever interaction of 3 ongoing projects on a platform.

Project Components of 3 on-going projects:

St. Martin's Biodiversity Conservation Project)

- Household Survey/Base line
- Biodiversity conservation
- Proposed Marine Park
- Prevention of sandstone, natural stone and coral extraction
- Seaweed, shell, coral, mollusk extraction prevention
- Awareness building (weekly) activities on conversation, cooking, cleanness of beach etc.
- Dissemination of Do's or Dont's for the tourist in the island
- Encourage household tourisms (20 so far)
- In Situ / ex-situe turtle conservation (Conapara, Galachipa 9000 released)
- AIG training/livelihood skill dev. training
- Laboratory, maritime museum, research centre from Dhaka to St. Martine's office-cum Barrack, Dormitory
- Solar/Wind energy for the project office complex
- Commissioning of a ship for research & eco-tourism

Empowerment of Coastal Fisher Community (ECFC) Project (DoF)

1) Vill. Organization, (4 villages) (St. Martine's Marine Fisheries Management)
   - 8 organised = Male +Female
2) Capacity building / linkage for AIG
   - training : 50 training sessions so far
3) Grant for organizations (as seed money)
4) Participatory Resource Management
5) 2 schools, Health care, Sanitation, legal aid
6) Village resource centers

Coastal & Wetland Biodiversity Management Project (CWBMP) - (DoE)

Primary role; Implementation of ECAs

ECA – boundary definition/land tenure

- BD Poush has been awarded the job of community mobilization (Starting April 2005)

Village Conservation Groups (VCGs)
- Resource management
- Awareness
- Alternative livelihood
- Tourism
- Habitat management

Components of all three projects, working on 500-600 households, were described and analyzed. Room for working together became evident. After a thread-bread discussion, the following recommendations were made.

Recommendation:

- All agreed to contribute and participate in the preparation of the Master Plan, emphasizing on:
  - ◊ Enforcement of the ECA to conserve biodiversity
  - ◊ Establishment of fish sanctuary and marine park
  - ◊ Promotion of nature tourism based on assessed carrying capacity of the island in relation to waste disposal and drinking water availability. Tourism infrastructure in Teknaf preferred
  - ◊ Empowerment of fisher community through group mobilization and alternative skill training
  - ◊ Expressed reservation about a move to depopulate St. Martin's island
- Representatives of active projects agreed to meet quarterly and share programs of on-going activities in the St. Martin's Island.
- Appreciated the facilitating role of the PDO-ICZMP, an inter-Ministerial set-up, and suggested continuation of the role in future.

List of Participants

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