

## DFID's Support to PDO-ICZM

DFID Bangladesh has agreed to provide budget support for the development of an Integrated Coastal Zone Management Program (ICZMP) through the Program Development Office (PDO). The objectives of this support is threefold:

- a) to support the broader development goals for the coastal region that will be addressed through the PDO;
- b) to use DFID Bangladesh's comparative advantage and experience (specially through the Chars Programme) to inform and influence design and development of the ICZM process, particularly in areas of livelihoods, institutional development and private sector linkages; and
- c) to identify (initially in conjunction with RNE and GoB) investment opportunities in the coastal areas.

DFID Bangladesh's support totals to £600,000 and will cover a period of 18 months. An MoU has been signed between Royal Netherlands Embassy and DFID Bangladesh for administration of the fund.

DFID's fund will be used for four basic approaches:

- support the technical assistance team : a team of national and international consultants in the areas of institutional development, local governance, rural livelihood and private sector development will be provided.
- stakeholder consultation : It is proposed that this consultation process will be more than a series of 'one off events' but rather will deliver new relationships with communities and institutions of the coastal region. Specifically, this exercise will enable the PDO to build a new framework, with communities and institutions becoming 'design partners' in the ICZM design process.
- knowledge management : The application of the principles that highlight the fundamental need for new knowledge and continuous learning will be critical to the success of this new approach. Specifically, the approach needs to be committed to both generating and disseminating the knowledge and understanding created by this development process, including the creation of a database.
- unallocated fund : This is to be applied to activities leading towards the design process for ICZM. The principle guidance for use of funds should be that they are used to assess new areas of understanding not currently being addressed.

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## Coastal Zone Asia Pacific Conference, 2002

12-16 May, 2002, Bangkok, Thailand

An international conference focusing on the coastal zones of the Asia-Pacific region was organized recently in Bangkok. It brought together more than 200 regional and international researchers, policy-makers, interest groups and communities from 30 countries to address and discuss issues of common concern. Key themes were: i) sustainable coastal activities; ii) coastal ecosystem management; iii) community/ resource interactions; iv) coastal resource economics & sustainability; v) coastal area planning; and vi) integrated coastal policies.

A total of 68 oral presentations in 4 plenary sessions and 10 technical sessions were made. About 50 posters were exhibited. A group of participants from Bangladesh attended the CZAP (Photo). During this conference, a workshop emphasizing the role of education was also held.



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The PDO-ICZM is one of the conference partners and is the local contact of this conference in Bangladesh. The CZAP 2002 conference documents are available at the PDO library. The proceedings of the conference is yet to be released on CD-ROM.

The CZAP 2004 will be held in Brisbane, Australia.

## Coastal Livelihoods Analysis On-going

Within the aegis of the PDO-ICZM, a Coastal Livelihoods Analysis (CLA) has been planned. A perception survey of direct stakeholders is now being carried out involving checklist-based interviews, group workshops and detailed life stories. A team of two researchers with assistance from senior members of the PDO is engaged in data collection. They are visiting selected areas throughout the coastal belt. The survey is being undertaken with help of several partner organizations including projects and NGOs. Among these are CEGIS monitoring team in Khulna KJDRP area, Sundarban Bio-diversity Conservation Project (SBCP) and Shushilan in Sundarban, BRAC in Khulna urban area, Patuakhali-Barguna Aquaculture Extension Project (PBAEP) and CODEC in Patuakhali, Char Development and Settlement Project II (CDSPII), Sagarika in Noakhali and NRDS in Lakshmipur.



Partners assist in selection of survey villages and identification of households. They also help in organizing validation workshops that take place in each survey area after the completion of interviews.

The survey team will visit Chakaria, Moheshkhali/Kutubdia and Chittagong in July.

The survey is expected to be completed in the first week of August and an analysis has been planned by end of September 2002.

## Attempts & approaches for delineation of the coastal zone

**Background:** Definition and delineation of the coastal zone had been a matter of discussion for long time and generated different views. When considered from single sector perspective, the matter is simple. For example, Soil Resources Development Institute and Department of Public Health Engineering have their own definitions and delineations. Attempts to define coastal zone for multisectoral and integrated approach dates back to early eighties. Based on geomorphology & hydrology, Coastal Environmental Management Plan for Bangladesh (CEMP), (UN/ESCAP 1988) considered five greater coastal districts (Chittagong, Noakhali, Barisal, Patuakhali and Khulna) as coastal zone. Reviewing many options, the GoB policy note on ICZM (1999) mentioned "Coastal areas are diverse in function and form: they do not lend themselves well to definition by strict spatial boundaries. In the spirit of focusing attention for management & planning purposes, we may delineate coastal zone in line with recognized administrative boundaries in Bangladesh and this would include the same 5 greater districts". However, the GoB Policy Note did not define the seaward boundary. The Inception Report of the PDO-ICZM (2001) suggested EEZ boundary as the seaward boundary and 16 sea & estuary facing districts as the landward boundary of the coastal zone.

**Context:** However the discussions continued and even rose at the Technical Committee of the ICZMP. This attempt is to look at delineation of the coastal zone more critically and subdivide the zone using much wider criteria. In setting the criteria to define and delineate the coastal zone and subdividing for management purpose we reviewed the definition, system and criteria used in Alaska, Nicaragua, the Netherlands, Germany, India and Sri Lanka

**Approach:** In Bangladesh context, the physical influence of the sea to the land, the tide is important. Tide brings salt to the land through surface and ground water that influences the agrarian economy of the country. The saline intrusion and effects of the tidal surge extends the vulnerabilities context of the coastal zone even beyond the coastal opportunity impact due to the usual flat terrain from the sea inward. We have attempted here to define the landward coastal boundary based on salinity intrusion, tidal interplay and cyclone risks.

Salinity (soil, surface water and ground water) intrusion, cyclone risks and tidal intrusion extent have been analyzed for each of the Upazilas of the southern half of the country. A code list has been prepared to provide weight to the variables of the parameters. A matrix has been prepared following the coded values by Upazilas. The Upazilas that received value 1 and above is considered to be within the coastal zone. For administrative and management reasons, if an Upazila of a district received value of 1 or above, than the entire district has been considered under coastal zone.

**Proposal:** A total of 19 districts (Jessore, Narail, Gopalganj in addition to 16 districts defined earlier) are now proposed, pending further verification, under the coastal area. EEZ could be the seaward boundary that shall enable better management of the deep-sea fishery and the gas exploration.

Following interactions of the land, fresh water and marine environment, coastal area could be stratified into:

*Exposed coast:* Upazilas along the coastline having immediate exposure to and interactions with the resources and facing the vulnerabilities contexts.

*Interior coast:* The neighboring Upazilas of the immediate coast, which are not along the coastline but enjoying spill over of coastal resources and facing vulnerabilities context accordingly.

*Buffer coast:* Upazilas following the interior coastal Upazilas having indirect effect of the coastal resources and vulnerabilities

Exposed and interior coasts together makes the coastal zone.

The coast could also be sub divided following different perspectives and setting criteria:

- geo-morphological and hydrological variations (e.g. hydrological regions in the NWMP);
- different ecosystems and ecological regions (e.g. Mangrove, old land Ganges basin etc. or Agro-ecological zones);
- vulnerabilities context and risks (e.g. cyclone risk zone, erosion zone etc.);
- socio-economic conditions of the coastal livelihood groups (e.g. poor, ultra poor etc.); and
- opportunities for the coastal livelihood groups (e.g. shrimp farming, salt farming, ports, EPZ etc.)

The PDO-ICZM will appreciate comments/suggestions from the interested citizens in this regard (pdo@iczmpbd.org).

### A PDO-ICZM feature

## Hamida's family taken out of poverty via integrated aquaculture

Hamida and Forkan Majhi live with their four children in Ballavpur village, in the Patuakhali District of Southern Bangladesh.

They have no farmland, just a homestead with a pond, which Forkan inherited from his father. Forkan is a rickshaw puller. In 1999 they became the members of a training group for Integrated Pond Farming, after the Department of Fisheries-Danida Patuakhali Barguna Aquaculture Extension Component (PBAEC) field worker, Ms. Shewli Chakraborty, asked Ballavpur villagers if they were interested in improving the use of their ponds and homestead poultry and vegetable production.



Hamida went to all six training sessions, but Forkan attended only four, as he had to earn USD .9 daily from rickshaw pulling to buy food. The family learned how to use all the space in and around the pond efficiently for fish, poultry and vegetable culture. Before the training they used to stock too many fingerlings (finger-size fish) in the pond. Fish growth was very poor due to shortage of food in the pond. Now Hamida will stock only one fingerling per square meter, she knows the benefit of sunlight for algae production and that chicken and cow manure can be used to increase natural fish food formation.

During the last year they harvested 157kg fish from their 480 square meter pond, out of this they consumed about 50kg. The rest they sold for USD103. They have 16 ducks and chickens, the manure is used as fertiliser in the pond. Hamida uses the income from egg sales for the education of the children and for emergencies. She grew vegetables for home consumption and managed to sell some extra production for USD14.

To date 68,000 people (one male and one female from 34, 000 households) have received training in this manner and 80% of them have adopted the technology productively. A water surface area the equivalent of 1,100ha (27,500 small ponds) has been brought under improved production since 1999. As a consequence an additional 2,000 tonnes of fish worth in the order of USD2 million are produced in the component area annually. The typical production level from homestead ponds prior to PBAEC training in this area is 500Kg/ha. The ponds are small at 400 square meters and often not managed correctly either with too many fish (this example), or too little just for the occasional sale or harvest for a special occasion. Fish production typically accounted for less than 5% of the annual income of the rural poor. By following a series of relatively simple techniques the use of limited inputs available to the poor can be put to best use and productivity increased 5 fold (from 20Kg to 100+Kg per annum for a typical small pond). The integrated farming technology provided, helps the farmers to optimise the use of the limited resources available to them and reduces risks by means of diversification of the income generating activities.



When we visited her house, Hamida told us "we have no chair, where you will sit?" Her husband was out pulling the rickshaw. But Mrs. Hamida is a very co-operative and social woman. She knows how to throw the cast net and showed us some fish from her pond.

Before Forkan used to rent a rickshaw, after selling fish, he added his savings and purchased two second-hand rickshaws. He is now earning USD1.4/day from one rickshaw and he is getting USD0.5 rent for the other. Hamida is grateful to Shewli Chakraborty, Extension Trainer of PBAEC for her close assistance behind this achievement.

*A feature of the Patuakhali Barguna Aquaculture Extension Project, contact : [pbaep@citechco.net](mailto:pbaep@citechco.net)*

## Sea turtle conservation in coastal waters of Bangladesh

Sea turtles, the ancient marine creatures are now globally endangered. There are seven species of sea turtles roaming in the world's water. All sea turtles are included in the Appendix I of CITES (Convention of International Trade in Endangered Species of Wild Fauna and Flora) and all species except the flatback are listed in Appendices I and II of CMS (Convention on the Conservation of Migratory Species of Wild Animals).

Since time immemorial, sea turtles use to come to nest on the sandy beaches of Bangladesh at different sites along the 710-km coastline from Sundarbans on the southwest and at the entire southeast coast including the St. Martin's island. Five species of sea turtles have been reported to occur in the territorial water of Bangladesh, which are Olive Ridley (*Lepidochelys olivacea*), green turtle (*Chelonia mydas*), Hawksbill turtle (*Eretmochelys imbricata*), Loggerhead turtle (*Caretta caretta*) and Leatherback turtle (*Dermochelys coriacea*). Compared to the situation in the past, nesting population has been declining day by day due to severe exploitation of eggs and killing of nesting turtles by fishing nets and other threatening activities. Most of the threats are of anthropogenic in origin. Now a days, mostly olive ridley and occasionally green turtles come to nest in the beaches of Bangladesh. Nesting of a single individual of Latherback was recorded in 1998. Many sites are not systematically monitored to confirm nesting turtles.

### Major threats

- Beach erosion and alteration
- Fishing nets and vessels
- Nest predation and stealing
- Increasing fishing pressure
- Industrial establishment

However, despite having all these adverse conditions, good numbers of sea turtles continue to nest in the coasts of Teknaf Peninsula (southeast) and Sundarbans (southwest) of Bangladesh. Suitable nesting beaches have been severely reduced in number, but several important sites remain, particularly the entire St. Martin Island, Shahparir Dwip in Teknaf Upazila, Inani Beach in Ukhia Upazila, Himchhari Beach and Sonadia island, Kutubdia island in Cox's Bazar Sadar district, Dimer Char and Dublar Char in Khulna district. It is important and urgent that an action plan be developed for the conservation of sea turtles whatever available in Bangladesh waters.



CNRS (Center for Natural Resource Studies) initiated sea turtle conservation activities in St. Martin's Island and in the Teknaf Peninsula since October 1998 to conserve sustainable population of sea turtles in the territorial waters of Bangladesh. Besides releasing over 35,000 hatchlings through in situ (pro-

### Achievements so far

Year	Egg preserved	Hatchling Released to sea
Oct'98 - June'99	Only in situ	2114
Jul'99-June'00	11604	7928
Jul'00-June'01	13548	8363
Jul'01- May'02	23188	16764
Grand Total	48340	35169



protecting sea turtle eggs and hatchlings in natural nests) and ex situ (collecting eggs and incubating in hatchery to hatch and subsequently released to the sea) hatching massive awareness campaign has been conducted in the southeast coastline. CNRS prepared and distributed various awareness materials including leaf lets (Bengali), posters, caps, T-shirts on

### Conservation sites

- St martin
- Shaparidwip
- Matarbari
- Inani
- Kutubdia

sea turtles and placed awareness billboards and signboards at different public places in this regard. The experiences and the approaches of CNRS in conservation of sea turtles have been shared with peers through attending regional and international symposia and presenting oral paper and posters at "International Sea Turtle Conservation and Biology Symposium" held in 2000 and 2001 in Orlando, USA and Philadelphia, USA and the second ASEAN Sea Turtle Symposium in Kota Kinabalu, Malaysia respectively.

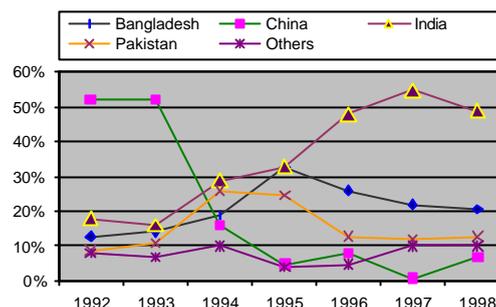
### Call to conserve

- Declare pacific ridley nesting beach at St martin as turtle reserve
- Plant *ipomea/panderus* to protect sand dunes from torrential rains
- Leave rock free space in the nesting area
- Motivate fisher and provide subsidy to repair nets cut to save turtles
- Boulder nets to be placed leaving nesting beaches aside
- Nest predation by dogs and stealing has to be stopped

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## Ship Breaking: Needs to Care

The ship breaking activity at Fauzdarhat coast in Chittagong was initiated in 1969. Government planning and administration concerning this activity is handled by the Mercantile Marine Department. Ministry of Commerce and Industries, Chittagong Port Authority, BIWTA and other Govt. organizations are also dealing with the sectoral issues of ship breaking. Fauzdarhat coast is the paradise of ship breaking having long uniform intertidal zone, low labour cost, existing transport facilities like Dhaka-Chittagong highway and railways, and more or less stable weather condition. Nationwide total breaking and breaking of very large vessels between 1992-1998 are presented in Figure.



At present there are approximately 50 established ship-breaking yards in this area. Vessels are beached by own propulsion power at high tide and during low tide vessels are lying stable on their flat bottom. The ship is cut down into different parts and winched to the shore at high tide and further large portion is cut into suitable pieces on the beach for better loading and transportation. The valuable components (e.g. small motors and pumps, navigation equipment, life saving equipment, furniture, electrical cabling, utensil, etc) are dismantled and sold to second hand market situated on both the sides of the Dhaka- Chittagong high way. It needs 5-6 months to dismantle a large tank.

The ship breaking industry is feeding to the steel mills, steel plate re-manufacturing, asbestos re-manufacturing, lubricating oil regeneration and other industries.

This activity has a great importance of our national economy and saving a lot of foreign currency by reducing the import of steel materials. Besides, they pay various taxes and duties such as import duties (7.5%), yard taxes (2.5%), etc. The sector provides at about US\$ 50 million per year to the Govt. Approximately 50,000 people are engaged directly in the ship breaking yards. In addition about 2,00,000 people are also engaged in different businesses related to ship breaking.

The ship breaking has a negative impact on our coastal environment. Ship breaking activities are practiced without following any rules and regulation and safety measures for the environment as well as for the workers. They discharge ballast water, bilge water and oils in the coastal water and oily film spreads over the water body hampering the photosynthetic process resulting the ultimate breakdown of food chain. Polycyclic Aromatic Hydrocarbon (PAH) and other crude oils are environmentally harmful and can have detrimental effect on marine environment especially on aquatic birds. Besides this, the heavy metals, paint materials (PCBs and TBT), radioactive elements, etc., are contaminating the water body resulting inhibitory effect on the organisms. Due to pulling the large ship or large parts of a ship in near shore area, soil losses its normal properties, which accelerates the rate of erosion of the seashore. Asbestos is minced and made powder and the small fiber blows in the air and animals including man are seriously affected due to inhalation of this fiber and suffers lung originated diseases like asthma, bronchitis, lungs cancer, etc. Harmful gases generated during cutting process are responsible for respiratory disease and asthma. All the ship born pollutants enter into the food chain and are accumulated into the biotic community causing various diseases.

Worker's accident is a normal phenomenon in the ship breaking yards. After cutting a large and heavy plain sheet the workers carry it on shoulders and transferred the sheet from cutting area to storage area or loaded on to a truck. During the pulling of iron sheet, many workers face serious accident even leading to death. The numbers of accident in case of workers are higher during rainy season because yards don't have any well-constructed roads and are bound to carry the large and heavy sheets on bare foot even during rain resulting many accidents. Besides these, explosion and fire are disastrous factors and unknown number of workers become disable or die during breaking practice every year.



The International Maritime Organisation (IMO) has fixed lifetime of a vessel as about 25 years. It is expected that ship-breaking activities along the beaches of the Chittagong coastline will increase during the next few years. So, the ship breakers will have to make sufficient arrangement for maintaining working environment as well as to protect the coastal environment. In this connection, Govt should have monitoring body for preparing the guidelines with a view to take care of ship breaking activities for protection of the resourceful coastal environment and human resources.

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## Institutional & legal study initiated

An in-depth analysis of the institutional and legal mechanisms has been initiated. The objective is to establish procedures of harmonization between institutional actors with supporting legal instruments to contribute to strengthen livelihood of coastal communities. This analysis will be tried-out through case studies of the institutional and legal mechanisms around issues of critical importance. Tentatively, the selected issues are: settlement on new lands, shrimp cultivation and disaster management.

The case study on shrimp is on-going. The case study takes into account other relevant studies/activities under the 4th Fisheries Project, Fisheries Futures and Fry Collection Action Plan. Case studies would at least include: identification of specific management issues and decisions to be taken; identification of the actors and parties involved; analysis of their interactions; identification of the legal and regulatory instruments these actors have available and analysis of the way they are used; conclusions on the efficiency and effectiveness and recommendations for improvement.

Other case studies are now being formulated.

### Coast in the Press

- ❑ Small Bangladesh in Bay (Observer, 20/4/02)
- ❑ Meghna erosion devours 5 villages in Hatiya (Observer, 29/4/02)
- ❑ 22 killed by tigers in last 3 months (Independent, 2/4/02)
- ❑ Bangladesh, India to protect Sundarbans jointly (Star, 4/4/02)
- ❑ Formulate national strategy to promote rainwater harvesting (Star, 2/4/02)
- ❑ Contingency plan to deal with oil pollution (Independent, 5/4/02)
- ❑ Govt. decides to set up airport at Kuakata (Star, 19/4/02)
- ❑ Govt. will examine possibility of making tourism center near Sundarbans (Independent 28/6/02)
- ❑ 1080 fishermen village to be set up in Khulna (Observer, 12/5/02)
- ❑ Fishermen of six coastal districts in dire straits (Independent, 24/5/02)
- ❑ Shrimp worth Tk. 30 crore washed away (Observer 14/6/02)
- ❑ Oil slicks continue polluting Karnaphuli (Star, 12/6/02)
- ❑ CEPZ herald new era in economy (Star 26/6/02)

### Population Census 2001

	Coastal Zone	Bangladesh
<b>Administrative Statistics</b>		
District	16	64
Upazila/Thana	131	507
Union	1154	4484
Village	14578	87319
Municipalities	60	223
<b>Population</b>		
Total (million)	30.6	123.2
Male (million)	15.5	62.7
Female (million)	15.1	60.4
Sex ratio	102.2	103.8
<b>Household</b>		
Number (000)	5977	25362
Size	5.1	4.8

### Website

The PDO-ICZM website is launched in November, 2001. The website contains an introduction of the PDO-ICZM, inventory of relevant projects, who is who, summary of all PDO-ICZM reports/publications, all copies of the Coast News, proceedings of all TC meetings and many other items.

Your comments on the website will be appreciated.

The address of the site is [www.iczmpbangladesh.com](http://www.iczmpbangladesh.com)

## Reducing Vulnerability to Climate Change (RVCC) Project: An Introduction

The Reducing Vulnerability to Climate Change is the first initiative of its kind in Bangladesh. It is a three-year project funded by the Canadian International Development Agency (CIDA), running from January 2002 - March 2005. The RVCC Project will work in six districts in southwest Bangladesh - Bagerhat, Gopalganj, Jessore, Khulna, Narail and Satkhira - through partnerships with local NGOs and communities. The Project goal is to increase capacity of communities in southwest Bangladesh to adapt to the adverse effects of climate change. The Project purpose is to build local capacity to anticipate and adapt to negative impacts stemming from climate change and to advocate on climate change issues.

To date, the RVCC has completed a vulnerability assessment in the southwest region. Partners are currently being recruited.

For additional information : *Claudia Schaerer, Project Coordinator, RVCC Project, CARE-Bangladesh, Khulna Field Office, House: 14, Rd: 113, Khalishpur Housing, Khulna, Phone: 041-761250, mobile: 017818995, Email: car-ervcc@khulna.bangla.net*

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### About PDO-ICZM

The PDO-ICZM is constituted and guided under the mandate of Inter-Ministerial Steering Committee and Technical Committee. The Ministry of Water Resources is the lead Ministry.

*The objectives have been elaborated as to:*

- identify a policy and institutional framework and develop a strategy for coastal development;
- defining measures to reduce the risk of loss of life and damage of property due to cyclonic storms and tidal surges and enhancing the capacities of the coastal communities to cope with immediate natural shocks and recover from the losses with dignity;
- develop a strategy for the management of both risks and consequences of disaster, which would include prevention, emergency response and post-disaster recovery;
- initiate a process approach to coastal development that harmonises the policies, programmes, procedures and activities of different GoB institutions, NGOs and donor supported projects active in the coastal zone;
- develop a strategy for enhancing civil society (including the local communities) capabilities and participation in coastal development;
- identify strategies and activities to enhance livelihoods development and reduce vulnerabilities in the coastal zone; and
- develop the knowledge base, improve awareness and establish a monitoring and evaluation system for coastal development.

In the preparatory phase of ICZM, the PDO will operate till December 2004.

**From this issue, a version in Bangla is also available and circulated. Projects/Initiatives are encouraged to send news & information relevant for the coastal zone, preferably in English and Bangla both, for the next issue of Coast News, to be published in October 2002.**

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