
IUCN Asia, Ecosystems and Livelihoods Group & the Bay of Bengal Large Marine Ecosystem Project
Integrated Coastal Management (ICM)

Best Practices and Lessons Learned from the South Asian Countries of the Bay of Bengal Large Marine Ecosystem (BOBLME); India, Bangladesh, Maldives and Sri Lanka

Workshop Report

28-29 July 2010

Colombo
Sri Lanka
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<td>AFCOF</td>
<td>Andhra Pradesh State Fishermen Cooperative Societies Federation</td>
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<td>APCs</td>
<td>Areas of Particular Concern</td>
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<td>CORIN</td>
<td>Asian Coastal Resources Institute-Foundation</td>
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<td>AECEN</td>
<td>Asian Environmental Compliance and Enforcement Network</td>
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<td>ASEAN</td>
<td>Association of Southeast Asian Nations</td>
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<td>AECP</td>
<td>Atoll Ecosystem Conservation Project</td>
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<td>BIMSTEC</td>
<td>Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation</td>
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<td>BOBP-IGO</td>
<td>Bay of Bengal Project - Intergovernmental Organisation</td>
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<td>BOBLME</td>
<td>Bay of Bengal Large Marine Ecosystem</td>
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<td>BOBMLE-SA</td>
<td>Bay of Bengal Large Marine Ecosystem South Asia</td>
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<td>BCCSAP</td>
<td>Bangladesh Climate Change Strategy and Action Plan</td>
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<td>CEGIS</td>
<td>Center for Environmental and Geographic Information Services</td>
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<td>CNRS</td>
<td>Centre for Natural Resource Management</td>
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<td>CECU</td>
<td>Coastal Engineering Control Unit</td>
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<td>CRMPSJ</td>
<td>Coastal Resource Management Plan for South Johor, Malaysia</td>
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<td>CWBMP</td>
<td>Coastal Wetland Biodiversity Management Project</td>
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<td>CZ</td>
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<td>Coastal Zone Management Plan</td>
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<td>CBFM</td>
<td>Community based Fisheries Management</td>
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<td>CBICM</td>
<td>Community based Integrated Coastal Management</td>
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<td>CODED</td>
<td>Community Development Centre</td>
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<td>Corporate Social Responsibility</td>
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<td>ECFC</td>
<td>Empowerment of Coastal Fishing Communities</td>
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<td>EAF</td>
<td>Ecosystem Approach to Fisheries</td>
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<td>Ecosystems and Livelihoods Group</td>
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<td>ECFC</td>
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<td>EEZ</td>
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<td>Fourth Fisheries Project</td>
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<td>Global Environmental Facility</td>
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<td>GESAMP</td>
<td>Group of Experts on the Scientific Aspects of Marine Environmental Protection</td>
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<td>IOGOOS</td>
<td>Indian Ocean Global Ocean Observing System</td>
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<td>IOSEA</td>
<td>Indian Ocean South - East Asia Marine Turtle Memorandum of Understanding</td>
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<td>IOTC</td>
<td>Indian Ocean Tuna Commission</td>
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<td>ITQs</td>
<td>Individual Transferable Quotas</td>
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<td>IOC</td>
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<td>Integrated Coastal Management</td>
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<td>IAEA</td>
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<td>International Collective in Support of Fishworkers</td>
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<td>International Coral Reef Initiative</td>
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<td>International Waters Learning Exchange and Resource Network</td>
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<td>LMEs</td>
<td>Large Marine Ecosystems</td>
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<td>Large-scale Fishers</td>
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<td>MFF</td>
<td>Mangroves for the Future</td>
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<td>Marine Fishing Regulation Act</td>
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<td>Marine Protected Area</td>
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<td>Marine Resources Evaluation and Planning</td>
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<td>MATYAFED</td>
<td>Federation of Fishermen Cooperatives in Kerala</td>
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<td>MSY</td>
<td>Maximum Sustainable Yield</td>
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<td>MOF</td>
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<td>NAPA</td>
<td>National Adaptation Plan of Action</td>
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<td>National Aquatic Resources Research &amp; Development Agency</td>
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<td>NCDC</td>
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<td>National Development Plan</td>
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<td>NFDB</td>
<td>National Fisheries Development Board</td>
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<td>NOAA</td>
<td>National Oceanic and Atmospheric Administration</td>
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<td>NACA</td>
<td>Network of Aquaculture Centres in Asia-Pacific</td>
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<td>NGOs</td>
<td>Non Governmental Organisations</td>
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<td>NORAD</td>
<td>Norwegian Agency for Development Cooperation</td>
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<td>PEMSEA</td>
<td>Partnerships in Environmental Management for the Seas of East Asia</td>
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<td>PKSF</td>
<td>Palli Karma Sahayak Foundation</td>
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<td>RCMP</td>
<td>Regional Coastal and Marine Programme</td>
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<td>SHGs</td>
<td>Self help groups</td>
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<td>SSF</td>
<td>Small-scale Fishers</td>
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<td>SASP-SACEP</td>
<td>South Asia Co-operative Environment Programme</td>
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<td>SAARC</td>
<td>South Asian Association For Regional Cooperation</td>
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<td>Abbreviation</td>
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<td>SEAFDEC</td>
<td>Southeast Asian Fisheries Development Center</td>
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<td>SIFFS</td>
<td>South Indian Federation of Fishermen Societies</td>
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<td>SAM</td>
<td>Special Area Management</td>
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<td>SAP</td>
<td>Strategic Action Plan</td>
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<td>SIDA</td>
<td>Swedish International Development Agency</td>
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<td>UNCLOS</td>
<td>United Nations Convention of the Law of the Sea</td>
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<td>UNEP</td>
<td>United Nations Environmental Program</td>
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<td>UNDP</td>
<td>United Nations Development Program</td>
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<td>VGF</td>
<td>Vulnerable Group Feeding</td>
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<td>WARPO</td>
<td>Water Resources Planning Organisation</td>
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<td>WTO</td>
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Executive Summary

The Bay of Bengal – which has over 400 million people - has been identified as one of the world’s sixty-four Large Marine Ecosystems (LMEs). Under the Bay of Bengal Large Marine Ecosystem (BOBLME) Project, implemented with GEF and bilateral donor funding support by the Food and Agriculture Organisation (FAO) of the United Nations, the Maldives, India, Sri Lanka, Bangladesh, Myanmar, Thailand, Indonesia and Malaysia, are working together to lay the foundations for a coordinated programme of action designed to improve the lives of the coastal populations through improved regional management of the Bay of Bengal environment and its fisheries.

One of BOBLME’s objectives is to promote the development and implementation of regional and sub-regional collaborative approaches to common and/or shared issues affecting the health and status of BOBLME. A subcomponent of this is to identify and evaluate the large and diverse body of information and experience associated with promoting: (i) community-based fisheries and habitat management; (ii) co-management; and (iii) the creation of alternative livelihoods among fisher communities in the region; activities designed for purposes of reducing impact on coastal resources.

IUCN – International Union for the Conservation of Nature - Asia’s Regional Coastal and Marine Programme (RCMP), a programme of the Asia Ecosystem and Livelihoods Group, supports sound policy and integrated coastal management interventions as a balanced response to coastal ecosystem issues, considering ecosystem management within the context of the long-term needs of coastal and marine resource users. IUCN partnered with BOBLME to undertake some of the activities under this subcomponent, specifically,

- To produce a literature review and synthesis of findings on ‘Integrated Coastal Management (ICM) Best Practices and Lessons Learned’ (Bangladesh, India, Sri Lanka, and Maldives); and
- To organise and facilitate an ICM Best Practices Workshop’ workshop for the four countries.

Fifty participants from the four BOBLME-SA countries, as well as two representatives from Southeast Asia attended the workshop held in at the Taj Samudra Hotel in Colombo, Sri Lanka on July 27th and 28th, 2010.

After the welcomes and traditional opening of the workshop, Dr. Rudolf Hermes, Chief Technical Officer of BOBLME presented an overview of the project, giving not only the background to the project but also its expectations and achievements so far.

A keynote presentation was made by Dr. Jayampathy Samarakoon, who introduced concepts (Ecosystem approach to fisheries, community-based integrated coastal management, co-management and sustainable livelihoods). He discussed the role of resource rent in marine fishery and in ICM and presented selected case studies from the four countries. He continued with the challenge of applying resource rent based upon lessons from case studies and posed questions about whether the capacity to make the necessary transitions was available and what we need to make those transitions.
The keynote presentation was followed by overviews of community-based integrated coastal management and co-management in the four countries. In Bangladesh, the focus centred round production; approaches to integrated management. The need to study the strengths and weaknesses of post ECFCC projects in the light of lessons learned from past CBFM projects in freshwater inland areas; institutionalisation of CBFM approach in coastal areas; the need for provision of endowment fund for sustainable operation of CBOs; the need for immediate attention to implement strategies and action plans outlined under coastal and marine fisheries sub-strategies and the need for political will for coastal and marine fisheries were presented as recommendations.

In the Maldives, old community-based management practices do not exist now due to a change in community needs and the legal system (from Vaaru to modern laws), but that co-management practices do exist. The general context of the country is that it is moving to decentralised governance. Coastal zone development and management bodies include central bodies and local bodies.

The Sri Lankan overview focussed on the evolution of coastal zone management on the island. Coastal zone management began based on an issue-oriented need (erosion), as well as development-oriented needs (such as tourism and fisheries). A third generation coastal zone management plan has evolved from little public participation to an extensive participatory process. The way forward for the coastal zone management plan in Sri Lanka is the evaluation of the programme itself, including its processes and outcomes. Inclusion of the impacts of the climate change to the coastal resources management programme and evaluation of the existing institutional system for coastal resources management are needed for future requirements.

The overview for India detailed existing regulations and rights of fishermen in India, revealing the complexities and conflicts that arise. The important social, legal and management issues specifically related to capture fisheries of India are the reduction of excess fishing capacity; multi-species management of resources, control of discarded incidental catches including marine mammals, sea birds, sea turtles etc.; development and use of selective, environmentally safe and cost effective fishing gear and technique; and sustainable development of unexploited or under-exploited species, protection of endangered species and strict compliance of fishing area norms- especially with artisanal fishing and deep-sea fishing. The overview also presented several examples of co-management in India.

Following the overviews for the four South Asian countries a summary of the review for the rest of the BOBLME-SA countries – Southeast Asian countries – was presented. The purpose of this review was to identify and review relevant concepts/ theories and definitions of ICM, community-based management and co-management; identify ICM, community-based management and co-management related policies; identify ICM, community-based management and co-management practices that work and practices that should be avoided and identify existing knowledge gaps concerning ICM initiatives. The main ecological resources in relevant countries were at risk. The coverage of mangroves was declining, coral reefs are moderate to poor and are damaged, seagrass beds have decreased and demersal fisheries have been over-exploited. The early initiatives of ICZM in Indonesia were as a response to over-fishing; in Malaysia, as a consequence of coastal erosion; in Thailand, as a result of coral reef destruction, mangrove deforestation and decline of fishery stock; in Myanmar, there is no documentation of early projects. The current policies on ICZM in the region and Co-
management/Community-based ICM initiatives in the region were listed. A case study of an ICM project in Post-Tsunami Aceh was also presented.

After these overviews, working group discussions were conducted round four questions:

1. What is the current status of CB-ICM in each country?
2. What factors hinder or support the development of CB-ICM in each country? Identifying case study examples either documented or undocumented.
3. What change is required nationally and locally for CB-fisheries/ habitat management and co-management approaches are to be more successful and more widely spread?
4. How could this change be effected, what action is necessary, and who could do it (responsible actor, support actors)?

These discussions were followed by another round of discussions. The delegates were asked to suggest

1. What strategies can be established to ensure that the relevant knowledge, information and governance capacity be developed for local resource managers and national policy decision makers?
2. What advocacy and awareness strategies/ actions are needed to support the main thrust of promoting CB-ICM in the BOBLME-SA sub-region (the statement)? Is it possible to identify key messages and target audiences?

The recommendations by the delegates centred round three main areas of focus:

1. Information and knowledge generation, sharing and management
2. Capacity building training, awareness creation and advocacy
3. Institutional arrangements, policies, laws.

The running thread of commonality in all four countries was that information management and sharing was critically needed in the region. Some countries noted that information was available but need to be made accessible to all stakeholders.

All four countries noted the need for focussed capacity building of relevant stakeholders. India highlighted the need for inclusion of social aspects into the curriculum of fisheries courses and the need for a review of current curricula.

Again, a strong commonality was the recommendation that mandates of government institutions were delineated, so that jurisdictional boundaries and duties were clarified. Another commonality was that legal strengthening for co-management was required.
1. Introduction: Background

The Bay of Bengal – which has over 400 million people - has been identified by the Food and Agricultural Organisation (FAO) as one of the world’s sixty-four Large Marine Ecosystems (LMEs). Under the Bay of Bengal Large Marine Ecosystem (BOBLME) Project, the Maldives, India, Sri Lanka, Bangladesh, Myanmar, Thailand, Indonesia and Malaysia, are working together to lay the foundations for a coordinated programme of action designed to improve the lives of the coastal populations through improved regional management of the Bay of Bengal environment and its fisheries. The BOBLME project is a five year project with a total estimated budget of US$ 31 million. The project will cover the following five areas of work:

1. Development of a Strategic Action Plan (SAP) to protect the health of the ecosystem and manage the living resources of the Bay on a sustainable basis to improve the food and livelihood security of the region’s coastal population;

2. Improving Coastal/Marine Natural Resources Management and Sustainable Use
   i. Promoting community-based management,
   ii. Improving policy harmonisation,
   iii. Devising regional fishery assessments and management plans for hilsa, Indian mackerel and sharks, and
   iv. Demonstrating collaborative critical habitat management in selected areas.

3. Better understanding of the BOBLME Environment
   i. Improving understanding of the large-scale processes and dynamics affecting the BOB’
   ii. Promoting use of Marine Protected Areas to conserve regional fish stocks’ and
   iii. Improving regional cooperation with regional and global assessment and monitoring programmes.


5. Project management, communication, and monitoring and evaluation.

The objective of BOBLME Component 2 (Coastal/Marine Natural Resources Management and Sustainable Use) is to promote the development and implementation of regional and sub-regional collaborative approaches to common and/or shared issues affecting the health and status of BOBLME.

The objective of the Subcomponent 2.1 (Community-based Integrated Coastal Management) is to identify and evaluate the large and diverse body of information and experience associated with promoting: (i) community-based fisheries and habitat management; (ii) co-management; and (iii) the creation of alternative livelihoods among fisher communities in the region; activities designed for purposes of reducing impact on coastal resources.

IUCN – International Union for the Conservation of Nature - Asia’s Regional Coastal and Marine Programme (RCMP), a programme of the Asia Ecosystem and Livelihoods Group, supports sound policy
and integrated coastal management interventions as a balanced response to coastal ecosystem issues, considering ecosystem management within the context of the long-term needs of coastal and marine resource users. RCMP focuses on knowledge management and capacity development as a key strategy for working in the region and provides a regional link in strengthening coastal management practices at local, national and trans-boundary scales, through a vast network and support system consisting of IUCN secretariat, members, commissions and a wide spectrum of project partners.

IUCN’s engagement in developing and supporting implementation of regional projects, and role in providing technical input for national projects and global initiatives in Asia has lead to the development of a solid partnership between the RCMP and BOBLME project to take forward the work of component 2.1 – Promoting community-based Integrated Coastal Management.

The initial task undertaken by RCMP for component 2.1 is the production of a literature review and synthesis of findings on ‘Integrated Coastal Management (ICM) Best Practices and Lessons Learned’ (Bangladesh, India, Sri Lanka, and Maldives) including the organisation and facilitation of the ‘ICM Best Practices Workshop’ workshop on July 28-29 2010.

This document is a detailed narrative of that workshop.

1.1 Inaugural Session

The workshop commenced with a short address by Dr. Ranjith Mahindapala, Country Representative of the Sri Lanka Country office, IUCN. He formally welcomed the delegates from all four countries: Bangladesh, India, the Maldives and Sri Lanka. He said that he was glad that Sri Lanka was able to host this workshop and invited the delegates to enjoy the hospitality that a peaceful Sri Lanka offered.

After the traditional oil lamp was lit, he invited Mr. Patrick Evans - FAO Representative in Sri Lanka and the Maldives - to give the inaugural speech. Mr. Evans noted that a lot of good work had already been carried out in the area. There were many lessons to be learned from past work. He said he had been a field officer for 22 years, carrying out community-based natural resource management in a number of Asian countries. He noted that community-based fisheries is challenging as it is difficult to have government relinquish authority and to share responsibilities with communities. There was also the challenge of building capacity among communities to empower them and to ensure that everyone had a say. This is not easy to achieve and usually takes years.

Mr. Evans continued that however difficult this was, the potential was outstanding. There was a chance not only to improve the productivity of a resource but also to improve the livelihoods of communities. Current approaches of governments are usually top down. In Sri Lanka, FAO is moving forward to work with small-scale fishers to ensure community involvement in decision-making. More than 60 fish landing sites around the coast of Sri Lanka are being restored, and the current approach is much more participatory.

A main change in Sri Lanka is cessation of the war. The FAO is working in the north on various agricultural projects. Fisheries resources in the north have been protected by the conflict and there may be healthy resources, but there has to be a focus on long-term sustainable management of these
resources. FAO is working towards achieving this, and is currently formulating a road map for long-term
development. He concluded by wishing the delegates all the best and hoped that what was discussed at
the workshop would be applied in the field. There are also aquaculture projects for fresh water prawns,
sea bass and tilapia.

Dr. Rudolf Hermes, Chief Technical Advisor to BOBLME then presented an introduction and historical
context to the BOBLME project. He noted that that the Bay of Bengal Large Marine Ecosystem extended
over 3.0 million km2, across eight countries and affected 400 million people. This is called BOBLME-SA.
Rapid population growth and high dependence on aquatic resources for food, trade, livelihoods, and
increased land use are having major impacts on the marine ecosystem. The Bay of Bengal is experiencing
a) over exploitation of fish stocks; b) habitat degradation, and c) land based pollution, causing
uncertainty whether the ecosystem will be able to support livelihoods in the future.

BOBLME is funded by the Global Environmental Facility (GEF) and the participating countries. Other
donors are the Swedish International Development Cooperation Agency (SIDA), Norwegian Agency for
Development Cooperation (NORAD), the World Bank and - National Oceanic and Atmospheric
Administration (NOAA) of the USA.

LMEs are defined by bathymetry, hydrography, productivity and trophodynamics . However, it
recognises the importance of socio-economics and governance aspects. The BOBLME Project has (5)
components

- Development of an action plan (Strategic Action Plan and institutional arrangements);
- Resources management;
- Understanding the environment (Fish refugia, oceanography and climate change);
- Ecosystem health (Ecosystem Indicators and Pollution Control); and
- Communications, monitoring and evaluation.

This workshop is a part of component 2. Coastal / Marine Natural Resources Management and
Sustainable Use, which seeks to;

- Promote community-based management and integrated coastal management;
- Improve policy harmonisation;
- Devise regional fishery assessments and management plans (sharks, hilsa, Indian
  mackerel); and
- Collaborative critical habitat management.

Again, the focus narrows to (1) promoting community-based management and integrated coastal
management.

Dr. Hermes then defined Integrated Coastal Management (ICM) as ‘a multi-phased process that unites
government and the community, science and management, and sectoral and public interests in
preparing and implementing an integrated plan for the development and protection of coastal
ecosystems and resources’, noting that ICM ultimately contributes to the sustainable development of
coastal areas and sustainable utilisation of their biological resources.
He then defined the Ecosystem Approach to Fisheries (EAF) as an integrated approach to fisheries to balance diverse societal objectives, within ecologically meaningful boundaries. EAF is a way of achieving sustainable development. The BOBLME Project is an opportunity to implement the EAF.

The expected outputs of the BOBLME project are

- Transboundary Diagnostic Analysis;
- Establishment of an institutional arrangement; and
- Commitment from the BOBLME countries to implement a Strategic Action Programme (SAP).

He said that the project expected several additional outcomes:

- **Stronger governance:**
  - Improvements in policy development;
  - Processes for planning and dialogue;
- **Improved resource management:**
  - Better understanding of small-scale fisheries issues;
  - Co-management - Multi-sectoral involvement;
  - Healthier ecosystems;
  - Sustainable fisheries;
- **Improved well-being, greater resilience of coastal communities;**
- **Better knowledge of:**
  - Fisheries for *hilsa* and Indian mackerel;
  - BOBLME’s large-scale processes and ecology;
  - Likely effects of climate change; and
  - Basic ecosystem health indicators in the BOBLME.

He then detailed project activities, noting that 486 Workshops, 77 Studies, 129 international consultant months, 259 national consultant months, data collection, short courses, training, communications, monitoring and evaluation and reporting was expected.

He also stressed that the BOBLME Project is seeking and forming partnerships to achieve its objectives. He listed a range of partners in the project: Asian Coastal Resources Institute-Foundation (CORIN), United Nations Environmental Program (UNEP), United Nations Development Program, FAO, IUCN, International Coral Reef Initiative (ICRI), Global Program of Action (GPA), Intergovernmental Oceanographic Commission (IOC), Indian Ocean Global Ocean Observing System (IOGOOS), Mangroves for the Future (MFF), Indian Ocean South - East Asia Marine Turtle Memorandum of Understanding (IOSEA), Southeast Asian Fisheries Development Center (SEAFDEC), Worldfish, Bay of Bengal Intergovernmental Organisation (BOBP-IGO), South Asia Co-operative Environment Programme (SASP-SACEP), East Asian Seas Action Plan - Coordinating Body on the Seas of East Asia (EASP-COBSEA), Network of Aquaculture Centres in Asia-Pacific (NACA), International Collective in Support of Fishworkers (ICSF), Indian Ocean Tuna Commission (IOTC), Asian Environmental Compliance and Enforcement Network (AECEN), International Waters Learning Exchange and Resource Network (IW Learn), International Atomic Energy Agency (IAEA), Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP), Partnerships in Environmental Management for the Seas of East Asia (PEMSEA), Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) and Universities. He noted that the Association of Southeast Asian Nations (ASEAN) and South Asian Association For Regional Cooperation (SAARC) will be important to effect regional changes.
In Component 2 the review actually takes stock of Community-based Integrated Coastal Management. The Key activities under BOBLME Component 2.1 in 2010 are:

- Literature review of best ICM practices, in particular those related to socio-economics monitoring and livelihoods diversification (on-going);
- A compendium of best practices in ICM is produced and reviewed in a Regional Workshop (on-going);
- The Workshop (on-going) identifies where sites will be selected for ICM outreach programmes;
- drafts policy recommendations (to inform BOBLME Comp 2.2);
- Production of outreach materials in the language of target audiences is produced;
- A plan for holding local dissemination workshops is devised, implemented, and monitored; and
- Local dissemination workshops are held in cooperation with partners to promote ICM best practices.

Shown below is a map of the area.

*BOBLME boundary*
1.2 Keynote Presentation

Dr. Jayampathy Samarakoon then gave a presentation on a Partial Synthesis of Lessons and Best Practices from Integrated Coastal Management and Fishery Management in South Asia.

He noted that the objective of review was to suggest a framework for discussing the possibilities for expanding the scope of governance (decision-making) that integrates fishery co-management into FAO’s ecosystem based approach to fishery management (EAF). His presentation centred on:

- Introduction to concepts: EAF, CBICM, Community-based Fishery Management (CBFM), co-management, sustainable livelihoods;
- The role of resource rent in marine fishery and in ICM;
- Selected case studies;
- The challenge of applying resource rent based upon lessons from case studies;
- Do we have the capacity to make the transition?
- What do we need for making the transition?

He described the review area and noted that there were several fronts (the Ganges-Brahmaputra Estuarine Front, the Myanmar Shelf Slope Front, the Palk Strait Front and the East Ceylon Front) where salinity mixes, giving a massive boost to primary productivities in coastal waters.

He also noted disparities and meeting points of the four countries as listed below.

<table>
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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Bangladesh</td>
<td>Floodplain delta</td>
<td>147 million; 53%</td>
<td>141,000; 700 km</td>
<td>Value – 5.1%</td>
<td>Direct 653,000; (indirect 2 million)</td>
</tr>
<tr>
<td>India</td>
<td>Sub-continent-delta + archipelago</td>
<td>1.1 billion; 30%</td>
<td>615,000; 4,645 km</td>
<td>Value - 2.9% Not global</td>
<td>Direct 400,000; (indirect 2 million)</td>
</tr>
<tr>
<td>Maldives</td>
<td>Volcanic archipelago + coral atolls</td>
<td>300,000; insignificant poverty</td>
<td>About 1 million km²</td>
<td>Fish 70% of total merchandize exports</td>
<td>Direct 60,000; (100,000)</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>Large, rock-based, island</td>
<td>21 million; 27%</td>
<td>517,000; 1,650 km</td>
<td>Imports equal about 30% of total production</td>
<td>Direct 100,000; (400,000)</td>
</tr>
</tbody>
</table>

He then introduced the concepts of the Ecosystem Approach to Fishery Management (EAF) and noted that Community-based integrated coastal management (CBICM) falls within that.
EAF includes
- fisheries management process;
- biological and environmental concepts and constraints;
- technological considerations;
- social and economic dimensions;
- institutional concepts and functions;
- time scales in the fisheries management process;
- the precautionary approach; and
- special requirements of developing countries.

Dr. Samarakoon then highlighted the differences of the coastlines in the four countries. In Bangladesh the coastline is 760 km, but with no coastal zone defined yet; the inner coastal zone has 35 million people and the exposed coastal zone, 19 million. Bangladesh has a relatively small Exclusive Economic Zone (EEZ) compared to the other three countries.

In India the coastline is 4,645 km, a coastal zone has been defined, with a large EEZ.

The Maldives has 200 inhabited islands each with a CZ; a population of 300,000; fishing is almost exclusively oceanic, and it has the largest EEZ against the smallest population.

Sri Lanka’s coastline is 1,700 km; it has a defined coastal zone and a large EEZ.

Dr. Samarakoon then detailed and defined Community-based Fishery Management (CBFM), Fisheries co-management and Sustainable livelihoods, as defined by the FAO.

- It is a people-centred and community-focused form of fishery management, which is narrower in scope than co-management.
- Government most often plays a minor role in CBFM providing only legitimacy and accountability.
- Note that only government can legally establish and defend user rights and security of tenure at the community level.

Fishery Co-management is
- A partnership arrangement in which many stakeholders share responsibility and authority for decision-making (governance) in management.
- Government (formally or informally) provides security for user rights and tenure at the community level.
- Stakeholders sharing the resource could include:
  - Fishers (primary stakeholder),
  - External agents (NGOs, academics, research institutions),
Sustainable Livelihoods are
- Alternative occupations to those who engage in it as an activity of last resort,
- Reduction of income poverty,
- Reduction of all forms of deprivation for continuously engaged fishers and dependents,
- Provision of education and health that empowers and enables coastal communities, particularly the next generations, to enter into mainstream economic activities that provide upward social mobility.

He stressed that CBFM is nested within Fisheries Co-management and that sustainable livelihoods are complex issues.

He then went on to describe who small-scale fishers (SSF) were. He noted that there was a great diversity among SSF; that they were adaptive; they used highly specialised gear and particular parts of the ecosystem.

Comparing Large-scale Fishers (LSF) and SSF, he noted that there were about two million LSF versus 12 million SSF. The annual catch was about the same for both. The capital cost for a job in LSF was 30,000 – 300,000 USD as compared to 2,500 -25,000 for SSF. 14 to 19 million tons of fuel is consumed annually in LSF but only 1-3 million tons in SSF. 2 to 5 tons of fish are caught per ton of fuel consumed in LSF but 10-20 tons of fish per ton of fuel in SSF. 5 to 30 fishers are employed per 1 million USD invested in LSF while 500-4,000 are employed for the same amount of money in SSF. 16 to 40 million tons of fish and invertebrates are discarded annually in LSF while nothing is discarded in SSF.

Even though SSF are much more cost effective and less damaging, there cannot be SSF without a coastline. But there are land use conflicts in the coast now, and displacement of SSF by migrants from inland and vice versa and competition between LSF and SSF.

Ecosystems have been degraded. They can be restored, sustained or depleted.

The stage is now set for four scenarios at crossroads. There is a vision where one wants to go, but it is influenced by national and global perceptions, for example,

1. **Existing national perceptions:**
   - Complex ocean-land-people system;
   - 20 million people in marine fishery;
   - Majority in extreme poverty;
   - Coastal and inshore fishery declining;
   - Exposure to hazards – high risk; and
   - Weak coastal resources management.

2. **National vision-future:**
   - Increased fish production/ export;
   - Expanded aquaculture;
   - Accelerated economic growth;
   - Enhanced human development – *including small-scale fishers*; and
   - Subsidies and incentives – expansion beyond EEZ – WTO negotiations.
3. **Global perception:**
- Over-fished oceans;
- Ecosystem conservation needed;
- Removal of subsidies and incentives;
- Co-management and governance;
- Cannot generalise from Bluefin tuna fishery to all fisheries worldwide (Re: End of the Line – Clover, 2004).

4. **FAO vision:**
- Ecosystem approach to fisheries management;
- Emphasis on rights-based fisheries;
- ICM/CBFM/Co-management/Governance for sustainable livelihoods;
- Mainstream small-scale fisheries in economic planning; and
- Property rights.

The character of fishing, perception of potential, using the opportunity is different for the different countries, as shown below.

<table>
<thead>
<tr>
<th>Country</th>
<th>Inshore (%)</th>
<th>Offshore (%)</th>
<th>Reported situation: Fleets from other nations engaged in illegal, unrecorded &amp; unreported (IUU) fishing (BOBLME – Stage 1: National Reports, MRAG, 2008).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangladesh</td>
<td>90</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>India</td>
<td>90</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Maldives</td>
<td>2</td>
<td>98 (Coastal Fishing Zone)</td>
<td></td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>65</td>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>

The important lesson is that what is not used by offshore fisheries is being used illegally.

Benefitting from the perceived opportunity requires integrated management. The challenge to BOBLME – SA, for the perceived opportunity to be realised:
- The *integrity of coastal ecosystems* that sustain fisheries stocks should be maintained.
- The *efficiency* of fishery management should be increased;
- There should be *effective WTO negotiations* regarding preferential subsidies;
- There should be *equitable distribution of benefits* toward livelihood development and poverty (deprivation) reduction;
• There should be adaptation to climate change; and
• The prevention of dissipation of coastal resource rent.

Competition and consequences: as competition increases, each person seeks to take the maximum share of the resource before somebody else does. Hence the ‘tragedy of the commons’ is the result – all lose. Now we know that CBFM and co-management occurs traditionally to enable efficient allocation of a resource.

What can we learn?

How does resource rent operate in real life?

Taught wisdom
Inference from the literature:
• reforms in fishery policy will prevent dissipation of resource rents (licenses, property rights, etc);
• fishers enabled to maintain a profit and to build assets;
• ‘tragedy of the commons’ avoided; and
• Individual Transferable Quotas (ITQs) needed.

Traditional wisdom
• Are any insights available from existing practices that relate to resource rent and management?
• Do such practices exist?
But there are challenges that have to be faced:

- Scarcity of alternative occupation;
- Reforms create winners and losers;
- Can losers be compensated;
- Rent capture dominates; and
- Rents increase: bureaucratic excess, corruption, etc.

Dr. Samarakoon that presented five selected case studies for the different countries that illustrated the existence of co-management in the region.

**In Bangladesh:**

1. *Livelihood security and co-management (FAO/UNDP, ECFC 2002-2006):* Sustainable livelihood approach to set the foundation of fishery co-management; community organisation and empowerment through training and awareness; focused empowerment of women; reduction of income poverty; disaster preparedness; education and health; technology; alternative livelihood (post-larvae collectors).

2. *Freshwater CBFM and Co-management:* Takes time, > 3 years; defined, defendable water body; there was technology for production; there is improvement, holds people together; NGOs were more effective than government; credit schemes strengthened CBFM organisation; bureaucratic foot-dragging impedes organisational development.

**In India:**

1. *Tamil Nadu and Andhra Pradesh: grassroots organisations that work – partnership with State Governments: Panchayats* (caste, and other) make decisions based on the ‘Subsidiarity Principle’; fisheries management through licensing, prohibitions on certain fishing gear, regulations on mesh-size and establishment of closed seasons and areas, under the Marine Fishing Regulation Act (MFRA); zones are demarcated by each state based on distance from the shoreline (from 5km to 10km) or on depth. Trawling and other forms of mechanised fishing are not permitted in inshore areas; the closed season or ‘monsoon fishing ban’ is another important management measure implemented for a period of 47 days and 65 days respectively, during what is considered to be the spawning and breeding season.

2. *In contrast, in Andhra Pradesh is a failed co-management intervention: cooperatives that undermine fishery livelihood.* The objective was to generate assets for improving livelihood, but there was a mismatch between the image of Andhra Pradesh State Fishermen Cooperative Societies Federation (AFCOF), village-level societies and reality; there was an illusion of egalitarian, democratic and transparent decision-making; mechanisms for good governance were absent: transparency, accountability; actual decisions were based on individual benefits (corruption); there was an erosion of confidence, default on loan recovery, abandonment of modernisation. The co-management mechanism was imposed, but based on voluntarism.
In the Maldives:

1. **Informal co-management**: Tuna fishing is a highly developed traditional livelihood – dates back more than 700 years. It employs more than 30% of the labour force. Fishing is in the ‘Coastal Fishing Zone’ – only for Maldivians, no licenses – exclusive fishing rights – allocation of property rights. In 2005 the production was 192,000 tons (NDP, 2005). NDP Policy is to ensure sustainable socio-economic development of fishing communities to maximise social and economic benefits. The coast guard provides support to discourage poaching and illegal fishing. The Master Plan should be finalised in consultation with the stakeholders and should ensure decentralisation and adopt the ‘Principle of Subsidiarity’.

In Sri Lanka:

1. **Negombo Estuarine stake net fishery**: This is a case of exemplary management: showing five key attributes imparting sustainability to ‘common pool resource’: There is i) democratic decision-making; ii) there are strict rules and unfailing penalties for infringements; iii) There is blind rotation of stake net positions by lottery – equalisation of benefits; iv) there is limitation on access; and v) reduction of opportunity for exploitation by free-riders. This has now been gazetted by the government, and co-management is formalised and works. However, this is not enough as pollution from upstream is choking the lagoon and the lagoon is dying, showing clearly that the ecosystem approach to fisheries becomes even more important for successful co-management.

Dr. Samarakoon then showed a visual of how coastal resources, rent, rent dissipation and ecosystem degradation are inter-related.

**Coastal resources, rent, rent dissipation & ecosystem degradation**

<table>
<thead>
<tr>
<th>WHO</th>
<th>WHY</th>
<th>How</th>
<th>RENT CAPTURE</th>
<th>RENT DISSIPATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government is the owner of the EEZs and all coastal resources (including fish stock and coastal space)</td>
<td>Acquiring a return to the owner</td>
<td>Limiting Access</td>
<td>Vast majority of small scale fishers who are poor</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Avoiding inefficiency: achieving efficient allocation of resources</td>
<td>Taxes</td>
<td>A minority of registered craft and gear operators</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Achieving ethical objectives</td>
<td>Licenses</td>
<td>A minority: legislators &amp; bureaucrats, tourist interests, etc</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>User rights</td>
<td>Designed mismanagement: Imposed cooperatives</td>
<td></td>
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<td></td>
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<td>Quotas</td>
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<td></td>
<td></td>
<td>Individually Tradable Quotas (ITQs)</td>
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<tr>
<td></td>
<td></td>
<td>Externalities: Penalties, Incentives</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Do nothing</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Tragedy of the commons</td>
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<td></td>
<td></td>
<td></td>
<td>Demographic change- emigration</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Ecosystem degradation</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>Corruption</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Fiscal policies that indirectly increase operational costs, erode savings and assets</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Bureaucratic excess</td>
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</tr>
</tbody>
</table>
Dr. Samarakoon then posed two key questions: i) Is mainstreaming small-scale fisheries into national planning achievable? ii) How can it be leveraged? What is the aggregate economic value of each fishery resource system in which CBFM and co-management already exists that can: i) feed to the national accounts; ii) serve as lessons in ‘best practices’ for the BOBLME-SA?

Do we have long term verifiable scientific information for?

- The attributes of the resource system, boundary, linkages, structural complexity, resilience?
- The number of resource units taken and the trend?
- The numbers of resource users, demographic character, and asset profile, etc?
- The management system, its attributes, evolution and resilience?

If this information is lacking, what needs to be done?

Problem definition

Inadequacy of scientific knowledge to impact:

(A) national policy and planning;
(B) sub-regional BOBLME planning; and
(C) informed networking among small-scale fishing communities to acquire political power

What is needed?

- Standardised sub-regional data collection?
- Geo-spatial information for resource system demarcation and mapping of interactions?
- Dealing with land-based pollution impacts?
- Application of resource rents in ICM and fishery management?
- Networking (mediated by NGOs) directed at imparting knowledge on livelihood safeguards?

After Dr. Samarakoon’s presentation, the technical sessions began. The objective was to deepen the discussion for each country, through the overview for that country. Four overviews of the countries were presented, as well as the parallel review that is being conducted for the South East Asian countries of the BOBLME.

2. Country Overview of CB-ICM – key speakers from participating countries

2.1. Overview for Bangladesh

Dr. Alam, Chief Scientific Officer, Bangladesh Fisheries Research Institute presented the overview for Bangladesh. He defined the coastal zone as the continental shelves and adjacent land area up to 100km inland from the coast; a transition area where terrestrial and marine environment interact; and a natural resource base that supports fisheries, aquaculture and agriculture, and an ecologically dynamic and diversified production system. In the Bangladesh coastal zone, there are 19 districts out of 64; 11 directly meet the sea or lower estuary; 133 upazilas (sub-districts) out of 484 are in the coastal zone and 48 are exposed to coast. The coastal zone of Bangladesh covers 32% (47,200 km²) of the total land area and harbours a coastal population of about 40 million (28% of country total). The Bangladeshi coastline is 710km and divided in the Eastern region (Pacific type); Central region (Active delta): the Ganges, Brahmaputra and Meghna jointly flow through this region and the Western region (Atlantic type).
Coastal communities have long relied on fisheries, natural trapping-holding-growing fish production, agriculture, the Sunderbans mangroves and salt production. Since the 1970s, following coastal polderization, aquaculture, and brackish water shrimp farming in particular, has been important.

In the fisheries sector, 83% of the production is shrimp, 15% fish and others the rest. Half a million metric tons (20% of country’s total) are produced through marine fisheries. Artisanal boats provide 90% of this catch, with 22,527 non-mechanised boats fishing inshore (<10 m depth); 21,433 mechanised boats fishing near-shore (10-40m depth). One hundred and thirty three trawlers provide <10% of the fish catch from off-shore waters (40-100m).

The central region is the most dynamic region, with 185 chars (sedimented small islands) and islands. Three million people live in these islands. There are also people who live seasonally in 35 marine and estuarine islands, with fishing as their only livelihood. There are only two cyclone shelters on 72 islands and only 14 islands are protected by embankments.

The western region has high potential as an aquaculture-agriculture region, where shrimp and rice can be produced at different times of the year.

Coastal vulnerability is high in Bangladesh, with cyclone and storm surges; floods, drainage congestion and water logging; drought and salinity intrusion; erosion; ecosystem degradation. Climate change exacerbates all vulnerabilities. Livelihoods and food security are threatened. More population and less socio-economic development in the exposed zone would result in a high risk situation.


All the above policies attach due importance for CZM for eradication of poverty, inequity and deprivation.

ICZM has been in existence in Bangladesh since the 1980s.

- ESCAP Secretariat and GoB Planning Commission 1986;
- Follow up study by UNDP and Planning Commission 1993;
- GoB Policy Note on ICZM issued Feb 1999;
- Joint Donor Mission (IDA-NEDA-WFP) March 1999;
• Joint Mission (IDA-NEDA) Oct 1999;
• ICZMP Project (2000-2005)
• Coastal land zoning for 19 coastal districts being implemented;
• ICZM Identification Mission 2009
  - Suggested revival of ICZM and phased implementation.

Funding for coastal zone development in Bangladesh has been extensive. 1.45 billion USD was allocated from 2005-06—2009-10.
• Bangladesh CC Trust Fund
  - USD 100 million 2009-10;
  - USD 100 million 2010-11;
• Multi donor climate resilience Green Trust Fund 110 million USD;
• NGO funding in the coastal zone 145 million USD 2009-10;
• Funding coastal fisheries (11 projects)
  - 2007-08—2011-12 funding: 67 million USD;
  - 2010-11 funding: 12.5 million USD;
• Support to Sustainable Management of the Bay of Bengal Large Marine Ecosystem Project (BFRI) (1/09/2008—31/08/2013);
  Total cost: 0.71 million USD, 2010-11 budget: 62,000 USD.

Dr. Alam then reviewed the current status of CBICM and ecosystem management. The success of CBFM is highly recognised in national fisheries strategy (2006). The Government of Bangladesh (DOF/MOFL) adopted a national fisheries strategy and action plan having eight sub-strategies of which the ICF sub-strategy has endorsed the CBFM for coastal fisheries management. The Marine Fisheries sub-strategy has also endorsed the necessity to adapt and institutionalise CBFM in coastal areas. Due to lack of exit strategy, post Empowerment of Coastal Fishing Communities (ECFC) activities appeared to have not been owned by Department of Fisheries.

Besides CBFM development, Bangladesh has the potential of coastal aquaculture development for livelihood improvement and opportunities of community involvement, resource availability and integration.
He then described how a combined rice-shrimp system can be used to maximise production, where shrimp is cultured during the dry season and rice is cultivated during the wet season, maximising land-water use for increased food production and income.

There are also approaches that promote a dry season rice-aquaculture system, where carps, shrimps and prawns are cultured. Integrated mud crab fattening-fish culture is also another approach to maximise production, as well as an integrated hydroponic agriculture-aquaculture system, where hydroponic agriculture (non-saline and/or salinity tolerant vegetables) are introduced with integrated fish culture in a pen encircling the hydroponic bed area.

Dr. Alam concluded with the following recommendations:

- The need to study the strengths and weaknesses of post ECFC projects in the light of lessons learned from post CBFM projects in freshwater inland areas.
- Institutionalisation of CBFM approach in coastal areas.
- The need for provision of endowment fund for sustainable operation of CBOs.
- Government should pay immediate attention to implement strategies and action plans outlined under coastal and marine fisheries sub-strategies.
- The need for political will for coastal and marine fisheries, as has been visible for hilsa fisheries resources management.

2.2 Overview for the Maldives

Mr. Hassan Shakeel, Senior Scientific Officer Marine Research Centre, Maldives gave an overview of community-based management, co-management and alternative livelihoods development in coastal and marine ecosystems in the Maldives.

He started by posing certain questions about Maldivian coastal zone concepts.

1. What was the coastal zone in Maldives? Was it the whole archipelago and the surrounding 75 miles of water? He defined the coastal zone as the whole archipelago and the surrounding 75 miles of water as the coastal zone if the coastal zone is defined as the land-water interface. He noted that small-scale fishers go 75 miles out to sea for tuna fishing.
2. Did every island have a separate, independent coastal zone? This is not likely as an island is influenced not only by the water immediately surrounding it but also by the water far away from it; and the water surrounding any given island is influenced by not only by that island but also by other close by islands and reefs.
3. Was there any non-coastal land on an island? Not likely as the whole island, large or small, is affected by the sea. Wind blowing from the sea affects the vegetation. The sea affects the water table of the island. As the whole island is part of the land-water interface, no non-coastal land is possible.
4. How does land-water interface in the case of Maldives differ from such interfaces in the cases of continents and large islands? In the case of the Maldives (where there are no rivers falling into the sea, no high land draining storm water and sediments into the sea) the sea is less influenced by the land compared with the land-water interfaces in continents and large islands.

The components of the coastal zone are: inner land on the island; shore area (beach and beach vegetation belt (locally known as heilhi); reefs; atoll basin; and coastal oceanic water. Integrated coastal zone management is integrated management of all these components and resources of the coastal zone. Integrated fisheries management in the coastal zone is integrated reef resources management.
Ecosystem management involves management of coastal ecosystems such as mangroves, natural brackish water ponds, and marine ecosystem/habitats such as shoreline/beach; coral reefs; atoll basins; open sea (which includes coastal oceanic water).

Coastal zone development and management bodies include central bodies and local bodies.

Central bodies:
- The National Environment Council which advises the Ministry of Environment on key environmental issues;
- The Ministry of Fisheries and Agriculture with the Marine Research Centre which oversees all aspects of marine resources management;
- The Ministry of Tourism which regulates tourism-related activities;
- The National Planning Council which allocates land/reef for projects;
- The Transport Authority which regulates the United Nations Convention of the Law of the Sea (UNCLOS);
- The Police and Defence forces who engage in surveillance and prevent poaching; and
- The Ministry of Home Affairs which ensures safeguarding environment at the council level.

Local bodies:
- Atoll Offices;
- Island Offices;
- Atoll Development Committees;
- Island Development Committees

Local bodies under the decentralisation policy
- City councils;
- Atoll councils;
- Island councils.

There are two major fisheries and environmental laws.
- The Environment Protection and Preservation Act of the Maldives (Act No. 4/93): *The Act recognises that protection and preservation of land and water resources, flora and fauna, and all natural habitats are important for the country’s sustainable development;*
- Fisheries Act (Act no: 5/87): *This act empowers the Ministry of Fisheries and Agriculture to establish and administer regulations for sustainable utilisation and conservation of fisheries stocks and living marine resources, including protecting threatened species.*

Major issues related the coastal zone are 1) coastal erosion due to sand mining; 2) downtrend of fisheries production; 3) lack of awareness; 4) solid waste and sewerage (coastal pollution); 5) resource use conflict/open access nature of coastal resources; 6) weak implementation and enforcement; 7) overlapping functions among institutions; 8) population pressure; 9) low political will; and 10) the lack of trained personnel.
Community-based coastal ecosystem management used to exist in the Maldives.
- Island communities managed mangroves for food, firewood, poles and timber;
- Island communities managed brackish water ponds for stocking and growing milkfish

But the current status is that management is non-existent because mangroves and milkfish are not as significant for the community as they used to be.

Coastal ecosystem management exists: 31 protected areas of varying sizes have been established; 71 species of birds, nine groups of marine animals (cetaceans, sharks, and sea turtles) are protected. In addition, there are resort house reefs.

Community-based fisheries management is practised at the island community level for big eye scad: where fishing method, predator catch and fishing time are controlled. However, these practices are no longer strictly followed. It is also followed at the atoll community level for tuna where fishing methods are controlled, trolling while pole and line fishing is going on is prevented, and removal of drifting objects and sharks is also prevented. Again, these practices are no longer followed strictly.

For co-management of coastal fisheries, partners include atoll and island offices, and fisher folk; central bodies; for tuna and reef fisheries. Currently, policies and strategies are being formulated into national development plans.

In fisheries and related sector opportunities for alternate livelihoods include: long-lining in offshore waters; marine aquaculture (pearl culture, ornamental fish culture, food fish culture); and value addition/product diversification (dry tuna).

Non-fishery sector opportunities for alternate livelihoods include: agriculture (traditional soil agriculture and hydroponic agriculture) and tourism (organising whale/manta ray watching trips in marine protected areas). The latter provides an opportunity to demonstrate the opportunity costs of whales and rays: in terms of long term use.

Mr Hassan Shakeel noted that Maldivian fisher-folk could adapt to new livelihood opportunities. Once tuna fishing in many islands was seasonal (northeast or southwest monsoon fishing); fisher-folk worked in other sectors (construction, carpentry) during off season. A Maldivian dhoni (boat) can be used for different types of fishing: pole and line tuna fishing, long-lining, hand-lining; they can keep reef fish and lobsters alive.

He also noted the inherent conflict between tourism and fisheries in the Maldives. Fishermen extract fish from the reefs, but hoteliers want the fish on the reefs for tourists.

He summarised his presentation by noting that old community-based management practices do not exist now due to a change in community needs and the legal system (from Vaaru to modern laws), but that co-management practices do exist. The general context of the country is that it is moving to a decentralised governance.
2.3. Overview for Sri Lanka

Mr Anil Premaratne, Director, Coast Conservation Department traced the evolution of coastal zone management in Sri Lanka. The Sri Lanka programme was initiated based on an issue-oriented need (erosion), as well as development-oriented needs (such as tourism and fisheries). The programme started with a narrow coastal zone (CZ).

Administrative Structure for CZM

- 1978 - Coast Conservation Division in the Ministry of Fisheries;
- 1983 - Coast Conservation Act came into operation;
- 1984 - Coast Conservation Division was upgraded to a Department (CCD).

Implementation of the Coast Conservation Act

There is a definition of the Coastal Zone in the Coast Conservation Act. There is provision for formulation and execution of schemes of work for coast conservation within the Coastal Zone as defined in the Act, and preparation of the Coastal Zone Management Plan (to be upgraded regularly).

Coastal Zone Management Programme

The programme started with recognition of the political authorities of a need of a CZM programme stemming from various coastal issues. A separate institution was established. Awareness was increased through national conference and a workshop. National studies – such as land use surveys and habitat studies - were conducted. Then a coastal zone management plan was prepared and the programme developed and implemented. The implementation needed to be monitored and the revision mandated carried out.

Evolution of Coastal Zone Management in Sri Lanka

1978 - Coast Conservation Division established within the Ministry of Fisheries;
1981 - Parliament enacted the Coast Conservation Act No. 57 of 1981;
1984 - Coast Conservation Division upgraded as the Coast Conservation Department;
1990 - Coastal Zone Management Plan received the approval of the Cabinet of Ministers;
1997 - First Revision of the CZMP; and
2004 - Second Revision of the CZMP.

The first Coastal Zone Management Plan (CZMP) was prepared in 1990 based on land-use information, workshops and meetings but with little public participation. It contained an introduction, the regulatory system, a section on coastal erosion, management of coastal habitats, loss and degradation of archaeological, historical and cultural sites, recreational and scenic areas, and a section of better management of coastal resources.

In 1997, a second generation management plan was prepared, through an extensive participatory process, findings of the several surveys and reports and through meetings and workshops. This plan contained an introduction, a section on coastal erosion management, coastal habitats management, coastal pollution control, protection of sites of special significance, regulatory mechanism, Special Area Management and the plan summary and priorities for action.

The revised CZMP 2004 was prepared through an extensive participatory process and based on field investigations to ensure that coastal issues were accurately and adequately identified. This plan
contained an introduction, a section on managing coastal erosion, conserving coastal habitats, controlling coastal water pollution, integrating coastal fisheries and aquaculture with coastal zone management, Special Area Management, managing sites of special significance and public access, regulatory mechanisms, implementation of CZMP policies, strategies and actions.

Management strategies used for the SL CZM Programme
- State-wide land use planning;
- Direct Development;
- Regulations;
- Shoreline exclusion or setbacks;
- Special area planning;
- EIA process;
- Education and Awareness;
- Planning, Policy and Guideline Development;
- Coastal research studies and data base development;
- Coordination, monitoring and evaluation.

Evaluation of the Sri Lanka CZMP
This was, basically, a policy-oriented plan based on the California type model. Ensuing policies have created uncertainty about certain development activities, as it is very difficult to tell one’s interest will be affected by the CZMP policies, but there is less opposition from pro-development interests than for land use zone plans.

The Sri Lankan CZMP policies are organised into four groups: 1) Environment type policies - relating to estuaries, lagoons, corals, mangroves and sand dunes; Resource management policies - relating to archaeology, historical and scenic sites; Issue-oriented policies – relating to coastal erosion and administrative procedure policies.

In evaluating the programme design stage, issues that arose are related to which problems should be included into programme; institutional arrangements to fit the problems that the programme is intended to solve; selection of management strategies; and decision on whether programmes should be policy-oriented, issue-oriented or management-oriented.

In evaluating organisational issues, problems that arose are insufficient data or information for preparation of the plan and decision-making; little understanding or knowledge on coastal ecosystems; lack of proper coordination among public authorities; and that resource management decisions were made basically on economic conditions with little attention to ecological consideration.

Complete evaluation of the process or programme was not carried out. Therefore it is very difficult to state that up to what extent the SL CZM programme resolves the issues that motivated its creation. The programme was commenced with a narrow coastal zone with immediate coastal area issues such as erosion and coastal tourism, and expanded to watersheds and marine areas with the same institutional arrangement. The programme did not address issues such as climate change and sea level rise. There are many agencies having responsibility for specific areas of CZM – this makes an effective co-ordinating mechanism vital. This mechanism will be established by institutionalising the seven working groups which facilitated the revision of the CZMP. The implementation of CZMP involves a large number of actions/tasks – a prioritisation, and periodic review of the priorities is essential. Delegation of
responsibility to the district/divisional/local level is also essential. A sustainable financing programme is necessary to ensure continuity in implementation.

The way forward for the CZMP in Sri Lanka is the evaluation of the programme itself, including its processes and outcomes. Inclusion of the impacts of climate change to the coastal resources management programme and evaluation of the existing institutional system for coastal resources management are needed.

The CZMP in Sri Lanka has a section on Special Area Management (SAM). SAM is a locally based geographically specific process that involves an affected community and provincial agencies in the process of resource management. It builds community level support through a highly participatory process and encourages local community groups to participate from the beginning in planning and implementation. SAMP is now an integral component of national coastal zone management policy. The 1997 CZMP recommended the implementation of SAMPs at 23 coastal sites, and the 2004 CZMP provides guidelines for future enhancement of the SAM process. The 2004 CZMP identifies 57 coastal sites for special area management of which eight are already under implementation as SAM sites by CRMP, 26 are beset by multiple resource use conflicts and are proposed as SAM sites, 23 are geographically smaller, have fewer problems and are identified as Areas of Particular Concern (APCs).

There are different stages of SAM planning: a) Identification and agreement on SAM site; b) entering the community with full time facilitators; c) compiling an environmental profile; d) conducting planning cum training workshops; e) organising resource management core groups; f) drafting a management plan through community involvement; g) implementing pilot projects with continuous planning and h) refining the management plan.

The SAM process is a dynamic, collaborative process involving a number of overlapping steps. It is also flexible and ongoing, with a two track approach that can be changed from one site to another. SAM planning has proven to be a successful method for managing in complex settings, with planning and implementation focused on collaborative approach and focused on site specific issues. The selection of sites is based on the severity of issues, economic significance, biodiversity and manageability.

Key indicators of success for the SAM process are that there are now guidelines for the management of lagoon fishery through the Lagoon Fishermen’s Association. Aquaculture proposals drew out lively discussions. The community was concerned about damage to the lagoon, mangroves and natural fishery. People living near mangroves prevent the felling of mangroves. Communities openly discuss problems with senior officials.

In order to promote the SAM process, political will, a strong agency to provide leadership and sound guidance, clear identification of the objectives and their relevance to national development plans are all essential. Applied research will help refine the general principle for sustainable management. Human resource training, monitoring of the response of the environmental systems to the management and the adaptation of these plans will also be necessary.

2.4. Overview for India

Professor A. Ramachandran of the School of Industrial Fisheries at the Cochin University of Science and Technology gave a presentation of the status of CMIZCM in India. His presentation detailed existing regulations and rights of fishermen in India, revealing the complexities and conflicts that arise.
He noted that India is one of the major fish producing countries in the world with third position in fisheries and second in aquaculture, with an annual fish production which rose to over 6.3 million tons between 2004-05 from around 0.75 million tons in 1950-1951. Marine fish production increased from 0.53 million tons in 1950-51 to a maximum of 2.99 million tons in 2002-03 and 2.78 million tons during 2004-05. Presently, fisheries and aquaculture contribute 1.04% to the national GDP and 5.34% of agriculture and allied activities. These resources are one of the main sources of livelihood for the rural poor, particularly the fisher community. For over 90 million people, fisheries can provide a subsistence level of annual income. At present, an estimated 14 million people are engaged in fishing, aquaculture and ancillary activities.

Coastal fisheries is under pressure as a result of high fishing intensities, pollution, open-access, manmade modifications, water abstraction, etc. In these waters, sustainable exploitation of fish stocks can be achieved through community participation and co-management.

India has the following priority programmes under welfare schemes
- Transfer of technology and capacity building;
- Development of model fishers villages;
- Group accident scheme for active fishers;
- Saving-cum-relief under welfare programmes;
- Establishment of awareness centres, training programmes for fishers; and
- Extension literature and video films, trainers’ training and refresher courses.

The constitution provides for entries under three lists. As conferred by Article 246(1), while the Union is supreme to make any law over the subjects enumerated in List I, the States, under Article 246 (3), enjoy competence to legislate on the entries contained in List II, and both the Union and the States under Article 246(2) have concurrent jurisdiction on entries contained in List III. In the event of a clash, the Union enjoys a primacy over States in that its legislation in the Union and the Concurrent List prevails over State legislations. Also, the Parliament has residuary powers to legislate on any matter not covered in the three Lists (Art. 248).

There are many pieces of legislation on air, water, environment, hazardous substance management, Solid waste management, and so on. Such laws also have a bearing on fishing and fisheries.
The Marine Fisheries (regulation and management act), 2009 is a bill to provide for regulation of:

- fishing, fishing activities and fisheries in the maritime zones of India;
- conservation and sustainable use of fisheries;
- regulation of all vessels engaged in direct or indirect exploitation of fisheries resources in the maritime zones of India;
- maintenance of law and order;
- protection of national security interests in the maritime zones of India; and
- for matters connected therewith and incidental thereto.

The new initiatives are:

- Hut insurance scheme, group insurance of fishers and farmers;
- Mediclaim policy;
- Incentives to fisherwomen groups (SHG);
- Safety at sea and assistance to FISHCOPFED under welfare programmes;
- Formulation of National Fisheries Development Policy under policy issues, co-management, CCRF and certification of boatyards and hatcheries under management and governance;
- Capacity building at the state level use of IT in ToT, programmes for EDUSAT, vocational education in fisheries schools, capacity building of fisheries co-operative Associations, NGOs, SHGs; and
- Strengthening of service delivery system;
- Revitalisation of co-operatives;
Capacity building/training and demand generation for fish under cooperatives and public-private partnerships;
- Location-specific field trials and demonstration units;
- Trickle down extension and involving NGOs in ToT under demonstration and exhibitions, and fisheries technology;
- Establishment of the National Fisheries Development Board (NFDB) in the X Plan is a major turning point in the Indian fisheries sector;
- The proposed outlay for fisheries development during the XI Plan is Rs 4,013 crores (40,130,000,000).

Nine hundred thousand full time and 1,100,000 part time fishermen are employed in marine fisheries related activities; 400,000 in marketing; 300,000 in repairing fisheries requisites; around 50,000 in fish processing and 400,000 in other ancillary activities. In total 31,500,000 people are engaged in fishing and farming operations directly or indirectly.

<table>
<thead>
<tr>
<th>Item/activity</th>
<th>Target</th>
<th>Achievements</th>
<th>Achievement %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motorisation of traditional craft (No.)</td>
<td>10,000</td>
<td>10,910</td>
<td>109.10</td>
</tr>
<tr>
<td>Introduction of intermediate craft of improved design (No.)</td>
<td>62</td>
<td>18</td>
<td>29.03</td>
</tr>
<tr>
<td>Resources specific Deep sea Fishing vessels including 50 Vessels with VMS (No.)</td>
<td>50</td>
<td>11</td>
<td>22.00</td>
</tr>
<tr>
<td>Safety of fishermen at sea (No.)</td>
<td>1,666</td>
<td>500</td>
<td>30.01</td>
</tr>
<tr>
<td>Fishermen development rebate on HSD (KL)</td>
<td>166,667</td>
<td>72,000</td>
<td>43.20</td>
</tr>
</tbody>
</table>

In the 10th Plan, central assistance of Rs 125 crore (1,250,000,000) was provided under various components for development of marine fisheries infrastructure. Six major fishing harbours, 40 minor fishing harbours and 151 fish landing centres have been completed and put to use. The remaining 18 fishing harbours and 37 fish landing centres are at various stages of construction. Considering the importance of the scheme for marine fisheries development, it is continued during the 11th Plan.

Model Fisherman Villages have been developed under this plan, providing basic civic amenities - such as housing, drinking water and construction of a community hall for fishermen. The villages were provided with tube wells at the rate of one tube well for every 20 houses. For recreation and common working place, a fisherman village with at least 75 houses is eligible to avail of financial assistance for construction of a community hall. There is also a group accident insurance scheme for active fishermen, with Rs 50,000 against accidental death or permanent total disability and Rs 25,000 for permanent partial disability.

A saving-cum-relief scheme is in existence to provide financial assistance to fishermen during the lean fishing season. Under this component, the beneficiary has to contribute a part of earnings during non-lean months. A matching amount is provided with equal contribution from Central and State government and the accumulated amount is distributed back to fishers in four/three equal instalments at the rate of Rs 300 per month to marine/inland fishers.
A scheme for fisheries training and extension provides training to fishery personnel to enable them to undertake fisheries extension programmes effectively. The scheme also provides assistance to fisher folk in upgrading their skills.

The National Co-operatives Development Corporation (NCDC) strengthens existing co-operatives by providing assistance on liberal pattern for expansion of their activities; and develops potential areas by organising functional cooperatives in these sectors. The Corporation has formulated specific schemes and patterns of assistance for enabling the fishery co-operatives to take up activities relating to production, processing, storage, marketing, etc.

National Federation of Fishermen’s Co-operatives Limited (National Federation of Fishermen’s Co-operatives Limited (FISHCOPFED) is the apex organisation of fishermen cooperatives in the country. Its activities could be classified mainly into two categories: promotional and welfare.

Promotional activities of FISHCOPFED include the organisation of conferences, supporting capacity building initiatives at various levels, transfer of technology to stakeholders, liaison with member organisations and agencies, etc. Welfare activities of the federation include implementation of the centrally sponsored Group Accident Insurance for Active Fishermen scheme, etc.

There remain problems in the optimum operations of co-operatives. For example, there is weak collaboration/coordination among various institutions involved in management and operation of co-operatives at primary, district and state level; rivalry among individuals/groups, lack of adequate infrastructure; lack of human and financial resources, lack of skills among the management workers and fishers. FISHCOPFED can play an important role in strengthening the linkage and co-ordination among co-operative at various levels.

National Bank for Agriculture and Rural Development (NABARD), Mumbai, is an apex institution, accredited with all matters concerning policy, planning and operations in the field of credit for agriculture and other economic activities in rural areas in India. The Bank has credit plans for investment in marine fisheries (motorisation of traditional crafts, introduction of mechanised vessels, introduction of item specific vessels), coastal aquaculture (shrimp farming, shrimp hatcheries and mariculture units) and others including processing and cold storage plants, feed mills and infrastructure development.

The Coastal Aquaculture Authority, Chennai is mandated to protect the ecologically fragile coastal areas, seashore, waterfront and other areas through regulation of shrimp culture in coastal States and Union Territories of India. The Authority promotes the development of sustainable and responsible shrimp farming practices within and outside the Coastal Regulation Zone.

The Bay of Bengal Programme (BOBP-IGO), Chennai is an Inter-Governmental Organisation that evolved from the Bay of Bengal Programme of the Food and Agriculture Organisation of the United Nations. It is mandated to enhance cooperation among member countries, other countries and organisations and provide technical and management advisory services for sustainable coastal fisheries development and management in Bay of Bengal region. It is focusing on helping the member countries in sustaining fisheries production and ensuring livelihood security for millions of fisher folk in the region.

The 1972 Stockholm Declaration proclaimed that man’s natural and manmade environment are essential to his well-being and to the enjoyment of basic human rights - even the right to life itself.
In 1986, the United Nations General Assembly recognised the relationship between the quality of human environment and the enjoyment of basic human rights [UNGA resolution 2398 (XXII) 1986]. The 1992 Rio Declaration emphasised sustainable development and environmental protection. Moreover, Agenda 21 called for the fulfilment of basic needs, improved living standards for all, better protected and managed ecosystems and a safer, more prosperous future.

The nature of environmental and human rights problems is similar in all South Asian countries. The right to life, a fundamental right, has been extended to include the right to a healthy environment. In India, the state has a duty to protect and preserve the ecosystem. This is a part of the directive principles of state policy and not a fundamental right. The right to life has been used in a diversified manner in India. It includes, *inter alia*, the right to survive as a species, quality of life, the right to live with dignity and the right to livelihood. In India, this has been recognised expressly as a constitutional right.

Another expansion of the right to life is the right to livelihood (article 41), which is a directive principle of state policy. In 1994, the Supreme Court of India directly mentioned the principle of sustainable development and tried to balance the social, economic and ecological aspects. The 1990’s definition of sustainable development emphasised the relationship between development and environment, and a balance between the two. More sophisticated challenges were made where the Indian courts were asked to deal with polluting industries, to prevent encroachment of wetlands and to preserve forests and vegetation. In S. Jagannath case, the court while dealing with commercial shrimp farming, held that a strict environmental test is required before permission is granted for the installation of such farming in a fragile coastal area. It added that there must be a compulsory environmental impact assessment which would consider inter-generational equity and rehabilitation.

In India there has been one landmark judgement by the Supreme Court with respect to access to marine resources. The plaintiff in the case was the purse-seine boat owners’ association and the defendants were the state of Kerala and the artisanal fish workers union. The case dealt with the question of prioritisation of rights. The court concluded that the action taken by the state to curb the rights of a few hundred investors (purse-seine boat owners) who wish to harvest marine resources in pursuit of profits was fully justified. This was deemed both legal and constitutional considering that it was undertaken in the interest of protecting the rights of thousands of traditional, artisanal fish workers for whom access to marine resources was their main source of livelihood. The right to life and livelihood was given higher priority over the right to do business. Clearly spelling out property-rights for marine resources is a necessary condition for resource management and governance. Therefore, the issue really is not whether to grant property rights, but rather to whom they should be granted. The strikes of Indian fish workers during 1994-95 against the entry of joint ventures into the Indian EEZ point unequivocally to this principle.

Most fisheries regimes may be considered rights-based. ITQ regimes have been constructed theoretically and specified according to neoclassical economic prescriptions. In such regimes, maximisation of net benefits in terms of narrowly defined economic values is paramount. Equity considerations are notably absent, while important collateral economic values bearing on the welfare of fishery-dependent communities are routinely ignored.

There is a division of powers between the Centre and the States. Under the Constitution of India, fisheries within the territorial waters, which extend up to a distance of twelve nautical miles from shore, is a state subject and the primary responsibility of its development rests with the state government. The
central government is responsible for all fishing activity that takes place beyond this limit—the deep sea or EEZ (exclusive economic zone) than extends up to a distance of 200 nautical miles. The state government has command over the fisheries, which are in the territorial waters of 12 miles, over communities that are dependent of the fisheries in the area and the marine resources in the area.

Regulations have not been successful in alleviating the problems. Numerous central and state legislations have not led to resolving conflict between the two sectors, nor have they secured the numbers of the species of fish. In fact, regulation may be responsible for perpetuating the problem as different governments put into place different policies, which clash with the interests of the traditional fishermen. There is no commitment from the government to stick to a regulatory framework, just like the recommendations of the Murari committee, which, after being accepted, were not implemented. This leads to a loss of faith in the authorities.

At the same time, the government proposed that the Coastal Zone Management (CZM) Notification replace the CRZ Notification based on the recommendations of the Swaminathan Committee’s Report. However, the CZM Notification does not provide for the rights and access of coastal communities. For example, livelihood activities such as fishing in CZM I waters and shores have not been mentioned, thus compromising the livelihood security of traditional fish workers, according to them. By not prioritising these activities in CZM I areas, the notification has equated all activities without recognising the differential impacts caused by various activities. In view of the above, a fishers’ movement has built up across the east coast in Tamil Nadu, Kerala, Andhra Pradesh, as well as Orissa and West Bengal.

Classification of fisheries management systems in India

<table>
<thead>
<tr>
<th>Type</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private ownership with transferable rights</td>
<td>Ownership rights are held by individual fishermen as in the case of fixed engines like stake nets and China nets.</td>
</tr>
<tr>
<td>State ownership</td>
<td>Ownership of certain reservoirs and lakes are kept with the government and access for fishing is banned for fishermen or the public.</td>
</tr>
<tr>
<td>Sole ownership</td>
<td>All fishing activities are dictated by the government as the sole owner as in the case of certain reservoirs and fishing rights are auctioned to fisher groups or societies.</td>
</tr>
<tr>
<td>Limited entry schemes</td>
<td>Access and withdrawal rights are restricted by the government as in paddy fields during periods of non cultivation.</td>
</tr>
<tr>
<td>Leasing of water bodies – government and private</td>
<td>For prawn filtration and fish farming wherein the ownership of the water bodies rest with the government/private owner of land or farm</td>
</tr>
<tr>
<td>Licensing system for various crafts and gear</td>
<td>For a specific craft/gear, for a specific time and location.</td>
</tr>
<tr>
<td>Co-management</td>
<td>Management system is based on negotiation. In the true sense this will involve participants and the State as the custodian of fisheries. This is only in the formation stage in Kerala and other parts of the country.</td>
</tr>
</tbody>
</table>
There are some success stories. Self-help groups (SHG) in Fisheries in Tamil Nadu Punnakkayal village have the largest number of SHGs in an Indian village with over 50 groups consisting exclusively of fisherwomen.

Today, there are several examples of successful fisherwomen SHGs in the region and their experiences need to be promoted in other states as well. The fish market at Nilankarai is managed by fisherwomen belonging to 12 SHGs. The management practices established by this group demonstrate their efficiency and unity.

Similarly, the SHGs formed by fisherwomen in Vellapatty village in Tuticorin has enabled its members to conduct individual business involving a wide range of activities, including fattening of crabs for sale in the local market.

Mudialy Fishermen’s Co-operative Society, Kolkata: registered in 1961, obtained 70ha of water logged wasteland – cum-garbage dump from Calcutta Port Trust and 10ha from the State Government. The Society has since engaged in production of fish in the sewage water and has also set up a Nature Park involving growth of an eco-tourism centre and extensive plantations of fodder plants, dust absorbing plants, canopy trees and agri-horticulture plants. In the process, the society has not only been successful in treating 25 million litres of waste water through biological means of pisciculture, but has also provided various facilities to its members like daily-wage medical and educational assistance, funeral aid, marriage aid and housing advance. The integrated and mutually beneficial nature of these activities has converted a stinking, disadvantaged area into an ecologically friendly expanse of greenery. The Society has successfully cultured Indian major carps as well as many exotic carps and successfully demonstrated the technology for sewage water fisheries.

South Indian Federation of Fishermen Societies (SIFFS) is the apex body of organisations of small-scale artisanal fish workers which started in January 2004. Prior to the tsunami it had 86 members in one particular village. The society takes care of all fishing-related needs of the members. The selling or auction of the catch is done collectively by the society, thus obtaining a much better price for the fishermen. To take care of the lean period, the society provides finance at 12 percent per annum to meet this demand. This is deducted on a daily basis from the earnings realised from the catch. The society also provides a savings service and all the members are insured. The fishing unit (all five members including the crew) is insured against accidental death at sea, at a 165 rupees annual premium. The uniqueness of the scheme is that it is impersonal, and is irrespective of which crew goes in which boat and if the crew change their team. Since the institution provides all kinds of services for fishing, the members get a nominal discount and preference for the services.

The village societies are federated into district federations which are primarily responsible for conflict resolution and advocacy. Boat owners as members and by virtue of the same, had only male members. Crew are taken as associate members on the recommendation of the boat owners, Membership has now grown over 200 with more than 400 associate members who are crew. SIFFS has also started forming groups with women who are engaged in fish vending. SIFFS has been able to work towards risk reduction in the fishermen’s traditional occupation by coming out with unique insurance schemes due to its ability to influence insurers based on the scale of its memberships.

Vallarpadam Island, Kerala has seven fishing grounds in the area and a total of 288 stake nets and 126 fishers using them. Of these 126, 48 have state sanctioned licenses and the remaining 78 do not. Four
of the *padu* \(^1\) grounds consisting of 144 nets are used solely by the licensed fishermen. The sites in these four grounds are allocated to specific fishers and are never changed - license is specific to site of the ground. The remaining three *padus* consist of 144 fishing sites and are used by 78 unlicensed fishers and it is in these parts that the *padu* system is followed. These three grounds operating with the unlicensed fishermen use a system of rotational access. Each of the three grounds has its own cooperative, called a *sangham*.

The three *sanghams* are not linked to each other, even though they follow a common system of fishery management and fish the same water with the same gear. The *sanghams* are registered with the state’s registrar’s office, but are not recognized by the state fisheries department. Members of the *sangham* belong to the *vala* \(^2\) caste.

Beginning 1974, state legislation required all fishers to have a state sanctioned license. By officially replacing the *pattayam* \(^3\) system, licensing led to the problem of open access. Thus there arose conflict between traditional fishers and new license holders. The *sangham* members are fishers that fish in that *padu*. (The *sangham* meets and decides on fishing locations assigned and rules made. There are three issues that the *sangham* tries to resolve: equitable access, providing collective social responsibility and mechanisms for conflict resolutions. A lottery method is used to assign fishing rights in a location. The *sangham* provides a collective social responsibility incorporated into its structure and function. Kodipadu and Muruganpadu incorporate an additional net in their rows, which is owned by the *sangham*. It is auctioned to members every fifteen days, the auction carried out at a time. Additional funds are collected by charging a fee for renting out fishing locations. The location can be rented out to other members of the *sangham* on a yearly basis. The renter and owner must pay the *sangham* Rs 1,000 each to facilitate the transfer, which must be provided for in writing to the *sangham*, thus allowing for short-term work, without giving up membership of the *sangham*. However, the legal protection for the management system is weak. They neither have the license or the legal authority to manage the fisheries. There is no mechanism for the three groups of illicit fishermen to coordinate with one another. While each *sangham* is limited in its own membership, there is no overall control of fisher numbers as a whole, or on those who may want to fish the waters.

The following models of fishery management are proposed for India:

- Calculate the maximum sustainable yield (MSY) along a coastline:
  - The share (in weight) of each fishing family would be arrived at by dividing the MSY by the number of families;
  - Thus the share in percentage of each family is determined, which remains constant forever;
  - The actual amount of fish entitlement would depend on MSY as calculated periodically;
  - Whether of a particular caste/clan or not, the quotas would still bind people together; and
  - This enables the formulation of norms and rules easily. Enforcement also becomes easier in such close-knit environment.

Thus, communities along a coastal belt can form their respective cooperative, which would then put into place a system of rules and regulations with respect to timing, gears, access etc, to monitor their

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1 *Padu* is a traditional system of granting entitlements to eligible members of a fisher community to undertake specific fishing activities on a rotational basis in specific site of a lagoon or back water system, during specified seasons under a co-management regime

2 *fishing*

3 In fisheries *pattayam* was granted in olden times for exclusive fishing rights which can be transferred to the dependents.
activities and enforce the quotas, and also to resolve any potential conflicts. All cooperatives could come together to form a body that would coordinate the activities of the cooperatives, as in the case of MATYAFED (Federation of Fishermen Cooperatives in Kerala).

The important negative aspects of deep sea fishing in India are:

- General restriction of fishing areas within 40 fathoms depth;
- Use of large number of vessels;
- Over-exploitation of some species (while the catching of the other species are not economic);
- Capital intensive operations;
- Discarding unwanted fish (approximately 130,000 tonnes catch annually) and heavy fishing pressure on shrimp resources.

Issues related to artisanal fisheries are:

- Over-exploitation of fishery resources;
- Destructive fishing practices;
- Damage to natural habitats;
- Conflicts with other sectors;
- Fishing in non-traditional areas;
- Misuse and wastage of surplus catches; and
- Non-compliance with unwritten laws like respect for the fish, respect for other fishermen, appreciation of the environment, passing on information to others, and adopting agreed ethics and tactics.

The major ethical issues in respect of capture fisheries of India may be summarised as:

- Water quality maintenance and protection;
- Abatement of pollution, protection of natural biodiversity;
- Protection of traditional fishing areas, customs and habitats, sustainability of fishing practices;
- Ensuring social, ecological and technical stability, protection, restoration and recovery of endangered species and stocks; and
- Balancing population pressure in neighbouring areas, and conflicts with other developmental actions as well as other fisheries sectors.

The more important social, legal and management issues specifically related to capture fisheries of India are:

- Reduction of excess fishing capacity;
- Multi-species management of resources, control of discarded incidental catches including marine mammals, sea birds, sea turtles etc.;
- Development and use of selective, environmentally safe and cost effective fishing gear and technique; and
- Sustainable development of unexploited or under-exploited species, protection of endangered species and strict compliance of fishing area norms- especially with artisanal fishing and deep-sea fishing.

An important observation to be made here is that in most cases, the non-governmental sea tenure system adopted by fishers themselves works reasonably well all over the world. For example, in Tamil Nadu, fishermen are known to recognise the right of fisher communities to control the fishing actions.
One way to describe this is to say that the coastal waters are under tenure, subject to the rules of neighbouring settlements.

The Kerala model of public-private cooperation in the management of estuarine fisheries is an example of co-management. Cherai Poyil is a brackish water pond with an area of 210ha located in the Kerala State of Indian peninsula at the extreme north-west opening of the Cochin estuary, which opens to the Arabian Sea at Azheekode. Cherai Poyil is a typical example of how a local state (Grama Panchayath) and communities together share the responsibility to allocate fisheries to various fishing groups and private entrepreneurs in the northern side of the Cochin estuary. The fishing territory managed jointly by local fishing communities and grama Panchayath is known as kappu. Today, kappu is the property of Pallipuram Grama Panchayath and its management is coordinated by a subcommittee which includes elected councilors, fisher representatives and leaders of local political parties. The Panchayath has learned from its past experience that direct mundane supervisory functions were expensive and community cooperation was highly essential to ensure better governance. At the same time both the communities and local Panchayath recognised that community-based management might not be feasible for want of modern skills to manage socio-ecological complexities of modern markets.

Thus it was quite natural that both of them searched for viable management alternatives as direct management by any one agency appeared to be economically and politically expensive. Thus the Panchayath decided to lease out the primary fishing rights as the leaseholder possessed resources and market information. And then, verbally, the present practice of auctioning system stabilised. An important factor assisted that choice was the stable growth in the volume of trade from the village to international markets. Increasing demand for prawns motivated a number of private entrepreneurs to lease in kappu fisheries and manage it according to locally laid down norms of the Panchayath. They motivated local traders and merchants to take over fishing rights over kappu. The top most authority of kappu management is the Panchayath which participates in this joint management exercise mainly because it receives money from this contract. It leases out the water body to the contractor who in turn allocates fishing rights to various gear groups including women. This transfer however, is subject to a set of rules and regulations regarding the use of different fishing practices, type of gears, mesh size regulation etc. The contractor accepts these rules, executes a bond, pays the first instalment of the auction amount and takes over the administration from the Panchayath.

Some major operational rules in the local area are that

- The auctioneer is allowed to fish only from the stake nets situated near the sluice and the distance between the stakes will be 16m;
- Fixing the stake should be with a gap of 5m from the bund for easy transportation;
- The display board that shows the fees details of different fishing methods will be placed in a notable place and the auctioneer has to fish only from stake net or sluice net;
- Loop nets, trammel nets and prawn nets are not permitted;
- The auctioneer is not permitted to use bag nets(stake nets) without informing the Panchayath when the bund is opened for irrigation purposes;
- The current orders of the government regarding fishing have to be obeyed;
- The auctioneer is having no right to ask for any compensation for his loss due to the blockage of canal for the construction of bridges or any other developmental activities that may come;
- Without the permission of Panchayath it is not allowed to change the location of existing Chinese nets and those who are changing ownership of Chinese net will have to inform officially
to Panchayath and the auctioneer of particular year. The profit share as to be paid at Fishermen welfare fund by the auctioneer; and

- Fishermen are not allowed to use trammel nets other than in the monsoon season.

The partnership arrangement between local Panchayath and leaseholder and their relations with local communities has been mutually beneficial to the participating agents in a number of ways. Panchayath participates in these joint management efforts as this partnership yields cash income and monetary returns. For the leaseholder, there is clarity in the ownership and tenure which restrain the rest of the communities to encroach on his property. Communities accept this procedure as an ideal alternative that delivers the required management services to kappu fisheries by reducing their risks and uncertainties. Being the owner of poyil, Panchayath has to make sure that various gear groups and the leaseholder comply with legal codes and regulations passed both by the central and state governments from time to time. These are rules that directly or indirectly impinge on the economic activities (fisheries, aquaculture, public works, irrigation, agriculture, tourism, mining etc.) undertaken by local communities on the estuarine ecosystems. The Panchayath adopts an informal approach that delays enforcement of these norms and follows the principle of political lobbying, community participation and negotiations as elements of alternate management strategy. For instance, there are issues between local Panchayath and the coastal regulation zone management authority regarding the implementation of CRZ rules within village limits. Instead of implementing these rules in total, the Panchayath has been adopting a policy to negotiate exceptions for the benefit of local communities. Similarly, the Panchayath also act as an appellate authority and intervenes in resolving conflicts between communities and contractors or/and other government departments.

The question is whether such locally evolved cooperative problem solving management practices sustain the health of ecosystems and deliver the required services to local communities. Co-operative management as practiced in Cherai poyil brings in a number of definite advantages to local communities:

1. Regulated fishing guarantees secure livelihoods for local fishermen and women.
2. Regulated fishing also facilitates resource conservation.
3. The management regime ensures equitable distribution of resources and even grants access to outsiders in times of crisis.
4. Moreover the system is highly useful and flexible to manage local level resource conflicts.

The Panchayath has also constituted a conflict resolution committee consisting of the secretary, three standing committee members, one each from Finance, Development and Service Departments, two opposition party members. This committee is headed by the president.

However, communities fail to prevent degradation of environmental quality and conserve estuarine biodiversity due to the lack of cross-scale institutional processes and organisational arrangements. There is a perceptive that there is inequity, all voices are not heard and there are external fishers engaging in destructive practices. Professor Ramachandran concluded that co-operative resource governance is a unique arrangement by which local governments accepted the role of communities in resource management and provided more space for their activities and initiatives in the management of the natural resources. The timely restructuring and flexibility of the system in tune with the changing forces of modernisation and external pressures is a must for success.

- But the livelihood rights of fishing communities and the defence of their rights to retain coastal lands and sustainably access fisheries and other coastal living resources must be promoted.
• Also the rights of fishing communities to participate in decision-making and management processes must be promoted.
• There must be engagement with international decision-making processes that have a bearing on the rights of fishing communities.
• International and regional trade issues in fisheries from a small-scale fisheries perspective must be monitored.
• Trade that is compatible with food and livelihood security must be promoted.
• Engagement with international decision-making processes on trade that have a bearing on food and livelihood security in fishing communities is also a must.

2.5 Overview on South-east Asia

Dr Dedi Adhuri and Ms Usha Kanagaratnam from the Worldfish Centre in Malaysia next presented a review of findings of integrated coastal management in Indonesia, Malaysia, Thailand and Myanmar. This is a parallel, ongoing review, similar to the review being carried out by Dr Samarakoon for BOBLME-SA.

Dr Dedi stated the purpose of the literature review was a) to identify and review relevant concepts/theories and definitions of ICM, community-based management and co-management; 2) identify ICM, community-based management and co-management related policies; 3) identify ICM, community-based management and co-management practices that work and practices that should be avoided and 4) identify existing knowledge gaps concerning ICM initiatives.

He initially defined ICZM as ‘a continuous and dynamic process by which decisions are made for the sustainable use, development, and protection of coastal and marine areas and resources. This is done by ensuring that the decisions of all sectors (e.g., fisheries, oil and gas production, water quality) and all levels of government are harmonised and consistent with the coastal policies of the nation in question. A key part of ICM is the design of institutional processes to accomplish this harmonisation in a politically acceptable manner’.

It was also defined as ‘coordinating the initiatives of the various coastal economic sectors toward long term optimal social and economic outcomes, including resolution of use conflicts and beneficial tradeoffs’.

Dr Dedi defined community-based management as an approach through which communities are given the opportunity and responsibility to manage in a sustained way the community resources, define or identify the amount of resources and future needs, and their goals and aspirations, and make decisions affecting their common wellbeing as determined by technical, socio-cultural, economic, political and environmental factors. This can be traditional, community-based, or newly formulated community-based management

Collaborative management (Co-management), he said was a partnership arrangement between the government and the communities dependent on the resources.

The main ecological resources in relevant countries were at risk. The coverage of mangroves was declining, coral reefs are moderate to poor and are damaged, seagrass beds have decreased and demersal fisheries have been over-exploited.
The early initiatives of ICZM in Indonesia were as a response to over-fishing. The Marine Resources Evaluation and Planning (MREP) project in 1993, focused on capacity building activities that enabled the development and management of ICM plans in ten provinces.

In Malaysia, early initiatives of ICZM were a consequence of coastal erosion. A National Erosion Study was carried out in 1984-85. Forty seven critical sites were identified and two institutions related to coastal zone management were established: the Coastal Engineering Control Unit (CECU) and National Coastal Erosion Control Council (NCECC).

In Thailand, ICZM resulted from coral reef destruction, mangrove deforestation and decline of fishery stock. The Phuket Island Action Plan (pilot study 1986-1989, implemented in 1992) 1993, community-based fisheries management program in Ban Don Bay and Phang-Nga Bay were all initial projects.

In Myanmar, there is no documentation of early projects.

Current policies on ICZM:

<table>
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<tr>
<th>Indonesia</th>
<th>Malaysia</th>
<th>Thailand</th>
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<tr>
<td>• Environmental Impact Assessment (AMDAL)</td>
<td>• Environmental Impact Assessment (EIA) Order, 1987, on large scale developmental project such as conversion of mangrove swamps, port expansion, coastal reclamation, construction of resorts.</td>
<td>• Multi or bi-sectoral laws that refer to integrated approach towards managing the coastal zones. Natural Resource Exploitation Act (groups 5 other Act, which includes the Forest Act of 1941, the Fisheries Act of 1947, the Minerals Acts of 1967, the Petroleum Act of 1971, and the Tourism Act of 1979);</td>
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<tr>
<td>• Laws on Decentralisation</td>
<td>• National Policy on Coastal Resource Management, 1992 (implementation started in 1996)</td>
<td>• The establishment of Tumbol Administrative Organisation (TAO): to represent community problems to the federal or provincial government and to conduct community-based projects.</td>
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<td>• Law No. 27, 2007, on Coastal and Small Island Management</td>
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Co-management/Community-based ICM initiatives in the region:

<table>
<thead>
<tr>
<th>No</th>
<th>Pilot Program</th>
<th>Year</th>
<th>Funded</th>
<th>Focus</th>
<th>Source</th>
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<td>Sectoral</td>
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<td>Force of Nature (FON)</td>
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<td></td>
<td>Project Description</td>
<td>Duration</td>
<td>Implementer</td>
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<td>2</td>
<td>‘Ikan larangan’ custom in West Sumatra, Indonesia: a traditional community-based approach</td>
<td>ongoing custom</td>
<td></td>
<td>Susilowati (1999)</td>
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<tr>
<td>7</td>
<td>Community-based fisheries management in Phang-Nga Bay, Thailand</td>
<td>1995 - 1999</td>
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</tbody>
</table>
Dr Dedi then talked about an ICM project in Post-Tsunami Aceh where the approach was good and is detailed in the figure below:
3. National Workshop Discussion Groups

Following the presentations of the country overviews on CB-ICM the delegates broke up into four county groups; India, Bangladesh, Maldives and Sri Lanka to start the Workshop sessions. In Workshop I each country group discussed and presented an overview and consensus on status of community-based fisheries/ habitat management and co-management for their respective country. Workshop II built on the discussions of Workshop I to discuss recommendations for the way forward for improving CB-ICM in the four respective countries.

3.1 Workshop 1: Overview on status of CBICM and direction for improvement in each of the four BOBLME SA countries

Ms. Maeve Nightingale of the Ecosystems and Livelihoods Group Asia, IUCN, introduced the workshop and presented the rationale that small-scale fisheries and habitat management must be a part of wider inter-sectoral planning policy and processes and adopt a partnership development approach between key interest groups involved in the fisheries and coastal sector, in order to stand the best chance of success. Recognition of the value and importance of ‘community-based management’ and ‘co-management’ approaches in the development of fisheries management policy are critical factors in negotiating trustworthy processes for sharing the rights and authority for responsible stewardship of fishery resources.

She said that the aim of this discussion was to come to a general consensus with regards to the status of CB-ICM in each of the four BOBLME-SA countries; India, Sri Lanka, Bangladesh, Maldives, centred round four questions:

- What is the current status of CB-ICM in each country?
- What factors hinder or support the development of CB-ICM in each country? Identifying case study examples either documented or undocumented.
- What change is required nationally and locally for CB-fisheries/ habitat management and co-management approaches are to be more successful and more widely spread?
- How could this change be effected, what action is necessary, and who could do it (responsible actor, support actors)?

The delegates noted that community-based coastal management is well established in South Asia but management is either not legalised, recognised or is ad hoc, was the consensus.

3.1.1 Status of CBICM in Sri Lanka and recommendations for the way forward

The Sri Lankan group comprised Arjan Rajasuriya, Research Officer at the National Aquatic Resources Research & Development Agency [NARA], Colombo; B. D. Abeyratna, Assistant Director, Department of Fisheries and Aquatic Resources, Colombo; J. H. A. A. Jayasekara, Assistant Director, Department of Fisheries and Aquatic Resources, Puttalam; Terney Pradeep Kumara, Head of Department of Oceanography & Marine Geology, University of Ruhuna, Matara; K. A. I. De Silva, Director (Policy & Planning), Ministry of Environment, Battaramula; K. A. L. Sandyani, Planning Assistant, Ministry of Fisheries and Aquatic Resource Development, Colombo; H. S. S. K. Haputhantri, Head, Marine Biological Resources Division, National Aquatic Resources Research And Development Agency (NARA); S.U.Lanka Prasada, Director Operations, Sri Lanka Coast Guard, Colombo; Kapila Gunarathe, Head of Coastal Livelihoods and Policy, IUCN, Sri Lanka; Diana De Alwis, Senior Programme Officer, IUCN Sri Lanka.
Status of CBICM in Sri Lanka
The group focused on the second to fourth questions. The factors that hindered CBICM in Sri Lanka related to:

- Jurisdictional overlaps. There were several conflicting jurisdictions: the Coast Conservation Department, the Urban Development Authority, and the Tourism Authority all operating with different mandates relating to the coast.
- There was a lack of coordination among regulatory bodies.
- Community participation was lacking, by various regulatory bodies in the formulation of laws and regulations.
- The community lacks a sense of ownership of the natural resource: this related to the lack of community participation in decision making.
- The community lacks awareness and capacity to engage in the management of resources.
- There is a lack of enforcement of laws and regulations.
- All ICM processes are long-term processes, but the ICM and co-management that are implemented are project-based and stall when the project ends. There is no long-term commitment and resources allocated for the long-term.
- There is inadequate information for ICM and co-management.
- Institutions lack adequate capacities for ICM co-management.

Factors that support CBICM in Sri Lanka include:

- The existence of national level policies, laws, institutions.
- A coast zone management plan, that is adapted every four years.
- Provision no. 31.1 a, b, c, of the Fisheries act 1996 no. 02 gives legal recognition and power to the community.
- Community-based management is not a new concept, historically it has been active.
- 25% of the annual budget allocation of the Coast Conservation Department is allocated annually for the Special Area Management Plan, which requires co-management.

Hikkaduwa, southwest Sri Lanka was identified as a case study of co-management that was not successful. This was the first Special Area Management (SAM) site identified. SAM uses local and geographically specific planning and active stakeholder participation in order to plan for optimal sustainable use of natural resources, ensure economic well-being as well as ecological integrity, and to practise sound natural resource management. This key concept was introduced in the 1980s as a tool for resource management in the coastal zone and has been an integral part of the Coastal Zone Management Plan of the Coast Conservation Department, since the 1990s. Benefits gained from the SAM process include zoning of sites to maximise ecological protection yet allowing sustainable use, poverty alleviation by provision of facilities for the enhancement of livelihoods, social upliftment through various community-based training programmes and improvement of water quality and waste management.

Hikkaduwa became popular as a tourist destination of Sri Lanka because of easily accessible coral reefs. With the influx of tourists into the area, there was unplanned tourism development. As a result of unplanned tourism development and lack of control of resource use, the SAM plan was introduced into the area. However, conflicts ensued among fishing communities and hoteliers. The Plan identified several management needs such as the demarcation of MPA boundaries, establishment of signs declaring protected area and status, multiple use zoning, measures to reduce pollution, and restriction
of the number of glass bottom boats. Despite these positive steps taken, the process did not continue after the project ended. In the end, community-based management was not successful. There were no finances for continuation. The notable successes in this effort were agreements among groups on sustainable use of resources, building awareness. However, in the end, trust for the community-based approach was lost.

**Recommendations for the way forward**
Answering the two questions regarding the changes required nationally and locally for the successful implementation of community-based fisheries/habitat management and co-management, and how these changes could best be effected, the Sri Lankan delegates suggested the following:

- Giving ownership to community through legal amendments that support co-management, accommodating the needs of the Fisheries and Coast Conservation Departments.
- Capacity building and awareness creation for stakeholders through training and dissemination of necessary data and information.
- A continuous process of monitoring and evaluation for ICM established through the introduction of a continuous process of monitoring and evaluation in the system.
- Financing should be established for co-management, by building into the ICM process and mechanism for sustainable financing.
- The establishment and continuous update of an information base by internalising an information management process and establishing an information clearing house.
- Reducing jurisdictional overlaps and contradictions by reviewing institutional jurisdictions and institutional conflicts and identifying jurisdictional overlaps and conflicts.
- Developing a meta database by collecting existing data, identifying data gaps, and filling data gaps in a continuous process.

### 3.1.2 Status of CBICM in Bangladesh and recommendations for the way forward

The Bangladeshi group comprised Istiak Sohan and Nasim Aziz of the IUCN Country Office in Bangladesh, M. Anisul Islam, Director, CNRS, IUCN; Emranul Huq Chowdhury, UDDIPAN, Dhaka; Kamal Sengupta, Deputy Executive Director, Community Development Centre (CODED) Chittagong; Giasuddin Khan, Senior Fisheries Scientist, The WorldFish Centre, Dhaka; Sultan Ahamad, Chief Specialist, Center for Environmental and Geographic Information Services (CEGIS), Dhaka; Jahangir Alam, Chief Scientific Officer, Freshwater Station, BFRI Mymensingh; and Abul Hashem and Arifur Rahman Tarafder, Assistant Directors, DOF, Matshya Bhaban, Dhaka.

**Status of CBICM**
The delegates noted that community-based management of fishery resources for inland water is well established in Bangladesh, although, a similar management practice for coastal and marine fisheries is still in the rudimentary stage. The policy framework supporting CBICM (Coastal zone policy, national water policy, national fisheries policy, ICF sub-strategy and Marine and Coastal sub-strategy under national fisheries strategy and action plan, NAPA, BCCSAP, ICZM, CDS) exists. Work is on going for integration of all sectors (forest, fisheries and livestock) for sustainable management (e.g., co-management projects: IPAC, CWBMP; CBFM project - ECFC) of all resources. Institutional arrangements – traditional, need-specialised arrangements exist. For example, GO / NGO / CBO; mobilisation (leadership, human rights, capacity building) and advocacy. Alternative livelihoods are supported (e.g., through a VGF card) as well as sustainable financing mechanisms. There are several alternative livelihood projects such as the social investment project of WB under MOF; three Jatka Projects for *Hilsa*
fishers (to protect juvenile *hilasa* fishes; the first by the Department of Fisheries supported by revenue budget for safety net; the second by the department of fisheries supported by USAID and the third – PKSF support through NGOs supporting subsidised marine fishing and training).

Periodic monitoring and documentation / evaluation of the programme is carried out. Coastal land zoning, PIP are ongoing process for implementation in different sectors (water, forest etc). Ownership is given: all relevant government agencies have focal points, as well as the Water Resources Planning Organisation (WARPO). Scaling up of projects is also taking place.

There are several co-managed habitats: four sanctuary sites have been established for hilsa fish (Andarmanik, Bhoal, Meghna Estuary, Tetulia) and one sanctuary is proposed (Shariatpur). All these sites are supported through revenue budget. The government has declared that at least two sanctuaries be established in each *upazila*.

The government of Bangladesh is implementing a ‘best practice and lesson learned’ workshop in each District, to increase information sharing. This is led by the Department of Fisheries and supported by other ancillary agencies, for example District/Upazila Administration. The Prime Minister of Bangladesh has recently recognised/ declared provision for an identification card and bank account for fishers. This is a driving force towards institutionalisation of the fisher folk communities. ICM matters have been discussed and reviewed and placed before parliamentary committees.

The government approved inland capture sub-strategy with an action plan under national fish strategy will be adapted, with some modifications, in the coastal zone of Bangladesh. The leasing policy for water bodies was reviewed in 2009 to ensure the access to wetland resources of real fishers through community-based management.

In addition, co-management is endorsed in draft wildlife act.

Factors that hindered the development of CBICM in Bangladesh were:

- Lack of adequate legislative arrangements;
- Absence /presence of continuous institutional support;
- Inadequate budgetary provisions;
- Lack of governance /ownership at the local level;
- Despite a pro-poor general policy, policy formulation is non-participatory;
- Lack of access to information/dissemination;
- A highly sectoral and department-based approach;
- Lack of research based information;
- Lack of exit strategies for projects;
- Inadequate institutional capacity (resource, knowledge, skill); and
- Lack of continuity and knowledge transfer from project to project.

Factors that supported the development of CBICM in Bangladesh were:

- Existence of policies and strategies supportive to CBIM;
- Clear and definitive definition of the coast;
- Existence of co-management bodies (UFC);
- Existence of coastal land use zoning;
- Access for fisher to marine fisheries; and
• Existence of leadership development of community-based organisations to implement government initiatives.

Case studies of CBICM identified by the delegates were:
• Empowerment of Coastal Fisher Community (ECFC);
• Integrated Protected Area Co-management (IPAC);
• Coastal Wetland Biodiversity Management Project (CWBMP);
• Integrated Coastal Zone Management Plan Project (ICZMP);
• Fourth Fisheries Project (FFP-GEF); and
• Coastal land use zoning.

Recommendations for the way forward
Answering the two questions regarding the changes required nationally and locally for the successful implementation of community-based fisheries/habitat management and co-management, and how these changes could best be effected, the Bangladeshi delegates suggested the following:

Changes required:
• Legislations for CBICM;
• Mandate existing institutions with ICM;
• Changing the approach from project to programme;
• Research;
• Sharing of experiences; and
• Strengthening of local government.

These changes could be effected by:
• Enactment of the coastal zone act/law;
• Extensive training on CBICM;
• Institutional strengthening with additional trained manpower;
• Increased budget allocation;
• Mainstreaming ICM management with other sectors; and
• Ensuring government allocation for implementing projects following programme approach.

3.1.3 Status of CBICM in the Maldives and recommendations for the way forward
The Maldivian group comprised Hassan Zameel, Deputy Director, Ministry of Tourism, Arts and Culture, Male'; Naeem Ibrahim, Director, Environmental Protection Agency, Male'; Fathimath Ghina, National Coordinator, GEF Small Grants Programme, United Nations Development Programme, Male'; Hassan Shakeel, Senior Biologist, Marine Research Center, Ministry of Fisheries and Agriculture, Male'; Shafiya Naeem, Senior Research Officer, Marine Research Center, Ministry of Fisheries and Agriculture, Male'; Marie Saleem, Environmental Consultant, Seamarc Pvt. Ltd., Male'; Mohamed Inaz, Assistant Resident Representative, Environment and Energy, United Nations Development Programme, Male'; and Abdulla Shibau, National Project Manager, Atoll Ecosystem Conservation Project, Ministry of Housing and Environment, Male'.

Status of CBICM
Discussing the current status of CBICM in the Maldives, the delegates noted that old community-based management practices do not exist now due to the change in community needs and legal system (from
Vaaru system to modern laws). These systems have changed with mechanisation – access from one end of the country to the other is no longer a problem.

There is now an *ad-hoc* management system and an open-access regime. Co-management practices do exist – and example include the GEF funded Atoll Ecosystem Conservation Project (AECP) and the Thulhaadhoo Pearl Culture Project.

The aim of the Baa Atoll project is to facilitate alternate livelihoods. This is a two year project. The island is renowned for handicrafts, shark and turtle fishing. At the end of the project, there was a cooperative society formed.

The country is moving to decentralised governance. Resorts now have community projects through their corporate social and environmental responsibility programmes.

Factors that hindered the development of CBICM in the Maldives were:
- The geographic spread of the islands which made Transportation and Communication difficult;
- Marketing issues because of the above – there is a difficulty of accessing markets;
- Product quality and quantity;
- An unstable political environment;
- Overlapping mandates within government institutions;
- Moving toward urban thinking from a more traditional setting: development of a cash economy: discouraging volunteerism for community benefits.

Factors that supported the development of CBICM in the Maldives were:
- The existence of traditional management experience;
- Shift from central to decentralised administrative arrangements;
- The existence of licensing – Licensing of local vessels for effective monitoring; Non renewal of foreign licenses;
- The enactment of cooperative society law;
- Stronger recognition of CSR;
- That communities were isolated;
- Existing initiatives – There are efforts to implement ICM at atoll-level; Formation of cooperatives;
- The emergence of potential economic subsectors – Hydroponics; Mariculture;
- That marketing opportunities exist – large tourism market for fishery products.

**Recommendations for the way forward**

In discussing the changes needed nationally and locally for CB fisheries/ habitat management and co-management approaches to be more successful and widespread, the delegates listed the following:
At the National Level:

- A stable government/political situation. This could be achieved by conflict resolution and mediated negotiation talks between government and parliament by political parties.
- Clearly defined mandates were needed. This could be achieved by reviewing and redefining mandates by relevant Ministries and PO;
- Stable and conducive economic setup. The Ministry of Economic Development and Ministry of Finance have to come up with a solution to this suggestion.

At the Local Level

- Reviving traditional management systems. This could be achieved by undertaking a study of previously existing management systems by relevant ministries and local bodies;
- Awareness at practical level achieved by carrying out island level awareness programmes by NGOs; MOFA; MHE.

3.1.4 Status of CBICM in India and recommendations for the way forward

The Indian delegates comprised Vineeta Hoon, Managing Trustee Centre for Action Research on environment Science and Society, Chennai; Manish Mathai Chandi, Field Research Coordinator ANET & Research Associate NCF/ANET, Andaman and Nicobar Islands Environmental Team, Centre for Herpetology, Tamil Nadu; Narayanan Mahadeshwar Ishwar, MFF India Coordinator, IUCN India, Rengaraju Balasubramanian, Research Coordinator, People's Action for Development Tamil Nadu; Aarthi Sridhar, Programme Head, Dakshin Foundation, Bangalore; Alappat Ramachandran, Professor, Cochin University of Science and Technology, Kerala; and Vriddagiri Vivekanandan, Advisor, South Indian Federation of Fishermen Societies, Trivandrum.

Status of CBICM

The delegates noted that integrated coastal zone management *per se* did not exist in India as nothing was integrated. Describing the status of CBICM in India, they noted that India abounds with community organisations that manage various aspects of the fisheries. Perhaps there is no fisherman or fishing family or fishing village that is not subject to control of a local community organisation. CBOs undertaking some coastal management functions also exist in other coastal (non fishing) communities—though much more limited in numbers and scope. This is not recognised because documentation is very limited. Whatever documentation that exists forms part of anthropological literature and rarely part of fisheries literature. Though local levels of Government in India are aware of the fishing community CBOs, Govt is ‘officially blind’ to these organisations.

There were several types of fishing organisations.

- Village (hamlet) level self governing organisations.
- Village or landing centre based organisations that mainly govern fishing related matters.
- Supra village level organisations that govern fishing and other community matters.
- Mechanised boat associations—mostly harbour based.
- Gear-based associations — mostly harbour-based (excepting the ring seine association in Kerala)
- Government co-ops in Maharashtra and SIFFS societies in Tamil Nadu and Kerala that control marketing, credit and input supply.
- Women’s self help group (SHGs) that provide financial services and (less often) livelihood support—mostly NGO organised, but also self organised in recent times.
- Federations of women SHGs (mostly Govt or NGO supported); some take up women’s issues—livelihood and rights.
• Modern associations to lobby and fight for fishermen rights—at cluster level, state level and national level (self organised as well as organised/supported by NGOs).
• Some are registered as trade unions, notably NFF and its member units.
• Political party organised trade unions and associations
• Some conservation oriented groups that have come up in recent times—to protect turtles, etc.
• New attempts to create fisheries management councils using traditional organisations as building blocks—FAO tsunami project in Tamil Nadu and Kerala.

There are also organisations that masquerade as CBOs:
• Government Co-ops across the entire coast (excepting Maharashtra) that are only conduits for Govt. welfare measures and to provide basis of registering fishermen.
• Kerala co-ops, a half-way house as there is some ownership of local community.
• Gulf of Mannar GEF project formed ‘eco-development’ societies.
• Many NGO formed organisations that have limited or no ownership of community.

Other Coastal organisations are
• Some non-fishing communities also have their own organisations—much less and not as strong as fisher organisation
• Gram Panchayats (official local self governing mechanism set up by State) take some action related to coastal issues (protection of beach, habitats; provision of fishing facilities)
• Some others—varying from state to state.

Discussing factors that hindered CBICM in India, there were two levels at which these factors operate.

At the community level:
• While village institutions are strong, the supra level organisations essential for resource management to be effective across a coast line are weak or withered away;
• Serious internal divisions within community that have cropped up due to state interventions; deeply divided between ‘mechanised’ and ‘traditional’ fishing or between major gear groups; caste and religious differences in certain areas;

At the government level:
• There is a stigma attached to traditional organisations perceived to be caste organisations;
• Lack of formal recognition of organic and self organised CBOs; preference for artificial entities created by state;
• No idea about fisheries management—lack of clarity on models for managing small-scale fisheries in the tropics;
• Development hangover, lack of application on management aspects.

Factors that support CBICM in India were not given by the delegates.

Recommendations for the way forward
Discussing the change(s) required nationally and locally for CB fisheries/ habitat management and co-management approaches to be more successful and widespread, the delegates listed the following:
• State recognition of traditional and self-formed organisations of fishing communities;
• Willingness of the government to work with fishing communities in a equal partnership and acceptance of co-management concept;
• Changes in laws that will facilitate transfer of power to community organisations;
• Creation of higher level platforms of fisher organisations that can address issues across longer stretches of the coast and get into co-management arrangements with the government;
• Better documentation of role of community organisations, their strengths and weaknesses;
• Providing a new direction and content to existing organisations through suitable capacity building activities;
• Stronger linkages with scientific world; role for civil society and fishing communities in setting agenda of scientific/academic institutions;
• The need to recognise rights of fishing communities to coastal space for their cooperation in ICM.

They noted the following methods as most suitable for effecting these changes:
• The need for three parties to work together – the government, civil society and fishing communities;
• Government relationship with communities not suitable for transition to co-management, needs civil society mediation;
• FAO, BOBLME can contribute by highlighting opportunities for co-management;
• Fishing Communities in India have a great capacity for management but without integrating them in a system of co-management, no effective management is possible.

3.2 Workshop II: Country recommendations for future actions for improving CBICM

Workshop II commenced on the second day. The aim of Workshop II was;
1. To discuss among groups and decide upon a statement that defines ‘the way forward’ for CB-ICM in BOBLME SA sub-region.
2. To identify a number of concrete recommendations and actions that could be taken forward light of the statement. The discussion should focus on what the BOBLME project could contribute and keep in mind both the national and “transboundary” view points and interests.
   The “transboundary” interests of BOBLME include the Sundarbans, the Gulf of Mannar, the Andaman Sea (India with SEA) and Maldives-Minicoy.

There are a number of challenges for improving fisheries and coastal resource management/governance in the BOBLME-SA sub-region. These include the following:

• Poor information and knowledge for management decision making
• Policy and implementation gaps – including the relationship between national policy decision making and local resource management needs and policy requirements
• Institutional issues in general including overlaps in jurisdiction and mandate, unclear roles and responsibilities etc.

The delegates were asked to suggest

1. What strategies can be established to ensure that the relevant knowledge, information and governance capacity be developed for local resource managers and national policy decision makers?
2. What advocacy and awareness strategies/ actions are needed to support the main thrust of promoting CB-ICM in the BOBLME-SA sub-region (the statement)? Is it possible to identify key messages and target audiences?

The recommendations by the delegates centred round three main areas of focus:
1. Information and knowledge generation, sharing and management
2. Capacity building training, awareness creation and advocacy
3. Institutional arrangements, policies, laws.

The running thread of commonality in all four countries was that information management and sharing was critically needed in the region. Some countries noted that information was available but need to be made accessible to all stakeholders.

All four countries noted the need for focussed capacity building of relevant stakeholders. India highlighted the need for inclusion of social aspects into the curriculum of fisheries courses and the need for a review of current curricula.

Again, a strong commonality was the recommendation that mandates of government institutions were delineated, so that jurisdictional boundaries and duties were clarified. Another commonality was that legal strengthening for co-management was required.

Other issues that were raised related to trans-boundary matters, such as fish stocks, the Sunderbans and bi-lateral agreements. Other emerging themes included climate change, zonation, developing marine protected area networks.

Only the Sri Lankan delegation suggested a statement on the way forward for CBICM in Sri Lanka. This read as: ‘Equitable and sustainable fisheries and coastal resource management is ensured in Sri Lanka with improved knowledge for policy development and decision making, appropriate co-management approaches, implementation mechanisms within well defined jurisdictional boundaries and institutional mandates.’

With respect to information and knowledge generation, sharing and management, the Sri Lankan team suggested the following:

- Identification of information/knowledge gaps;
  - Socio economics data;
  - Bio-physical data for example, carrying capacities;
  - Resource status/ stocks;
  - Resource exploitation levels;
  - (This can be achieved by carrying out by carrying out review and stock assessment.)
- Filling in data gaps;
  (This can be achieved by carrying out country research and studies, cross country studies, cross country knowledge sharing).
- Development of an information sharing mechanism;
  (This can be achieved through the establishment of a meta data base, and a centralised, accessible information management system.)
- Internalisation of an information management process/system –information clearing house.
- Development of a sustainable financing mechanism for information management.
With respect to capacity building training, awareness creation and advocacy the Sri Lankan team suggested the following:

- Capacities for co-management is improved;
- Through capacity building and awareness programmes for communities;
- Training programs for resource managers and decision makers;
- Empowerment of CBOs; and
- Development of alternative livelihoods (support for livelihood activities of resource dependents).

With respect to institutional arrangements, policies, laws the Sri Lankan team suggested the following: Implementation mechanisms should be developed within well defined jurisdictional boundaries and institutional mandates by

- Identify institutional jurisdictions, mandates, their overlaps and institutional conflicts (carry out review of existing legal and institutional framework);
- Formulate legal amendments which are needed to support co-management to accommodate needs-Fisheries, CCD legislations (carry out consultation with communities and other stakeholders);
- Develop institutional mechanisms developed for co-management (carry out consultation of stakeholders - workshops, interviews etc)
- Build into the ICZM process sustainable financing mechanisms for co-management (through public-private partnerships, co-financing mechanisms, government commitments with adequate budget allocations).

With respect to trans-boundary issues the Sri Lankan team noted that capacities for co-management are improved (through bi-lateral and multi-lateral cooperation, negotiations and agreements etc.)

The Bangladeshi team noted against information and knowledge generation, sharing and management the following:

- Need extensive research on social, biological and physical aspects;
- All knowledge generation, planning and management process should always keep in mind climate change issues.
- Need to develop appropriate communication strategy and action plan;
- Specialised knowledge that is available (e.g., ICZM, ECFC, ICF, marine sub-strategies) and required (e.g., post ECFC consolidation) should be built into an information system that can be used by the policy makers as well as communities should be developed for good coastal zone governance.
- For joint management of world’s largest freshwater mangrove ecosystem - Sundarbans, synthesis and sharing of existing information and knowledge is required between the two countries for joint management (low flow of fresh water rivers, joint monitoring of ecosystem health, biodiversity and productivity of resources).

With respect to capacity building training, awareness creation and advocacy the Bangladeshi team suggested the following:

- Special training for capacity building and awareness for all stakeholders should be provided through training and sensitisation workshops.
- New spaces should be created for local level stakeholders (for example, create a CBO network).
- Women should be empowered for the decision-making process in coastal zone management.
• Build on past and existing development activities and achievements (Bio-regional planning for Teknaf Peninsula and SWOT analysis for ecotourism development for Sundarbans under IPAC project) directed towards coastal development through stakeholder engagement.
• Alternative livelihoods that are sustainable should be promoted.

With respect to institutional arrangements, policies, laws the Bangladeshi team suggested the following:
• Existing institutions relevant to ICM should be mandated with the responsibilities to manage CZ with additional resources (staff, mandate and fund).
• Community-based organisations should be formalised under relevant laws. This will ensure accountability, transparency and a congenial environment for desired integrated and ecosystem approach of co-management of competing and conflicting resources of the coastal zone.
• Conflict management mechanism should be in place and authority should be delegated to the local government bodies under a co-management mechanism.
• Decentralisation of a decision-making system should be delegated at the District and Upzila level (local level) for empowerment of government and community organisations and at the same time implemented through integration of all concerned agencies/institutions.
• The relevant laws (wetland, marine, aqua, etc) should be modified to fit in the sustainable management of the fragile and depleting coastal resources.
• From a resource management perspective, coastal land zoning including delineation of coastline, coastal strip and coastal zone (fishing zonations) should be completed and made legalised.
• A network of Protected Areas could be designated (habitat and spawning grounds) followed by community-based management planning.

With respect to trans-boundary issues, the joint management of world’s largest freshwater mangrove ecosystem - Sundarbans, requires synthesis and sharing of existing information and knowledge between the two countries for joint management (low flow of fresh water rivers, joint monitoring of ecosystem health, biodiversity and productivity of resources).

The Indian team noted against information and knowledge generation, sharing and management the following:
• Documentation of co-management and community-based management in fisheries is needed. This can give overall picture of the scenario.
• Scientific information should be available in vernacular languages to fisher folk, both government and non-governmental sources.
• The BOBLME could focus on the production of information and programmes that reach the community level.
• Sensitisation of scientific institutions on community-based management
• Identification of collaborative programmes between scientific organisations and fishing communities on concrete projects (such as fisheries data collection);
• Coastal management practices should be documented;
• Information sharing should be enhanced – strengthen the processes that provide information to communities on EIAs, pollution reports, CZMAs etc.

With respect to capacity building training, awareness creation and advocacy the Indian team suggested the following:
There is a need to include a social science perspective into the fisheries curriculum to build greater knowledge about community-based fisheries and coastal management. The curriculum should also include cultural and social aspects of fishing communities instead of the present production oriented curriculum.

- A curriculum review/development programme can be undertaken by the BOBLME programme.
- Training for fisheries officials should be carried out on community-based management in fisheries;
- Strengthen local organisations involved in conservation practices; and
- Supporting training and capacity of community-based monitoring for pollution prevention and control.

With respect to institutional arrangements, policies, laws the Indian team suggested the following:

- Governance interventions for fisheries and coastal management requires different structures;
- Need to identify potential and appropriate community-based institutions for coastal management;
- Making policy makers aware of communities and their strengths;
- Wherever possible legally recognise coastal management contributions and also provide support combined management efforts.
- Need for greater integration of various departments and agencies for the management of coastal areas;
- Need to include local (and especially fishing) communities into management bodies.
- Need for suitable changes to relevant legislation where required.
- Structural changes are required in governance and legislation incorporating the stakeholders (particularly fishing communities).

The key messages that the Indian team suggested were that:

- Communities can protect their resources and need recognition;
- Government alone cannot be vested with the responsibility of ICM; and
- Need to work with civil society groups and local fisheries movements to effect the proposed changes.

The Maldivian team noted against information and knowledge generation, sharing and management the following:

- The compilation of existing local and indigenous community-based knowledge
  - Management
  - Skills
  - Technology
- Sharing project findings and experiences locally and regionally during project lifetime rather than presenting them at the end of the project;
- Sharing lessons learned from economic valuation of biodiversity study;

With respect to capacity building training, awareness creation and advocacy the Maldivian team suggested the following:

- Study tours are established that will be effective for community-based management enterprises;
- Development of focused awareness and advocacy campaigns on
  - Species Issues;
• Enabling networking among CBM practitioners
  - Workshops;
  - Sharing findings and lessons learned;
  - Discussion forums.
• Training on economic valuation.

With respect to institutional arrangements, policies, laws the Maldivian team noted the following:
• There are overlapping mandates within government institutions
• There is resource governance at different levels.

With respect to trans-boundary issues, the Maldivian team suggested that
• Regional coastal/fisheries resource management plans are developed, implemented and enforced.
• Regional cooperation is established among border management authorities;
4. Summary of recommendations

Dr. Rudolf Hermes and Ms. Maeve Nightingale facilitated the closing session.

Community-based coastal management practices are well established in South Asia but these management mechanisms are largely unrecognised, informal (without legal backing) or ad hoc.

Inadequate legislation, lack of institutional capacity and support, overlapping mandates and jurisdictions, inadequate budgetary allocations, lack of access to information and the lack of continuity (project versus programme approach) were identified as factors that hindered CBICM in the region.

Changes required to improve CB-ICM and the improvement of livelihood of coastal/ fishing communities centred around three main areas: the need to strengthen institutional mechanisms and legislation that support rights based management of local resources, the need for basic information and information management, the need for capacity building; and the need for paradigm shift from project to programme to address the issues of sustainability.

The recommendations centred on three main focal areas; Information and knowledge, including knowledge management; Capacity building and training, including awareness creation and advocacy; and institutional arrangements, policies, laws that support CB-ICM.

Requirement of information and knowledge

The common recommendation from all four countries was that critical information required for improved coastal and fishery resource management is not available and that information management and sharing was critically needed in the region. Reliable information is critical for effective political advocacy and lobbying for improved rights based management opportunities. The absence of reliable and accessible data is currently a major obstacle to bridging the gap between coastal community interests and interests driven by national level (generalised) economic interests. Inherent in building an adequate information base is the recognition that scientific and local knowledge should be made available and accessible to all parties and that local fishing communities should also have a role in setting the research agenda for scientific/ academic institutions.

Documentation of the economic contribution of small scale and artisanal fishing communities to the local and national economies plus their roles for ensuring food security and management of local resources are key focal areas for information gathering. This information is important if coastal/ fishing communities are to be recognised and ‘put on the map’. This information is also essential if village organisations/ institutions are to be able to join together and work ‘horizontally’ across the coastline or discrete ecological systems.

Capacity building training, awareness creation and advocacy

All four countries noted the need for capacity development of relevant stakeholders (government, civil society and fishing communities) to improve integrated coastal management (including CB and co-management). The overall technical capacity for fisheries management and the management of small scale fisheries in the tropics is also urgently required. India highlighted the need for inclusion of social aspects into the curriculum of fisheries courses and the need for a review of current curricula.
Institutional arrangements, policies, laws

The common recommendation was for mandates of government institutions to be delineated, so that jurisdictional boundaries and duties were clear. An additional recommendation common to all four countries was for the legal recognition and mandate by government to support co-management arrangements and changes in law that facilitate transfer of power to community organisations. Related to this recommendation is that the rights of fishing communities to coastal space should be recognised as an inherent part of ICM approaches.

Other issues that were raised related to trans-boundary matters, such as fish stocks, the Sunderbans and bi-lateral agreements. Other emerging themes included climate change, zonation, developing a network of marine protected areas.

Concluding the workshop, Dr. Ajit De Silva, Director of Policy and Planning, Ministry of Environment and Natural Resources gave the vote of thanks, thanking FAO, IUCN and the delegates.
## Annex 1: Workshop agenda

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<td><strong>Inaugural session</strong></td>
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<tr>
<td>Welcome and Lighting of Traditional Oil Lamp</td>
<td>Dr. Ranjith Mahindapala Country Representative of IUCN Sri Lanka 09:00-09:10</td>
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<tr>
<td>Inaugural Speech</td>
<td>Mr. Patrick T. Evans. FAO Representative in Sri Lanka and Maldives 09:10-09:20</td>
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<tr>
<td>Introduction to BOBLME</td>
<td>Dr. Rudolf Hermes, CTA, BOBLME 09:20-09:30</td>
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<tr>
<td>CB-ICM Review Presentation</td>
<td>Dr. Jayampathy Samarakoon 09:30-10:10</td>
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<td>Speech by Chair</td>
<td>Dr. Indra Ranasinghe, DG-MFARD 10:10-10:20</td>
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<td>Tea Break</td>
<td>10:20-10:40</td>
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<tr>
<td><strong>Technical Session</strong></td>
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<tr>
<td>Facilitated by Ms. Maeve Nightingale, Regional Coordinator, Regional Coastal &amp; Marine Programme (RCMP), IUCN</td>
<td>10:40 – 10:50</td>
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<tr>
<td>Presentation CB-ICM Overview - Bangladesh</td>
<td>Dr. Md. Jahangir Alam, Chief Scientific Officer, Bangladesh Fisheries Research Institute, Bangladesh 10:50-11:10</td>
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<td>Presentation CB-ICM Overview - Maldives</td>
<td>Mr. Hassan Shakeel, Senior Scientific Officer, MRC, Maldives 11:10- 11:30</td>
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<td>Presentation CB-ICM Overview - Sri Lanka</td>
<td>Mr. Anil Premaratne, Director Coast Conservation Department (CCD), Sri Lanka 11:30 – 11:50</td>
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<td>Presentation CB-ICM Overview- India</td>
<td>Dr. A. Ramachandran, Cochin University of Science and Technology, India 11:50-12:10</td>
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<tr>
<td>Presentation CB-ICM South East Asia</td>
<td>Dr. Dedi Surpriadi Adhuri &amp; Ms. Usha Kanagaratnam, WorldFish Centre, Malaysia 12:10 – 12:30</td>
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<tr>
<td>Open Discussion</td>
<td>12:30 – 13:00</td>
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<td>Lunch</td>
<td>13:00 – 14:00</td>
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<tr>
<td>Introduction to Workshop I</td>
<td>Ms. Maeve Nightingale, RC, RCMP, IUCN 14:00-14:10</td>
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<tr>
<td>Workshop I – National group discussions</td>
<td>Overview and consensus on status of community based fisheries and habitat management and co-management in each of the four BOBLME SA countries</td>
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<tr>
<td>Feedback and Synthesis from Workshop I</td>
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<td>Wrap up of the Day 1</td>
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<td>Screening of ‘End of the Line’</td>
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<td>Dinner</td>
<td>Sea Spray, Galle Face Hotel</td>
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<th>Day 2</th>
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<tr>
<td>Introduction to Workshop II</td>
<td>Dr. Rudolf Hermes, CTA, BOBLME and Ms. Maeve Nightingale, RC, RCMP, IUCN</td>
<td>09:00-09:15</td>
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<tr>
<td>Group discussion on the future of CB- ICM in BOBLME South Asia</td>
<td>Output: Statement on ‘the way forward’ for CB-ICM in BOBLME SA sub-region: Recommendations &amp; Action Plan (to BOBLME, Governments, and/or NGOs or other facilitators)</td>
<td>09:15-11:00</td>
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<tr>
<td>Tea break</td>
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<td>11:00-11:20</td>
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<tr>
<td>Feedback and Synthesis from Workshop II</td>
<td>Facilitated by Dr. Rudolf Hermes, CTA, BOBLME and Maeve Nightingale, RC, RCMP, IUCN</td>
<td>11:20-13:00</td>
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<tr>
<td>Lunch</td>
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<td>13:00-14:00</td>
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<tr>
<td>Wrap up and future actions recommended</td>
<td>Facilitated by Dr. Rudolf Hermes, CTA, BOBLME and Maeve Nightingale, RC, RCMP, IUCN</td>
<td>14:30-15:30</td>
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## Annex 2: Participants of the workshop

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<tr>
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<th>Title</th>
<th>Name</th>
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<tbody>
<tr>
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<td>10</td>
<td>Mr. Md. Arifur Rahman Tarafder</td>
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<td>Mr. Manish Mathai Chandi</td>
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<td>Dr. Rengaraju Balasubramanian</td>
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<td>15</td>
<td>Ms. Aarthi Sridhar</td>
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<td>16</td>
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<td>17</td>
<td>Mr. Vriddagiri Vivekanandan</td>
<td>Advisor</td>
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<td>18</td>
<td>Mr. Hassan Zameel</td>
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<td>Ministry of Tourism, Arts and Culture, 5th Floor, Velaanaage, Male'</td>
<td>Maldives</td>
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<td>Mr. Naeem Ibrahim</td>
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<td>Environmental Protection Agency, Jamaaluddeen complex, Nikagas magu, Male'</td>
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<td>Ms. Fathimath Ghina</td>
<td>National Coordinator, GEF Small Grants Programme</td>
<td>United Nations Development Programme, Buruzu Magu, Male</td>
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<td>21</td>
<td>Mr. Hassan Shakeel</td>
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<td>22</td>
<td>Ms. Shafiya Naeem</td>
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<td>23</td>
<td>Ms. Marie Saleem</td>
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<td>Seamarc Pvt. Ltd. 7th Floor, M.Maya; Gandhakoalhi Magu Gandhakoalhi Magu Male'</td>
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<td>24</td>
<td>Mr. Mohamed Inaz</td>
<td>Assistant Resident Representative, Environment and Energy</td>
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<td>25</td>
<td>Mr. Abdulla Shibau</td>
<td>National Project Manager</td>
<td>Atoll Ecosystem Conservation Project, Ministry of Housing and Environment, Male'</td>
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<td>Mr. Dedi Supriadi Adhuri</td>
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<td>Dr. Susil Liyanarachchi</td>
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<td>33</td>
<td>Dr. Terney Pradeep Kumara</td>
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<td>Arjan Rajasuriya</td>
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<td>Anil Premaratne</td>
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<td>B D Abeyratna</td>
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<td>Mr.</td>
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<td>Ms</td>
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