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Front cover picture: Mangroves in Mutharajawela, Sri Lanka. © Sriyanie Miththapala 2006

## List of acronyms

### **MFF      Mangroves for the Future**

<b>ADB</b>	Asian Development Bank
<b>ASEAN</b>	Association of South East Asian Nations
<b>CBO</b>	Community-Based Organisation
<b>CEL</b>	Centre for Environmental Law
<b>CEM</b>	Commission on Ecosystem Management
<b>CGIAR</b>	Consultative Group on International Agricultural Research
<b>CONSRN</b>	Consortium to Restore Shattered Livelihoods in Tsunami-Devastated Nations
<b>CORDIO</b>	Coral Reef Degradation in the Indian Ocean
<b>EEPSEA</b>	Economy and Environment Program for Southeast Asia
<b>FAO</b>	Food and Agriculture Organisation of the United Nations
<b>FFI</b>	Fauna and Flora International
<b>GLOMIS</b>	Global Mangrove Database and Information System on Mangroves
<b>GPA</b>	UNEP Global Programme of Action for the Protection of the Marine Environment from Land-Based Activities
<b>GTZ</b>	Deutsche Gesellschaft für Technische Zusammenarbeit
<b>ICM</b>	Integrated Coastal Management
<b>ICRAF</b>	World Agroforestry Centre
<b>ICZM</b>	Integrated Coastal Zone Management
<b>IOTWS</b>	Indian Ocean Tsunami Warning System
<b>ISME</b>	International Society for Mangrove Ecosystems
<b>IUCN</b>	The World Conservation Union
<b>IWMI</b>	International Water Management Institute
<b>JICA</b>	Japan International Cooperation Agency
<b>LOICZ</b>	Land-Ocean Interactions in the Coastal Zone
<b>NACA</b>	Network of Aquaculture Centres in Asia-Pacific
<b>NGO</b>	Non-Governmental Organisation
<b>NOAA</b>	US National Oceanic and Atmospheric Administration
<b>SAARC</b>	South Asian Association for Regional Cooperation
<b>SACEP</b>	South Asia Co-operative Environment Programme
<b>SANDEE</b>	South Asia Network for Development and Environmental Economics
<b>SEAFDEC</b>	Southeast Asian Fisheries Development Center
<b>SSC</b>	Species Survival Commission
<b>TERI</b>	The Energy and Resources Institute
<b>TNC</b>	The Nature Conservancy
<b>UNDP</b>	United Nations Development Programme
<b>UNEP</b>	United Nations Environment Programme
<b>UNESCO</b>	United Nations Educational, Scientific and Cultural Organisation
<b>USAID</b>	United States Agency for International Development
<b>WCMC</b>	UNEP World Conservation Monitoring Centre
<b>WCPA</b>	World Commission on Protected Areas
<b>WCS</b>	Wildlife Conservation Society
<b>WIOMSA</b>	Western Indian Ocean Marine Science Association
<b>WWF</b>	Worldwide Fund for Nature

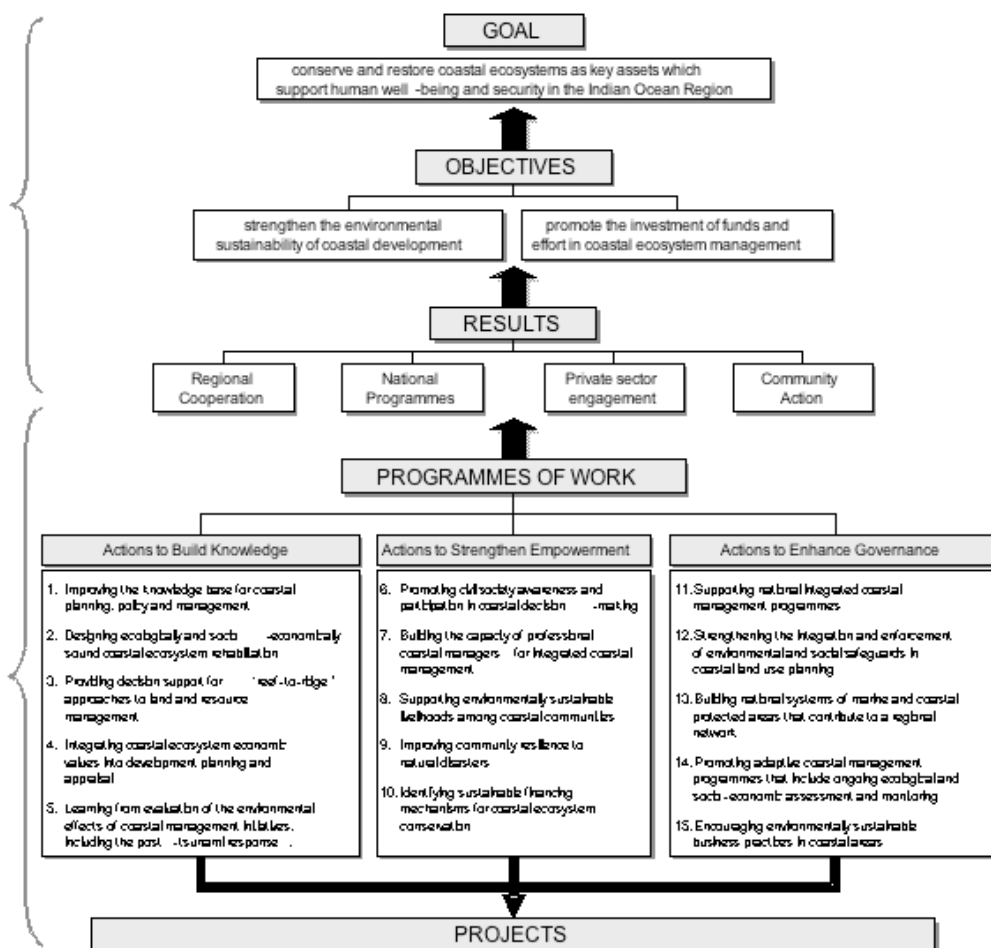
FROM STRATEGY TO ACTION



## Strategic and implementation framework

The strategy for Mangroves for the Future (MFF) is based on a vision of a more healthy, prosperous and secure future for all sections of coastal populations in Indian Ocean countries, where all ecosystems are conserved and managed sustainably.

Full details of the overall strategic framework for MFF are contained in the document *Mangroves for the Future: A strategy for promoting investment in coastal ecosystem conservation* (September 2006), available at <http://www.iucn.org/tsunami>. MFF's goal and objectives contribute towards the conservation and restoration of coastal ecosystem as an essential part of coastal development infrastructure. The first works at the level of the direct actions and interventions that are required to manage coastal ecosystems sustainably, equitably and effectively. The second objective works to strengthen the broader frameworks that influence people's investments and actions, and which enable or hinder environmentally sustainable coastal development. Together, these objectives tackle both the direct and the underlying causes of ecosystem degradation, unsustainable livelihoods and persistent vulnerability in coastal areas of Indian Ocean countries.



### Strategic and implementation framework

#### Results

At the level of implementation, MFF is founded on making knowledge available, empowering institutions and people to use that knowledge, and thereby enabling them to participate more effectively in decision-making and in promoting good governance in coastal areas. MFF intends to effect demonstrable changes through 19 results, spread across four key areas of influence:

regional cooperation, national programme support, private sector engagement and community action.

Fifteen broad programmes of work have been designed to effect the changes reflected in these results by tackling key aspects of coastal management in which effort is required. The initiative will be implemented through a series of on-the-ground projects which will deliver these actions, outputs and associated results. Together these result areas represent the types of changes, and involve the main stakeholder groups, where support and action is required to address the current and future threats to ecosystems and livelihoods, and to conserve and restore coastal ecosystems for long-term human well-being and security.

	Results that will strengthen the environmental sustainability of coastal development	Results that will promote the investment of funds and effort in coastal ecosystem management
<b>REGIONAL COOPERATION</b>	<p><b>R1.1</b> More effective institutions and mechanisms for cooperation in coastal ecosystem management</p> <p><b>R1.2</b> Safe space and constructive dialogue for discussing sensitive issues</p> <p><b>R1.3</b> Stronger regional voice in global dialogues and decisions</p>	<p><b>R2.1</b> Increased prioritisation of coastal ecosystem management in the development agendas of regional institutions</p> <p><b>R2.2</b> More efficient and effective impact and use of resources to support environmentally sustainable coastal development at the regional level</p>
<b>NATIONAL PROGRAMME SUPPORT</b>	<p><b>N1.1</b> More effective policy, legal and institutional mechanisms for inter-sectoral coordination in environmental aspects of coastal management</p> <p><b>N1.2</b> Strengthened alliances and procedures to improve environmental law enforcement and compliance</p> <p><b>N1.3</b> More inclusive development planning, appraisal, approval and monitoring processes which reflect ecosystem needs</p> <p><b>N1.4</b> More sustainable, equitable and effective protection, and where necessary rehabilitation, of coastal ecosystems</p>	<p><b>N2.1</b> Increased prioritisation of coastal ecosystem management across national development agendas, policies and budgets</p> <p><b>N2.2</b> More aware, engaged and empowered civil society supporting coastal ecosystem conservation</p> <p><b>N2.3</b> Increased and more effective investment of funds in coastal ecosystem management</p>
<b>PRIVATE SECTOR ENGAGEMENT</b>	<p><b>P1.1</b> Enhanced action in coastal conservation through partnership with the private sector</p> <p><b>P1.2</b> More environmentally sustainable business, industry and commerce in coastal areas</p>	<p><b>P2.1</b> Greener business plans which recognise and reflect ecosystem services</p> <p><b>P2.2</b> Enhanced investment in ecosystems as infrastructure, and fair payment for the benefits of ecosystem services</p>
<b>COMMUNITY ACTION</b>	<p><b>C1.1</b> More environmentally sustainable coastal livelihoods</p> <p><b>C1.2</b> More integrated development and conservation actions which serve to reduce vulnerability and increase resilience among coastal communities</p>	<p><b>C2.1</b> Improved participation in, support for, and benefit from, ecosystem conservation among coastal dwellers, especially women</p>

## From strategy to action: the programmes of work at a glance

The programmes of work delineate the key aspects of coastal management in which Mangroves for the Future will work to build knowledge, strengthen empowerment and enhance governance. Each programme of work incorporates a series of actions and outputs. The actions and outputs under each programme of work define what the initiative will undertake in concrete terms in order to achieve its results. On-the-ground projects will deliver these actions and outputs. It is envisaged that between 2-3 projects will be carried out under each programme of work, and each project will undertake to deliver at least 3 actions and outputs.



Programmes of Work	Actions/Outputs		Contribution to results
ACTIONS TO BUILD KNOWLEDGE			
1. Improving the knowledge base for coastal planning, policy and management	1.1	Gap analysis of existing knowledge resources and data sources as compared to the needs of coastal managers for information.	R1.2: Safe space and constructive dialogue for discussing sensitive issues R1.3: Stronger regional voice in global dialogues and decisions N1.3: More inclusive development planning, appraisal, approval and monitoring processes which reflect ecosystem needs
	1.2	National and site-level baseline assessments of coastal biodiversity, ecosystems and livelihoods in order to contribute to a regional inventory, including an assessment of risk and vulnerability.	
	1.3	Appropriate regional and national-level information networks, resource centres, databases and/or meta-databases.	
	1.4	Support to existing national data and GIS centres in accessing and sharing relevant data regarding coastal zone ecosystems.	
	1.5	Targeted research to fill key data gaps and information needs.	
2. Designing ecologically and socio-economically sound coastal ecosystem rehabilitation	2.1	Review of restoration work already underway (both before and during the post-tsunami reconstruction process), identification of national, regional and global expertise, and dissemination (with the possible establishment of a global database on rehabilitation projects) of best practices and lessons learned.	N1.4: More sustainable, equitable and effective protection, and where necessary rehabilitation, of coastal ecosystems P1.1: Enhanced action in coastal conservation through partnership with the private sector C1.1: More environmentally sustainable coastal livelihoods
	2.2	Within each country identification of areas that require, and are suitable for, rehabilitation, and those that are suitable for natural regeneration.	
	2.3	Capacity building for rehabilitation through the development and/or dissemination of best practice guidelines and training courses in local languages.	
	2.4	Monitoring to assess the impacts of restoration, using indicators for measuring impacts and performance at the species and ecosystem levels, as well as on the socio-economic status of surrounding human populations.	
	2.5	Application of management and eradication measures for invasive alien species in coastal ecosystems, and measures to halt their use for shoreline protection.	
3. Providing decision support for 'reef-to-ridge' approaches to land and resource management	3.1	Enhance awareness of the need for "reef to ridge" approaches among inland land and resource managers, river-basin planners and policy-makers.	N1.1: More effective policy, legal and institutional mechanisms for inter-sectoral coordination in environmental aspects of coastal management N1.3: More inclusive development planning, appraisal, approval and monitoring processes which reflect ecosystem needs N2.1: Increased prioritisation of coastal ecosystem management across national development agendas, policies and budgets
	3.2	Analysis of existing land-based activities which impact on coastal ecosystems and livelihoods, in order to identify appropriate plans for reversal and mitigation.	
	3.3	Promote inclusion of coastal stakeholders in existing and planned integrated land and water resource management strategies and mechanisms for dialogue.	
	3.4	Design and distribute a decision support tool that incorporates 'reef to ridge' considerations.	

Programmes of Work	Actions/Outputs	Contribution to results
4. Integrating coastal ecosystem economic values into development planning and appraisal	<p><b>4.1</b> Development of simple, easy-to-apply ecosystem valuation tools and methods that can be used for planning and appraising coastal conservation and development activities.</p> <p><b>4.2</b> Generation of information on coastal ecosystem values in response to specific development and conservation challenges and issues, and for particular high-value or threatened ecosystems and locations.</p> <p><b>4.3</b> Training and awareness building among both development and conservation planners on the economic value of coastal ecosystems and the use of economic tools.</p> <p><b>4.4</b> Development of decision-support tools, including databases and GIS maps, which integrate data on economic values with information on biophysical and socio-economic characteristics, trends and vulnerabilities in coastal areas.</p>	<p>R2.1: Increased prioritisation of coastal ecosystem management in the development agendas of regional institutions</p> <p>R2.2: More efficient and effective impact and use of resources to support environmentally sustainable coastal development at the regional level</p> <p>N1.3: More inclusive development planning, appraisal, approval and monitoring processes which reflect ecosystem needs</p> <p>N2.1: Increased prioritisation of coastal ecosystem management across national development agendas, policies and budgets</p> <p>N2.3: Increased and more effective investment of funds in coastal ecosystem management</p> <p>P2.2: Enhanced investment in ecosystems as infrastructure, and fair payment for the benefits of ecosystem services</p> <p>C2.1: Improved participation in, support for, and benefit from, ecosystem conservation among coastal dwellers, especially women</p>
5. Learning from evaluation of the environmental effects of coastal management initiatives, including the post-tsunami response	<p><b>5.1</b> Region-wide evaluation of environmental impacts of the post-tsunami reconstruction process, efforts at ecosystem restoration, and review of funding to environmental activities.</p> <p><b>5.2</b> Development of consolidated methods and networks for environmental/ecosystem monitoring and evaluation and their application to ongoing programmes of coastal reconstruction, development and ecosystem conservation, including their application to all activities carried out under MFF.</p> <p><b>5.3</b> Dissemination and ongoing sharing of practical and policy relevant findings and recommendations of environmental evaluation post-tsunami, including lessons learned and identified priorities for future action.</p> <p><b>5.4</b> Targeted review of the impacts of the tsunami on women's use and management of the environment for livelihoods.</p>	<p>R1.1: More effective institutions and mechanisms for cooperation in coastal ecosystem management</p> <p>R1.2: Safe space and constructive dialogue for discussing sensitive issues</p> <p>R2.2: More efficient and effective impact and use of resources to support environmentally sustainable coastal development at the regional level</p> <p>N2.3: Increased and more effective investment of funds in coastal ecosystem management</p>

Programmes of Work	Actions/Outputs	Contribution to results
<b>ACTIONS TO STRENGTHEN EMPOWERMENT</b>		
6. Promoting civil society awareness and participation in coastal decision-making	<p><b>6.1</b> Targeted awareness programmes on the role and importance of coastal ecosystems for development and livelihoods, for stakeholders such as women, school children, resource users, protected area buffer communities, urban dwellers, local government administration and national development decision-makers.</p> <p><b>6.2</b> Translation of key documents and information materials into local language, and adaptation to local conditions and circumstances.</p> <p><b>6.3</b> Development of primary and secondary school curricula on coastal ecosystem topics.</p> <p><b>6.4</b> Support to multi-stakeholder forums for coastal zone management, at the local level and within the context of national ICM programmes.</p> <p><b>6.5</b> Work with the mass media to build the capacity of journalists and writers to report on ecosystem concerns in radio, TV and newspapers, with a special focus on local language presentation.</p> <p><b>6.6</b> Support for women's fora to discuss and elaborate ideas and tools for the restoration work.</p>	<p>N1.1: More effective policy, legal and institutional mechanisms for inter-sectoral coordination in environmental aspects of coastal management</p> <p>N1.2: Strengthened alliances and procedures to improve environmental law enforcement and compliance</p> <p>N2.2: More aware, engaged and empowered civil society supporting coastal ecosystem conservation</p> <p>C2.1: Improved participation in, support for, and benefit from, ecosystem conservation among coastal dwellers, especially women</p>
7. Building the capacity of professional coastal managers for integrated coastal management	<p><b>7.1</b> National capacity and training needs assessments for different stakeholder groups in order to identify gaps, needs, strengths and opportunities for building capacity in ICM.</p> <p><b>7.2</b> Support to existing regional and national centres of training, research and excellence in ICM.</p> <p><b>7.3</b> Support to tertiary education and research in ICM through grants, partnership and leadership development programmes.</p> <p><b>7.4</b> Development of targeted training modules for continuing education of coastal practitioners and managers.</p>	<p>R1.1: More effective institutions and mechanisms for cooperation in coastal ecosystem management</p> <p>R2.1: Increased prioritisation of coastal ecosystem management in the development agendas of regional institutions</p> <p>R2.2: More efficient and effective impact and use of resources to support environmentally sustainable coastal development at the regional level</p> <p>N1.1: More effective policy, legal and institutional mechanisms for inter-sectoral coordination in environmental aspects of coastal management</p> <p>N2.1: Increased prioritisation of coastal ecosystem management across national development agendas, policies and budgets</p>

Programmes of Work	Actions/Outputs	Contribution to results
8. Supporting environmentally sustainable livelihoods among coastal communities	<p><b>8.1</b> Development of models to guide livelihood restoration in post-disaster situations, and methodologies to promote an action-learning approach to ensure that livelihood restoration activities are adapted to specific local needs and ecosystem conditions.</p> <p><b>8.2</b> Development and replication of small community-led ecotourism activities related to mangroves and other coastal ecosystems, and improve access to markets.</p> <p><b>8.3</b> Support the restoration of fisheries and aquaculture in tsunami-affected areas, and ensure that these efforts are environmentally sustainable.</p> <p><b>8.4</b> Development of efforts to add value to local use and marketing of non-fish mangrove products, linked to community-based management and conservation approaches.</p> <p><b>8.5</b> Identification and information sharing on alternative livelihoods which can address key threats to coastal ecosystems which arise from unsustainable exploitation or damaging harvesting methods, while meeting the long-term needs and changing socio-economic aspirations of coastal communities.</p>	<p>C1.1: More environmentally sustainable coastal livelihoods</p> <p>C1.2: More integrated development and conservation actions which serve to reduce vulnerability and increase resilience among coastal communities</p> <p>C2.1: Improved participation in, support for, and benefit from, ecosystem conservation among coastal dwellers, especially women</p>
9. Improving community resilience to natural disasters	<p><b>9.1</b> Further application of vulnerability assessment and mapping in coastal areas, including integrating livelihood and ecosystem information into exiting databases and associated disaster preparedness and response strategies.</p> <p><b>9.2</b> Continuation and incorporation of additional countries into the coastal community resilience component of the USAID IOTWS, including replicating activities in other villages, and extending methodologies for assessing community vulnerability, with particular attention to the most vulnerable groups including women and children.</p> <p><b>9.3</b> Support for activities to strengthen coastal shelter belts and green belts where they are clearly needed and have been proved to make a demonstrable contribution to the protection of coastal communities and settlements, using environmentally-sound techniques.</p>	<p>C1.2: More integrated development and conservation actions which serve to reduce vulnerability and increase resilience among coastal communities</p> <p>C2.1: Improved participation in, support for, and benefit from, ecosystem conservation among coastal dwellers, especially women</p>
10. Identifying sustainable financing mechanisms for coastal ecosystem conservation	<p><b>10.1</b> Review of innovative and sustainable funding mechanisms which have applicability to coastal areas and coastal management actions.</p> <p><b>10.2</b> Development of materials on the economic return to investing in coastal ecosystems as infrastructure, and associated awareness campaign for decision-makers who determine and allocate government budget allocations and overseas development assistance.</p> <p><b>10.3</b> Piloting of payment for ecosystem services schemes for selected coastal ecosystems and management programmes, based on private-public-community partnerships.</p> <p><b>10.4</b> Review of the needs and opportunities for a regional trust fund for coastal ecosystem management, leading to recommendations for development if appropriate.</p> <p><b>10.5</b> Development and implementation of long-term sustainable financing strategies for key MFF actions, paying particular attention to actions aimed at protected area management, coastal ecosystem rehabilitation, and community sustainable livelihood activities.</p>	<p>R2.1: Increased prioritisation of coastal ecosystem management in the development agendas of regional institutions</p> <p>N2.1: Increased prioritisation of coastal ecosystem management across national development agendas, policies and budgets</p> <p>N2.3: Increased and more effective investment of funds in coastal ecosystem management</p> <p>P2.2: Enhanced investment in ecosystems as infrastructure, and fair payment for the benefits of ecosystem services</p>

Programmes of Work	Actions/Outputs	Contribution to results
<b>ACTIONS TO ENHANCE GOVERNANCE</b>		
11. Supporting national integrated coastal management programmes	<p><b>11.1</b> Assessment of national institutional mechanisms and programmes for ICM in order to identify and operationalise appropriate, inclusive and sustainable governance mechanisms for MFF.</p> <p><b>11.2</b> In India, support to the operations of state-level coastal zone management authorities.</p> <p><b>11.3</b> In Indonesia, support to the finalisation of ICM legislation and plans for its implementation, capacity building to enable the development of Provincial and District level ICM arrangements, support to the implementation of the National Mangrove Ecosystem Management Strategy, with particular emphasis on Aceh Province.</p> <p><b>11.4</b> In Maldives, support to the development of measures and mechanisms for inter-sectoral coordination in integrated coastal management.</p> <p><b>11.5</b> In Seychelles, support to the revision of policy and legislation on coastal development to reflect ecosystem concerns.</p> <p><b>11.6</b> In Sri Lanka, support to inter-sectoral mechanisms for integrated coastal zone management through the Coast Conservation Department.</p> <p><b>11.7</b> In Thailand, continued support to the development and implementation of Promotion of Marine and Coastal Resources Management Act and National Coastal and Marine Policy.</p>	<p>R1.1: More effective institutions and mechanisms for cooperation in coastal ecosystem management</p> <p>N1.1: More effective policy, legal and institutional mechanisms for inter-sectoral coordination in environmental aspects of coastal management</p> <p>N2.1: Increased prioritisation of coastal ecosystem management across national development agendas, policies and budgets</p> <p>N2.3: Increased and more effective investment of funds in coastal ecosystem management</p> <p>C2.1: Improved participation in, support for, and benefit from, ecosystem conservation among coastal dwellers, especially women</p>
12. Strengthening the integration and enforcement of environmental and social safeguards in coastal land use planning	<p><b>12.1</b> Review of legal and regulatory measures governing coastal zone land use and development, and associated information sharing among coastal planners and developers.</p> <p><b>12.2</b> Support to the development of spatial plans for coastal zones at national and local levels, including assessing critical and vulnerable ecosystems and needs for ecosystem protection within land use zoning.</p> <p><b>12.3</b> Support to the formation of resolution mechanisms to deal with land-use conflicts around critical ecosystems, particularly protected areas.</p>	<p>N1.1: More effective policy, legal and institutional mechanisms for inter-sectoral coordination in environmental aspects of coastal management</p> <p>N1.2: Strengthened alliances and procedures to improve environmental law enforcement and compliance</p> <p>N1.3: More inclusive development planning, appraisal, approval and monitoring processes which reflect ecosystem needs</p> <p>P2.1: Greener business plans which recognise and reflect ecosystem services</p>

Programmes of Work	Actions/Outputs	Contribution to results
13. Building national systems of marine and coastal protected areas that contribute to a regional network	<p><b>13.1</b> Gap analysis to review existing protected area coverage, identify regionally or nationally under-represented ecosystems, and recommend areas in need of additional protection.</p> <p><b>13.2</b> Assessment of management effectiveness of existing protected areas leading to the development of strategies for management improvements.</p> <p><b>13.3</b> Support to the development of new, or strengthening of existing, protected areas in critical or under-represented coastal ecosystems</p> <p><b>13.4</b> Supporting a regional forum and learning network to share knowledge and approaches on protected area management.</p> <p><b>13.5</b> Development of codes of conduct for the tourism industry for the use of protected areas.</p>	<p>N1.4: More sustainable, equitable and effective protection, and where necessary rehabilitation, of coastal ecosystems</p> <p>P1.1: Enhanced action in coastal conservation through partnership with the private sector</p> <p>N2.3: Increased and more effective investment of funds in coastal ecosystem management</p> <p>C2.1: Improved participation in, support for, and benefit from, ecosystem conservation among coastal dwellers, especially women</p>
14. Promoting adaptive coastal management programmes that include ongoing ecological and socio-economic assessment and monitoring	<p><b>14.1</b> Needs assessment to identify exiting socio-economic and ecological baselines, and gap-filling of deficiencies in key data and indicators.</p> <p><b>14.2</b> Support to regional and national systems for the spatial assessment of ecosystems using satellite imagery, and to mechanisms for developing the communication and information sharing necessary to combine data at a regional level.</p> <p><b>14.3</b> Development, and associated training in the use of, common protocols for community-based and scientific monitoring of coastal ecosystem health and socio-economic indicators.</p> <p><b>14.4</b> Application of ecological and socio-economic assessment and monitoring mechanisms for key MFF actions, paying particular attention to actions aimed at protected area management, coastal ecosystem rehabilitation, and community sustainable livelihood activities.</p>	<p>R2.2: More efficient and effective impact and use of resources to support environmentally sustainable coastal development at the regional level</p> <p>N1.4: More sustainable, equitable and effective protection, and where necessary rehabilitation, of coastal ecosystems</p> <p>N2.1: Increased prioritisation of coastal ecosystem management across national development agendas, policies and budgets</p>
15. Encouraging environmentally sustainable business practices in coastal areas	<p><b>15.1</b> Development and dissemination of sector-specific guidelines on environmental risks, threats and opportunities, and existing regulatory mechanisms, involving both the adaptation of existing materials (including those produced after the tsunami) as well as production of new resources.</p> <p><b>15.2</b> Awareness-raising among chambers of commerce and other business/commercial associations on green business opportunities and benefits.</p> <p><b>15.3</b> Targeted support to specific partnerships between government, NGOs and local communities and the private sector in developing joint mechanisms and collaborative arrangements for identifying opportunities for green enterprise development and support to coastal conservation.</p> <p><b>15.4</b> Development of codes of conduct, leading to possible certification schemes where appropriate, for key industries and business sectors such as tourism, housing and fisheries.</p>	<p>P1.1: Enhanced action in coastal conservation through partnership with the private sector</p> <p>P1.2: More environmentally sustainable business, industry and commerce in coastal areas</p> <p>P2.1: Greener business plans which recognise and reflect ecosystem services</p> <p>P2.2: Enhanced investment in ecosystems as infrastructure, and fair payment for the benefits of ecosystem services</p>

## ACTIONS TO BUILD KNOWLEDGE





# 1. Improving the knowledge base for coastal planning, policy and management

## *Needs and challenges*

A sound ecological, biophysical and socio-economic knowledge base, including spatial data on resources, hazards and infrastructure, as well as on their management and use arrangements, is essential for good coastal zone management. Although there has been extensive research in the region, and many data collected, key gaps in knowledge remain. For example UNEP, in the rapid environmental assessments prepared in the immediate aftermath of the tsunami, noted the lack of readily-available environmental data. These gaps were reiterated frequently in the MFF country consultations.

Subsequently, information covering the social, economic and biophysical impact of the tsunami and on livelihoods was collected, and new data gathering activities were initiated regionally and nationally (for example through IUCN's Regional Information Hub on Coastal Ecosystems, UNDP's Development Assistance Database, UNEP's Environmental Knowledge Centre, and Trinet in India). Nevertheless, considerable gaps in information remain.

Even where available, information about key aspects of coastal ecosystems, their goods, services and interactions with other elements of human and physical infrastructure, are still poorly understood or imply inaccessible to those who need it when they need it. Reports and datasets are often scattered across different sources, necessitating time-consuming research. This is partly attributable to data being not being available to the general public because they are held in research institutions or by government bodies who lack incentives and methods for data sharing, as well as lack of easy systems for finding information.

While there are several relevant global database (such as UNEP's World Conservation Monitoring Centre, ISME's global mangrove database and information system (GLOMIS), WorldFish's databases on fish and coral reefs, FAO's forestry, agricultural and fisheries databases, and the UNEP-GPA clearing-house mechanism), these do not necessarily deal with appropriate scales for local coastal management. The national information systems and GIS centres that exist in most countries are more suited to the tasks needed, but often lack data, or are focused on terrestrial areas rather than coastal zones.

Coastal managers frequently do not have knowledge of, or access to, these information resources, or find that the raw data they contain is not immediately or easily applicable to real-world management needs. A key challenge is to ensure that adequate social science and natural science information is made available in a practical and policy-relevant form, which can meet coastal planning needs and is geared towards addressing critical issues and threats relating to coastal zone development, conservation and disaster preparedness. Consultations identified a number of regional and global agencies who are already engaged in similar work or are interested in becoming engaged in these activities, including the Species Survival Commission, Greencoast Initiative, IWM, ICRAF and WorldFish.

## *Actions and outputs*

This programme of work intends to carry out actions to generate the following outputs:

- 1.1 Gap analysis of existing knowledge resources and data sources as compared to the needs of coastal managers for information, including for risk reduction and disaster management.
- 1.2 National and site-level baseline assessments of coastal biodiversity, ecosystems and livelihoods in order to contribute to a regional inventory, including an assessment of risk and vulnerability.
- 1.3 Appropriate regional and national-level information networks, resource centres, databases and/or meta-databases.

- 1.4 Support to existing national data and GIS centres in accessing and sharing relevant data regarding coastal zone ecosystems.
- 1.5 Targeted research to fill key data gaps and information needs, including:
  - The nature, magnitude and benefit of coastal ecosystem services (such as support to fisheries productivity, storm and wave control and shoreline protection);
  - Resilience and recovery rates of different species and communities in vegetated coastal ecosystems;
  - Presence and impact of invasive alien species in coastal ecosystems.

### *Contribution to results*

The actions to be carried out under this programme of work will contribute towards the following MFF results:

- Safe space and constructive dialogue for discussing sensitive issues
- More inclusive development planning, appraisal, approval and monitoring processes which reflect ecosystem needs
- Stronger regional voice in global dialogues and decisions

### *Estimated budget*

	US\$ million					
	Total	2007	2008	2009	2010	2011
Improving the knowledge base for coastal planning, policy and management.	5.0	0.15	1.50	1.25	1.25	0.85

### *Agencies who have expressed an interest in collaboration*

During the course of the MFF consultations, a number of agencies expressed an interest in collaborating as partners in the implementation of this programme of work. This includes interests in developing and partnering in new projects, as well as the existence of ongoing or planned projects and programmes which contribute towards MFF results and objectives.

At the country level, the regional, national and local consultations identified a wide range of CBOs, NGOs and government departments with a proven track-record and interest in partnering in projects which contribute towards the actions and outputs for this Programme of Work. At the regional and international level, the Species Survival Commission, GreenCoast Project, IWMI, ICRAF, ISME, FAO, UNEP-WCMC, UNEP GPA and WorldFish Center expressed an interest in participating in this Programme of Work.

The RSC will work with these potential implementing partners during the early part of 2007 to foster linkages between project partners, and develop detailed project proposals to be funded under MFF.

## 2. Designing ecologically and socio-economically sound coastal ecosystem rehabilitation

### *Needs and challenges*

Although in most cases coastal ecosystems are naturally resilient and can recover once a stress has been removed, this process can be slow. When ecosystems are damaged severely or converted radically, natural recovery may not be possible. For these reasons, active interventions to rehabilitate ecosystems may be required.

Mangrove restoration programmes have for some time been underway in Indian Ocean countries, and tsunami programmes accelerated this work. The post-tsunami reconstruction process stimulated a focus on coastal ecosystem rehabilitation, particularly mangroves, targeting areas which had been damaged by the tsunami itself as well as aiming to reforest or afforest new sites or areas which had lost their vegetative cover in the past. However, mangroves are far complex and diverse ecosystems, and restoring a mangrove community to its full complement of biodiversity is very difficult. While the post-tsunami experience has generated notable successes (for example through the work of the Mangrove Action Project in Indonesia), some of the efforts at mangrove rehabilitation have failed to reach their intended targets.

The desire for quick effects meant that, often, little attention was paid to the skills and technical knowledge needed. In a number of cases mangrove replanting did not pay attention to the biophysical, socio-economic and institutional conditions necessary for successful rehabilitation, including the baseline situation and shifting baselines. Mangroves were planted in unsuitable areas (for example without due attention to prior or current existence of mangroves, or appropriate soil and tidal conditions), with unsuitable species (for example with exotic species, or as monocultures), in sites where existing stresses and threats remained intense, or without the active participation and support of local communities and government institutions. Although well-intentioned, such efforts have in the event had little impact on local ecosystem and livelihood status.

There remains a pressing need for better coastal ecosystem restoration in areas where severe degradation has taken place, and natural processes or regeneration have been undermined. A key challenge is however to ensure that restoration programmes are based on sound science, techniques and approaches. During the consultations for MFF, there was widespread agreement that there are a plethora of replanting initiatives, many of which lack the necessary planning and scientific rigour to succeed. At the same time, despite the existence of multiple guides, toolkits and handbooks on replanting, there have been few attempts to share knowledge, experiences and best practices between sites and countries (the Global Environment Centre is making some efforts in this regard to share experiences and evaluate replanting programmes in Malaysia and other countries, and a Mangrove Code of Conduct has recently been developed under World Bank funding).

The need for sharing of experiences, and training in suitable and sustainable ecosystem rehabilitation techniques, was identified as a priority in India, Indonesia, Maldives, Seychelles, Sri Lanka and Thailand. Consultations also highlighted the challenge of ensuring that implementing organisations (including local communities) have the appropriate skills, and that the specific requirements of different species are understood. Restoration of ecosystems involves a wide range of activities in addition to replanting, for example the removal of alien invasive species (considered a particular priority in Aceh and Sri Lanka), mechanisms for community engagement and benefit, and consideration of tenurial, legal and management arrangements once ecosystems have been re-established. Consultations identified a number of regional and global agencies who are already engaged in similar work or are interested in becoming engaged in these activities, including FAO, FFI, Species Survival Commission, Wetlands International, the Greencoast Initiative, ISME, Mangrove Action Project and JICA Mangrove Centre.

## *Actions and outputs*

This programme of work intends to carry out actions to generate the following outputs:

- 2.1 Review of restoration work already underway (both before and during the post-tsunami reconstruction process), identification of national, regional and global expertise, and dissemination (with the possible establishment of a global database on rehabilitation projects) of best practices and lessons learned.
- 2.2 Within each country identification of areas that require, and are suitable for, rehabilitation, and those that are suitable for natural regeneration.
- 2.3 Capacity building for rehabilitation through the development and/or dissemination of best practice guidelines and training courses in local languages.
- 2.4 Monitoring to assess the impacts of restoration, using indicators for measuring impacts and performance at the species and ecosystem levels, as well as on the socio-economic status of surrounding human populations.
- 2.5 Application of management and eradication measures for invasive alien species in coastal ecosystems, and measures to halt their use for shoreline protection.

## *Contribution to results*

The actions to be carried out under this programme of work will contribute towards the following MFF results:

- More sustainable, equitable and effective protection, and where necessary rehabilitation, of coastal ecosystems
- Enhanced action in coastal conservation through partnership with the private sector
- More environmentally sustainable coastal livelihoods

## *Estimated budget*

	US\$ million					
	Total	2007	2008	2009	2010	2011
Designing ecologically and socio-economically sound coastal ecosystem rehabilitation.	2.0	0.25	0.50	0.50	0.50	0.25

## *Agencies who have expressed an interest in collaboration*

During the course of the MFF consultations, a number of agencies expressed an interest in collaborating as partners in the implementation of this programme of work. This includes interests in developing and partnering in new projects, as well as the existence of ongoing or planned projects and programmes which contribute towards MFF results and objectives.

At the country level, the regional, national and local consultations identified a wide range of CBOs, NGOs and government departments with a proven track-record and interest in partnering in projects which contribute towards the actions and outputs for this Programme of Work. At the regional and international level, FAO, FFI, Species Survival Programme, Wetlands International and the GreenCoast project, ISME, JICA Mangrove Center and the Mangrove Action Project expressed an interest in participating in this Programme of Work.

The RSC will work with these potential implementing partners during the early part of 2007 to foster linkages between project partners, and develop detailed project proposals to be funded under MFF.

### 3. Providing decision support for ‘reef-to-ridge’ approaches to land and resource management

#### *Needs and challenges*

Damage to coastal ecosystems (and associated impacts on human well-being) results not only from activities carried out in the coastal zone, but also from those carried out further inland. Pollution (from municipal, industrial and domestic sources) as well as waste and runoff from agriculture results in nutrient enrichment of the ocean and toxic impacts on coastal and marine organisms. Upstream deforestation and other forms of vegetation clearance are responsible for escalating sediment loads in rivers, estuaries and coastal waters, and choke coastal and marine ecosystems. Many coastal ecosystems, particularly mangroves, are also increasingly affected by changes in upstream hydrology caused by water abstraction and storage (for example by irrigation, hydropower and urban water supply schemes), and reduction in the timing or volume of freshwater flows.

A landscape, or “reef to ridge” approach is required to address these problems and threats to coastal ecosystems and livelihoods. Although there are many initiatives underway in the region which address land-based sources of pollution, catchment management, and other issues in inland environmental management, relatively few consider downstream coastal ecosystems as a consideration or target for their actions. In turn, most coastal conservation activities do not focus on activities or actions further inland.

This disconnect is exacerbated by weak awareness (among both coastal and inland planner and managers) of the linkages and impacts, or the action required to address them. Activities undertaken by UNEP-GPA, LOICZ and SACEP represent efforts to establish this link, and set in place measures which tackle shared impacts and concerns as they interface between inland and coastal areas. Consultations identified a number of regional and global agencies who are already engaged in similar work or are interested in becoming engaged in these activities, including UNEP, LOICZ, SACEP and WWF.

#### *Actions and outputs*

This programme of work intends to carry out actions to generate the following outputs:

- 3.1 Enhance awareness of the need for “reef to ridge” approaches among inland land and resource managers, river-basin planners and policy-makers.
- 3.2 Analysis of existing land-based activities which impact on coastal ecosystems and livelihoods, in order to identify appropriate plans for reversal and mitigation.
- 3.3 Promote inclusion of coastal stakeholders in existing and planned integrated land and water resource management strategies and mechanisms for dialogue.
- 3.4 Design and distribute a decision support tool that incorporates ‘reef to ridge’ considerations

#### *Contribution to results*

The actions to be carried out under this programme of work will contribute towards the following MFF results:

- More effective policy, legal and institutional mechanisms for inter-sectoral coordination in environmental aspects of coastal management
- More inclusive development planning, appraisal, approval and monitoring processes which reflect ecosystem needs
- Increased prioritisation of coastal ecosystem management across national development agendas, policies and budgets

### *Estimated budget*

	US\$ million					
	Total	2007	2008	2009	2010	2011
Providing decision support for 'reef-to-ridge' approaches to land and resource management.	2.0		0.50	0.50	0.50	0.50

### *Agencies who have expressed an interest in collaboration*

During the course of the MFF consultations, a number of agencies expressed an interest in collaborating as partners in the implementation of this programme of work. This includes interests in developing and partnering in new projects, as well as the existence of ongoing or planned projects and programmes which contribute towards MFF results and objectives.

At the country level, the regional, national and local consultations identified a wide range of CBOs, NGOs and government departments with a proven track-record and interest in partnering in projects which contribute towards the actions and outputs for this Programme of Work. At the regional and international level, UNEP Regional Seas Programme, LOICZ, WWF, UNEP-GPA and SACEP expressed an interest in participating in this Programme of Work.

The RSC will work with these potential implementing partners during the early part of 2007 to foster linkages between project partners, and develop detailed project proposals to be funded under MFF.

## 4. Integrating coastal ecosystem economic values into development planning and appraisal

### *Needs and challenges*

There is a generally poor understanding of the economic value of coastal ecosystems. Although most people are well aware of the role that resource-based industries (such as fisheries and tourism) play in coastal economies, and these data are reflected in economic statistics and development indicators, there is less comprehension of just how important these goods and raw materials are in terms of their multiplier effects at local and national levels (for example in terms of their contribution to the national economy, or their role in local livelihoods and poverty alleviation). Little or no data exists, and there is extremely weak awareness, on the economic value of coastal ecosystem services (such as safeguarding coastal production and consumption, reducing vulnerability, and strengthening resilience). The small amount of work that has been carried out in this area (such as by EEPSEA and SANDEE) tends to remain mainly academic, and its findings have largely failed to reach conservation and development decision makers and planners.

Undervaluation means both that ecosystems tend to be marginalised in mainstream coastal zone economic and development decision-making (leading to activities which degrade, convert and deplete ecosystems). Project and programme appraisals rarely factor in ecosystem and environmental impacts, and there is seen to be little development or economic rationale for investing in conservation. At the same time, undervaluation means that coastal conservation initiatives frequently fail to develop approaches which are economically sustainable, or tackle the direct and underlying economic causes of ecosystem degradation. It also constrains the identification and development of financial and economic incentives for coastal conservation, and the integration of livelihood and ecosystem goals and approaches.

The MFF consultation identified undervaluation as an obstacle to sustainable coastal zone development. In particular, a need was identified to improve the information base on the economic value of coastal ecosystem services, and to make efforts to ensure that these values are routinely incorporated into development planning, economic indicators and statistics, and investment and project appraisal. The use of valuation to identify needs and opportunities for capturing ecosystem benefits sustainably in conservation efforts (such as through value-added and income-generating activities) was also highlighted as a priority. Consultations identified a number of regional and global agencies who are already engaged in similar work or are interested in becoming engaged in these activities, including SANDEE, EEPSEA, CARE and WIOMSA.

### *Actions and outputs*

This programme of work intends to carry out actions to generate the following outputs:

- 4.1 Development of simple, easy-to-apply ecosystem valuation tools and methods that can be used for planning and appraising coastal conservation and development activities.
- 4.2 Generation of information on coastal ecosystem values in response to specific development and conservation challenges and issues, and for particular high-value or threatened ecosystems and locations.
- 4.3 Training and awareness building among both development and conservation planners on the economic value of coastal ecosystems and the use of economic tools.
- 4.4 Development of decision-support tools, including databases and GIS maps, which integrate data on economic values with information on biophysical and socio-economic characteristics, trends and vulnerabilities in coastal areas.

### *Contribution to results*

The actions to be carried out under this programme of work will contribute towards the following MFF results:

- Increased prioritisation of coastal ecosystem management in the development agendas of regional institutions
- More efficient and effective impact and use of resources to support environmentally sustainable coastal development at the regional level More inclusive development planning, appraisal, approval and monitoring processes which reflect ecosystem needs
- Increased prioritisation of coastal ecosystem management across national development agendas, policies and budgets
- Increased and more effective investment of funds in coastal ecosystem management
- Enhanced investment in ecosystems as infrastructure, and fair payment for the benefits of ecosystem services
- Improved participation in, support for, and benefit from, ecosystem conservation among coastal dwellers, especially women

### *Estimated budget*

	US\$ million					
	Total	2007	2008	2009	2010	2011
Integrating coastal ecosystem economic values into development planning and appraisal.	3.0	0.10	0.75	0.75	0.75	0.65

### *Agencies who have expressed an interest in collaboration*

During the course of the MFF consultations, a number of agencies expressed an interest in collaborating as partners in the implementation of this programme of work. This includes interests in developing and partnering in new projects, as well as the existence of ongoing or planned projects and programmes which contribute towards MFF results and objectives.

At the country level, the regional, national and local consultations identified a wide range of CBOs, NGOs and government departments with a proven track-record and interest in partnering in projects which contribute towards the actions and outputs for this Programme of Work. At the regional and international level, Winrock International, SANDEE, EEPSEA, CARE International, and the Western Indian Ocean Marine Science Association expressed an interest in participating in this Programme of Work.

The RSC will work with these potential implementing partners during the early part of 2007 to foster linkages between project partners, and develop detailed project proposals to be funded under MFF.



## 5. Learning from evaluation of the environmental effects of coastal management initiatives, including the post-tsunami response

### *Needs and challenges*

Regular evaluation of coastal programmes is essential for adaptive management, and periodic assessments at the regional level have been recommended as a key reform needed to improve the sustainability and effectiveness of coastal management worldwide. Such information and learning is currently extremely weak. Coastal programmes are planned and implemented without a thorough understanding of the impacts and effects they are generating, and there is little learning from experience or sharing of lessons between countries, agencies or over time. This results in weak accountability and transparency, and means both that mistakes made in the past tend to be repeated and that best practice and successes are not factored into subsequent actions.

These issues were highlighted in the post-tsunami response. Although a comprehensive evaluation of humanitarian and reconstruction activities was undertaken by the Tsunami Evaluation Coalition, and published in July 2006, this contained no evaluation of environmental activities and impacts. Such information and learning remains a glaring gap. No other formal and independent region-wide evaluation has been taken of the impact of reconstruction activities on the coastal environment, or of the many efforts to restore ecosystems and “green” the reconstruction process. Yet specific case studies and anecdotal evidence points to the fact that in many cases the reconstruction process had devastating short and long-term impacts on coastal ecosystems and livelihoods, and that many of the efforts to integrate environmental concerns into post-tsunami reconstruction have failed to reach their targets.

As identified by both conservation and development agencies during the consultations (particular emphasis was given by CARE and ADB), there is an urgent need to evaluate the environmental impacts of the tsunami response, in order both to identify mitigation measures and additional actions required to reverse environmental degradation, as well as to assess progress and impacts against donor and government agencies’ stated environmental safeguards and targets. In particular, elaboration of the impact of the tsunami on the lives of women and children will be important, as these groups were most vulnerable. Evaluation of the livelihood and socio-economic impact of conservation and environmental rehabilitation measures forms a critical part of this evaluation. Such an evaluation can also provide valuable lessons learned on best practices and successes, as well as helping to prioritise needs for future actions and measures in coastal areas. Consultations identified a number of regional and global agencies who are already engaged in similar work or are interested in becoming engaged in these activities, including UNDP, UNEP, FAO, and University of Rhode Island.

### *Actions and outputs*

This programme of work intends to carry out actions to generate the following outputs:

- 5.1 Region-wide evaluation of environmental impacts of the post-tsunami reconstruction process, efforts at ecosystem restoration, and review of funding to environmental activities.
- 5.2 Development of consolidated methods and networks for environmental/ecosystem monitoring and evaluation and their application to ongoing programmes of coastal reconstruction, development and ecosystem conservation, including their application to all activities carried out under MFF.
- 5.3 Dissemination and ongoing sharing of practical and policy relevant findings and recommendations of environmental evaluation post-tsunami, including lessons learned and identified priorities for future action.
- 5.4 Targeted review of the impacts of the tsunami on women’s use and management of the environment for livelihoods.

### *Contribution to results*

The actions to be carried out under this programme of work will contribute towards the following MFF results:

- More effective institutions and mechanisms for cooperation in coastal ecosystem management
- Safe space and constructive dialogue for discussing sensitive issues
- More efficient and effective impact and use of resources to support environmentally sustainable coastal development at the regional level
- Increased and more effective investment of funds in coastal ecosystem management
- Improved participation in, support for, and benefit from, ecosystem conservation among coastal dwellers, especially women

### *Estimated budget*

	US\$ million					
	Total	2007	2008	2009	2010	2011
Learning from evaluation of the environmental effects of coastal management initiatives, including the post-tsunami response.	3.0	0.50	0.75	0.50	0.50	0.75

### *Agencies who have expressed an interest in collaboration*

During the course of the MFF consultations, a number of agencies expressed an interest in collaborating as partners in the implementation of this programme of work. This includes interests in developing and partnering in new projects, as well as the existence of ongoing or planned projects and programmes which contribute towards MFF results and objectives.

At the country level, the regional, national and local consultations identified a wide range of CBOs, NGOs and government departments with a proven track-record and interest in partnering in projects which contribute towards the actions and outputs for this Programme of Work. At the regional and international level, UNEP, ADB, FAO, Coastal Resources Center/University of Rhode Island, and the Green Coast Project expressed an interest in participating in this Programme of Work.

The RSC will work with these potential implementing partners during the early part of 2007 to foster linkages between project partners, and develop detailed project proposals to be funded under MFF.

## ACTIONS TO STRENGTHEN EMPOWERMENT



## 6. Promoting civil society awareness and participation in coastal decision-making

### *Needs and challenges*

The tsunami generated a vastly increased understanding of the role of coastal ecosystems in both shoreline protection and in the provision of other valuable goods and service. Public attention was drawn to the needs to conserve coastal ecosystems in order to sustain human production and consumption, and protect human settlements. At the same time there was a sharp upswing in public interest in coastal management, and reconstruction processes spurred an intensive period of engagement with the civil sector in dealing with the impacts of the tsunami, and many efforts to raise public awareness on topics relating to coastal ecosystem and coastal development.

As the post-tsunami reconstruction effort winds down, and things return to a more “business as usual” situation, there is a danger that the heightened awareness and involvement of civil society in coastal ecosystem management will also decline. Yet integrated and equitable approaches to coastal management both require and demand the full participation and support of civil society, if they are to succeed and be sustained in the future. At the same time, broad stakeholder participation is a prerequisite of transparent and accountable decision-making and good governance in coastal development and conservation. Women, often the environmental stewards in their own communities have difficulties in accessing information and participating in government-led decision-making. The tsunami aftermath has also highlighted that particular attention needs to be given to the participation constraints faced by indigenous people and other marginalised groups in the region.

The need for public awareness and engagement in coastal management was highlighted in all of the countries participating in the consultation process. Many government agencies and NGOs, from both conservation and development sectors, have set in place programmes of work that directly involve local communities and civil society, and wish this collaboration to continue. These involve a wide scope of target audiences, who have very different interests, needs and priorities, and a widely varying awareness of coastal ecosystem and livelihood issues. Consultations identified a number of regional and global agencies who are already engaged in similar work or are interested in becoming engaged in these activities, including ISME, UNEP, WWF, CARE and Mangrove Action Project.

The role of women, both in post-tsunami recovery, and in achieving sustainable development more generally has been recognised. However, progress in empowering women in tsunami-affected areas was already slow before Dec 2004 as evidenced by the 2005 UN report on implementation of the Millennium Development Goals where South Asia in particular has made poor progress on implementation of MDG 3. A truly successful coastal restoration effort will require empowered women as full partners in the process.

### *Actions and outputs*

It should be noted that this programme of work is tied intimately to the actions carried out under other programmes of work which aim to link this improved awareness with concrete on-the-ground actions in coastal ecosystem management and support to sustainable livelihoods. This programme of work intends to carry out actions to generate the following outputs:

- 6.1 Targeted awareness programmes on the role and importance of coastal ecosystems for development and livelihoods, for stakeholders such as women, school children, resource users, protected area buffer communities, urban dwellers, local government administration and national development decision-makers.
- 6.2 Translation of key documents and information materials into local language, and adaptation to local conditions and circumstances.
- 6.3 Development of primary and secondary school curricula on coastal ecosystem topics.

- 6.4 Support to multi-stakeholder forums for coastal zone management, at the local level and within the context of national ICM programmes.
- 6.5 Work with the mass media to build the capacity of journalists and writers to report on ecosystem concerns in radio, TV and newspapers, with a special focus on local language presentation.
- 6.6 Support for women's fora to discuss and elaborate ideas and tools for the restoration work.

### *Contribution to results*

The actions to be carried out under this programme of work will contribute towards the following MFF results:

- More effective policy, legal and institutional mechanisms for inter-sectoral coordination in environmental aspects of coastal management
- Strengthened alliances and procedures to improve environmental law enforcement and compliance
- More aware, engaged and empowered civil society supporting coastal ecosystem conservation
- Improved participation in, support for, and benefit from, ecosystem conservation among coastal dwellers, especially women

### *Estimated budget*

	US\$ million					
	Total	2007	2008	2009	2010	2011
Promoting civil society awareness and participation in coastal decision-making.	5.0	0.20	1.20	1.20	1.20	1.20

### *Agencies who have expressed an interest in collaboration*

During the course of the MFF consultations, a number of agencies expressed an interest in collaborating as partners in the implementation of this programme of work. This includes interests in developing and partnering in new projects, as well as the existence of ongoing or planned projects and programmes which contribute towards MFF results and objectives.

At the country level, the regional, national and local consultations identified a wide range of CBOs, NGOs and government departments with a proven track-record and interest in partnering in projects which contribute towards the actions and outputs for this Programme of Work. At the regional and international level, ISME, CARE International, Mangrove Action Project and UNEP-WCMC expressed an interest in participating in this Programme of Work.

The RSC will work with these potential implementing partners during the early part of 2007 to foster linkages between project partners, and develop detailed project proposals to be funded under MFF.

## 7. Building the capacity of professional coastal managers for integrated coastal management

### *Needs and challenges*

Adequate capacity, in terms of institutions, technical skills, human and financial resources, is essential if the principles and theory of integrated coastal zone management (ICM) are to be translated into practice and result in successful programmes. ICM initiatives often start off with good plans, but are never fully implemented or fail to be sustainable, because of inadequate human and institutional resources. The complexity of ICM means that those involved must have an understanding of both the ecological and socio-economic characteristics of the coastal zone and marine environment, so that they appreciate the interdisciplinary nature of the management intervention, and the dynamic and inter-linked characteristics of the coastal environment.

Capacity building is considered a fundamental need in most of the countries consulted during the course of preparing the initiative. It was specifically mentioned in meetings held in Maldives, Sri Lanka and Indonesia. Global recognition of the need for capacity building should also be noted. The ISME Mangrove Action Plan refers to the need for improved capacity for mangrove management, and the Bali Strategic Plan for Technology Support and Capacity Building, adopted by the UNEP Governing Council in February 2005, recognises lack of capacity as a major obstacle to the sustainable management of natural resources. The plan also highlights the importance of South-South cooperation, and urges greater effort through the exchange of experience, expertise, information and documentation between institutions.

Various region-wide initiatives are underway which address some of the capacity needs, including the recent establishment by SAARC of a Regional Coastal Zone Management Centre in the Maldives. LOICZ is working to build and strengthen regional networks of coastal researchers, managers and practitioners, and the Asian Institute of Technology comprises a regional hub for training and research in coastal issues. National universities and training centres in participating countries have active research and training programmes in topics related to coastal management, sometimes working in partnership with international centres (such as IWMI and WorldFish) or universities (the University of Rhode Island Coastal Resource Center and University of Newcastle both have active joint research and training programmes with Indian Ocean country universities). Many of these efforts at international cooperation have focused on one-off training courses which respond to the activities of donor projects, rather than on sustained or long-term institutional support. Few training facilities currently exist which include dedicated courses or units dealing with ICM, or provide practical training for coastal practitioners and managers. Consultations identified a number of regional and global agencies who are already engaged in similar work or are interested in becoming engaged in these activities, including SAARC CZM, SACEP, AIT, WWF and University of Rhode Island.

### *Actions and outputs*

This programme of work intends to carry out actions to generate the following outputs:

- 7.1 National capacity and training needs assessments for different stakeholder groups in order to identify gaps, needs, strengths and opportunities for building capacity in ICM.
- 7.2 Support to existing regional and national centres of training, research and excellence in ICM.
- 7.3 Support to tertiary education and research in ICM through grants, partnership and leadership development programmes.
- 7.4 Development of targeted training modules for continuing education of coastal practitioners and managers, including enforcement agencies.

### *Contribution to results*

The actions to be carried out under this programme of work will contribute towards the following MFF results:

- More effective institutions and mechanisms for cooperation in coastal ecosystem management
- Increased prioritisation of coastal ecosystem management in the development agendas of regional institutions
- More efficient and effective impact and use of resources to support environmentally sustainable coastal development at the regional level
- More effective policy, legal and institutional mechanisms for inter-sectoral coordination in environmental aspects of coastal management
- Increased prioritisation of coastal ecosystem management across national development agendas, policies and budgets

### *Estimated budget*

	US\$ million					
	Total	2007	2008	2009	2010	2011
Building the capacity of professional coastal managers for integrated coastal management.	2.0	0.20	0.45	0.45	0.45	0.45

### *Agencies who have expressed an interest in collaboration*

During the course of the MFF consultations, a number of agencies expressed an interest in collaborating as partners in the implementation of this programme of work. This includes interests in developing and partnering in new projects, as well as the existence of ongoing or planned projects and programmes which contribute towards MFF results and objectives.

At the country level, the regional, national and local consultations identified a wide range of CBOs, NGOs and government departments with a proven track-record and interest in partnering in projects which contribute towards the actions and outputs for this Programme of Work. At the regional and international level, the SAARC Coastal Zone Management Centre, Asian Institute of Technology, LOICZ, the Nature Conservancy, University of Rhode Island, WWF and SACEP expressed an interest in participating in this Programme of Work.

The RSC will work with these potential implementing partners during the early part of 2007 to foster linkages between project partners, and develop detailed project proposals to be funded under MFF.



## 8. Supporting environmentally sustainable livelihoods among coastal communities

### *Needs and challenges*

MFF aims to address the continuing challenges to coastal ecosystems and livelihoods in Indian Ocean countries. The links between local livelihoods and ecosystem status is well-recognised, and many of the post-tsunami reconstruction efforts linked the concept of sustainable livelihood restoration with ecosystem conservation and rehabilitation. However many of these efforts failed to fully operationalise an integrated ecosystems and livelihoods approach, reflecting past practice in coastal conservation and development. Major efforts have been made to promote environmentally sustainable livelihood restoration via initiatives such as the Greencoast project, and by agencies such as CARE, Oxfam and WWF. During the consultations, four sectors in particular were highlighted as requiring particular attention in coastal areas (both in terms of opportunities to strengthen sustainable livelihoods at the local level, as well as their potential to threaten coastal ecosystems) and have been the focus of consolidated efforts to integrate ecosystem and livelihood concerns: ecotourism, fisheries, aquaculture/mariculture, and non-fish mangrove products.

A number of post-tsunami recovery projects aiming to restore livelihoods paid inadequate attention to considerations of environmental sustainability, impacts on ecosystems, or of the need to meet changing aspirations and needs in the future, and focused only on replacing damaged infrastructure or skills. Most significant perhaps was the oversupply of fishing boats in Sri Lanka, which may in the future lead to greater over-fishing and thus even less secure livelihoods for coastal communities. Equally, a range of ecosystem restoration and environmental rehabilitation measures were in some cases initiated which provided few opportunities for local communities to participate or benefit, leading to serious questions about both their economic viability and long-term sustainability. Remarkably few interventions addressed long term needs and trends in terms of the changing needs and aspirations of coastal populations, and meeting future and continuing threats to ecosystems and livelihoods.

Integrating ecosystem and livelihood concerns is not simple, and requires that many different – and interrelated – conditions and dynamics are understood and addressed. Many of these factors are highly context-specific. It is vitally important to look into the underlying causes of poverty, vulnerability and livelihood insecurity, to understand the direct and underlying cause of ecosystem degradation, as well as to be clear about the types of livelihood activities that are acceptable, sustainable and have genuine potential. Ultimately, conservation actions cannot be considered to be sustainable unless they address livelihood issues, and development actions cannot be considered to be sustainable unless they incorporate ecosystem concerns. Consultations identified a number of regional and global agencies who are already engaged in similar work or are interested in becoming engaged in these activities, including CONSRN, WWF, Greencoast Initiative, UNDP, CORDIO, SACEP, FAO, CARE, FFI and WCS.

### *Actions and outputs*

This programme of work intends to carry out actions to generate the following outputs:

- 8.1 Development of models to guide livelihood restoration in post-disaster situations, and methodologies to promote an action-learning approach to ensure that livelihood restoration activities are adapted to specific local needs and ecosystem conditions.
- 8.2 Development and replication of small community-led ecotourism activities related to mangroves and other coastal ecosystems, and improve access to markets.
- 8.3 Support the restoration of fisheries and aquaculture in tsunami-affected areas, and ensure that these efforts are environmentally sustainable.
- 8.4 Development of efforts to add value to local use and marketing of non-fish mangrove products, linked to community-based management and conservation approaches.

- 8.5 Identification and information sharing on alternative livelihoods which can address key threats to coastal ecosystems which arise from unsustainable exploitation or damaging harvesting methods, while meeting the long-term needs and changing socio-economic aspirations of coastal communities

### *Contribution to results*

The actions to be carried out under this programme of work will contribute towards the following MFF results:

- More environmentally sustainable coastal livelihoods
- Improved participation in, support for, and benefit from, ecosystem conservation among coastal dwellers
- More integrated development and conservation actions which serve to reduce vulnerability and increase resilience among coastal communities

### *Estimated budget*

	US\$ million					
	Total	2007	2008	2009	2010	2011
Supporting environmentally sustainable livelihoods among coastal communities.	8.0		2.00	2.00	2.00	2.00

### *Agencies who have expressed an interest in collaboration*

During the course of the MFF consultations, a number of agencies expressed an interest in collaborating as partners in the implementation of this programme of work. This includes interests in developing and partnering in new projects, as well as the existence of ongoing or planned projects and programmes which contribute towards MFF results and objectives.

At the country level, the regional, national and local consultations identified a wide range of CBOs, NGOs and government departments with a proven track-record and interest in partnering in projects which contribute towards the actions and outputs for this Programme of Work. At the regional and international level, CARE, CORDIO, SACEP, Oxfam, FAO, FFI, WCS, the Green Coast Project, Mangrove Action Project and WWF expressed an interest in participating in this Programme of Work.

The RSC will work with these potential implementing partners during the early part of 2007 to foster linkages between project partners, and develop detailed project proposals to be funded under MFF.

## 9. Improving community resilience to natural disasters

### *Needs and challenges*

Coastal communities have always been vulnerable to episodic and acute events such as cyclone, storm surges and other catastrophes, as well as to long-term chronic impacts such as erosion, sea level rise and pollution. The tsunami emphasised how ill-prepared the region is to deal with these events, and how loss of resilience is increasing the impact of such disasters. In addition, some groups in society were much more vulnerable than others and in the case of the tsunami, that was particularly true for women and children. Human populations in coastal areas need to be able to adapt to the changes that are coming, and this will require building both the resilience of communities themselves, and of the ecosystems and natural resources upon which they depend.

UNEP's rapid assessments, carried out shortly after the tsunami, identified the lack of vulnerability mapping and risk assessments in most Indian Ocean countries. The Asian Disaster Preparedness Centre has produced guideline on community-based disaster risk management, which are in the process of being incorporated into a curriculum for training as part of the International Tsunami Training Institute jointly with the Asian Institute of Technology. The USAID-Indian Ocean Tsunami Warning System (IOTWS) is attempting to build community resilience to natural hazards in tsunami-affected areas and other coastal zones of the region, and the countries involved (Indonesia, Maldives, Sri Lanka and Thailand) considered MFF to be a possible mechanism for continuing their activities following completion of the current project in September 2007. In the Seychelles, a need was identified to incorporate ecosystem considerations into risk management procedure, and the Maldives has already embarked on a number of activities to increase the resilience of communities such as the creation of elevated "safe islands" with vegetated bunds. Particular emphasis was given to considering the need to factor in measures to deal with the continuing and intensifying threats posed by global climate change, and in India both WWF and TERI underscored the need to build resilience among urban communities in coastal zones.

Consultations identified several elements of the type of comprehensive approach to disaster risk reduction that needs to be promoted in coastal areas of Indian Ocean countries. These include an emphasis on ecosystems and natural barriers (as conventional "hard" engineering is proving unsuccessful or insufficient in many cases), as well as actions to build community preparedness and to integrate risk reduction into ecosystem management and development planning. Great emphasis was also given to the need to develop and implement post-disaster strategies that focus on community livelihood recovery, while minimising damage to the ecosystems that are essential for coastal protection and livelihood security. Consultations identified a number of regional and global agencies who are already engaged in similar work or are interested in becoming engaged in these activities, including CARE, IOTWS, UNDP and WWF.

### *Actions and outputs*

This programme of work intends to carry out actions to generate the following outputs:

- 9.1 Further application of vulnerability assessment and mapping in coastal areas, including integrating livelihood and ecosystem information into existing databases and associated disaster preparedness and response strategies.
- 9.2 Continuation and incorporation of additional countries into the coastal community resilience component of the USAID IOTWS, including replicating activities in other villages, and extending methodologies for assessing community vulnerability, with particular attention to the most vulnerable groups including women and children.
- 9.3 Support for activities to strengthen coastal shelter belts and green belts where they are clearly needed and have been proved to make a demonstrable contribution to the protection of coastal communities and settlements, using environmentally-sound techniques.

### *Contribution to results*

The actions to be carried out under this programme of work will contribute towards the following MFF results:

- More integrated development and conservation actions which serve to reduce vulnerability and increase resilience among coastal communities
- Improved participation in, support for, and benefit from, ecosystem conservation among coastal dwellers, especially women

### *Estimated budget*

	US\$ million					
	Total	2007	2008	2009	2010	2011
Improving community resilience to natural disasters.	3.0		0.75	0.75	0.75	0.75

### *Agencies who have expressed an interest in collaboration*

During the course of the MFF consultations, a number of agencies expressed an interest in collaborating as partners in the implementation of this programme of work. This includes interests in developing and partnering in new projects, as well as the existence of ongoing or planned projects and programmes which contribute towards MFF results and objectives.

At the country level, the regional, national and local consultations identified a wide range of CBOs, NGOs and government departments with a proven track-record and interest in partnering in projects which contribute towards the actions and outputs for this Programme of Work. At the regional and international level, CARE, USAID and WWF expressed an interest in participating in this Programme of Work.

The RSC will work with these potential implementing partners during the early part of 2007 to foster linkages between project partners, and develop detailed project proposals to be funded under MFF.

## 10. Identifying sustainable financing mechanisms for coastal ecosystem conservation

### *Needs and challenges*

Core funding for coastal management activities comes from two major sources in most Indian Ocean countries: national government budgets and donor programmes or development assistance. Although it is of key importance to maintain (and even improve) these financial flows in the future, such funding sources face a number of limitations in both their magnitude and scope. Most of the countries involved in the consultation (particularly staff from government agencies) identified inadequate public sector budgets as an overriding obstacle to effective coastal management. Donor-funded projects and programmes are usually short-term, and do not provide a sustained or secure source of funding for coastal management initiatives. In both cases, funds are tied to particular government or donor priorities and conditionalities, and lack flexibility in terms both what they are used for and to whom they flow.

While continuing efforts must be made to justify coastal management funding as a priority to national governments and overseas donors, the consultations identified a clear need to find mechanisms to supplement these conventional funding sources, and particularly to identify more sustainable and flexible sources of funding which can be used to maintain coastal management activities once they have been started. Needs for funding at the local community and site level, and the identification of opportunities to promote investment in coastal ecosystems and sustainable livelihoods were identified as particular priorities. To date, little work has been carried out on this topic in the region in relation to coastal areas and activities.

Funds for coastal management are in principle available from many sources, including charitable or philanthropic contributions, partnerships with the private sector, fiscal instruments (including both taxes and subsidies), market-based mechanisms (such as payment for environmental services and user charges), and through funds raised locally. There however remains a gap in terms of turning this theory into practice, and identifying cases where sustainable financing mechanisms can be identified and implemented in support of specific activities and stakeholder groups. At the same time, if funding to coastal management activities is to be improved and made more sustainable, a clear case needs to be made to potential funders and investors of the economic wisdom and financial profitability of implementing such measures. Consultations identified a number of regional and global agencies who are already engaged in similar work or are interested in becoming engaged in these activities, including TNC and the Conservation Finance Alliance.

### *Actions and outputs*

This programme of work intends to carry out actions to generate the following outputs:

- 10.1 Review of innovative and sustainable funding mechanisms which have applicability to coastal areas and coastal management actions.
- 10.2 Development of materials on the economic return to investing in coastal ecosystems as infrastructure, and associated awareness campaign for decision-makers who determine and allocate government budget allocations and overseas development assistance.
- 10.3 Piloting of payment for ecosystem services schemes for selected coastal ecosystems and management programmes, based on private-public-community partnerships.
- 10.4 Review of the needs and opportunities for a regional trust fund for coastal ecosystem management, leading to recommendations for development if appropriate.
- 10.5 Development and implementation of long-term sustainable financing strategies for key MFF actions, paying particular attention to actions aimed at protected area management, coastal ecosystem rehabilitation, and community sustainable livelihood activities.

### *Contribution to results*

The actions to be carried out under this programme of work will contribute towards the following MFF results:

- Increased prioritisation of coastal ecosystem management in the development agendas of regional institutions
- Increased prioritisation of coastal ecosystem management across national development agendas, policies and budgets
- Increased and more effective investment of funds in coastal ecosystem management
- Enhanced investment in ecosystems as infrastructure, and fair payment for the benefits of ecosystem services

### *Estimated budget*

	US\$ million					
	Total	2007	2008	2009	2010	2011
Identifying sustainable financing mechanisms for coastal ecosystem conservation.	5.0	0.10	0.40	1.50	1.50	1.50

### *Agencies who have expressed an interest in collaboration*

During the course of the MFF consultations, a number of agencies expressed an interest in collaborating as partners in the implementation of this programme of work. This includes interests in developing and partnering in new projects, as well as the existence of ongoing or planned projects and programmes which contribute towards MFF results and objectives.

At the country level, the regional, national and local consultations identified a wide range of CBOs, NGOs and government departments with a proven track-record and interest in partnering in projects which contribute towards the actions and outputs for this Programme of Work. At the regional and international level, The Nature Conservancy, Conservation Finance Alliance and UNEP expressed an interest in participating in this Programme of Work.

The RSC will work with these potential implementing partners during the early part of 2007 to foster linkages between project partners, and develop detailed project proposals to be funded under MFF.

## ACTIONS TO ENHANCE GOVERNANCE





## 11. Supporting national integrated coastal management programmes

### *Needs and challenges*

Integrated coastal management (ICM) can be defined as the process by which multiple uses of the coastal and marine environment are managed together so that a wide range of needs are catered for, including both ecosystem protection and sustainable development. It is now an accepted framework for the management of coastal activities to reduce conflict and ensure that the natural resources and ecosystems upon which coastal economies are founded are used sustainably.

ICM allows all stakeholders (including governments, NGOs, private sector and local communities) to participate and benefit. Due to the need to involve and reflect the needs of multiple sectors and stakeholders, ICM programmes generally require some kind of umbrella institution or coordinating body which comprises representatives of these different groups, and meets regularly to ensure transparency and accountability in coastal management, promote an integrated approach to planning and management, and enhance information exchange about sectoral development issues and appropriate collaborative action.

The countries participating in MFF have varying arrangements for promoting ICM at the national (and sometimes sub-national) level. In order to minimise competition and conflict, and to introduce some form of coordination between the actions of different sectors and managing authorities, most governments have adopted an integrated approach to coastal management. An umbrella institution, policy and legislation which is specifically concerned with coastal areas has often been established. In India, a national and 13 state level Coastal Zone Management Authorities have been established. In Indonesia, National Integrated Coastal Management legislation is in preparation, and implementation will be decentralised to Provincial and District levels. In the Maldives no coastal zone management programme or institution exists at present. In the Seychelles, the Environmental Engineering Section in the Department of Environment is tasked with implementing and coordinating coastal zone management activities. In Sri Lanka the Coast Conservation Department is mandated with managing and coordinating development activities in coastal areas, with a Coastal Zone Management Plan that is now in its third revision. In Thailand, at least 20 existing laws apply in the coastal zone, but there is no framework legislation or mechanism for coordinating implementation.

The consultation process made it clear that varying interpretations and stages of operationalisation of the concept of ICM between countries, as well as the different institutional legal and policy mechanisms that have been developed, mean that needs and appropriate responses differ between countries. Each country identified a range of different needs and priorities for support, depending on their specific interests and circumstances. However, across all countries involved in MFF the large number of sectors involved in the coastal zone however means that institutional arrangements for integrated and effective management are often difficult, and require consolidated efforts to strengthen and support ICM. Consultations identified a number of regional and global agencies who are already engaged in similar work or are interested in becoming engaged in these activities, including FAO, WWF, ASEAN, SAARC and SACEP.

### *Actions and outputs*

This programme of work intends to carry out actions to generate the following outputs:

- 11.1 Assessment of national institutional mechanisms and programmes for ICM in order to identify and operationalise appropriate, inclusive and sustainable governance mechanisms for MFF.
- 11.2 In India, support to the operations of state-level coastal zone management authorities.
- 11.3 In Indonesia, support to the finalisation of ICM legislation and plans for its implementation, capacity building to enable the development of Provincial and District

- level ICM arrangements, support to the implementation of the National Mangrove Ecosystem Management Strategy, with particular emphasis on Aceh Province.
- 11.4 In Maldives, support to the development of measures and mechanisms for inter-sectoral coordination in integrated coastal management.
- 11.5 In Seychelles, support to the revision of policy and legislation on coastal development to reflect ecosystem concerns.
- 11.6 In Sri Lanka, support to inter-sectoral mechanisms for integrated coastal zone management through the Coast Conservation Department.
- 11.7 In Thailand, continued support to the development and implementation of Promotion of Marine and Coastal Resources Management Act and National Coastal and Marine Policy.

### *Contribution to results*

The actions to be carried out under this programme of work will contribute towards the following MFF results:

- More effective institutions and mechanisms for cooperation in coastal ecosystem management
- More effective policy, legal and institutional mechanisms for inter-sectoral coordination in environmental aspects of coastal management
- Increased prioritisation of coastal ecosystem management across national development agendas, policies and budgets
- Increased and more effective investment of funds in coastal ecosystem management
- Improved participation in, support for, and benefit from, ecosystem conservation among coastal dwellers
- Stronger regional voice in global dialogues and decisions

### *Estimated budget*

	US\$ million					
	Total	2007	2008	2009	2010	2011
Supporting national integrated coastal management programmes.	10.0	2.00	2.00	2.00	2.00	2.00

### *Agencies who have expressed an interest in collaboration*

During the course of the MFF consultations, a number of agencies expressed an interest in collaborating as partners in the implementation of this programme of work. This includes interests in developing and partnering in new projects, as well as the existence of ongoing or planned projects and programmes which contribute towards MFF results and objectives.

At the country level, the regional, national and local consultations identified a wide range of CBOs, NGOs and government departments with a proven track-record and interest in partnering in projects which contribute towards the actions and outputs for this Programme of Work. At the regional and international level, WWF, FAO, GTZ, ASEAN, SAARC and SACEP expressed an interest in participating in this Programme of Work.

The RSC will work with these potential implementing partners during the early part of 2007 to foster linkages between project partners, and develop detailed project proposals to be funded under MFF.

## 12. Strengthening the integration and enforcement of environmental and social safeguards in coastal land use planning

### *Needs and challenges*

Land use planning involves identifying the most suitable use of the coastal zone in relation to its physical and ecological characteristics and resources, and human needs. It is essential to integrated coastal management. Spatial planning is particularly important on the coast because of its vulnerability to disasters.

Most of the countries participating in MFF have a voluminous, and often comprehensive, body of laws and regulations governing land use in the coastal zone. However in many cases regulations are weakly enforced, if at all, meaning that illegal land and resource use takes place, often in an environmentally unsustainable manner. Not all countries contain an integrated land use policy or strategy for coastal areas, and where they exist these policies and strategies are not always implemented.

Weak enforcement of regulatory and planning frameworks exacerbate, and sometimes cause, pre-existing land conflicts in coastal areas. Land use planning is of little use if there are major land conflict issues, as is often the case on the coast. Poor landless people often settle in coastal areas, having migrated from the interior, in order to make a living from fishing, and subsequently develop into permanent communities with perceived rights to land which they have cultivated for many years. Meanwhile the rich resources and lucrative opportunities for business and industry mean that powerful interests often intervene in coastal development processes and land use arrangements. Encroachment into protected areas and state lands remains a major problem, and gives rise to frequent conflicts between different resource users, local communities, the private sector and government.

Actions and programmes carried out after the tsunami highlighted many of the weaknesses and gaps in land use planning, and in the effective enforcement of relevant regulations, policies and plans for the coastal zone. During the consultation, many examples were given of the illegal or inappropriate siting of coastal settlements and resettlement areas, of failure to incorporate environmental safeguards into infrastructure development and reconstruction, and of the intense land use conflicts arising within the reconstruction process. Unclear or absent land tenure arrangements were also stated as a critical issue requiring attention, and as a major source of land use conflict. Consultations identified a number of regional and global agencies who are already engaged in similar work or are interested in becoming engaged in these activities, including CEL, ASEAN, SAARC, FAO, UNDP and the International Land Coalition.

### *Actions and outputs*

This programme of work intends to carry out actions to generate the following outputs:

- 12.1 Review of legal and regulatory measures governing coastal zone land use and development, and associated information sharing among coastal planners and developers.
- 12.2 Support to the development of spatial plans for coastal zones at national and local levels, including assessing critical and vulnerable ecosystems and needs for ecosystem protection within land use zoning.
- 12.3 Support to the formation of resolution mechanisms to deal with land-use conflicts around critical ecosystems, particularly protected areas.

### *Contribution to results*

The actions to be carried out under this programme of work will contribute towards the following MFF results:

- More effective policy, legal and institutional mechanisms for inter-sectoral coordination in environmental aspects of coastal management

- Strengthened alliances and procedures to improve environmental law enforcement and compliance
- More inclusive development planning, appraisal, approval and monitoring processes which reflect ecosystem needs
- Greener business plans which recognise and reflect ecosystem services

### *Estimated budget*

	US\$ million					
	Total	2007	2008	2009	2010	2011
Strengthening the integration and enforcement of environmental and social safeguards in coastal land use planning.	2.0	0.20	0.50	0.50	0.40	0.40

### *Agencies who have expressed an interest in collaboration*

During the course of the MFF consultations, a number of agencies expressed an interest in collaborating as partners in the implementation of this programme of work. This includes interests in developing and partnering in new projects, as well as the existence of ongoing or planned projects and programmes which contribute towards MFF results and objectives.

At the country level, the regional, national and local consultations identified a wide range of CBOs, NGOs and government departments with a proven track-record and interest in partnering in projects which contribute towards the actions and outputs for this Programme of Work. At the regional and international level, the Commission on Environmental Law, ASEAN, SAARC, FAO and the International Land Coalition expressed an interest in participating in this Programme of Work.

The RSC will work with these potential implementing partners during the early part of 2007 to foster linkages between project partners, and develop detailed project proposals to be funded under MFF.

## 13. Building national systems of marine and coastal protected areas that contribute to a regional network

### *Needs and challenges*

Protected areas are a core mechanism in national efforts to conserve coastal ecosystems and biodiversity. These areas are valued not only for the aesthetic and cultural aspects but also as providers of important ecosystem services including watershed protection, erosion control and protection of key stocks of natural resources such as fisheries and forests.

Yet coastal areas remain poorly represented in the national protected area networks of the countries participating in MFF, and many vitally important or threatened coastal ecosystems do not have protected status. Greater representation is required to address these gaps in coverage, and to ensure that critical ecosystems are conserved.

The consultation made it clear that different countries are at different stages in developing their protected area systems, and needs vary accordingly. For example the Maldives has recently established two mangrove protected areas, whereas India has a long-established system of protected areas which incorporate a large number of coastal and marine areas. In Sri Lanka, although there are a number of coastal protected areas and special area management sites, key ecosystems remain unrepresented. Even where protected areas have been established in coastal areas, these often remain “paper parks”, as there is weak capacity and inadequate funding to manage them effectively.

National differences notwithstanding, the need for more and better managed marine and coastal protected areas was noted in most countries during consultations. Participants also emphasised the need to support measures to improve management effectiveness, mentioning a range of issues including designing protected areas for resilience linked to climate change, improved integration with tourism, support to participatory management approaches, improving buffer zone management, and identifying sustainable financing mechanisms. Consultations identified a number of regional and global agencies who are already engaged in similar work or are interested in becoming engaged in these activities, including SACEP, WIOMSA, UNESCO, UNEP, and the Ramsar Bureau.

### *Actions and outputs*

This programme of work intends to carry out actions to generate the following outputs:

- 13.1 Gap analysis to review existing protected area coverage, identify regionally or nationally under-represented ecosystems, and recommend areas in need of additional protection.
- 13.2 Assessment of management effectiveness of existing protected areas leading to the development of strategies for management improvements.
- 13.3 Support to the development of new, or strengthening of existing, protected areas in critical or under-represented coastal ecosystems
- 13.4 Supporting a regional forum and learning network to share knowledge and approaches on protected area management.
- 13.5 Development of codes of conduct for the tourism industry for the use of protected areas.

### *Contribution to results*

The actions to be carried out under this programme of work will contribute towards the following MFF results:

- More sustainable, equitable and effective protection, and where necessary rehabilitation, of coastal ecosystems
- Increased and more effective investment of funds in coastal ecosystem management
- Enhanced action in coastal conservation through partnership with the private sector

- Improved participation in, support for, and benefit from, ecosystem conservation among coastal dwellers, especially women

### *Estimated budget*

	US\$ million					
	Total	2007	2008	2009	2010	2011
Building national systems of marine and coastal protected areas that contribute to a regional network.	5.0	0.20	1.20	1.20	1.20	1.20

### *Agencies who have expressed an interest in collaboration*

During the course of the MFF consultations, a number of agencies expressed an interest in collaborating as partners in the implementation of this programme of work. This includes interests in developing and partnering in new projects, as well as the existence of ongoing or planned projects and programmes which contribute towards MFF results and objectives.

At the country level, the regional, national and local consultations identified a wide range of CBOs, NGOs and government departments with a proven track-record and interest in partnering in projects which contribute towards the actions and outputs for this Programme of Work. At the regional and international level, the World Commission on Protected Areas, The Nature Conservancy, SACEP, WIOMSA, UNESCO, UNEP-World Conservation Monitoring Centre, Ramsar Bureau and the CBD Secretariat expressed an interest in participating in this Programme of Work.

The RSC will work with these potential implementing partners during the early part of 2007 to foster linkages between project partners, and develop detailed project proposals to be funded under MFF.

## 14. Promoting adaptive coastal management programmes that include ongoing ecological and socio-economic assessment and monitoring

### *Needs and challenges*

Coastal management processes need to be both responsive and adaptive to changing needs, threats and circumstances in ecological and socio-economic conditions. Thus long-term monitoring and response mechanisms are needed that can detect changes at relevant scales, identify likely causes of these changes, and recommend management responses and adaptations to deal with them.

It became apparent in the aftermath of the tsunami, and during subsequent coastal management interventions, that long-term programmes for monitoring socio-economic and ecosystem indicators are largely lacking in the region. Coastal management tends to be based on relatively fixed plans, and lacks flexibility to adapt, respond and reorient itself as needs and conditions change. Furthermore, new interventions, such as replanting of mangroves, have been initiated without associated monitoring programmes.

During the consultations, the need to improve coastal monitoring was identified as a need in Indonesia, Maldives, Seychelles, Sri Lanka and Thailand. It is also mentioned as a high priority, for mangrove ecosystems, in the ISME Mangrove Action Plan. Methodologies are now widely available, for both socio-economic and ecological monitoring in the field, as well as for broader spatial assessment using satellite imagery. They however remain ill-applied to coastal ecosystems, or to coastal management interventions. Consultations identified a number of regional and global agencies who are already engaged in similar work or are interested in becoming engaged in these activities, including LOICZ, IWMI, CORDIO, SACEP and UNEP.

In addition, any programmes that are put in place post-tsunami should provide the flexibility to respond to additional forces such as climate change.

### *Actions and outputs*

This programme of work intends to carry out actions to generate the following outputs:

- 14.1 Needs assessment to identify existing socio-economic and ecological baselines, and gap-filling of deficiencies in key data and indicators.
- 14.2 Support to regional and national systems for the spatial assessment of ecosystems using satellite imagery, and to mechanisms for developing the communication and information sharing necessary to combine data at a regional level.
- 14.3 Development, and associated training in the use of, common protocols for community-based and scientific monitoring of coastal ecosystem health and socio-economic indicators.
- 14.4 Application of ecological and socio-economic assessment and monitoring mechanisms for key MFF actions, paying particular attention to actions aimed at protected area management, coastal ecosystem rehabilitation, and community sustainable livelihood activities.

### *Contribution to results*

The actions to be carried out under this programme of work will contribute towards the following MFF results:

- More efficient and effective impact and use of resources to support environmentally sustainable coastal development at the regional level
- More sustainable, equitable and effective protection, and where necessary rehabilitation, of coastal ecosystems

- Increased prioritisation of coastal ecosystem management across national development agendas, policies and budgets

### *Estimated budget*

	US\$ million					
	Total	2007	2008	2009	2010	2011
Promoting adaptive coastal management programmes that include ongoing ecological and socio-economic assessment and monitoring.	3.0	0.10	0.75	0.75	0.75	0.65

### *Agencies who have expressed an interest in collaboration*

During the course of the MFF consultations, a number of agencies expressed an interest in collaborating as partners in the implementation of this programme of work. This includes interests in developing and partnering in new projects, as well as the existence of ongoing or planned projects and programmes which contribute towards MFF results and objectives.

At the country level, the regional, national and local consultations identified a wide range of CBOs, NGOs and government departments with a proven track-record and interest in partnering in projects which contribute towards the actions and outputs for this Programme of Work. At the regional and international level, the Species Survival Commission, LOICZ, IWMI, CORDIO, University of Sydney and UNEP-WCMC expressed an interest in participating in this Programme of Work.

The RSC will work with these potential implementing partners during the early part of 2007 to foster linkages between project partners, and develop detailed project proposals to be funded under MFF.



## 15. Encouraging environmentally sustainable business practices in coastal areas

### *Needs and challenges*

Coastal areas of Indian Ocean Countries provide lucrative opportunities for business and industry, for example in fisheries, tourism, mining and agricultural sectors. They are also the focus of rapidly-expanding infrastructure development. Much of this commerce, industry and development is taking place with scant regard to the environment, and with devastating consequences on coastal ecosystems and local livelihoods. At the same time, the potential to profit and gain from environmentally sustainable business remain little known, and there are few incentives for the private sector to become engaged in activities which are supportive of coastal conservation.

The consultation highlighted a wide range of environmental threats and opportunities associated with business and industry. These ranged from the commercial pressures that built up in direct response to post-tsunami reconstruction (for example needs for sustainable supplies of timber in Aceh, and sand in Sri Lanka, for reconstruction), the ways in which livelihood restoration and economic redevelopment was planned and implemented (including a generally perceived failure to consider environmentally-friendly technologies and green business opportunities), and a general lack of enforcement of adequate environmental safeguards in investment and project appraisals carried out to plan for infrastructure and construction activities.

At national and regional levels, few attempts have been made to directly engage with commerce, industry and the private sector in coastal management. The examples which do exist of this kind of work tend to be focused on specific locations or partnerships, and there has been little scaling-up or sharing of lessons learned. Yet great interest has been shown by certain sectors, including those involved in the tourism industry and housing development, in identifying ways of promoting environmentally-friendly business opportunities and practices. The consultation process identified a clear need to respond to these opportunities, and to work to promote environmentally sustainable business practices across the many sectors, industries and companies operating in coastal areas of the region. Consultations identified a number of regional and global agencies who are already engaged in similar work or are interested in becoming engaged in these activities, including CEM, CARE and WWF.

### *Actions and outputs*

This programme of work intends to carry out actions to generate the following outputs:

- 15.1 Development and dissemination of sector-specific guidelines on environmental risks, threats and opportunities, and existing regulatory mechanisms, involving both the adaptation of existing materials (including those produced after the tsunami) as well as production of new resources.
- 15.2 Awareness-raising among chambers of commerce and other business/commercial associations on green business opportunities and benefits.
- 15.3 Targeted support to specific partnerships between government, NGOs and local communities and the private sector in developing joint mechanisms and collaborative arrangements for identifying opportunities for green enterprise development and support to coastal conservation.
- 15.4 Development of codes of conduct, leading to possible certification schemes where appropriate, for key industries and business sectors such as tourism, housing and fisheries.

### *Contribution to results*

The actions to be carried out under this programme of work will contribute towards the following MFF results:

- Enhanced action in coastal conservation through partnership with the private sector
- More environmentally sustainable business, industry and commerce in coastal areas
- Greener business plans which recognise and reflect ecosystem services
- Enhanced investment in ecosystems as infrastructure, and fair payment for the benefits of ecosystem services

### *Estimated budget*

	US\$ million					
	Total	2007	2008	2009	2010	2011
Encouraging environmentally sustainable business practices in coastal areas.	2.0	0.40	0.40	0.40	0.40	0.40

### *Agencies who have expressed an interest in collaboration*

During the course of the MFF consultations, a number of agencies expressed an interest in collaborating as partners in the implementation of this programme of work. This includes interests in developing and partnering in new projects, as well as the existence of ongoing or planned projects and programmes which contribute towards MFF results and objectives.

At the country level, the regional, national and local consultations identified a wide range of CBOs, NGOs and government departments with a proven track-record and interest in partnering in projects which contribute towards the actions and outputs for this Programme of Work. At the regional and international level, the Commission on Ecosystem Management, The Nature Conservancy, CARE and WWF expressed an interest in participating in this Programme of Work.

The RSC will work with these potential implementing partners during the early part of 2007 to foster linkages between project partners, and develop detailed project proposals to be funded under MFF.



## GOVERNANCE, FUNDING AND IMPLEMENTATION ARRANGEMENTS

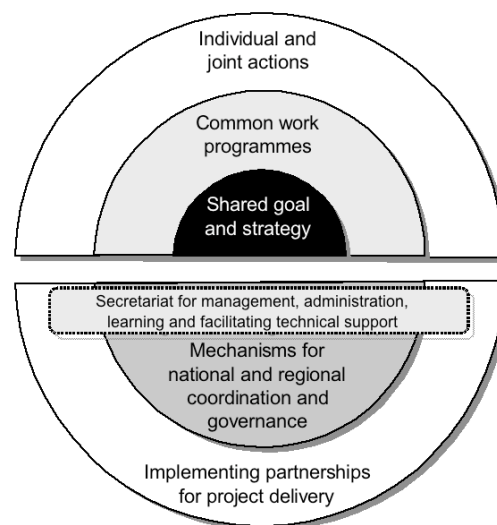
## A collaborative platform

The consultations which were carried out to guide the design and development of Mangroves for the Future identified three overriding priorities among those involved in coastal zone management in Indian Ocean Countries:

- a call for **regional coordination, learning and sharing**;
- a demand to continue the **momentum and partnerships** which had been prompted by the tsunami; and
- the identification of **continuing needs and priorities** where resources and effort are required to address the threats to coastal ecosystems and livelihoods.

The governance, funding and implementation arrangements for the initiative reflect these needs and demands. MFF aims to build a collaborative platform which will bring together different countries, agencies, sectors and levels of scale to work towards a common goal. It builds a web of partnerships which will foster and sustain the collaboration that is needed to address long-term threats to coastal ecosystems and livelihoods in an integrated manner, and which is required to implement successfully an initiative of this magnitude and scope.

Mangroves for the Future will thus be implemented through a series of individual projects that are linked by a shared goal and fall under defined work programmes, and which together undertake actions and deliver outputs which contribute towards a set of common results. These projects will be implemented by a wide range of groups, from the local to the international level, working in partnership with others. The envisaged integration, knowledge sharing and synergy between components, at all levels, will be achieved through the formation of a regional steering committee and national coordinating bodies which will actively work to promote coordination, dialogue and learning between components. They also fulfil the vital function of ensuring accountability, transparency and good governance in the operation of the initiative.



**Levels of action and governance**

## Governance

Mangroves for the Future aims to ensure regional, national and local coordination and learning within and between multiple agencies, countries and sectors. It is therefore of the utmost importance that the decision-making and planning mechanisms which govern MFF are inclusive as regards these multiple stakeholders, and also ensure the good governance and accountability which is required for an initiative of this magnitude and scope.

Mangroves for the Future will operate through two levels of governance mechanisms:

- A **Regional Steering Committee (RSC)**, which provides the overall coordination and guidance to the initiative, and serves to oversee its decision-making and accountability; and
- In each of the focal countries, **National Coordinating Bodies (NCB)**, which coordinate the implementation of the initiative at the national level, and foster learning and dialogue between partners.

### *Regional Steering Committee*

The RSC will be co-chaired by IUCN and UNDP, and have as members one representative from each of the governments of the six focal countries for the initiative (India, Indonesia, Maldives, Seychelles, Sri Lanka and Thailand) and five UN agencies and non-governmental organisations who have a regional mandate and experience in dealing with coastal ecosystem and livelihood issues (CARE, FAO, UNEP, Wetlands International and WWF). This composition aims to achieve both geographical and thematic balance, as well as ensuring representation from different types of agencies and constituencies. Membership of the RSC may also include representation from major donors to MFF. The functioning and operations of the RSC will be supported by a Secretariat (see below).

It is noted that while the RSC and its Secretariat is based in Asia (Bangkok), this initiative also covers initially one, and later possibly more, countries in Africa. In order to support the African countries, the UNDP-UNEP office in Kenya, in collaboration with the IUCN East Africa regional office, will link up with the RSC through their Asian representatives.

The RSC provides strategic oversight and guidance on the implementation of MFF, and promotes regional coordination, dialogue, learning and sharing between partners. It is ultimately accountable to donors, and has the responsibility for mobilising both funding and technical resources for the implementation of MFF. The RSC is also the overall decision-maker on matters of fund allocation and workplan prioritisation for the entire initiative.

### *National Coordinating Bodies*

Whereas the RSC will be formed specifically to deal with the coordination and management of MFF, and to oversee decision-making and accountability, National Coordinating Bodies (NCB) will operate through existing national mechanisms for coastal management which include and coordinate different sectors, agencies and civil society groups. In many countries these mechanisms will be government-led ICM bodies or committees, but where other representative and well-developed mechanisms for coastal coordination exist which are led by non-governmental organisations and are recognised by government, these may also be appropriate as NCB.

The intent to build on existing national-level mechanisms for coastal management, rather than creating parallel bodies which may replicate or duplicate the functions of existing institutions, is considered essential for long-term sustainability and capacity-building in the countries participating in Mangrove for the Future. It also constitutes a key result of MFF (N2.1) – more effective policy, legal and institutional mechanisms for inter-sectoral coordination in environmental aspects of coastal management. As the situation in participating countries is both complex and variable, the identification of appropriate bodies to function as NCB has been included as an initial action and output of the initiative (action/output 11.1).

The NCB is responsible for coordinating the implementation of the initiative at the national level, and for ensuring that actions are consistent with and supportive of national goals for coastal management. It also provides a platform for inter-sectoral and inter-agency dialogue, information sharing and learning. Membership of the NCB will encompass a broad range of groups, including the government agencies, NGOs and civil society groups who are partners in MFF, and others who have a stake in coastal management in the country. Representation of the NCB within the RSC will be provided through the nominated national government representative

to the RSC, and IUCN and UNDP Country Offices will also play a role as liaison points with the RSC.

## Coordination, monitoring and learning

A small Secretariat will be formed to support the functioning and operations of the RSC, and to provide the necessary management and administration support to run MFF. The Secretariat will ensure regular reporting from implementing partners, as well as overseeing monitoring, evaluation and learning for the initiative. It will also function as a clearing house and communications hub, promoting dialogue and information sharing both internally and externally, and will facilitate the provision of technical support where required.

By keeping the Secretariat small and focused, it is intended to avoid creating an expensive, top-heavy and unsustainable bureaucracy around MFF. For this reason, the Secretariat is not envisaged as a large team of regional experts, but rather as a small unit which comprises only essential coordination, communications, administrative and accounting support, and works to facilitate and coordinate additional technical support, including financial and programme monitoring and evaluation.

## Implementation of the programmes of work

The programmes of work will be implemented through a series of individual projects, to be carried out by implementing partners but linked together through the initiative. These partners include government agencies, non-governmental organisations (NGOs), community-based organisations (CBOs), research institutions and the private sector. Many of the implementing partners have already been identified through the consultations which took place to develop MFF, and additional partners will be identified during the initial stages of setting the initiative in place (see below).

Funding will be released for each project against an agreed budget, workplan and outputs. Decisions on funding allocation and workplan prioritisation will be made by the RSC, according to the overall budget prepared for MFF (see below). Criteria for project selection and approval will be finalised during the first meeting of the RSC, and will include the requirements that each project delivers at least three actions/outputs (see above), and involves at least two implementing partners. Project selection criteria will be designed to promote inclusiveness as regards the locations and agencies involved in implementing MFF; ensure cohesion, complementarity and additionality in generating results; and prioritise partners and actions which have the most likelihood of making an effective and sustainable contribution towards the goal of MFF.

## Funding modalities

The estimated cost of implementing Mangroves for the Future between 2007-2011 is US\$62 million (see below). It is envisaged that up to at least half of this amount will be raised as new and additional resources, while the remainder will comprise co-finance provided from already-committed funding, by the contributions of participating organisations through their own existing activities and budgets, and via funds raised separately to the initiative.

### *Fund operation and management*

A financial mechanism is required to ensure that new and additional funding raised for MFF is managed and allocated in a transparent and accountable manner, according to the needs and priorities that exist on the ground, and in line with the strategy and results identified for the initiative. Various modalities for financial management and allocation have been considered. The chosen mechanism establishes a single programme fund which will be drawn down against specified projects of implementing partners which have been developed in response to the programmes of work and actions identified for MFF.

The MFF fund will be managed through the Regional Steering Committee (see above), so as to provide a transparent and participatory mechanism for making decisions about the allocation and use of funds raised, as well as ensuring the necessary accountability to donors. In effect, the Regional Steering Committee will act as trustees for funding raised for the initiative. At the project level, implementing partners will be accountable to the Regional Steering Committee for spending against an agreed budget, workplan and outputs. The fund will be subject to annual independent audits.

An initial budget for the programmes of work to be carried out under MFF has already been prepared (see below), covering the period 2007-2011. This phased budget will guide the initial allocation of funds. Any additional funding raised will be allocated according to a revision of the budget and workplan for the initiative, made by the Regional Steering Committee in consultation with national and local partners through National Steering Committees. It is estimated that, overall, approximately 8% of the total funding for the initiative (or US\$5 million over the period 2007-2011) is required to cover the costs of coordination, monitoring and learning.

### *Financial sustainability*

Although the MFF fund provides an essential mechanism for matching financial resources to the areas of greatest need, while ensuring the active engagement of a wide range of stakeholders and implementing partners, considerations of long-term financial sustainability are also critical. For this reason, the initiative includes a programme of work (#10) which is concerned specifically with identifying more sustainable and flexible sources of funding which can be used to maintain coastal management activities once they have been started. Sustainable financing strategies will be piloted for key MFF actions, which can serve as models for broader replication and extension. A series of actions have also been identified under other programmes of work (including #4, 11, 15) which aim to stimulate and increase long-term public budget allocations and private investment flows to coastal ecosystem and livelihood activities in the region.

## Timeline and milestones for action

### *Phased approach*

Recognising that certain immediate actions are required to prepare and develop the full initiative, Mangroves for the Future adopts a phased approach to implementation. During the first year of operation, MFF will establish core management and technical functions, work with partners to develop detailed project proposals, and commence the operation of priority actions.

### Timeline for implementation

	2007	2008	2009	2010	2011
Establishment of management, governance and funding mechanisms	■				
Development of detailed project proposals	■	■	■		
Initial technical actions	■				
Full project implementation		■	■	■	■

Initial management actions include establishing the required management, administration, governance, funding and monitoring mechanisms for the operation of the initiative, and working with implementing partners to develop detailed project proposals. Further country-level consultation and dialogue to identify and strengthen appropriate mechanisms for National Steering Committees, and to engage additional partners, is a key preparatory action.

A number of technical actions will provide the needs assessments and consultations, and consolidate the information bases, which are required to further develop projects under the specified programmes of work. Initial technical actions deal with needs for information, ecosystem rehabilitation, tools for ecosystem valuation, evaluation of environmental aspects of post-tsunami reconstruction, training and capacity-building, sustainable financing mechanisms, institutional mechanisms, protected areas and socio-economic and ecological baselines. These are detailed in the table below.



## Initial actions

Management	Formation of Regional Steering Committee and National Steering Committees
	Establishment of Regional Coordination Unit
	Development of framework for monitoring, evaluation and learning
	Establishment of MFF fund
	Development of detailed project proposals
Technical	1.1. Gap analysis of existing knowledge resources and data sources as compared to the needs of coastal managers for information
	2.1. Review of restoration work already underway (both before and during the post-tsunami reconstruction process), identification of national, regional and global expertise, and dissemination (with the possible establishment of a global database on rehabilitation projects) of best practices and lessons learned.
	2.2. Within each country identification of areas that require, and are suitable for, rehabilitation, and those that are suitable for natural regeneration
	4.1. Development of simple, easy-to-apply ecosystem valuation tools and methods that can be used for planning and appraising coastal conservation and development activities.
	5.1. Region-wide evaluation of environmental impacts of the post-tsunami reconstruction process, efforts at ecosystem restoration, and review of funding to environmental activities.
	7.1. National capacity and training needs assessments for different stakeholder groups in order to identify gaps, needs, strengths and opportunities for building capacity in ICM.
	10.1. Review of innovative and sustainable funding mechanisms which have applicability to coastal areas and coastal management actions.
	11.1. Assessment of national institutional mechanisms and programmes for ICM in order to identify and operationalise appropriate, inclusive and sustainable governance mechanisms for MFF.
	13.1. Gap analysis to review existing protected area coverage, identify regionally or nationally under-represented ecosystems, and recommend areas in need of additional protection.
	14.1. Needs assessment to identify exiting socio-economic and ecological baselines, and gap-filling of deficiencies in key data and indicators.

## Milestones

As reflected in the budget for MFF (see below), project funding will be disbursed gradually from year 1 of the initiative, and it is envisaged that all activities will be underway by Year 4. The table below describes milestones in the delivery of programmes of work which the initiative expects to reach during its first 5 years of operation.

### Milestones in the delivery of programmes of work

	2007	2008	2009	2010	2011
Building Knowledge					
1. Improving the knowledge base for coastal planning, policy and management	Knowledge and data availability and gaps identified	National baselines and risk/ vulnerability assessed		Regional inventory updated	
		Information networks and data centres supported Targeted research findings available			
2. Designing ecologically and socio-economically sound coastal ecosystem rehabilitation	Restoration work reviewed, lessons shared, and areas for rehabilitation identified	National capacity building carried out Restoration initiatives being implemented Rehabilitation activities being monitored Measures for alien species control being applied			
3. Providing decision support for 'reef-to-ridge' approaches to land and resource management	Awareness building activities being carried out Land-based activities being analysed Mitigation and reversal plans being applied				
4. Integrating coastal ecosystem economic values into development planning and appraisal	Practical tools for ecosystem valuation developed	Information being generated and shared Training and awareness being conducted Decision-support tools being applied			
5. Learning from environmental progress and impacts of the tsunami response	Post-tsunami environmental evaluation conducted	Environmental impacts of coastal management activities being monitored on a continuing basis Recommendations and lessons learned being shared			

	2007	2008	2009	2010	2011
Strengthening Empowerment					
6. Promoting civil society awareness and participation in coastal decision-making	Targeted awareness programmes being conducted Information materials and curricula being disseminated and used Multi-stakeholder forums operating Mass media being engaged in coastal management issues				
7. Building the capacity of professional coastal managers for integrated coastal management	Training needs and opportunities identified	Centres of training, research and excellence being supported Training modules being used			
8. Supporting environmentally sustainable livelihoods in coastal areas	Development of restoration models and action-learning methodologies	Sustainable livelihood activities underway Best practices and lessons learned being disseminated and used			
9. Improving community resilience to natural disasters	Vulnerability assessment and mapping for disaster preparedness carried out Activities to strengthen coastal community resilience being conducted				
10. Identifying sustainable financing mechanisms	Potential financing mechanisms documented	Information materials disseminated Site-level financing strategies developed	Sustainable financing mechanisms being piloted Regional trust fund being elaborated		
Enhancing Governance					
11. Supporting national integrated coastal management programmes	National ICM mechanisms reviewed, and NSC identified	Country-level mechanisms for ICM operating and acting a NSC for MFF			
12. Strengthening the integration and enforcement of environmental and social safeguards in coastal land use planning	Review of legal and regulatory measures Information sharing	Spatial plans being used Conflict resolution mechanisms being applied			
13. Building national systems of marine and coastal protected areas that contribute to a regional network	PA network gaps and needs identified	PA management effectiveness being assessed on a continuing basis Protected area management being supported Knowledge being shared Tourism industry code of conduct being implemented			
14. Promoting ecological and socio-economic assessment and monitoring for adaptive coastal management	Socio-economic and ecological baseline identified and key data gaps filled	National systems for spatial assessment operating Support being provided to monitoring activities Ecological and socio-economic assessment and monitoring being carried out			
15. Encouraging environmentally sustainable business practices in coastal areas	Sector guidelines developed Awareness raising activities being conducted Green enterprise and conservation partnerships in place Codes of conduct being implemented				

## Budget for 2007-2011

	US\$ million					
	Budget	2007	2008	2009	2010	2011
<b>Building Knowledge</b>	<b>15.0</b>	<b>1.00</b>	<b>4.00</b>	<b>3.50</b>	<b>3.50</b>	<b>3.00</b>
1. Improving the knowledge base for coastal planning, policy and management.	5.0	0.15	1.50	1.25	1.25	0.85
2. Designing ecologically and socio-economically sound coastal ecosystem rehabilitation.	2.0	0.25	0.50	0.50	0.50	0.25
3. Providing decision support for 'reef-to-ridge' approaches to land and resource management.	2.0		0.50	0.50	0.50	0.50
4. Integrating coastal ecosystem economic values into development planning and appraisal.	3.0	0.10	0.75	0.75	0.75	0.65
5. Learning from evaluation of the environmental effects of coastal management initiatives, including the post-tsunami response.	3.0	0.50	0.75	0.50	0.50	0.75
<b>Strengthening Empowerment</b>	<b>23.0</b>	<b>0.50</b>	<b>4.80</b>	<b>5.90</b>	<b>5.90</b>	<b>5.90</b>
6. Promoting civil society awareness and participation in coastal decision-making.	5.0	0.20	1.20	1.20	1.20	1.20
7. Building the capacity of professional coastal managers for integrated coastal management.	2.0	0.20	0.45	0.45	0.45	0.45
8. Supporting environmentally sustainable livelihoods among coastal communities.	8.0		2.00	2.00	2.00	2.00
9. Improving community resilience to natural disasters.	3.0		0.75	0.75	0.75	0.75
10. Identifying sustainable financing mechanisms for coastal ecosystem conservation.	5.0	0.10	0.40	1.50	1.50	1.50
<b>Enhancing Governance</b>	<b>22.0</b>	<b>2.90</b>	<b>4.85</b>	<b>4.85</b>	<b>4.75</b>	<b>4.65</b>
11. Supporting national integrated coastal management programmes.	10.0	2.00	2.00	2.00	2.00	2.00
12. Strengthening the integration and enforcement of environmental and social safeguards in coastal land use planning.	2.0	0.20	0.50	0.50	0.40	0.40
13. Building national systems of marine and coastal protected areas that contribute to a regional network.	5.0	0.20	1.20	1.20	1.20	1.20
14. Promoting adaptive coastal management programmes that include ongoing ecological and socio-economic assessment and monitoring.	3.0	0.10	0.75	0.75	0.75	0.65
15. Encouraging environmentally sustainable business practices in coastal areas.	2.0	0.40	0.40	0.40	0.40	0.40
<b>Establishment of governance, coordination and learning mechanisms</b>	<b>2.0</b>	<b>2.00</b>	-	-	-	-
<b>TOTAL</b>	<b>62.0</b>	<b>6.40</b>	<b>13.65</b>	<b>14.25</b>	<b>14.15</b>	<b>13.55</b>

