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Eighth meeting
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Item 26.3 of the provisional agenda*

REPORT OF THE AD HOC TECHNICAL EXPERT GROUP ON IMPLEMENTATION OF INTEGRATED MARINE AND COASTAL AREA MANAGEMENT (IMCAM)

1. The expert group met from 11 to 15 July 2005 in Montreal, with financial support from the Government of the Netherlands.

2. Sixteen participants were present, including experts selected from among nominations by Parties to the Convention (Barbados, Brazil, Canada, Ghana, India, Kenya, Lithuania, Madagascar, Netherlands, Palau, Russian Federation, Sweden, Thailand and Yemen), and expert representatives of organizations (International Collective in Support of FishWorkers and Commonwealth Secretariat). A full list of participants is contained in annex I.

3. The meeting was opened by a representative of the Executive Secretary to the Convention on Biological Diversity at 9.30 a.m. on Monday 11 July 2005. The secretariat then explained the purpose of the meeting, its mandate, and the expected outputs.

4. The meeting elected Mr. Lawrence Hildebrand of Canada and Ms. Beatrice Padovani Ferreira from Brazil as Co-Chairs.

5. The meeting adopted its agenda on the basis of the provisional agenda proposed by the Executive Secretary (UNEP/CBD/AHTEG-IMCAM/1/1).

6. The majority of the work of the expert group was undertaken in plenary. However, smaller drafting groups were formed to consider selected agenda items in detail.

7. The substantive work of the meeting occurred under agenda item 3. Under agenda item 3.1, the meeting was requested to review previous work undertaken on IMCAM and to identify obstacles to the implementation of IMCAM. Under agenda item 3.2, the meeting was invited to propose a set of targeted enabling activities that could best overcome the identified obstacles to the implementation of IMCAM.

* UNEP/CBD/COP/8/1.

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Under agenda item 3.3 the meeting was requested to identify existing tools, including policy, technological and financial tools and mechanisms to overcome these obstacles. Under agenda item 3.4, the meeting was asked to propose priority areas for the work of the Convention aimed at implementation of IMCAM. Finally, under agenda item 3.5 the meeting was asked to identify ways and means to foster international cooperation to assist stakeholders in developing countries and indigenous and local communities in implementing IMCAM. The meeting had, as a starting point for its work, a note by the Executive Secretary on strategies for overcoming obstacles to implementation of IMCAM (UNEP/CBD/AHTEG-IMCAM/1/2).

8. The meeting discussed agenda items 3.1, 3.2 and 3.3 at length, identifying obstacles to implementation of IMCAM, and proposing enabling activities and tools for overcoming these obstacles. These items were prioritized to the extent possible and expected outcomes were identified. Following this discussion, the group drafted specific recommendations concerning agenda items 3.4 and 3.5.

9. The meeting adopted the substance of its draft report, and proposed a method for its finalization. The Secretariat will compile participant submissions and subsequently edit the report. Prior to finalization, the report will be circulated to all participants for approval.

10. The meeting was closed at 3.30 p.m. on Friday, 15 July 2005.

SUBSTANTIVE REPORT

I. INTRODUCTION

1. Coastal areas contain diverse and unique resources, which are highly productive, renewable and are a source of income that has a potential to improve the socio-economic well-being of coastal communities and nations. 1/ According to the Millennium Ecosystem Assessment, coastal ecosystems are among the most productive, yet highly threatened ecosystems in the world. It has been estimated that even though the coastal zone covers only 8 per cent of the world, the goods and services provided by it are responsible for approximately 43 per cent of the estimated total value of global ecosystem services. 2/ Coastal fisheries provide protein to a large proportion of the human population and are valued at $34 billion annually. Artisanal coral reef fisheries reportedly account for 90 percent of the fish production of Indonesia and up to 55 percent in the Philippines, 3/ while the Wadden Sea in northern Europe provides one quarter of the North Sea catch of plaice, sole, shrimp, dab and herring. 4/ Healthy marine and coastal ecosystems cycle nutrients generate significant tourism income, support international commerce, provide effective barriers to mitigate and protect against severe storms and erosion, and act as the major component of global climate regulation. As an example, mangroves provide habitat for over 2,000 fish and benthic species, and protect shorelines from erosion. They also supply fuel-wood and charcoal, timber for construction and a variety of food sources, as well as acting as a barrier against flooding, storms and other natural disasters. The greatest threat to coastal systems comes from development-related conversion of coastal habitats, leading to large-scale losses of habitats and services. 5/ Reclamation, over-exploitation and destruction of coastal assets for port development, urbanization, and industrial, resort and aquaculture development are commonplace. Over the years, there has been a real failure to appreciate and account for the economic value, often intangible, that these natural resources provide in competing, free-market economies. 6/

2. Sectoral management of coastal zones has clearly failed to halt the progressive loss of habitat and biodiversity over the years. Decision II/10, as adopted by the Conference of the Parties to the Convention on Biological Diversity at its second meeting in Jakarta in November 1995, encourages the use of IMCAM as the most suitable framework for addressing human impacts on marine and coastal biological diversity and for promoting its conservation and sustainable use; and encourages Parties to establish and/or strengthen, where appropriate, institutional, administrative, and legislative arrangements for the development of integrated management of marine and coastal ecosystems, plans and strategies for marine and coastal areas, and their integration within national development plans. Due to its importance, the implementation of integrated marine and coastal area management became one of the programme elements of the Convention's programme of work on marine and coastal biological diversity, which was adopted in 1998 (decision IV/5) and updated in 2003 (decision VII/5). The other programme elements are:

1/ Costanza, R., R. D'Arge, R. de Groot, S. Farber, M. Grasse, B. Hannon, K. Limburg, S. Naeem, R. V. O'Neill, J. Paruelo, R. G. Raskin, P. Sutton and M. ven den Belt. 1997. The value of the world's ecosystem services and natural capital. *Nature* 387: 253-260.

2/ Costanza, R. 2000. The ecological, economic and social importance of the oceans. Seas at the Millennium: An Environmental Evaluation. C.R.C. Sheppard. New York, Pergamon. III Global Issues and Processes: 393-403.

3/ Clark, J. R. 1996. *Coastal zone management handbook*. CRC Press.

4/ De Groot, R. 1992. Functions of Nature. Wolters-Noordhoff, Amsterdam.

5/ Agardy, T and Alder J. et al . 2005. Millennium Ecosystem Assessment, Chapter 19: Coastal Systems.

6/ Crooks, S. and R. Turner. 1999. Integrated Coastal Management: Sustaining Estuarine Natural Resources. Advances in *Ecological Research* 29: 241-289.

marine and coastal living resources; marine and coastal protected areas; mariculture; and invasive alien species. Out of these, IMCAM can be viewed as the framework under which all of the activities within the programme of work are undertaken.

3. IMCAM can be defined as a continuous, dynamic, iterative, adaptive and participatory process in which a co-ordinated strategy is developed and implemented to allow sustainable resource use. Vertical integration of national, regional and local authorities as well as horizontal integration of the general public and relevant coastal stakeholders are considered to be cornerstones of the IMCAM process. Integrated management of coastal zones must be able to deal not only with current anthropogenic pressures, but also with future uncertainty regarding climate change, including accelerated sea-level rise and changing storm patterns. 7/

4. Given the complex nature of these pressures and the multiple users of the coastal zone, it is perhaps not surprising that the implementation of IMCAM continues to be faced with many constraints. 8/ ,9/ Recognition of these challenges will, however, enable policy and decision makers, coastal managers and other stakeholders to prioritise their activities and design more effective programmes by incorporating enabling activities designed to overcome the constraints.

5. IMCAM should be applied in the context of the ecosystem approach, which is the primary framework for implementation of the Convention on Biological Diversity. The Convention on Biological Diversity sees the ecosystem approach as a strategy for integrating the management of land, water and living resources and promoting conservation and sustainable use in an equitable way. Use of the ecosystem approach will help in achieving a balance between the three objectives of the Convention: conservation; sustainable use; and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources. The ecosystem approach also recognizes that humans, with their cultural diversity, are an integral component of many ecosystems. Decision VII/11 of the Conference of the Parties to the Convention on Biological Diversity noted the potential consistency of IMCAM with the ecosystem approach of the Convention on Biological Diversity, as well as the role of the approaches and tools developed specifically for IMCAM. Therefore, IMCAM will ideally support the implementation of the ecosystem approach in marine and coastal areas.

6. Previous efforts under the programme of work on marine and coastal biological diversity of the Convention on Biological Diversity are of relevance to IMCAM. This work includes the reports of the Ad Hoc Technical Expert Groups on Marine and Coastal Protected Areas (see www.biodiv.org/doc/publications/cbd-ts-13.pdf) and on Mariculture (see www.biodiv.org/doc/publications/cbd-ts-12.pdf). In addition, guidance on integrated marine and coastal area approaches for implementing the Convention on Biological Diversity has been developed in collaboration with the Government of the Netherlands (see www.biodiv.org/doc/publications/cbd-ts-14.pdf). Finally, principles and guidelines on incorporating wetland issues into integrated coastal zone management have been produced by the Ramsar Convention (see http://www.ramsar.org/key_guide_iczm_e.htm).

7/ Turner, R. 2000. Integrating natural and socio-economic science in coastal management. *Journal of Marine Systems* 25: 447-460.

8/ Bijlsma, L., M. Crawford, C. Ehler, F. Hoozemans, V. Jones, R. Klein, B. Miermet, N. Mimura, R. Misdorp, R. Nicholls, K. Ries, J. Spradley, M. Stive, L. de Vrees and S. Westmacott. 1993. *World Coast Conference Report.* Ministry of Transport, Public Works and Water Management, National Institute for Coastal and Marine Management, Coastal Zone Management Centre, Noordwijk, the Netherlands.

9/ Cicin-Sain, B. and R. W. Knecht. 1998. Integrated coastal and ocean management: concepts and practices. Washington DC and Covelo, California: Island Press.

7. A substantial amount of other work undertaken in the context of the Convention on Biological Diversity is also of relevance to IMCAM. This work includes the development of sustainable use principles and guidelines, and guidelines on incorporating biodiversity-related issues into environmental impact assessments, as well as on-going work relating to positive incentives.

8. The Ad Hoc Technical Expert Group on the Implementation of IMCAM was convened to assist countries in reaching the goal of promoting and improving the implementation of IMCAM at the local, national and regional level. Specifically, the Terms of Reference request the Ad Hoc Technical Expert Group to:

(a) Review the work undertaken under programme element 1 (IMCAM) of the programme of work on marine and coastal biological diversity, including the existing guidance on the Convention on Biological Diversity and IMCAM developed by the Government of the Netherlands; the Ramsar Convention guidelines; relevant regional initiatives; the results of the ad hoc technical expert groups on marine and coastal protected areas and mariculture; the relevant sections of the Plan of Implementation of the World Summit on Sustainable Development; and the obstacles to implementation identified by Parties;

(b) Based on task (a), propose a set of targeted enabling activities that could best overcome the identified obstacles to the implementation of IMCAM nationally and regionally; and propose ways and means, such as partnerships or other means, through which they could be undertaken within the context of the Convention;

(c) Identify existing tools, including policy, institutional, technological and financial tools and mechanisms that can be used to overcome obstacles to national and regional-level implementation of IMCAM. Provide guidance to Parties on the application of such tools;

(d) Based on tasks (a), (b), and (c), propose priority areas for the work of the Convention, aimed at the implementation of IMCAM globally.

9. When undertaking all of the tasks described above, the Ad Hoc Technical Expert Group was requested to consider the special needs of and difficulties faced by stakeholders in developing countries and indigenous and local communities, and identify ways and means to foster international cooperation to assist those countries.

II. CONSTRAINTS TO IMPLEMENTING IMCAM

10. The obstacles for implementing IMCAM have been grouped into the categories adopted in the Strategic Plan of the Convention (decision VI/26) as follows:

1. Political/Societal obstacles
2. Institutional, technical and capacity-related obstacles
3. Lack of accessible knowledge/information
4. Economic policy and financial resources
5. Collaboration/cooperation
6. Legal/juridical impediments
7. Socio-economic factors
8. Natural phenomena and environmental change

11. Under these categories, constraints specific to implementing IMCAM were identified, and grouped in their perceived order of importance. The constraints were identified based on the collective

experiences of the Ad Hoc Technical Expert Group, as well as on various studies[10] [11/],[12/] It should be emphasized that not all categories of constraints are necessarily found in any given country or IMCAM programme. However, the categories are indicative of the often seemingly insurmountable obstacles that must be overcome to achieve progress in IMCAM.

A. Political/Societal obstacles

1. Political obstacles

12. The following political obstacles were identified:

(a) Lack of long-term vision for IMCAM;

(b) Lack of political will and commitment to IMCAM, at various levels – national, regional and local;

(c) Elected officials' and their political parties' interest in costs and benefits limited to their term in office;

(d) Pro-development institutions and groups have greater access to policy makers than pro-conservation institutions and groups;

(e) Development options proposed for the coastal zone are often incompatible with IMCAM objectives;

(f) Lack of political will for effective enforcement of IMCAM related legislation;

(g) Inadequate attention to priorities articulated by indigenous and local communities and other stakeholders in decision-making processes.

13. Successful implementation of IMCAM requires a long-term vision, shared outcomes and specific goals and targets. Most government decisions are made on 4 to 5 year election cycles and there is little attention paid to longer-term issues such as the 8 to 12 year IMCAM project cycle or the long-term gains from sustainable resource management. Changing leadership during election cycles sometimes tend to change the focus of long-term resource management programmes. In addition, elected Governments may also be reluctant to consider costs and benefits beyond their term in office, while many IMCAM projects will take years to demonstrate results that can be readily seen and appreciated by the public.

14. It is important for Governments to take a strong and visible lead in ensuring that the use and management of the coastal zone is in line with IMCAM principles, particularly in the areas of regulation and implementation, and in enforcement of IMCAM-relevant legislation. The commitment and full involvement of Government is essential for the initiation and long-term support of IMCAM. In most cases, the management of shared resources also requires a commitment to regional cooperation. Without political

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10/ Sorensen, J. 2002. Baseline 2000 Background Report: The Status of Integrated Coastal Management as an International Practice. University of Massachusetts, Boston http://www.uhi.umb.edu/b2k/baseline2000.pdf

11/ Westmacott, S. 2001. Integrated coastal management in the tropics: identifying the impediments and evaluating management tools. *PhD Thesis.* University of Newcastle upon Tyne.

12/ Chua, T.-E. 1998. Lessons Learned from Practicing Integrated Coastal Management in South East Asia. *Ambio* 27: 599-610.

will and on-going support on the local, national and regional levels, implementing IMCAM will be extremely difficult. 13/

15. Government commitment may be diluted by the fact that pro-development institutions have greater access to decision-makers and usually dominate over pro-conservation institutions in public fora. 14/ Conflicts between pro-conservation and pro-development institutions can be exacerbated if development options proposed for the coastal zone are incompatible with IMCAM objectives, and fail to adequately consider environmental issues. Pro-conservation institutions and groups would likely support alternative, environmentally sound development projects (for example, routing a road so that it does not impact on the ecological integrity of coastal ecosystems), if such options were introduced.

16. Politicians and senior policy makers may not be aware of the commitments that their countries have made to various international conventions regarding coastal resources management, including the implementation of IMCAM, nor do they always adhere to such commitments. The existence of IMCAM as a government strategy to combat loss of marine resources should be included in the induction programme of policy-makers, and, where possible, a comprehensive timetable be established for regular updates to policy-makers on developing issues.

17. An effective IMCAM programme will also need to address priorities identified by indigenous and local communities and other stakeholders. Communities dependent on marine and coastal resources for their livelihoods have important first-hand knowledge of the status of these resources and the problems affecting them. However, local concerns, such as degradation and destruction of coastal habitats and resources by activities that are considered economically lucrative, may not be given priority status by policy makers. Economic issues are discussed in further detail in section 4.

2. Societal obstacles

18. The following societal obstacles were identified:

(a) Inadequate awareness and knowledge among stakeholders and the general public about the benefits of IMCAM, particularly its role in fostering sustainable use of resources;

(b) Low level of educated involvement of stakeholders, particularly indigenous and local communities, in decision-making processes;

(c) Inadequate structures for stakeholders to arrive at a consensus vision for IMCAM, for conflict avoidance and resolution and for implementing the activities.

19. Several IMCAM guidance documents and papers on successful implementation have identified public participation as vital to successful implementation of IMCAM. 15/, 16/, 17/ When local communities are faced with national government decisions in which they had no part, lack of understanding of the IMCAM process and its benefits among users of coastal resources leads to distrust and feelings of

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13/ Olsen, S. B., J. Tobey and L. Z. Hale. 1998. A Learning Based Approach to Coastal Management. *Ambio* 27: 611-619.

14/ Sorensen, J. 2002. Baseline 2000 Background Report: The Status of Integrated Coastal Management as an International Practice. University of Massachusetts, Boston http://www.uhi.umb.edu/b2k/baseline2000.pdf

15/ Clark, J. (1995) Coastal Zone Management Handbook. New York, Lewis Publishers.

16/ Cicin-sain, B and Knecht, R., 1998: Integrated Coastal and Ocean Management- Concepts and Practices. Washington, D.C., Island Press.

17/ Masalu, D. C. P. 2000. Coastal and Marine resource use conflicts and sustainable development in Tanzania. *Ocean and Coastal Management* 43: 457-494.

resentment. 18/ This is particularly the case when issues seen as important by local communities, such as pollution of coastal areas and destruction of coastal habitats, are not adequately addressed in IMCAM plans. A successful IMCAM programme need not necessarily have the best technical content but it does require public approval whilst meeting the needs of a large number of stakeholders. 19/

20. Ultimately it is the public's attitude that determines society's response to management decisions. If the public does not ''buy into'' the decisions taken, by being actively engaged, they can often substantially delay, or even prevent, IMCAM initiatives from being taken. Creating public awareness and fostering public participation generally means that more time is required for decisions to be taken. However, experience shows that, ultimately, such an approach may be more cost-effective. The absence of public awareness and the loss of confidence in management decisions and the regulatory process can create enormous impediments to IMCAM implementation. Nonetheless, there is still a widespread lack of public participation in coastal area management worldwide.

21. Communities and resource users may sometimes be unaware of the environmental impacts of their actions and the development patterns taking place around them. Even if they are aware, there may be a perceived absence of alternatives to their current and unsustainable resource use patterns. This is often the case with diminishing fisheries resources, largely because these resources are viewed as open access and the growing numbers of users, and the increasing conflicts between them, leads to overexploitation. 20/ Therefore, economic development and enhancement of livelihood options must be an integral part of IMCAM programmes.

22. Another constraint is the lack of connection between decision-makers (at the top) and those experiencing the problems of the coastal zone on a daily basis (at the bottom). This is often due to the different objectives of national level institutions and the local resource users. At the national level, the main objective might be conservation and maintenance of biodiversity, while the goal of the local resource user is the well-being of themselves and their families 21/ as most of them are below poverty line and/or are under the clutches of middlemen. Furthermore, in many cases, there is no mechanism available to resolve conflicts that may arise between different parties during the course of programme implementation, and to develop a common vision for IMCAM.

23. IMCAM programmes need to pay greater attention to raising awareness of, and involving, the public before they can effectively move forward. There should be formal mechanisms for public participation in development and implementation of IMCAM programmes, and indigenous and local communities must be enabled to participate in an effective manner by enhancing their capacity for participation. This will mean investing extra time in the overall process to allow for such awareness-raising. In situations where there is no participation at all, or it is at best rudimentary, relevant mechanisms will need to be introduced. In cases where participation mechanisms do exist, care should be taken to ensure that stakeholders have a complete understanding of projected gains and losses, and that they are in possession of relevant information in a format that is understandable to them and that is available within a

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18/ Hegarty, A. 1997. Start with what the people know: a community based approach to integrated coastal zone management. *Ocean & Coastal Management* 36: 1-3.

19/ Chua, T.-E. 1993. Essential Elements of Integrated Coastal Zone Management. *Ocean and Coastal Management* 21: 81-108.

20/ Amar, E. C., R. M. T. Cheong and M. V. T. Cheong. 1996. Small-scale fisheries of coral reefs and the need for community-based resource management in Malalison Island, Philippines. *Fisheries Research* 25: 265-277.

21/ Jorge, M. A. 1997. Developing capacity for coastal management in the absence of the government: a case-study in the Dominican Republic. *Ocean & Coastal Management* 36: 47-72.

reasonable time frame. This will avoid a consensus that is based on false expectations. Theoretical plan development without the support of the local community may be a futile exercise.

B. Institutional, technical and capacity-related obstacles

1. Weak institutional structures

24. The following obstacles were identified in relation to weak institutional structures:

(a) The lack of sufficient authority within IMCAM institutions to be effective;

(b) The lack of integration between the bottom-up and top-down approaches;

(c) The vagueness of what constitutes IMCAM in management terms;

(d) The absence of mechanisms to allow or ensure horizontal integration;

(e) The large number of (uncoordinated) agencies with conflicting or overlapping interests;

(f) The poor, internal organisation of institutions;

(g) IMCAM institutional arrangements, powers and budget inadequate to form effective horizontal and vertical integration among existing units of government and NGOs;

(h) Difficulty in hiring and retaining competent and skilled in-country staff;

(i) Over-reliance on skills and inputs of foreign consultants (not building in-country capacity).

25. The case-studies undertaken as preparation to the World Coast Conference (1993) identified the lack of adequate institutional organisation as one of the major obstacles to IMCAM implementation. 22/ 23/ The situation is not much different a decade later with the many agencies responsible for IMCAM still poorly integrated.

26. IMCAM institutions often lack direct authority over land-use practices affecting coastal ecosystems. This lack of authority and mandate of agencies blocks the ability of these agencies to address problems relating to ecosystems crossing administrative boundaries. 24/ Existing legislation pertinent to IMCAM may involve more than one agency, often resulting in conflicting authority and jurisdiction.

27. Perhaps the greatest impediment to successful implementation of IMCAM lies in *integration*. In many cases, there is little or no coordination between national, regional and local Government levels (vertical integration). Inadequate coordination results in fragmentation and duplication of efforts. Traditionally, in order to understand complex ideas, humans have tended to break down problems into their component parts. This automatically leads to compartmentalization and fragmentation. Organizationally, this tendency works against integration. It is perhaps not surprising that IMCAM is difficult and

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22/ Awosika, L. S., S. Boromthanarat, R. Cornforth, M. Hendry, R. Koudstaal, M. Ridgley, J. Sorenson, L. de Vrees and S. Westmacott. 1993. *Management Arrangements for the development and implementation of coastal zone management programmes*. World Coast Conference Organising Committee, Noordwijk, the Netherlands.

23/ Bijlsma, L., M. Crawford, C. Ehler, F. Hoozemans, V. Jones, R. Klein, B. Miermet, N. Mimura, R. Misdorp, R. Nicholls, K. Ries, J. Spradley, M. Stive, L. de Vrees and S. Westmacott. 1993. *World Coast Conference Report.* Ministry of Transport, Public Works and Water Management, National Institute for Coastal and Marine Management, Coastal Zone Management Centre, Noordwijk, the Netherlands.

24/ Baird, R. C. 1996. Toward New Paradigms in Coastal Resource-Management - Linkages and Institutional Effectiveness. *Estuaries* 19: 320-335.

complicated to manage when those responsible are spread over different ministries, and departments within the same ministry, at national government level. Magnify this through the increasing number of relevant regional and municipal authorities which are often organized in a different way, and it is easy to understand why vertical integration can be such a great obstacle. Additionally, IMCAM is often being implemented on a project-by-project basis with no underpinning national policy. This often means that decisions are taken at the local level divorced from similar decisions taken elsewhere.

28. There is need for decentralisation with more involvement of local authorities, who are in a better position to engage with the community. It is only through decentralised implementation that the gap between policy goals created at the national level and the activities implemented at the local level can be narrowed. Local level management efforts should be fully supported by the national government, national policy and budgets. The institutional framework should also recognise and support co-management, and empower resource users to take part in management and enforcement of regulations.

29. The IMCAM process requires the involvement of a number of sectors operating in the marine and coastal environment (e.g., oil and gas development, fisheries, coastal tourism, mariculture, marine mammal protection, port development), as well as land-based sectors that influence the coastal and marine environment (e.g. agriculture, forestry, mining, housing, tourism). Integration between these different sectors is called horizontal integration. In many cases a mechanism to provide for such integration is absent, leading to the IMCAM process being constrained by the activities of those sectors not actively participating in it.

30. Furthermore, in many countries there is a distinct imbalance between executive decision-making involving multiple government ministries. Traditionally, fisheries departments have more authority than environmental departments in matters relating to coastal waters. In some cases, a large number of agencies have conflicting or overlapping interests and mandates, making it difficult to provide for harmonized implementation of IMCAM. Institutions created at the behest of the international development community tend to be relatively weak and powerless compared to the much older, well-staffed and politically well-entrenched units of government advocating development. 25/ Such institutions, to make any meaningful impacts, would have to dovetail and work out their programmes through existing effective government units.

31. IMCAM institutional arrangements, powers and budget may be inadequate to form effective horizontal and vertical integration among existing units of Government and NGOs. In addition, individual institutions may have poor internal organization. Clearly, effective integrated management requires coordinated actions and shared roles and responsibilities among a number of governmental and non-governmental agencies in multiple levels of governance. Designing such a system includes allocating responsibility, creating understanding about roles and responsibilities, ensuring adequate resources for management tasks at all levels, building capacity among implementing officials, developing systems for monitoring performance and ensuring accountability. 26/

32. In many developing countries, institutional structures are further challenged by the difficulty of hiring and retaining competent in-country staff and programme managers as a result of low pay and poor working conditions. Individuals with needed skills and education go abroad for education and experience, and may often stay abroad. There may also be an over-reliance on the skills and inputs of foreign

25/ Sorensen, J. 2002. Baseline 2000 Background Report: The Status of Integrated Coastal Management as an International Practice. University of Massachusetts, Boston http://www.uhi.umb.edu/b2k/baseline2000.pdf

26/ Lowry, K. 2001. "Decentralized Coastal Management", *Coastal Resources Management Project*, University of Rhode Island Coastal Resources Center.

consultants. Foreign assistance programmes may not build adequate country capacity to sustain the programme when donor assistance is decreased or withdrawn and foreign consultants leave the country. 27/

33. Another big problem facing governments at all levels is the vagueness of the definition of IMCAM as it relates to pragmatic management issues. The GESAMP model of IMCAM as an iterative process 28/ and the ''order of outcomes'' described by Olsen 29/ have provided IMCAM managers with a framework to structure their thinking and planning efforts, and to organise IMCAM programmes. However, UNEP's pragmatic sub-division of IMCAM into 23 discrete actions 30/ should help Governments plan the steps that need to be taken to implement IMCAM and to monitor and measure the progress they are making. The draft UNEP IMCAM Marker Set is available in annex II to this document.

2. Limited institutional capacity

34. The following obstacles were identified in relation to limited institutional capacity:

Lack of human resources and inadequate IMCAM knowledge & experience (also see sub-section 3 below);

35. IMCAM requires a change in attitude towards resource management and institutional arrangements, demanding a variety of experiences, expertise and knowledge in both the planning and implementation phases. In many countries, these requirements are often lacking or absent. 31/ Even if management mechanisms are in place, the experience of working in an integrated manner is frequently absent. A shortage of trained personnel and collective resources ranked highly in an IMCAM survey carried out for the World Coast Conference. 32/ Lack of financial capacity and personnel will lead to the institutions being unable to carry out adequate research or monitoring and consequently being unable to fully evaluate the impacts of developments and the IMCAM programme itself. IMCAM programmes tend to have comparatively small budgets when compared to the budgets of other initiatives. This lack of resources also affects the technologies used and available equipment.

36. The size of the area to be managed is also an important factor when examining the resources required for effective management. Large areas, such as the Great Barrier Reef in Australia require a huge quantity of resources to be effectively managed. 33/ On the other hand, small island states may have smaller areas to manage but their financial capacity and available expertise to manage these areas may be

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27/ Sorensen, J. 2002. Baseline 2000 Background Report: The Status of Integrated Coastal Management as an International Practice. University of Massachusetts, Boston http://www.uhi.umb.edu/b2k/baseline2000.pdf

28/ GESAMP. 1996. Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection. *GESAMP Reports and Studies* No. 61.

29/ Olsen, S. 2003. Frameworks and Indicators For Assessing Progress in Integrated Coastal Management Initiatives. *Ocean and Coastal Management* 46: 347-61.

30/ Pickaver, A. H., C. Gilbert and F. Breton. 2004. An indicator set to measure the progress in the implementation of integrated coastal zone management in Europe. *Ocean and Coastal Management* 47: 449 – 462.

31/ Jorge, M. A. 1997. Developing capacity for coastal management in the absence of the government: a case-study in the Dominican Republic. Ocean & Coastal Management 36: 47-72.

32/ Bijlsma, L., M. Crawford, C. Ehler, F. Hoozemans, V. Jones, R. Klein, B. Miermet, N. Mimura, R. Misdorp, R. Nicholls, K. Ries, J. Spradley, M. Stive, L. de Vrees and S. Westmacott. 1993. *World Coast Conference Report.* Ministry of Transport, Public Works and Water Management, National Institute for Coastal and Marine Management, Coastal Zone Management Centre, Noordwijk, the Netherlands.

33/ Craik, W. 1996. The Great Barrier Reef Marine Park, Australia: A model for regional management. Natural Areas Journal 16: 344-353.

equally limited. 34/ Furthermore, different management approaches by neighbouring countries towards common resources spread over large areas may not yield desired results.

37. Development of critical skills such as problem solving, strategic planning, project/programme monitoring and evaluation and conflict resolution is imperative. Skills enhancement at both national and local levels is important. Capacity-building at the local level, however, is often constrained by the need to run programmes in the local languages. While it is important to increase the number of skilled coastal managers and expand their knowledge base, it is also equally important to create an enabling environment in which these practitioners can work.

3. Communication

38. The following obstacles were identified in regards to communication:

(a) The low level of communication between scientists and managers;

(b) The inability of many scientists to communicate in a non-scientific language;

(c) The failure of local managers to adequately state their needs;

(d) Absence of a 'free' press as well as access to public information;

(e) High illiteracy rates limits public understanding and participation;

(f) Absence of appropriate language skills on local level.

39. Communication on and about IMCAM among the multiple stakeholders is a major challenge for all Parties. There is little doubt that a lot of work on implementing IMCAM has already taken place worldwide, and that some of the perceived shortfalls of IMCAM programmes may well be results of misunderstanding. But because there is an evident lack of information, and because a coordinated system of information dissemination among the stakeholders is absent, those perceived shortfalls will continue to be associated with the IMCAM programme in question. In addition, many success stories may go unnoticed, and their lessons are not fully utilized by practitioners.

40. The links between science, resource management and policy-making are often not well developed, and scientific information needs an effective mechanism of integration into the decision-making process. Many scientists lack the ability, time or will to communicate science in such a way that it is made understandable to the manager or the decision-maker. Similarly, managers often fail to communicate to scientists their IMCAM information needs, or to take into account scientific information in decision-making even when it is made available. This may lead to decisions being made that are inconsistent with science, are motivated by economic objectives only, or that may fail to acknowledge scientific uncertainty and alternative hypotheses. The issue of scientific information in the management process is further discussed under the following section (section 3).

41. Most IMCAM projects are implemented at the local level, requiring the participation of indigenous and local communities and other stakeholders. A great deal of communication is required between managers and all stakeholders in order to discuss the objectives and benefits of IMCAM and the role of stakeholders in its design, implementation and evaluation. Although many informational resources relating to IMCAM already exist, both nationally and internationally, their practical use on the local level is often limited by the fact that they have not been translated into local languages. In some countries, high illiteracy

34/ Dahl, C. 1997. Integrated coastal resources management and community participation in a small island setting. Ocean & Coastal Management 36: 1-3.

rates limit public understanding and participation. In others, absence of "free" press, as well as limited access to public information, hinder the IMCAM process.

C. Lack of accessible knowledge/information

42. The following obstacles were identified in regards to lack of accessible knowledge/information:

(a) Information and predictability: Limited ability to model complex systems for adequate impact assessment and program evaluation. Absence of cost-effective valid models and/or baseline and time-series data;

(b) The irregular or insufficient dissemination of information among scientists, managers and stakeholders;

(c) Management objectives and needs are not clearly defined, agreed upon and communicated among scientists, managers and stakeholders;

(d) Irregular communication between IMCAM institutions at the local, regional and global levels;

(e) Dissemination of scientific work stays within the scientific community due to specialized language and format of publications;

(f) Limited access to scientific publications;

(g) Lack of respect for intellectual and cultural knowledge and property;

(h) Fragmentation of knowledge constraining informed decision-making.

43. Decisions taken as part of the IMCAM process should take into account, and be based upon, good scientific information. Basic information includes e.g. topographic contour maps, high-resolution coastline elevations, marine habitat maps, valid water quality and pollution data, fisheries-related data and demographic data. However, in many cases such scientific information is lacking, as are appropriate technologies for analysis, such as Geographic Information Systems (GIS) equipment and a laboratory for water quality and pollution assessment. In particular, adequate time series data is often not available, nor are accurate predictive models. Such data and models should assess with reasonable certainty the potential impacts of development proposals, and the consequences of alternative planning or management policies. Monitoring and evaluation of completed or ongoing programs and projects is also important. 35/

44. Even in cases where a substantial amount of scientific and technical research is being undertaken throughout the coastal zone, its results may not be used to guide management. Often the results of this research are not communicated between scientists and managers in a language that is easily understandable to those making day-to-day management decisions. 36/ The problem lies within both the scientific and management communities: organizations creating scientific knowledge may not be disseminating it rapidly enough or in an understandable form and medium to ensure timely science-based management decisions. In fact, the objective of scientific publications is not, in general, to provide information understandable to the general public. Likewise, managers may not be defining what their needs are to the research community.

35/ Sorensen, J. 2002. Baseline 2000 Background Report: The Status of Integrated Coastal Management as an International Practice. University of Massachusetts, Boston http://www.uhi.umb.edu/b2k/baseline2000.pdf

36/ Done, T. J. and R. E. Reichelt. 1998. Integrated coastal zone and fisheries ecosystem management: Generic goals and performance indices. Ecological Applications 8: S110-S118.

45. The IMCAM process usually requires answers to local questions, whilst agencies supporting scientific research will not fund research with only local benefits. However, local agencies may not have sufficient funds to support the necessary research themselves. Furthermore, scientific research programmes are often carried out by external scientific institutions, including regional institutions, with goals different from those required to produce input into the IMCAM process. Such programmes are not designed to provide data for management but rather to undertake scientific research. 37/ Networking to establish better contact between local managers and scientific institutions has been shown to be helpful.

46. Another constraint is that data collected by scientists may only be available to the manager when it has been published in peer-reviewed journals, often a year or more later. Pressure on scientists to publish their work in high-ranking journals will impede rapid information transfer. Publication in local or regional journals is often not valued by the academia. With increasing pressure on coastal environments, there is little room for managers to wait for years before acting on scientific data and recommendations. In addition, subscription to scientific publications is often expensive, restricting their accessibility beyond well-funded universities and research institutions.

47. In addition to scientific knowledge, local knowledge also has an important function in the management process. Indigenous and local communities often have an in-depth understanding and knowledge about their ecosystems, based on generations of interaction with the resources in the coastal zone. However, there may be little recognition of this among scientists and policy makers, and it is not taken into account while preparing IMCAM plans. In some cases, local knowledge is appropriated by researchers without due acknowledgement, leading to feelings of resentment and mistrust among indigenous and local communities. In order to effectively utilize local knowledge in the IMCAM process, the manager will need to build trust with the local community, discuss and reach consensus with them regarding the goals and activities of the IMCAM process, and seek their involvement in implementation.

48. The information needed for good IMCAM decisions is often disparately scattered and fragmented amongst a plethora of diverse institutions. Without appropriate mechanisms for sharing knowledge, decisions may be made based on incomplete information.

49. Indigenous and local communities have a wealth of knowledge about biodiversity and its sustainable management, and in many countries marine and coastal biodiversity underpins livelihoods and food security. Application of sustainable local and traditional knowledge in the management of biological resources may also promote the maintenance of local and traditional knowledge systems. However, the use of local and traditional knowledge will need to be undertaken in a manner that respects intellectual and cultural property, consistent with the Convention's programme of work on Article 8(j) and related provisions.

D. Economic, policy and financial resources

50. The following obstacles relating to economic policy and financial resources were identified:

(a) Placing socio-economic values on not-directly monetizable environmental conditions and qualities (e.g., endangered species, landscape aesthetics, community character);

(b) The disparity in costs (high and early in the process) vs. benefits (slow and in the future);

(c) The lack of awareness of the value of natural resources and benefits from IMCAM;

37/ McCorry, D. 1996. the Worldwide Status of Coral Reef Monitoring Programmes, 1994. MSc dissertation. Newcastle Upon Tyne: University of Newcastle upon Tyne.

(d) The imbalance between economics and the environment in decision-making;

(e) Funds are not commensurate with needs resulting in inappropriate level of financing,

(f) The lack of mechanism to guarantee post-funding sustainability;

(g) Undefined fiscal and financial policies to realize benefits of IMCAM;

(h) Lack of benefit-sharing.

51. National Governments have a number of priority issues they have to deal with, and often their primary concern is a sound economy and job creation. 38/ Governments, in general, tend to put economic considerations above environmental ones, and many coastal uses are often of a conflicting nature. This situation is exacerbated in developing countries, particularly those in debt. Consequently, perceived low priority issues are omitted from implementation and additional funds for research, management, and enforcement are, therefore, unlikely to materialize. Economic plans are often perceived to be in competition with ecological plans, even when economic development (e.g. tourism) may actually depend upon the conservation of the environment. Normally, economic development prevails. This highlights the lack of awareness amongst many politicians and also technicians of the value of natural resources and the dependence of sustainable economic development on a healthy environment. It is particularly difficult to place monetary values on benefits that are not directly quantifiable (for example endangered species, aesthetic and spiritual values), and therefore such values are at a disadvantage (or dismissed) in the political process. 39/

52. There is a disparity in the flow and appearance of costs and benefits over time. Costs of an IMCAM programme are usually immediate, and may be high to a small number of stakeholders. Such costs may, for example, include the loss of existing and potential employment or diminished property values. Benefits, on the other hand, usually take years to become evident. For example, rebuilding fisheries or an endangered species population may take a long time depending on the species in question. In addition, benefits are usually distributed broadly to the public-at-large. 40/

53. Funding is also, most often, not commensurate with the needs of IMCAM. In Western Europe, practitioners often complain about the lack of available funds for implementation of IMCAM. However, there are also other aspects to this problem. In developing countries, too much money can often be directed towards IMCAM, resulting in funding that is not appropriate for the needs of the work. The World Bank and the Global Environmental Facility (GEF), because of their operational nature, are not able to fund small projects. Their demands for large-scale projects can be out of balance with the capacities of the countries that the funding aims to assist. In order to be economically worthwhile, they need to fund at the multi-million dollar level. In Eastern Europe, some countries have been unable to cope with IMCAM at this level, leading to contracts not being fulfilled and the funds being withdrawn.

54. Equally important is the fact that the funds required for implementation of IMCAM are approximately 10 to 100 times greater than the amount required for planning. This is often not factored in at the beginning, leaving IMCAM plans unused and gathering dust on office shelves. Most current IMCAM funding initiatives are still only project-based and thus last for only a limited time period. Donors need to take a greater responsibility when committing to help, beginning small and expanding gradually,

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38/ Baird, R. C. 1996. Toward New Paradigms in Coastal Resource-Management - Linkages and Institutional Effectiveness. *Estuaries* 19: 320-335.

39/ Sorensen, J. 2002. Baseline 2000 Background Report: The Status of Integrated Coastal Management as an International Practice. University of Massachusetts, Boston http://www.uhi.umb.edu/b2k/baseline2000.pdf

40/ Ibid.

recognizing the longer time frame required for successful IMCAM, and the need to fund implementation and not just planning.

55. Funding programmes need to include a means of moving towards sustainable financing, which is required to make the transition from donor-funded projects to country-supported programmes. In most cases, developing countries do not really commit to continuation of donor-funded projects by planning for internal funding to ensure sustainability. Whereby, at the end of these projects, most are abandoned or drastically downscaled shortly thereafter.

56. Lack of benefit-sharing can also be an obstacle to implementation of IMCAM in cases where mechanisms to share benefits from management efforts with and among local communities are not clearly put in place. If communities do not directly benefit from the IMCAM process, it is unlikely that they will cooperate, and may even undermine the effort in many ways. This obstacle is difficult to overcome by direct means because, as stressed in this document, benefits are often not realized in the short term. Sharing of benefits will require an adjustment of expectations, and in particular the timeframe of expected benefits balanced against the timeframe of any losses that may occur. For example, in establishing a no-take fishing area, the loss of fishing access to the area will be immediate, while the benefits, in the form of increased catches in surrounding areas, will take several years to materialize.

E. Collaboration/cooperation

57. The following obstacles relating to collaboration/cooperation were identified *(See also section on weak institutional structures)*:

(a) The lack of vertical integration;

(b) The absence of mechanisms to allow or ensure horizontal integration;

(c) The lack of co-ordinating mechanisms for institutions with similar or overlapping mandates;

(d) Lack of transboundary cooperation.

58. Without appropriate mechanisms for vertical and horizontal integration, flow of necessary information may be impeded, and the gap between planning and implementation remains. In situations where there is a lack of coordination between agencies, a more traditional sector-based approach to resource management will be strengthened. This situation can at times reinforce power conflicts between various agencies. As a result, decisions are taken to settle immediate, politically motivated conflicts, rather than addressing long-term, socio-economic ones. In many cases, it is more appropriate to develop new structures to meet the new challenges of IMCAM rather than strengthen old ones.

59. A lack of integration, cooperation or coordination between agencies will also lead to a lack of understanding of the different IMCAM objectives and, often, failure to reach consensus. For example, one AHTEG participant reported of two inter-governmental bodies that have been set up to oversee regional IMCAM. One of these approaches IMCAM from the viewpoint that nature conservation should underpin all IMCAM decisions whereas the other approaches it from the viewpoint of spatial planning and sees nature conservation as simply one of many competing sectors. Both regard themselves as *the* authority on IMCAM in the region and, inevitably, relations between the two organisations do not foster cooperation. Compounding the problem, a number of States within the region are also members of another cooperation agreement, which has its own strictures on IMCAM.

60. Marine resources, as well as threats to the marine and coastal environment (e.g. pollution) do not respect national boundaries. Managing whole ecosystems, including river basins and shared coastlines, in the context of the ecosystem approach requires transboundary cooperation. In many areas, Regional Seas Programmes and Action plans provide a platform for this type of collaboration. However, in cases where Regional Seas Programmes do not exist, or where they are weak on IMCAM, other mechanisms, including bilateral arrangements, will need to be put in place. Large Marine Ecosystem (LME) projects, because of their inherently transboundary nature promote cooperation in the management of marine resources. LME projects can be complementary to IMCAM efforts, particularly when biodiversity concerns are a high priority in those projects. Lack of arrangements for transboundary cooperation will provide a serious impediment for effective implementation of IMCAM.

F. Legal/juridical impediments

61. The following legal/juridical impediments were identified:

(a) Lack of comprehensive analysis of existing legislation relevant for IMCAM;

(b) Vague and/or conflicting language in laws, decrees and regulations;

(c) Lack of enabling legislation to implement the provisions of international legal instruments;

(d) Laws and regulations have inadequate powers and budget provisions for implementation;

(e) Non-Party status to other international environmental conventions;

(f) Lack of appropriate and adequate legislation;

(g) Lack of use of Alternative Dispute Resolution to foster communication and amicable resolutions to problems among stakeholders and others;

(h) Weak judicial/ juridical practices relating to IMCAM;

(i) Poor enforcement practices against offenders.

62. Existing legislation may be inappropriate/inadequate for implementation of IMCAM initiatives. Laws would need to provide an IMCAM programme with (i) an institutional arrangement that can achieve all necessary dimensions of integration, (ii) the ability to set clear, measurable and non-conflicting objectives to resolve issues, and (iii) the necessary powers and the budget to resolve issues. In some cases, although legislation to enable IMCAM programmes exists, it may contain vague or contradictory language, or have inadequate powers and budgetary provisions for implementation. 41/ At the same time, some States party to various international conventions relating to coastal resources management, including the implementation of IMCAM, have not enacted enabling legislation at the national level to implement the provisions of such international instruments, while other States are yet to accede to international legal instruments relevant to IMCAM. As a consequence, appropriate and adequate legislation has still not been put in place. In this respect, a comprehensive analysis of existing national legislation will help highlight gaps and inconsistencies.

63. While legislative weaknesses are major shortfalls to effective implementation of IMCAM, insufficient enforcement capability and will to enforce are also crucial factors. This coupled with unclear mandates and responsibilities results in the continued decline in the status of the marine environment in many cases. Regulations may be complex, poorly understood, or even misunderstood, which, in effect, will limit the ability to enforce them. The legislative process may also be lengthy, and enforcement of

41/ Sorensen, J. 2002. Baseline 2000 Background Report: The Status of Integrated Coastal Management as an International Practice. University of Massachusetts, Boston http://www.uhi.umb.edu/b2k/baseline2000.pdf

legislation is often associated with high costs and long delays. This will ultimately be detrimental to effective resource management and may provide outcomes too late when dealing with high impact issues. Although there is often a lack of funding for adequate enforcement, the goal should be to reach a situation where enforcement is not needed. Alternative Dispute Resolution mechanisms provide a cooperative way to resolve problems without resorting to litigation.

64. It needs to be noted, however, that lack of legislation may be more of a perceived impediment than an actual constraint. In a recent study of the Baltic States, for example, it was shown that, although no specific IMCAM legislation is in place in any of the nine riparian states, all of them conduct IMCAM to some extent using their existing legislation as a framework for implementation. 42/ Indeed, when adequate legislation appears to be lacking, there is always the possibility of using the relevant provisions of international and regional legal instruments, including the United Nations Convention on the Law of the Sea, the Convention on Biological Diversity, and Regional Seas Conventions and Action Plans.

G. Socio-economic factors

65. The following socio-economic obstacles were identified:

(a) Overdependence and unsustainable patterns of resource use;

(b) Difficulties in finding alternative or supplemental livelihood options;

(c) Degradation of coastal areas due to pollution, sedimentation, urbanization, expansion of industry and tourism; etc

(d) Demographic shift to and from coastal areas;

(e) Inadequate policy initiatives to improve the socio-economic condition, quality of life and skills of natural-resource dependent populations along the coast, including to enable diversification of livelihoods to reduce pressure on natural resources;

(f) Inadequate recognition/ clarification of the rights of natural resource dependent coastal communities to resources traditionally used by them, and inadequate support to empower them to protect and manage resources in sustainable ways;

(g) The incidence and relative significance of impacts among the different stakeholders; the costs of an IMCAM programme are usually immediate, and may be high to a small number of stakeholders in contrast with relatively low benefits usually spread broadly among many beneficiaries, a major problem in forming and maintaining supportive constituencies *(see also the section on economic, policy and financial obstacles)*.

66. Poverty is the major driving force behind many social-economic factors affecting implementation of IMCAM in developing countries. Many of the obstacles identified here result either directly or indirectly from the lack of alternative sources of livelihood and poor socio-economic status of local people. In such a context, basic human survival needs, such as adequate food and shelter, for most impoverished populations often preclude almost any attempts to conserve coastal resources and protect environments. Socio-economic and environmental gains achieved by planning, management and development improvements can be nullified by population increases particularly among the lowest income groups. 43/ Given that larger family size may be a rational response by the poor to their situation (need for more hands

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42/ Pickaver, A. H. Integrated Coastal Zone Management in the Baltic States - State of the Art Report. HELCOM Habitat 2002.

43/ Sorensen, J. 2002. Baseline 2000 Background Report: The Status of Integrated Coastal Management as an International Practice. University of Massachusetts, Boston http://www.uhi.umb.edu/b2k/baseline2000.pdf

for more incomes), the problem ultimately lies with the inability of governments to ensure basic quality of life for their people.

67. Indigenous and local communities along the coast have traditionally depended on coastal resources for their livelihoods. However, as competing uses of coastal resources, from industry, tourism and urban growth for example, increase, and as coastal resources come under severe pressure due to pollution and degradation of sensitive habitats, their livelihoods are rendered increasingly vulnerable. As a result of factors such as low levels of education and political marginalization, communities may be unable to draw attention to these developments or to diversify into other livelihoods, and may continue to use coastal resources to eke out a living in ways considered unsustainable. For example, as fisheries resources come under greater pressure from increasingly efficient fishing fleets, often using gear considered destructive, traditional, small-scale fishers may have little option but to continuing in the fishery, competing over depleting resources. In this competition, small-scale fishers using their traditional gear are at a disadvantage, and will often themselves resort to destructive practices such as bombing, muro-ami, small mesh nets, etc.

68. According to the Millennium Ecosystem Assessment, coastal populations are rapidly increasing, mostly through migration, high population growth rates and tourist visitations. Population densities on the coasts are nearly three times that of inland areas. In addition, coastal communities aggregate near those systems that provide the most ecosystem services and are most highly vulnerable, including estuaries, and, in the tropics, mangroves and coral reefs. Many of these areas are unprotected or marginally protected, and the lack of long-term planning management of human pressures is an important element leading to degradation, pollution and the fast rates of decline in resource abundance.

H. Natural phenomena and environmental change

69. The following obstacle relating to natural phenomena and environmental change was identified: lack of preparation and response to biological and physical phenomena (e.g., hurricanes, typhoons, tsunamis) that has the potential to impact coastal infrastructure and shift ecosystem balance.

70. The coastal zone has the highest concentration of natural hazards in the world. These hazards can be:

(i) **Biological**, e.g., invasive alien species;

(ii) **Physical**, e.g., coastal erosion, landslides, river or estuary flooding, storm surge flooding and winds from ocean borne storm events (such as hurricanes, cyclones, and typhoons), earthquakes, tsunamis, and volcanic eruptions); and

(iii) **Climate-change related**, e.g. sea-level rise and increased number of storm events etc.

71. Coastal development, including the associated clearance of coastal wetlands, often leaves human populations increasingly vulnerable to the impacts of natural phenomena and environmental change. Awareness and use of planning and engineering options to reduce or eliminate the devastation wrought by different types of coastal hazards is required. Furthermore, populations living in hazard-prone areas, such as steep hillsides prone to landslides, river flood plains, or immediate shoreland areas periodically experiencing storms, are often poor, and therefore disproportionately vulnerable to the effects of natural disasters. 44/

44/ Sorensen, J. 2002. Baseline 2000 Background Report: The Status of Integrated Coastal Management as an International Practice. University of Massachusetts, Boston http://www.uhi.umb.edu/b2k/baseline2000.pdf

III. ENABLING ACTIVITIES

72. Despite the constraints mentioned above, there are a considerable number of good examples of IMCAM being successfully implemented around the globe. All constraints do not occur at the same time in any given country, and it is possible to effectively implement IMCAM even in the presence of some constraints. The presence of a constraint can, in many cases, be too easily used as an argument to do nothing, and the implementation of IMCAM can be started even under less than ideal conditions. It is quite acceptable to begin with a different, parallel processes and still have good IMCAM in practice. Table 1 shows a set of enabling activities, which could be used to overcome various individual constraints. The table also incorporates tools, which can assist in undertaking the identified enabling activities. The list is not exhaustive. Examples of enabling activities in the form of case studies from a variety of countries can be found in Annex III to this document.

Table 1. Constraints to the implementation of ICZM and some suggested enabling activities and tools. The table goes through selected constraints, and proposed tools and enabling activities for each. A category (policy, institutional, technological, financial, partnership) is assigned for each enabling activity, as are the proposed actors.

The following definitions for terminology were used:

- **"PUBLIC"** refers to the general public
- **"STAKEHOLDERS"** refers to all those groups who have a direct interest in the marine and coastal zone
- **"PRIMARY STAKEHOLDERS"** refers to indigenous and local communities who are directly dependent for their livelihoods on coastal and marine resources
- **"INTERNATIONAL INSTRUMENTS"** refers to Conventions, Treaties, Agreements, etc.
- **"ALTERNATIVE DISPUTE RESOLUTION (ADR)"** is an accepted and increasingly utilized means of settling disputes without recourse to the Courts which is not costly and seeks peace throughout communities .
- **"REGIONAL"** refers to an arrangement among member countries within a geographic region
- **"POLITICAL"** in this context includes the political systems and the political persona
- **"STEWARDSHIP"** refers to the responsibility role over the natural resource whether it relates to its use, supervision or statutory. In many cases this is weak or misinterpreted.
- **"PROPERTY RIGHTS"** refers to legal ownership status of natural resources and area in question.

OBSTACLES	TARGETED ENABLING ACTIVITIES/TOOLS	CATEGORY	ACTORS	EXPECTED OUTCOMES
1. Political/societal obstacles **1A Political obstacles** 1. Lack of long-term vision and lack of political commitment to IMCAM, at local, national, regional levels	1.1. Create awareness about IMCAM among policy-makers by making a compelling case on the demonstrable benefits of IMCAM, 45/ 1.2. Mainstream IMCAM into national and regional planning processes,	1.1 Political 1.2 Political	1.1: Civil society, other organizations, coastal managers, educators, leading policy-makers 1.2&1.3: Policy makers,	1&2 Government commitment to full realization of IMCAM at all levels ***(Short term)*** 1&2 Regional arrangements for promotion of IMCAM

45/ Examples include:

- Studies on valuation of marine and coastal resources, using resource economics
- World Environment Day celebrations, incorporating IMCAM
- Training programmes for policy makers in IMCAM
- Membership of policy makers on CBD-relevant committees
- Case studies/ appropriate information products in various forms, on successful IMCAM projects, drawing out the lessons learned
- Publications demonstrating benefits of IMCAM (economic, social, environmental, including its role in disaster mitigation and climate change)

OBSTACLES	TARGETED ENABLING ACTIVITIES/TOOLS	CATEGORY	ACTORS	EXPECTED OUTCOMES
	1.3. Integrate IMCAM into day-to-day political agenda.	1.3 Political	civil society and other organizations, regional programmes	objectives ***(Medium term)***
2. Lack of political will for effective enforcement of IMCAM related legislation	2. Sensitize policy-makers about the negative effects of non-implementation and non-enforcement of IMCAM related legislation and obligations.	2. Political	2: Civil society, other organizations, educators, leading policy-makers	3.Full integration and participation of stakeholders, particularly indigenous and local communities, recognized by policy makers in an established and functional mechanism for IMCAM decision making and enforcement ***(Medium term)***
3. Inadequate attention to priorities articulated by primary stakeholders, i.e. indigenous and local communities and other stakeholders in decision-making processes	3. Facilitate processes that enable local constituencies to articulate a common vision relating to IMCAM and to input into decision-making	3. Partnership/ Policy	3***:*** Coastal managers, policy-makers, communities and other stakeholders, civil society, organizations	
1B Societal obstacles 1. Inadequate awareness and knowledge among stakeholders and the general public about benefits of IMCAM, particularly its role in fostering sustainable use of resources	1.1. Sensitize the public, particularly the youth, and create greater awareness about benefits of IMCAM 46/ 1.2. Ensure incorporation, on an ongoing basis, of experiences from successes and failures of IMCAM programmes	1.1 Partnership 1.2 Partnership/ Institutional	1.1: Educators, civil society, other organizations, coastal managers 1.2: Coastal managers, policy-makers, organizations	1.1 Positive changes in attitudes of public and stakeholders and better appreciation of the coastal and marine environment ***(Long term)*** 1.2 Effective and adaptive IMCAM programmes ***(Medium term)***
2. Low level of involvement of stakeholders, particularly indigenous and local communities,	2. Establish mechanisms promoting effective consultation and participation of stakeholders,	2. Partnership/	2: Coastal managers, policy-makers,	2. Established arrangements for

46/ Examples include:

- Locally appropriate educational/ public awareness material, including for use in school curricula
- Culturally-appropriate and locally-relevant metaphors explaining IMCAM
- Publications/ audio visual material on successes/ achievements of IMCAM
- Equitable participatory structures and mechanisms such as administrative forums/councils

OBSTACLES	TARGETED ENABLING ACTIVITIES/TOOLS	CATEGORY	ACTORS	EXPECTED OUTCOMES
in decision-making and enforcement processes 3. Inadequate structures for stakeholders to arrive at a consensus vision for IMCAM, for conflict avoidance and resolution	particularly with indigenous and local communities, at all stages of programme planning, design, implementation, enforcement 47/ and evaluation 3. Establish mechanisms for conflict avoidance and conflict resolution	Institutional 3. Partnership/ Institutional	community leaders 3. Coastal managers, policy-makers, community leaders	consultation and participation of stakeholders in IMCAM programmes ***(Medium term)*** 3. A consensual process of decision making is in place ***(Medium term)***
2. Institutional, technical and capacity-related obstacles **2A Weak institutional structures** 1.The lack of sufficient authority within IMCAM institutions to be effective.	1. Hold meetings of relevant administrative agencies to analyse their individual mandates and activities, with the aim of developing a common understanding of roles, responsibilities and coordination strategies.	1. Political/ Institutional	1&2: Policy-makers, representatives of all relevant government agencies/departments and organizations	**Overall outcome:** Strong institutions that can implement IMCAM effectively. 1. An existing national body or a lead/coordinating agency with legal mandate for IMCAM, or a steering committee made up of agencies for IMCAM to take a lead role is established. Appropriate bodies at regional and local levels are established. ***(Short term)***
2. The lack of integration between the bottom-up and top-down approaches.	2. Bring together representatives of different agencies at all levels responsible for IMCAM through obligatory, regular inter-agency meetings	2. Institutional		2. Improved vertical integration ***(Medium term)***
3. The vagueness of what constitutes IMCAM in management terms.	3. IMCAM needs to make sense (to local stakeholders) through i.e. the use of indicators to measure progress, 48/ publicity in different media	3. Partnership	3: Coastal managers, educators, civil society, organizations	3. An understanding of the importance of IMCAM ***(Medium to long term)***

47/ These mechanisms should ensure that:
- IMCAM programmes respond to clearly-identified needs of stakeholders
- costs and benefits from IMCAM efforts are shared equitably and that mechanisms to do this are part of project design

48/ Such as the UNEP ICZM Marker Set.

OBSTACLES	TARGETED ENABLING ACTIVITIES/TOOLS	CATEGORY	ACTORS	EXPECTED OUTCOMES
4. The absence of mechanisms to allow or ensure horizontal integration.	4. Obligatory, regular inter-agency/ department meetings to ensure harmonisation of different roles.	4. Political	4. Policy-makers, representatives of all relevant government agencies/departments, sectors, organizations	4. Strengthened horizontal relationships ***(Medium term)***
5. The large number of (uncoordinated) agencies with conflicting or overlapping interests	5. Hold meetings of relevant administrative agencies to analyse and coordinate their individual mandates and activities.	5. Political/ Institutional	5. Policy-makers, representatives of all relevant government agencies/departments and organizations	5. An existing national body or a lead/coordinating agency with legal mandate for IMCAM, or a steering committee made up of agencies for IMCAM to take a lead role is established. Appropriate bodies at regional and local levels are established. ***(Medium term)***
6. The poor, internal organisation of institutions.	6. Creating models & promoting synergies for institutional structures to support IMCAM through incorporating proven examples of good practice adapted to countries needs.	6. Institutional	6. Policy-makers, representatives of relevant government agencies and organizations	6. Strengthened organisation of institutions. ***(Medium term)***
7. Failure in incorporation of expected future challenges in IMCAM plans (eg. migration of people from inland to coastal area)	7. Develop appropriate mechanisms to avoid unexpected pressures on coastal zone	7. Institutional	7. Coastal managers, researchers, policy makers, organizations	7.Appropriate predictive models in place before developing IMCAM plans ***(Short term)***
B. Limited institutional capacity 1. Lack of human resources, and inadequate IMCAM knowledge & experience.	1. Enhance knowledge and experience through (i) training programmes on IMCAM (emphasising CBD) and how to work together in an integrative fashion & (ii) recruitment programmes	1. Institutional/ Technological	1. Research and educational institutions, relevant organizations, policy-makers, funding agencies	***Overall outcome:*** Sufficient human resources with adequate knowledge and experience. 1. Sufficient human resources with adequate knowledge and experience. ***(Long term)***
C. Communication l. The low level of communication				***Overall outcome:*** The

OBSTACLES	TARGETED ENABLING ACTIVITIES/TOOLS	CATEGORY	ACTORS	EXPECTED OUTCOMES
between scientists and managers. 2. The inability of scientists to communicate in a non-scientific language and the failure of local managers to adequately state their needs. 3. Absence of appropriate language skills on local level	1a) Establish two-way, consistent and regular communication through a clearing house mechanism 1b) Establish and implement a research agenda that will incorporate local and traditional knowledge and cultural practices, directed at improving the information base for IMCAM) 2a) Encourage non-technical interpretation of scientific arguments through *e*.g. the use of third parties, where relevant 2b) Provide educational programmes for local managers through *e*.g. training programmes. 3. Promote use of appropriate skills through *e*.g. exchange visits	1a) Partnership 1b) Political 2a) Partnership 2b) Financial/ Political 3. Financial/ Technological	1a): Researchers, coastal managers, organizations 1b) Research institutions, local and indigenous communities, coastal managers, funding institutions 2a) Science journalists, communicators, educators 2b) Researchers, educational institutions, relevant organizations 3. Scientists, local and indigenous communities, coastal managers	elimination of communication gaps between scientists, managers and local people for IMCAM implementation. 1. Improvement of the level of communication ***(Medium term)*** 2. A common understanding between scientists and managers on IMCAM issues ***(Long to medium term)*** 3. Managers and other IMCAM staff that can communicate more effectively at the local level. ***(Short to medium term)***
3. Lack of accessible knowledge/information 1. The irregular or insufficient dissemination of information among scientists, managers and	1a) Ensure wide sharing and utilization of IMCAM-relevant research and information through partnerships between scientists, managers and resource users[49]	1a) Partnership 1b) Partnership/ Technologicaol 1c) Partnership	1a) Scientists, communities and other resource users, coastal managers 1b) Coastal managers, organizations	1. Improved understanding and more effective working relationships among actors

49/ Activities to accomplish 1(a) - (c) include:
- Annual meetings (Partnership)
- Share results of research (permitting system) and collect data in consultation with field managers (Partnership)
- Disseminate information using the best and most appropriate method given local, regional conditions/situation (Partnership)
- Integrate IMCAM component into World Environment Day and Oceans Day celebrations (Political/Technological)
- Promote and/or develop networks between relevant groups at the national, regional and global level (Institutional)
- Set up task groups to convert scientific data into management plans (Partnership)
- Make IMCAM plans adaptable to emerging scientific problems (Technological/Political)

OBSTACLES	TARGETED ENABLING ACTIVITIES/TOOLS	CATEGORY	ACTORS	EXPECTED OUTCOMES
stakeholders; and the low level of public awareness	1b) Share best management practices on specific IMCAM needs 1c) Raise awareness about the importance of IMCAM among all actors	2. Partnership	1c) Educators, coastal managers, civil society and other organizations, leading policy-makers	***(Medium term)***
2. Management objectives and needs are not clearly defined, agreed upon and communicated among	2. Create partnerships between scientists, managers and resource users through regular communications and meetings to define		2. scientists, communities and other resource users, coastal managers	2. Management objectives are defined, developed and agreed upon collectively by all actors

- Open marine camps for children with the aim to form young ambassadors that in time will become leaders (Partnership)

50/ Activities to accomplish this include:

- Encourage joint research between scientists, resource managers and local stakeholders – co-research (Partnership)
- Improve indicators for IMCAM (Technological)
- Clear statement of management objectives and needs (Political)
- Address information requirements at different levels, particularly at the local level (Partnership)

51/ Activities to accomplish this include:

- Develop training videos and train ambassadors (Technological)
- Utilize all available medium for information dissemination (Technological)
- Make scientific information public (free access to scientific information) (Political/Technological)
- Make data accessible to communities for planning purposes in an understandable way (ex. Water pollution data) (Political)
- Improve timeliness of availability of scientific data for immediate decision-making (Political/Partnership)

52/ One way to accomplish this is to include ethnoscience and para-taxonomists (taxonomic monitoring by local people) in survey and inventory of resources

53/ Activities to accomplish this include:

- Develop and promote the consistent use of a Global interactive database of IMCAM efforts (World Bank) (Technological)
- Develop or create archives of knowledge related to IMCAM for countries/regions (Technological)
- Improve GIS-based systems for access to scientific data (Technological/Institutional)
- Develop methods to address fragmentation of knowledge, through for example metadata bases and environmental information systems (access by all countries) (Technological)
- Establish regional and global data centres on IMCAM/biodiversity (ex. GBIF, OBIS or through regional seas) (Technological)
- Providing financing for creation of regional/global data centres (Financial)
- Create clearinghouse mechanisms available at the scale at which IMCAM is being implemented (containing all relevant information and understandable to local stakeholders) (Technological/Partnership)

OBSTACLES	TARGETED ENABLING ACTIVITIES/TOOLS	CATEGORY	ACTORS	EXPECTED OUTCOMES
scientists, managers and stakeholders; and failure of managers to state their needs and provide feedback	management objectives and information needs50			***(Medium term)***
3. Irregular communication between IMCAM institutions at the local, regional and global levels; and the low level of awareness by resource users of the need to conserve the marine and coastal environment.	3. Promote IMCAM sessions at national and regional science and management meetings	3. Political	3. Researchers, coastal managers, organizations	3. Improved understanding of IMCAM at all levels, resulting in more efficient, clear and holistic decisions ***(Short term)***
4. Dissemination of scientific work stays within the scientific community due to specialized language and format of publications	4. Make scientific information public, and freely and widely accessible in a timely manner 51/	4. Partnership/ Technological	4. Researchers, coastal managers, educators, civil society, policy-makers	4. All stakeholders receive results of all scientific work in a timely and understandable format ***(Short term)***
5. Lack of respect for intellectual and cultural knowledge and property	5a) Avoid cultural appropriation (mining) of local knowledge 5b) Local/traditional knowledge given appropriate attention and used to address mitigation measures 52/	5a) Political 5b) Political/ Technological	5a) & b): Researchers, coastal managers, communities	5. Appropriate recognition of local and traditional knowledge, and its integration, resulting in better informed decisions and stronger partnerships ***(Short term)***
6. Fragmentation of knowledge constrains informed decision-making.	6. Develop and promote the consistent use of national, regional and global IMCAM databases, metadata bases, information systems and archives of IMCAM-related knowledge 53/	6. Technological	6: Research institutions, other relevant organizations, including government departments	6. Better informed decisions through IMCAM programmes, which have learned from experience ***(Medium term)***
7. Limited access to scientific publications	7. Set up roving libraries and free download on web sites	7. Political	7. Research and educational institutions, other relevant organizations	7. Improved access to information and better scientific assistance to decision making

OBSTACLES	TARGETED ENABLING ACTIVITIES/TOOLS	CATEGORY	ACTORS	EXPECTED OUTCOMES
				(Short term)
4. Economic policy and financial resources 1. The lack of awareness of the value of natural resources 2. The lack of awareness of the economic benefits of using IMCAM 3. Inadequate financial capacity for IMCAM implementation	1, 2 and 3: • Urge developed countries and GEF to mobilize financial resources to support developing countries and countries with economies in transition to implement IMCAM as part of CBD programme work • Ensure equitable sharing of benefits, particularly to indigenous and local communities, from the IMCAM process • Raise awareness about the economic benefits of IMCAM and of healthy coastal ecosystems 54 • Ensure that IMCAM produces tangible and measurable value added benefits to resources and stakeholders • Use, promote and finance technologies with less environmental impact55	Financial Political Political/ Financial Political Financial/ Political	Governments Governments Relevant national, regional and international organizations, civil society, economists Coastal managers, policy makers, community representatives Policy makers, industry, civil society,	1. The economic value of natural resources is recognised and taken into account in decision making ***(Short term)*** 2. Realisation of the importance, benefits and urgency of implementation of IMCAM ***(Short term)***

54/ Activities to accomplish this include:

- Disseminate case studies of economic benefits of IMCAM to different groups (poor people, livelihoods, economic investment) (Institutional, financial)
- Provide projections of economic benefits of IMCAM to different groups in the short, long and medium term (Financial/Political)
- Make a case for the coastal environment to have economic value (valuation of environmental services) (Political/Financial)
- Place a value on existing livelihoods based on natural resources (value of these vs. value of development projects) (Political/Financial)

55/ Activities to accomplish this include:

- Wise planning of projects potentially impacting biodiversity (benefits of projects to environment and local communities) (Political)
- Take into consideration positive and negative effects of different technologies (Political/Technological)

OBSTACLES	TARGETED ENABLING ACTIVITIES/TOOLS	CATEGORY	ACTORS	EXPECTED OUTCOMES
			communities Policy makers, coastal managers	
	• Develop a strategic vision emphasizing the goods and services that flow from natural ecosystems	Political		
			4a) Policy makers, business community	4. Balance achieved between economics and environment in decision-making
4. The imbalance between economics and the environment in decision-making.	4a) Environmental sustainability seen as foundation for economic development (integrating this issue into business practice) 56/	4a) Financial	4b) Relevant national, regional and international organizations, civil society, economists	
	4b) Publicize the connection between environmental degradation and economic growth on the global level 57/	4b) Political		
	4c) Include social and cultural aspects into economic analysis	4c)Political/ Financial	4c) Economists	
			5a) Financial experts, policy makers, coastal managers	5:
5. Funds are not commensurate with needs resulting in inappropriate level of financing, also there is no mechanism to guarantee post funding sustainability.	5a) Include comprehensive business planning (cost projection) on IMCAM plans at all phases, especially post project in order to ensure that IMCAM plans are financially sound 58/	5a) Financial	5b) Recipient countries and donor agencies	• Donors enter into partnerships with recipient countries for long term IMCAM implementation;
	5b) Ensure that donor support is commensurate	5b) Political/ Financial		

56/ Activities to accomplish this include:

- Create donors credits for countries protecting environment (Ex. Debt for nature swap) (Political/Financial)
- Remove perverse incentives (Political/Financial)

57/ Activity towards this end includes public economic pressure against or in favour of products or companies depending on their environmental policy (Political/Finacial)

58/ Activities to accomplish this include:

- Create guidelines on how to fund costs of IMCAM, and how to make IMCAM sustainable (also how to make IMCAM cost-effective) (Technological)
- Encourage reinvestment of economic benefits derived from the environment (Financial)
- Develop mechanisms to encourage private sector contributions to implementing IMCAM, including guidelines (Political/Financial)
- Put in place an environmental impact fee (Political/Financial)
- Developers to put in place a fund to mitigate environmental impacts (ex. Polluter pays) (Political/Financial)

59/ Activity towards this end includes expediting procedures for funding applications and making them transparent.

OBSTACLES	TARGETED ENABLING ACTIVITIES/TOOLS	CATEGORY	ACTORS	EXPECTED OUTCOMES
	with country needs and capacity to sustain a program. 5c) Donors must share accountability with recipient countries for long term IMCAM. 5d) Enhance the dialogue with funding organizations 59/	5c)Partnership /Political 5d) Partnership	5c) Recipient countries and donor agencies 5d) Recipient countries and donor agencies	Move from project to programme mentality ***(Medium term)*** • Countries accept donor support with a commitment for post project sustainability of programme
6. Undefined fiscal and financial policies to realize benefits on IMCAM	6. Elaborate and implement fiscal and financial legislation mechanisms to buttress IMCAM's needs	6. Political/ Financial	6. Governments, legal and financial experts	6. Improved policies and consistent application of appropriate legislation ***(Medium term)***
5. Collaboration/cooperation 1. The lack of vertical integration (see 2A2)	1. Hold meetings of relevant administrative agencies at national, regional and local levels to analyse their individual mandates and activities.	1. Political/ Institutional	1. Representatives of relevant agencies at all levels	***Overall outcome:*** Consultative processes and coordinating mechanisms are established. 1. An existing national body or a lead/coordinating agency with legal mandate for IMCAM, or a steering committee made up of agencies for IMCAM to take a lead role is established. Appropriate bodies at regional and local levels are established. ***(Medium term)***
2. The absence of mechanisms to allow or ensure horizontal integration. (see 2A4)	2. Obligatory, regular inter-agency/ department meetings to ensure harmonisation of different roles.	2. Political	2. Representatives of government agencies and sectors of relevance to IMCAM, representatives of relevant organizations	2. Strengthened horizontal relationships
3. The lack of co-ordinating mechanisms for institutions with similar or overlapping mandates. (see 2A5)	3. Make IMCAM programmes transparent and accountable by holding meetings of relevant administrative agencies to analyse their individual mandates and activities.	3. Political/ Institutional	3. Representatives of relevant agencies at all levels	3. An existing national body or a lead/coordinating agency with legal mandate for IMCAM, or a steering committee made up of agencies for IMCAM to take a

OBSTACLES	TARGETED ENABLING ACTIVITIES/TOOLS	CATEGORY	ACTORS	EXPECTED OUTCOMES
				lead role is established. Appropriate bodies at regional and local levels are established. ***(Medium term)***
4. Lack of trans-boundary cooperation	4. Adopting trans-boundary initiatives and agreements by holding appropriate meetings of existing regional bodies, organisations etc.	4. Political	4. Representatives of national governments and regional bodies and organizations	4. Promotion of transboundary cooperation. ***(Medium term)***
6. Legal/juridical impediments				
1. Lack of comprehensive analysis of existing legislation relevant for IMCAM	1. Comprehensively review environmental and other related legislation relevant to IMCAM 60/	1. Political	1. Governments and legal experts	1,2&3.Comprehensive and appropriate legislation ***(Short term)***
73. Lack of appropriate and adequate legislation, to enable the provisions of international instruments and address national policies	2. Enact enabling legislation to implement/ harmonize the provisions of the CBD, other international instruments relevant to IMCAM and address national policies 61/	2. Political	2. Governments and legal experts	
74. Non-Party status to other international environmental conventions	3. Encourage States to accede to appropriate international instruments relevant to IMCAM	3. Political	3. Civil society	
75. Weak judicial/ juridical and enforcement practices relating to IMCAM	4a) Review the judicial/ juridical and enforcement system with a view to identifying and addressing weaknesses and promoting best practices in relation to IMCAM	4a)Political/ Institutional	4a) Governments and legal experts	4a) Educational programmes for judiciary and enforcement agencies on the importance of sustainable use of coastal and marine resources ***(Medium term)***
	4b) Promote Alternative Dispute Resolution (ADR) to foster communication and amicable resolutions to problems among stakeholders and	4b) Political/ Institutional	4b) Governments, legal experts, community representatives, representatives of sectors operating in the	

60/ Study examples of relevant legislation on IMCAM from other countries, to develop nationally-specific legislation.

61/ For example: (Law to) clarify and promote acceptable and equitable property right regimes for resources in coastal areas, ensuring recognition of customary and traditional rights to these resources, and to designate stewardship over coastal and marine resources in IMCAM programmes.

OBSTACLES	TARGETED ENABLING ACTIVITIES/TOOLS	CATEGORY	ACTORS	EXPECTED OUTCOMES
	others		coastal zone	4b) Establishment of appropriate Alternative Dispute Resolution (ADR) systems (***Medium term)***
7. Socio-economic factors				
1. Overdependence and unsustainable patterns of resource use	1a) Use adequate fisheries management adapted to local circumstances in order to ensure sustainable use of living resources 62/	1a) Technological /Political	1a) Policy-makers, coastal managers, resource users, including relevant industry sectors and communities	1. Sustainable use of natural resources as defined by existing Conventions ***(Medium term)***
	1b) Provide for diversification of economy and creation of new activities in coastal area	1b) Political	1b) Policy-makers, coastal managers, communities, researchers, sustainable industry	
	1c) Conduct detailed studies on the identification/development of site-specific alternative and appropriate resource use	1c) Technological	1c) Coastal managers, communities, relevant organizations	
2. Degradation of coastal areas due to pollution, sedimentation, urbanization etc	2a) Develop and improve land-use planning and resource use in coastal areas, taking into account community and indigenous issues. 63/	2a) Political/ Technological	2a) Policy-makers, coastal managers,	2. Adherence to policies and Conventions related to

62/ Activities to accomplish this include:

- Use of suitable/selective fishing gear and practices (Political)
- Employ positive incentives – ex. buy back destructive gear, pay an allowance to fishermen during periods when fishing is closed (Political/Financial)
- Implement FAO Code of Conduct on Responsible Fisheries (Political)
- Enhance post-harvest technology, processing and handling practices (Technological/Political)

63/ Activities to accomplish this include:

- Promotion of environmental certification for hotels, restaurants, and other establishments (Political)
- Promotion of Global Programme of Action for the protection of the marine environment from land based activities (Political)

64/ Activities to accomplish this include:

OBSTACLES	TARGETED ENABLING ACTIVITIES/TOOLS	CATEGORY	ACTORS	EXPECTED OUTCOMES
			researchers, civil society, relevant organizations, communities and industry representatives	environmental degradation, which includes the use of sustainable practices in the watershed ***(Medium term)***
	2b) Establish community based land air and water quality monitoring programmes, which adhere to national standards, linking degradation to their sources	2b) Partnership	2b) Researchers, policy-makers, communities	
	2c) Establish of national environmental standards	2c) Political	2c) Researchers, policy-makers	
	2d) Ensure the consistent application of independent strategic environmental assessments to address external and cumulative impacts of developments	2d) Political	2d) Governments, industry, civil society	
3. Demographic shift to and from coastal areas	3. Develop and improve land use planning and resource use in coastal areas taking into account community and indigenous issues.	3. Political	3. Policy-makers, coastal managers, researchers, civil society, relevant organizations, communities and industry representatives	3. Development patterns comply with carrying capacity of coastal ecosystems ***(Long term)***
4. Difficulties in finding alternative or supplemental livelihood options	4a) Exploit existing opportunities by investigating community characteristics and adapting them to IMCAM planning and the wishes of people	4a) Partnership	4a) Coastal managers, communities, researchers	4. Alternative or supplemental livelihood options have been developed collaboratively with local stakeholders ***(Medium term)***
	4b) Improve existing livelihoods through diversification of alternative by experience sharing with other regions and countries. 64/	4b) Partnership	4b) Policy-makers, coastal managers, communities, researchers, sustainable industry	
		4c) Political		

- Better prices for products made locally and to community and ecological standards (Political/Financial)
- Villages to select, produce and advertise one product unique to it (Political)
- Empower local communities to develop value-added products from local sources (Political)
- Develop ecotourism – use knowledge of area to the maximum (Political)
- Mobilize human resources by involving women self help groups and unemployed youths (Political)

OBSTACLES	TARGETED ENABLING ACTIVITIES/TOOLS	CATEGORY	ACTORS	EXPECTED OUTCOMES
	4c) Take into account traditional practices and innovations in implementing IMCAM		4c) Coastal managers, communities, researchers	
8. Lack of appreciation and understanding of impact of natural phenomena in IMCAM 1. Lack of preparation and response to biological and physical phenomena that has the potential to impact coastal infrastructure and shift ecosystem balance	1a) Illustrate the potential impacts of natural disasters relevant to stakeholders on all levels, especially on local level 1b) Make available data on coastal vulnerability/risk in the planning process 1c) Improve coastal resilience through improved watershed, sediment and water quality management 65/ 1d) Develop and implement IMCAM plans incorporating predicted impacts of severe weather and climate change, as well as biological phenomena 1e) Develop suitable predictive models of natural disasters, such as tsunamis, cyclones, floods, sea level rise 1f) Put in place risk assessment system and propose mitigation measures 1g) IMCAM should inform the decision to Protect, Mitigate or Retreat	1a) Technological 1b) Technological 1c) Technological 1d) Technological/ Political 1e) Technological 1f) Political/ Technological 1g) Political	1a) Coastal managers, researchers, organizations, communicators 1b) Researchers, coastal managers 1c) Researchers, coastal managers, policy makers, communities 1d) Researchers, coastal managers, policy makers 1e) Researchers 1f) Researchers, coastal managers, policy makers, communities 1g) Researchers, coastal managers, policy makers	1. IMCAM programmes designed to adapt to unanticipated physical or biological hazards ***(Short term)***

65/ Activities to accomplish this include:

- Protect species and areas showing most resilience (Political)
- 1e) Employ strategic sediment management by creating reservoirs (sediments of appropriate characteristics kept available for the future) (Technological)

IV. CONCLUSION & RECOMMENDATIONS

73. The transition from IMCAM planning to implementation is a challenge for many coastal management programmes because of the great number of constraints present. It is fortunate, however, that not all of these challenges are encountered in any given country at the same place and time. Experience shows that specific legislation for IMCAM, while perhaps desirable, is not a pre-requisite for implementation, provided that some kind of legislative framework is present that will facilitate the application of IMCAM. Very few countries in the world have IMCAM-specific legislation, but globally there are many examples of good IMCAM practice to draw from.

74. This document has highlighted a series of enabling activities, which can be used to overcome certain impediments. Any one of these enabling activities, if adapted to specific national needs, will add to the effectiveness of an IMCAM programme. Several case-studies are also presented in Annex III to this document, illustrating ways in which a country can take further steps towards implementing a number of important aspects of IMCAM. It is not the intention that these examples be rigidly followed, as the national circumstances of each country are unique. However, they do provide examples of how specific problems have been overcome through strengthening IMCAM institutions, optimising public and stakeholder participation, improving vertical integration through special area management, and horizontal integration through the use of marine protected areas. All of these actions are key elements in any national IMCAM strategy. Each of the case-studies also incorporates other useful elements of IMCAM. For example, the Tanzania case-study incorporates public participation, while the Belize case-study takes into account the development of public-private partnerships. The fact that each case study includes several important components of successful implementation of IMCAM demonstrates the underlying approach of integration.

75. Based on its consideration of obstacles to implementation of IMCAM and enabling activities, the Ad Hoc Technical Expert Group has proposed a set of recommendations, which could bring substantial improvements in IMCAM implementation:

76. In order to improve implementation of IMCAM, countries are urged to:

Political and societal issues

- Create a supportive political climate for effective implementation of IMCAM, given that insufficient political will has been a major hindrance to IMCAM implementation.
- Ensure that information about the sustained social, economic, health, environmental, and cultural benefits of IMCAM is widely disseminated among government officials, policy makers, users of coastal resources and the general public.
- Institutionalize participatory processes that enable stakeholders, particularly indigenous and local communities, to input into decision-making and to articulate a common vision for mainstreaming of IMCAM in national and regional processes.

Legal/juridical issues

- Undertake a comprehensive review of environmental and other related legislation relevant to IMCAM, and, where necessary, enact appropriate legislation.
- Enact enabling legislation to implement/harmonize the provisions of the international instruments relevant to IMCAM, or, where appropriate, to accede to international instruments relevant to IMCAM.

- Ensure effective enforcement of legislation, particularly through sensitising the judiciary and enforcement agencies about the importance of sustainable use of coastal and marine resources and the importance of apprehending offenders.

Weak institutional structures

- Examine institutional structure for IMCAM, and strengthen it appropriately in order to achieve targets, such as establishing:
    (i) A lead agency with a clear legal mandate; and
    (ii) Appropriate subsidiary bodies at regional and local levels responsible to the lead agency

Limited institutional capacity

- Significantly improve capacity-building for IMCAM activities through regular training and recruitment programmes.

Communication

- Bridge the communication gaps between scientists, managers and local communities by establishing working groups on research needs, taking full cognisance of local and traditional knowledge as well as cultural practices, and encouraging the use of non-technical language.

Collaboration/cooperation

- Actively participate in international initiatives and contribute to agreements, such as regional seas programmes, Large Marine Ecosystem (LME) projects, and river basin initiatives, in order to improve trans-boundary cooperation.

Lack of accessible knowledge/information

- Improve collection, collation, communication, and dissemination of information and participation of stakeholders in the implementation of management decisions.
- Support the development and use of a global interactive database of IMCAM efforts.

Economic policy and financial resources

- Mobilise funding mechanisms at the national, regional and global levels in order to successfully implement and ensure the sustainability of IMCAM.
- Value natural resources to the level of their economic significance, and use the information in decision making.

Socio-economic factors

- Empower and promote the capacity of local communities and other stakeholders to use resources sustainably and, where required, to diversify their economic and livelihood base.

Natural phenomena and environmental change

- Design adaptive IMCAM programmes that take into account/respond to environmental change, as well as recurrent or unexpected physical or biological hazards.

General

- Asses baseline level of IMCAM implementation through the adoption and application of indicators, such as the UNEP ICZM Progress Indicator Set (see annex II).
- As a pre-requisite to any IMCAM implementation, develop and adopt a National IMCAM Strategy based upon one of the many available examples.
- Use marine and coastal protected areas (MCPAs) as a simple IMCAM tool to protect marine resources and to undertake many facets of the IMCAM process, such as vertical integration and horizontal integration of stakeholder groups.
- Undertake MCPA management in collaboration with indigenous and local communities.

Annex I

MEMBERS OF THE AD HOC TECHNICAL EXPERT GROUP ON IMPLEMENTATION OF INTEGRATED MARINE AND COASTAL AREA MANAGEMENT (IMCAM)

Country experts:

Mr. Gamal Abdulla Nasser Al-Harrani, Yemen
Mr. A.K. Armah, Ghana
Ms. Angelique Brathwaite, Barbados
Mr. Adalbert Eledui, Palau
Ms. Beatrice Padovani Ferreira, Brazil
Ms. Dalia Gudaitiene-Holiman, Lithuania
Mr. Lawrence Hildebrand, Canada
Mr. Ali Kaka, Kenya
Mr. L. Kannan, India
Mr. Alan Pickaver, the Netherlands
Mr. Raobelina Randriamiarana, Madagascar
Mr. Ukkrit Satapoomin, Thailand
Ms. Susan Smith, Sweden
Mr. Sergey Zagranichny, Russian Federation

Experts from organizations:

Ms. Chandrika Sharma, International Collective in Support of Fishworkers
Ms. Cheryl Thompson-Barrow, Commonwealth Secretariat

CBD Secretariat:

Ms. Marjo Vierros
Mr. David Coates
Mr. Mathieu Regnier
Ms. Pierina Yupanqui
Mr. Kalemani Jo Mulongoy

Annex II

DRAFT UNEP ICZM MARKER SET

Note: The UNEP ICZM indicator set is still under development. It does, however, provide an example of the types of indicators that can be used to assess implementation of IMCAM. The EU indicator set presented below (after the UNEP indicator set) has been widely peer reviewed and is being currently implemented. The two indicator sets are very similar.

I. 1ST ORDER OUTCOMES: THE PRE-CONDITIONS FOR IMPLEMENTATION OF ICZM

Focus	Marker	Y	N	Notes
A. Prioritization of the goals and issues	1. Have the issues been identified?			
	2. Have the issues been analysed?			
	3. Have the goals for the issues been set?			
	4. Is there a policy?			
	5. Have the relevant target groups been identified?			
	6. Are there opportunities for minority groups, gender etc. in place?			
	7. Has poverty been addressed?			
	8. Have protected areas been included?			
	9. Have good practices been incorporated?			
	10. Has an evaluation been included?			
B. Political and legislative commitment	1. Is there an executive mandate?			
	2. Is there support within the political structure at a national level?			
	3. Is there relevant legislation in place?			
	4. Is there legislation in place that enables authorities to implement ?			
	5. Is there recognition that a 10-15 year commitment is required?			
	6. Are there sufficient financial resources committed for an ongoing programme?			
	7. Have necessary investments been identified?			
C. Stakeholder and Public involvement and support	1. Does the public share the government vision?			
	2. Is there stakeholder support?			
	3. Is there public awareness?			
	4. Is there public support?			
	5. Are there mechanisms for stakeholder and public participation?			
D. The capacity to implement the programme	1. Is there a strategy?			
	2. Have plans been drafted?			
	3. Have plans been adopted?			
	4. Is there support within the institutions responsible for implementation?			
	5. Is there information exchange between institutions?			
	6. Are there sufficient human resources?			
	7. Do those human resources have sufficient, relevant capacity?			
	8. Are the roles and responsibilities amongst collaborating institutions clear?			
	9. Are there vertical (national/ regional/local) mechanisms in place?			
	10. Are there horizontal mechanisms in place?			
	11. Has an education programme been included?			

	12. Has a communication programme been included?			
	13. Is there a conflict resolution mechanism in place?			
	14. Have public-private partnerships been set up?			
	15. Have EIA's been included?			
	16. Has a permitting system been included?			
	17. Are enforcement capabilities in place?			
	18. Is there a penalty system in place?			
	19. Is ecosystem costing in place?			
	20. Are non-regulatory incentives in place?			
	21. Have management plans incorporated existing and emerging scientific knowledge?			
	22. Is an environmental monitoring programme in place?			
	23. Has a comprehensive set of indicators been developed to assess progress towards sustainability?			

Draft of a UNEP ICZM Marker Set

II. 2ND ORDER OUTCOMES: THE IMPLEMENTATION OF ICZM

Focus	*I. Marker*	YES	NO	SUPPORTING EVIDENCE
A. Changes In the Behaviour of Institutions	**1. Have the issues and their significance changed during implementation?**			
	2. How is the programme adapting to these changes?			
	3. Have the goals been modified? If so how?			
	4. Have such adaptations strengthened the potential of the programme to achieve its original 3d Order goals?			
	5. Are the implementing institutions collaborating effectively?			
	6. Are conflict mediation methods being effectively applied? **7. Are private-public partnerships functional and generating desired results?**			
	8. Is the permitting system being effectively implemented?			
	9. Are programme policies being enforced?			
	10. Are programme procedures being enforced?			
	11. Are regulations being enforced?			
	12. Are the institutions with responsibilities for implementation collaborating effectively			
	13. Is support within the political structure at a national level being maintained?			
B. Changes in the Behaviour of Resource Users	**1. Are target groups changing in response to programme implementation? If so, how.**			
	2. Is the quality of life changing of those anticipated to benefit from the programme? If so, how?			
	3. Are destructive forms of resource use being reduced? If so, what is the impact of these changes?			

Focus	*I. Marker*	YES	NO	SUPPORTING EVIDENCE
	4. Are conflicts among user groups are being reduced? If so, how?			
	5. Are good practices called for by the programme have been adopted? If so, what are the impacts?			
	6. Is the public continuing to share the government vision?			
	7. Is there public awareness of implementation actions?			
	8. Does the public support the implementation programme			
	9. Are stakeholder and public participation shaping the implementation process? With what result?			
C. Changes in Investment	**1. Are investments in time contributing to the implementation of the programme?**			
	2. Are investments in funding contributing to the implementation of the programme?			
	3. Are investments other resources contributing to the implementation of the programme?			
	4. Are sufficient financial resources being committed to sustain the implementation of the programme?			
	5. Are necessary investments in infrastructure being made?			
	6. Is programme infrastructure being effectively used and maintained?			
	7. Are there sufficient human resources for sustained implementation?			
	8. Is the penalty system an effective deterrent to behaviours of priority concern ?			
	9. Is ecosystem costing affecting decision making?			
	10. Are incentives for desired behaviours proving effective?			
	11. Is existing and emerging scientific knowledge being incorporated into the implementation process?			
	12. Is environmental monitoring revealing the impacts of programme actions?			
	13. Is a comprehensive set of indicators documenting progress towards programme goals for priority issues?			

THE EUROPEAN UNION IMCAM INDICATOR SET

An Indicator for Measuring Progress in the Implementation of ICZM

Country ..... Region …… Local area ……

Phase	Action	Description	National		Regional		Local	
			2000	2005	2000	2005	2000	2005
	1	Decisions about planning and managing the coast are governed by general legal instruments.						

Aspects of coastal planning and management are in place	2	Sectoral stakeholders meet on an ad hoc basis to discuss specific coastal and marine issues.						
	3	There are spatial development plans which include the coastal zone but do not treat it as a distinct and separate entity.						
	4	Aspects of the coastal zone, including marine areas, are regularly monitored.						
	5	Planning on the coast includes the statutory protection of natural areas.						
A framework exists for taking ICZM forward	6	Existing instruments are being adapted and combined to deal with coastal planning and management issues.						
	7	Adequate funding is usually available for undertaking actions on the coast.						
	8	A stocktake of the coast (identifying who does what, where and how) has been carried out.						
	9	There is a formal mechanism whereby stakeholders meet regularly to discuss a range of coastal and marine issues.						
	10	Ad hoc actions on the coast are being carried out that include recognisable elements of ICZM.						
	11	A sustainable development strategy which includes specific references to coasts and seas is in place.						
	12	Guidelines have been produced by national, regional or local governments which advise planning authorities on appropriate uses of the coastal zone.						
Most aspects of an ICZM approach to planning and managing the coast are in place and functioning reasonably well	13	All relevant parties concerned in the ICZM decision-making process have been identified and are involved.						
	14	A report on the State of the Coast has been written with the intention of repeating the exercise every five or ten years.						
	15	There is a statutory coastal zone management plan.						
	16	Strategic Environmental Assessments are used commonly to examine policies, strategies and plans for the coastal zone.						
	17	A non-statutory coastal zone management strategy has been drawn up and an action plan is being implemented.						

	18	There are open channels of communication between those responsible for the coast at all levels of government.						
	19	Each administrative level has at least one member of staff whose sole responsibility is ICZM.						
	20	Statutory development plans span the interface between land and sea.						
	21	Spatial planning of sea areas is required by law.						
	22	A properly staffed and properly funded partnership of coastal and marine stakeholders is in place.						
	23	ICZM partnerships are consulted routinely about proposals to do with the coastal zone.						
	24	Adequate mechanisms are in place to allow coastal communities to take a participative role in ICZM decisions.						
An efficient, adaptive and integrative process is embedded at all levels of governance and is delivering greater sustainable use of the coast	25	There is strong, constant and effective political support for the ICZM process.						
	26	There is routine (rather than occasional) cooperation across coastal and marine boundaries.						
	27	A comprehensive set of coastal and marine indicators is being used to assess progress towards a more sustainable situation.						
	28	A long-term financial commitment is in place for the implementation of ICZM.						
	29	End users have access to as much information of sufficient quality as they need to make timely, coherent and well-crafted decisions.						
	30	Mechanisms for reviewing and evaluating progress in implementing ICZM are embedded in governance.						
	31	Monitoring shows a demonstrable trend towards a more sustainable use of coastal and marine resources.						

Annex III

CASE-STUDIES

77. Enabling activities are illustrated through four case studies, each of which incorporates several aspects of the enabling activities listed in the above table. It is therefore not intended that each case study relates to only one of the major groups of impediments. The nature of integrated management means that each case study will embrace more than one of the constraints and enabling activities.

A. Institutional strengthening

Case-study: Tanzania

78. Tanzania's mainland coastline stretches for over 2300 kilometres and includes five regions as well as large islands like Mafia Island, and numerous islets including their catchment areas. About two thirds of the coastline has fringing reefs, often close to the shoreline, broken by river outlets including the Rufiji, Pangani, Ruvuma, Wami, Matandu and Ruvu. The continental shelf is 5.8 kilometres wide, except at the Zanzibar and Mafia channels where it extends to a width of about 62 kilometres. 66/

79. This coastal area is of critical importance to the development of the country. The five mainland coastal regions contribute about one third of the national Gross Domestic Product (GDP). 67/ Currently, 75 percent of the country's industries are in urban coastal areas. Newly initiated activities in the coastal region, including coastal tourism, mariculture development and natural gas exploitation are seen as becoming increasingly important in the future for promoting national economic development. There is also substantial but un-tapped potential for agriculture, offshore fisheries, shipping, urban development, small-scale mining and manufacturing. These economic opportunities need to be developed for the benefit of the nation and coastal people, in a manner that links growth to wise management and protection of the resource base.

80. However, as elsewhere, pressures on coastal resources are increasing, and resource depletion is already occurring. Sprawl, uncontrolled land use and major developments threaten large tracks of coastal area. This is made worse by unplanned settlements, both in urban and rural areas, where there is no access to potable water and sanitary systems, leading to health problems like cholera and diarrhoea. Coral mining is increasing to supply building material for construction along the coast. In addition, exploitation and uncontrolled use of mangroves is on the increase. International fishing trawlers are impacting significantly on fishery resources that are important for local users. There is also increased pressure from tourism, industry and population growth and the related new infrastructure.

81. As a result, in 2002, a National Integrated Coastal Environment Management (ICM) Strategy was published following several years of community consultation and input. 68/ It recognises seven different

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66/ Linden, O and Lundin, C. (ed.) 1995. Integrated Coastal Zone Management in Tanzania.

67/ World Bank (1996), Tanzania, *The Challenges of Reforms: Growth, Income and Welfare.* Report No. 14982-TA, Vol.1.

68/ The United Republic of Tanzania. 2003. *National Integrated Coastal Environment Management Strategy*. Vice Presiedent's Office. Dar es Salaam.

strategies that need to be applied by the year 2025, and which are currently at different stages of implementation.

82. In order to carry out the National ICM Strategy, three levels of institutional structure have been created under the National Environment Management Council, which reports directly to the Vice-President's office. These are a National Steering Committee on Integrated Coastal Management (NSC-ICM), a planned Integrated Coastal Management Unit (ICMU) and various inter-sectoral working groups.

83. The National Steering Committee's main responsibility is to provide a policy oversight and guidance on the conduct of overall activities. The Steering Committee is comprised of the Permanent Secretary for the Environment, who appoints members to the Committee and serves as its Chair; three coastal district representatives; a representative from the Mafia district; one member from the private sector; one member from non-governmental organizations; and nine members from the central government. Central government representation is drawn from departments of lands and human settlements; fisheries; forestry; tourism; agriculture and mining. Other members include the Director General of the National Environment Management Council, the Director of the Division of Environment and a representative from the ministry responsible for local government. The Committee has so far met once and plans to meet again, with an aim to meet, in principle, every six months.

84. The Tanzanian Coastal Management Partnership 69/ currently coordinates and facilitates the implementation of the strategy and carries out relevant coastal activities. These tasks should be taken over by the ICMU in the near future. However, the inter-sectoral working groups provide the main vehicle for implementing IMCAM. The working groups, which include a core technical working group, issue specific working groups, and science and technical working groups, are composed of technical experts and representatives of different disciplines and sectors. They may also include representatives from the private sector and from communities 70/

85. Finally, in order to achieve implementation, various mechanisms and actions have been chosen, some of which are new whilst others re-emphasize or build upon previous experience at local or national level. Various institutions have been given specific responsibilities, with a time frame allocated to make the process effective.

B. Vertical integration and local community involvement through Special Area Management

Case-study: Muthurajawela Marsh and Negombo Lagoon, Sri Lanka

86. The Muthurajawela Marsh - Negombo Lagoon coastal wetland complex, 6,232 ha in extent, is located along the western coast of Sri Lanka. The 3,068 ha marsh extends southwards from the lagoon, which is 3,164 ha in extent and connected to the sea by a single narrow opening. The entire wetland is separated from the sea by a sand barrier formed during past sea level changes. Freshwater from catchments of 727 km^2 drains into the system via Dadugam Oya at the point where the lagoon and the marsh meet.

69/ Torell, E., G. Luhikula and L. M. Nzali. 2002. *Managing Tanzania's coast through integrated planning: Reflection upon the first year of distrity ICM action planning.* Tanzania Coastal Management Partnership.

70/ Torell, E.C., M. Amaral, T. G. Bayer., J. Daffa., G. Luhikula., and L. Z. Hale. 2004. *Building enabling conditions for integrated coastal management at the national scale in Tanzania.* Ocean and Coastal Management 47 339-359.

87. The Government of Sri Lanka enacted the *Coast Conservation Act No. 57 of 1981* which culminating in the development of a Coastal Zone Management Plan in 1989. The Plan was adopted in 1992. 71/ The plan outlined strategies for providing greater management emphasis on coastal erosion and habitats in the coastal zone, including the designation of coastal setback areas in which building construction was virtually prohibited within 300m from the coastline. In parallel, a strategic environmental education and awareness program for coastal resources management and conservation was prepared. 72/ A resource management strategy further recommended 73/ that a second generation coastal resources management strategy be implemented at the national, provincial, district and local levels, with more monitoring and research and an enlarged public awareness and education program. It also recommended the design and implementation of Special Area Management (SAM) plans "to be implemented at specific geographic sites of ecological and socio-economic significance."

88. Special Area Management is a locally-based, geographically-specific, planning process that allows for the comprehensive management of natural resources with highly participatory practices and the active involvement of the local community as the main stakeholder group. It involves co-management of resources whereby government institutions and other planning agencies assume the role of facilitators, while local community groups are considered the custodians of the resources being managed. In this way, livelihood practices allow for sustainable natural resource use and management within the designated area.

89. SAMs are now an integral component of the national coastal zone management policy of Sri Lanka, and as a result several important activities have taken place. A re-location and community development package for encroacher communities living on Muthurajawela Marsh has been developed. An area designated as a mixed urban zone was sand-filled with drainage and transport infrastructure. A cost-recovery system for the management, in the form of a visitor centre, has been introduced. 74/ Last but not least, a land use plan including screening of investment proposals has been set up. 75/ A detailed conservation management plan was also endorsed aiming at sustainable use of lagoon resources, pollution control, job creation and community involvement in management. The Departments of Wildlife Conservation and Forestry were made responsible for different aspects of the Plan and an area of 1777 ha. has been declared a wetland sanctuary. 76/

90. Participation of community and other stakeholders in planning and management is central to the SAM concept. A basic premise is that it is possible to organize local communities to manage their natural

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71/ Central Environment Authority. 2000. *Conservation Management Plan: Muthurajawela Marsh and Negombo Lagoon*. Wetland Conservation Project, CEA & Euroconsult. Colombo.

72/ Greater Colombo Economic Commission. (1991) *Masterplan of Muthurajawela Marsh and Negombo Lagoon.* GCEC & Euroconsult.

73/ Olsen. S., D Sadacharan, J.I.Samarakon, A.T.White, H.J.M. Wickremeratne & M.S. Wijeratne. 1992. *Coastal 2000: A resource management strategy for Sri Lanka's coastal region.* Vols. I & II. CRC Technical Report No. 2033, Coastal Conservation Dept. Univ. Rhode Is.

74/ Samarakoon J. and van Zon H. 1996. *Integrated development and management of a coastal system – the case of Muthurajawela Marsh and Negombo Lagoon, Sri Lanka.* Tropical Asia 6. pp. 1-8.

75/ Mahanama M. 2000. *Planning and management aspects of Muthurajawela Marsh and Negombo Lagoon"*. In Farmer N. ed. Workshop on effective management for biodiversity conservation in Sri Lankan wetlands: Muthurajawela Marsh, Negombo Lagoon & Chilaw Lagoon. Report 55. Centre for Economics and Management of Aquatic Resources, Univ. of Portsmouth.

76/ Emerton L. and Kekulandala L.D.C.B. 2003. *Assessment of the economic value of Muthurajawela wetland*. Occ. Pap. IUCN, Sri Lanka, 4 1-28.

resources, and that they will continue to do so if they perceive that they derive tangible benefits from better management. In this process government agencies serve as 'catalysts' or 'facilitators' helping organize communities to engage in resource management and providing technical support. They also act as 'mediators' to help balance competing demands in resource management, or as 'partners' of communities by engaging in 'co-management' with community groups. Therefore, while the national coastal management program is based largely on a regulatory strategy, the SAM plans included several types of management interventions, including education and awareness programmes, collaborative self-management, capital development projects and micro-enterprise development. 77/

91. The experiences from SAM implementation in Sri Lanka demonstrate that this tool seems to have been successful in developing a community-level approach to coastal resources management that complements the national approach. User groups appear to be motivated to collaborate with each other and with the government to improve the condition of coastal resources. It should be kept in mind, though, that user groups would not be able to legally manage access to resources without assistance of the government, and therefore government co-management of SAM projects with user groups provides the basis for effective management. Government funding and regulation are also critical to the success of such management.

C. Optimizing public and stakeholder participation

Case-study: Dorset coast, United Kingdom

92. The Dorset Coast is located on the central south coast of England, and is 146 km in length. It comprises stretches of undeveloped coastline, which is of great importance to wildlife, as well as to landscape and geological conservation. There is a substantial urban region in the east where much of the population of 647,245 inhabitants is concentrated. This area is also home to one of the world's largest natural harbours, including a substantial port and recreational fleet, as well as Europe's largest onshore oilfield. The inshore waters are important for tourism (Dorset's biggest industry), water recreation and an inshore fishing industry. The area is also used for military training and commercial shipping.

93. The management of coastal resources in the United Kingdom is extremely complex, with over 80 Acts of Parliament dealing with the regulation of activities both on land and within the marine environment. In addition, many organisations and landowners are involved. The lack of a single Act dealing with the Coastal Zone, combined with the number of competing activities within a relatively narrow area, means that many organisations attempt to manage different activities with no overview or lead agency. Above low water mark, the Local Authorities have planning responsibilities, and have historically taken a lead in coordinating management initiatives. The situation is different below the low water mark, where management responsibilities are organised on a sectoral basis, with many decision-making powers residing at the national level.

94. In 1993, the regional government of Dorset County Council recognised that there were a number of issues concerning the coast that were not being addressed properly. In the autumn of 1994, a coastal seminar involving stakeholders was held. As a result, the stakeholders agreed to form a forum, and in 1995 the Dorset Coast Forum was established. The overall aim of the Forum is to promote a sustainable approach to the management, use and development of Dorset's coastal zone, which will ensure that its

77/ Negombo Lagoon Special Area Management Community Coordinating Committee. (undated). *Special area management plan for Negombo Lagoon.*

inherent natural and cultural qualities are maintained and enhanced for the benefit of future generations. Membership in the Dorset Coast Forum is open to organisations, which have a vested interest in the Dorset coast. It currently has 121 members. Importantly, the partnership includes key funding organisations, including the regional government itself. The forum has no mandate to take on statutory functions, but it can help with co-ordination of coastal policy or management. It works by generating ideas, co-ordinating discussion, encouraging friendly relations and providing good networking. Empowerment is by consensus, peer review and willingness to commit to jointly agreed actions. Nonetheless, the Forum is run with a very small staff of only 4 persons.

95. The Forum has developed the Dorset Coast Strategy. 78/ There are four key elements to the Strategy: a clear vision for the coast up to the year 2050; a series of principles leading to a widespread agreement on future planning and management; nine priorities for the future management of Dorset's coast; and detailed policies and actions to achieve progress with each priority. The Strategy drew on the conclusions of a regional biodiversity plan for South West England, which in turn was designed to implement the United Kingdom national biodiversity plan. The Forum enabled the Strategy to be developed by consensus, working to integrate the different mandates and activities of organisations with coastal responsibilities, while focusing on local needs and priorities to improve the planning and management of the Dorset coast.

96. The Forum is now involved in the process of implementing the actions contained in the Strategy, 79/ including establishing an integrated policy and guidelines for more detailed coastal management plans; identifying strategic opportunities for resource development and solutions for sustainable coastal development and management; developing participation of a wide range of partners and a coordinated approach to strategy implementation; and evaluating and reporting the results.

97. A key part of the Strategy was the establishment of ways to implement the recommendations. The main mechanism that has been found to be useful is the establishment of working groups, with membership drawn from the Coast Forum. These groups are designed to address specific tasks within the Strategy, and are formed according to need. They are made up of members of the Forum staff team, and Forum members. At present time, there are five Working Groups operating under the Forum addressing archaeology, marine issues, pollution and water quality, and recreation and tourism. Actions in the Strategy not covered by one of the Working Groups are directly dealt with by the Steering Group and the Forum. Work in relation to biodiversity is carried out through the group on marine issues.

98. The approach of developing a policy-based Strategy through the work of a Forum has facilitated the establishment of a mechanism that can help address otherwise politically difficult sectoral questions. The Strategy has also, through the accompanying activities, been able to identify those areas, which are less amenable to integrated management.

D. Horizontal integration through the designation and management of marine protected areas

Case-study: Belize

99. The Belize Barrier Reef is the largest barrier reef in the Western Hemisphere (260 km.) with extensive and diverse coral reef ecosystems as well as abundant mangroves and sea-grass beds. These

78/ Dorset Coast Strategy, Strategy Action Plan, 1999, Dorset Coast Forum.

79/ www.dorsetcoast.com.

reef habitats are of considerable economic importance, with fishing and tourism being the two main uses. 80/ The reef is, however, threatened by a number of human activities, such as nutrient enrichment from land-based pollutants (sewage and agricultural run-off) and sedimentation. Transportation of oil and fuel poses an ongoing threat, while tourism may lead to reef damage, deterioration of water quality, illegal camping, litter, and damage from diving, snorkelling and boating activities. Over-fishing, e.g. of lobster and conch, is another main source of impact on reef systems. Climate change is believed to be responsible for the increase in coral bleaching and may be a contributing factor to several coral diseases.

100. The Coastal Zone Management (CZM) programme in Belize began in 1990 due to concerns about these impacts on the Belize barrier reef system. It was agreed that an integrated plan was required for the entire coastal area, which would require the close coordination of many different agencies, including government, non-government and private sector organizations. Basic to this need for integrated coastal zone planning and management was the understanding that the future economic sustainability of Belize is closely interlinked with its coastal and marine resources. 81/ Two of the country's major industries, tourism and fisheries, rely on maintaining the ecological health of its coastal systems.

101. Belize has, therefore, developed and adopted an Integrated Coastal Zone Management Strategy, 82/ which was endorsed by the Government in 2003. It was developed through a broad and extensive process of inter-sectoral, inter-agency, inter-disciplinary and public consultations. The Strategy has three major objectives: setting and maintenance of targets and standards for environmental and natural resources management in the coastal area; supporting planned development; and building alliances to benefit Belizeans. A major focus of the CZM programme, run through a specially created Coastal Zone Management Authority and Institute (CZMA&I), has been the expansion of the marine protected areas network.

102. The establishment of marine protected areas (MPAs) is increasingly being considered a useful option for management of vulnerable marine habitats, including coral reefs. Many of the MPAs prohibit all extractive uses, while some may protect only a particular species or locally prohibit specific kinds of fishing. The motivation for establishing these protected areas varies, but high on the list are economic benefits of tourism, maintenance of fisheries, conservation of coral reef ecosystems and protection of traditional use.

103. Local communities and user groups participated in the planning process for establishing marine protected areas. It has been recognized that stakeholders within an area must have an input into the decision-making process if management and conservation strategies are to be successful. Participation is also encouraged beyond the planning phase to include management. To this end, partnerships with community groups and non-governmental organizations have in some instances been active in the management of marine reserves.

80/ Pomeroy R.S. and Goetze T. 2003. Belize case-study: Marine protected areas co-managed by friends of nature.

81/ Olsen. S., and M. Ngoile. 1998. *Final Evaluation Global Environmental Facility Belize: Sustainable development and management of biologically diverse coastal resources*. Coastal Resources Centre. Coastal Management Report No.2207.

82/ Coastal Zone Management Authority and Institute. 2003. The National Integrated Coastal Zone Management Strategy for Belize. Belize City.

104. To date, fourteen marine protected areas have been established and the Belize barrier reef has been designated as a World Heritage Site. MPAs are now being used to protect representative samples of all coastal and marine habitats that lie within the territorial waters of Belize, as well as critical habitats of several endangered species, such as marine turtles, crocodiles and manatees. The role of MPAs in enhancing fisheries productivity and management is also being investigated. As multiple-use reserves, these areas also provide opportunities for nature-based tourism. The financial sustainability of MPAs is being enhanced, 83/ and several different revenue-generating mechanisms are currently being explored. Belize advocates community and private sector involvement in the management of its resources, and in marine-related tourism. Tour guides have to undergo a series of ecological and environmental training courses and a license is granted only upon successful completion of the courses. Carrying Capacity Studies are also being recognized as an important tool to aid in effective management of MPAs, in particular to control visitor numbers and activities at heavily visited coral reef sites.

105. Once designated, good management of the reserves is essential. To this end, MPAs are currently being managed either by the Fisheries Department or the Belize Forest Department, depending upon their designation. A number of these MPAs are also being co-managed with community groups and NGOs. Further, Belize has a National Coral Reef Working Group, which allows for the sharing and dissemination of information as well as discussions on monitoring parameters and standardization.

E. Holistic, comprehensive and effective coastal wetland eco-restoration

Case-study: Chilika Lake, India

106. Chilika Lake is the largest lagoon lying along the east coast of India, in Orissa State. It is a unique assemblage of marine, brackish and freshwater ecosystems. A 32 km long, narrow, outer channel connects the lagoon to the Bay of Bengal, near the village of Motto. The lagoon's water spread area ranges from 906 to 1165 Sq Km. Its rich fishery resources sustain the livelihood of more than 0.15 million fisherfolk.

Biological diversity of the lake

107. Chisika Lake is a hotspot of biodiversity, containing a plethora of species of phytoplankton, macro-algae and aquatic plants along with 720 species of non-aquatic plants and 800 species of fauna, including rare, threatened and endangered species. Fish alone constitute 200 species. More importantly, the lake is a wintering ground for more than 1 million migratory birds. For its rich biodiversity, the lake was designated as a Ramsar Site in 1981.

Degradation of the lake

108. Siltation, shrinkage of area, choking of the inlet channel as well as shifting of the mouth connecting to the sea, decrease in salinity, proliferation of invasive freshwater species, decrease in fisheries productivity and overall loss of biodiversity were the problems that led to the degradation of the lake and drove the lake to be included in the list of the Montreux Record (Ramsar Site in Danger) in 1993.

Role of Chilika Development Authority (CDA)

109. To restore the lake, the CDA implemented a bold programme of action based on the principle of integrated management and wise-use of resources, laying emphasis on the participation of local people,

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83/' Coastal Zone Management Authority and Institute. 2003. Operationalizing a financing system for coastal and marine reserve management in Belize.

their shared decision-making and capacity building. This action resulted in the overall increase of biodiversity of plants, animals and notably birds, spectacular increase in fish catches and added socio-economic benefits to the local population.

Major interventions and their results

110. Desalting the channel connecting the lagoon to the sea and opening a new mouth by the CDA were the major interventions that resulted in the following positive impacts.

(a) Better exchange of water between the lagoon and the sea;

(b) Improvement in salinity flux and restoration of salinity gradient;

(c) Flushing out of sediments from the lagoon;

(d) Reduction of water logging in the paddy fields of the northern sector of the lagoon during the monsoon season;

(e) Substantial increase of fishery resources due to auto-recruitment of juveniles from the sea and free migration of fish species, including economically important species from the sea to the lagoon and vice-versa;

(f) Reduction of freshwater weeds due to increase in salinity;

(g) Increase in bird population, due to the increase in perching facility, created by depositing the dredged materials in an existing island, planted with suitable plant species for perching.

Other interventions

111. In addition to the major interventions, some other important interventions were also made by the Authority to restore the ecological balance of the lagoon. They were: catchment management in a participatory manner, economic incentives to the local people to stop poaching of birds, improving the socio-economic conditions of the people, and promoting environmental education and awareness activities.

The Ramsar Wetland Conservation Award and Evian Special Prize – 2002 for the restoration of Chilika Lake

112. After the restoration work , in 2001, a Ramsar Advisory Mission was carried out at the Chilika Lake Ramsar Site, which concluded with the recommendation for the removal of the site from the Montreux Record.

113. The Ramsar Award was given to the CDA in recognition of the exemplary restoration work carried out with the active involvement of all stakeholders.

Chilika Lake, A Striking Example

114. Chilika Lake has thus become an example of how restoration of the ecological characteristics of a site can result not only in increased biodiversity, but also in a dramatic increase in catches and other socio-economic benefits to the local population.

F. Implementing IMCAM in a small island developing State

Case-study: Barbados

115. The Government of Barbados (GOB) is presently in its 22nd year of implementing IMCAM. In 1982, the Government of Barbados embarked on a jointly funded Inter American Development Bank

(IDB) and Government programme, titled the Coastal Conservation Programme, to implement IMCAM. The programme contained three elements, Technical Multidisciplinary Research and Engineering, Institutional and Legal Mechanisms and the Preparation of a Coastal Zone Management Plan (which was informed by the first two components). The project-based approach was identified as a means of garnering the appropriate financial and human resources, as well as establishing specific milestones.

116. The Coastal Conservation Project Unit was established in 1982, as the agency to implement the project. However, by 1995, the Unit was seen as integral to the long term effective implementation of IMCAM, and The Coastal Zone Management Unit was established. This new agency, which comprised of marine biologists, coastal engineers and coastal planners was integrated into the now Ministry of Housing, Lands and the Environment, with a mandate to develop and implement the Coastal Zone Management Plan for the Island. The mission statement of the Unit is "Working to ensure that the coast retains its vital and pivotal role in the economic, social and physical development of Barbados". This has allowed for the sustainability of IMCAM in Barbados.

117. The project cycle has moved through Pre-feasibility and Diagnostic surveys, into consolidation and project execution. The project demonstrated that multi-disciplinary approaches are effective in coastal management, and utilized the adoption of pilot project/demonstration project approaches to coastal engineering, and community involvement in coastal management. Institutional strengthening played a large role in the project, with each project stage involving institutional strengthening and capacity-building in the form of on the job training and post graduate training of staff.

118. The Coastal Conservation Programme has resulted in the development of a Coastal Management Plan, established routine work programmes for the Coastal Zone Management Unit, and strengthened relationships with communities and stakeholders. It has also resulted in the development of two Acts, in addition to extensive information on coastal and marine ecosystems. The Coastal Zone Management Act, which deals with physical impacts on marine and coastal resources and their management, and the Marine Pollution Control Act, which relates to controlling land-based sources of marine pollution.

119. The Barbados case-study can clearly be considered to be a good flagship programme for other SIDS with similar problems. While "piece meal" projects do contribute to the conservation and management process, the integrated approach provides a stronger focus on the problems and creates opportunities for change. The use of integrated coastal zone management programmes places emphasis on implementation of solutions that should reach all groups (from policy makers to technocrats to the general public) who all have an interest in the sustainable management of the island's coastal assets.

G. Coordination and the IMCAM process

Case-study – Kenya

120. Kenya has a network of seven Marine Protected Areas situated along the most highly utilized areas of the Coast. Most of the activities in these areas relate either to tourism or to urban centres.

121. Limited monitoring takes place outside these MPA's, and management is complicated by overlapping jurisdictions and roles.

122. An IMCAM process was initiated in the mid 1990's comprising of all the major stakeholders including the MPA authority (Kenya Wildlife Service), Kenya Port Authority, local Municipal Councils, the

local semi-government body empowered to coordinate development in the region (the Coast Development Authority), the Kenya Marine and Fisheries Research Institute (KEMFRI), hoteliers and other minor players. A pilot project was implemented to test the process in Mombasa, whereby with funding support from USAID a selected beach with multiple users was developed and a maintenance structure composed of local fisherfolks, beach operators, Government and Municipal representatives was put in place.

123. A Strategy for the process was also prepared under the Chair of the CDA.

124. The success of the pilot scheme has set in motion other similar projects, e.g. Diani. In addition, the Steering Committee established during the process has continued to operate.

125. While there is a clear will by the stakeholders to work together, the major challenge for this initiative remains the overlapping and sometimes conflicting legislation and responsibilities.

126. In January of 2000, Kenya created a National Environment Management Authority (NEMA) which is meant, among other things, to coordinate and harmonize these differing roles and responsibilities. More emphasis needs to be put in achieving this challenge. Coordination of the activities of the non-government sector involved in marine related work is also imperative as is their inclusion in the IMCAM process.

127. Continued funding of the activities of the process is another challenge facing the proponents. The initial process and the pilot work were mainly, and still is, sponsored by external funding. The stakeholders did not foresee future sustainability concerns in the early stages.

128. Increasing pressure on marine resources from legal as well as illegal users makes the need to have coordinated and consistent attention an urgent issue for the Government to spearhead.

H. Optimising public and stakeholder participation – the role of Municipal Environmental Councils in the integrated management of coastal areas

Case study: Brazil

129. Using municipalities as management units has grown as a government strategy in Brazil during the last decade - a response to a move to decentralize the management of the Union's public assets. It also represents a way to increase administrative efficiency and incorporate actions adapted to local needs and characteristics. To achieve this objective it is necessary not only to increase the capacity of the State and Municipal Governments, but also to reduce the concentration of power, through the development of mechanisms, which allow the participation of local communities in achieving compatibility between uses and reducing conflicts of interests. In that process, the Federal Government has encouraged the creation of municipal councils with equal representation of government and society. The federal Government has, in some cases (for example the Health and Education Municipal Councils), also granted funds to the municipality for making such councils operational.

130. In July 1998, the Inter-American Development Bank (IADB) approved a project called the Integrated Initiative for Management of the Coastal Reef System Between Tamandaré and Paripueira, or "Recifes Costeiros" (Coastal Reefs) project. The project was conceived through an initiative of the

Pernambuco´s Federal University, the Fisheries Research Center of the Brazilian Institute of Environment (CEPENE, IBAMA) and the Aquatic Mammals Foundation (FMM).

131. Among the several issues addressed by the Coastal Reefs Project, one of the most important was the creation of an institutional structure of integrated administration. The importance of municipal executive power in the process of environmental administration is quite clear because the municipal district is in direct contact with problems and daily conflicts, and if qualified and organized, could act in an effective way in the search of appropriate solutions.

132. Initially, the idea was to create an Administration Committee for the Coral Coast Marine Protected Areas (MPA). It soon became clear that the effectiveness of the Committee would depend on the capacity of each municipal council to represent diverse local interests and needs in a broad way. To facilitate this, a strategy for the establishment and operation of the Municipal Councils for Environmental Defense (COMDEMAs) in the Coral Coast MPAs municipal districts was put in place84.

133. The first council, the Tamandaré Municipal Council of Environment, was created in May 1999. It focused on interactions with the Tourism Development Project for the Northeast, also financed by IADB. The city of Tamandaré is a coastal municipality located 120 kilometers south of Recife, the capital of Pernambuco state. The coastal zone of Pernambuco has a high population density85 and a diversity of ecosystems of great importance for local economy, such as mangroves and coral reefs. Tourism is important for local economy, and the government has expended a lot of effort to promote and develop this sector. The existence of three partially overlapping protected areas in this region reflects its importance and need for protection.

134. Among the environmental issues concerning the municipal district of Tamandaré that have been discussed at COMDEMA are the designation of land allotments and building of urban condominiums; the irregular occupation of seaside areas; the zoning of rural settlements; and PRODETUR/NE, a project conceived as an auxiliary program in the development of tourism activities in the Northeast area. Concerning Tamandaré, and as part of activities relating to the Guadalupe Tourist Center, three roads were scheduled for construction. This included the refurbishing of the city's main access road, and the construction of a bridge connecting the municipal district to the neighbor district of Rio Formoso.

135. By the year 2000, the road construction had impacted several coastal ecosystems. The issue became recurrent on the COMDEMA's agenda, resulting in the approval of a protest motion against the way in which work on the Guadalupe Tourist Center road system was being carried out.

136. The protest motion was based on a) the impacts of the road works on the coastal environment, including deforestation of Atlantic rain forest, infilling of mangrove areas, cutting of vegetation, sand extraction, estuary silting and increased sedimentation in coral reefs areas; b) the way in which the environmental licensing process was conducted; c) the lack of consultation from the State of Pernambuco

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84/ Ferreira, B. P., Messias, L. and Maida, M. 2005 The Environmental Municipal Councils as an instrument in coastal integrated management: the *Área de Proteção Ambiental Costa dos Corais (AL/PE)* experience., Journal of Coastal Research, special issue 39 (in press). ISSN0749-0208.

85/ MORAES, A. C. R. 1999. Contribuições para a Gestão da Zona Costeira do Brasil: elementos para uma geografia do litoral brasileiro. Hucitec, Edusp. (Contributions to the Coastal Zone Management of Brazil – elements for a geography of the Brazilian coastline). São Paulo. 229p.

government concerning discussions and community opinion; and d) the foreseeable environmental and social problems that will occur due to the road system construction. Discussion of this subject in COMDEMA did not only aim to mitigate and compensate impacts, but also to offer alternatives to the current outdated development model. Other PRODETUR developments along the Brazilian coast also resulted in degradation of coastal ecosystems, and some failed to collaborate with local communities, creating opportunities only to the great entrepreneurs of the tourism business86.

137. In September 2000, the protest motion was sent to the concerned Government Secretary of State and also to the Inter-American Development Bank, the Banco do Nordeste, the Federal and State Public Prosecution Service, and the Brazilian Institute of Environment. By February 2001, the Public Prosecutor opened a Public Civil Inquiry to assess the damage that the road works were causing to the environment, especially to two Protected Areas: the Costa dos Corais' and the Guadalupe's.

138. The construction was halted in the following year, and a negotiation process started. After one year of negotiations, both parties (COMDEMA and State of Pernambuco Government) agreed on several points: a) The necessity of creating a Municipal Park as a main compensatory measure; b) The funds for implementing the conservation unit must amount to at least 0.5% of the project's value, according to Resolution n. 002/96 from CONAMA; c) The need for an obligatory environmental licensing process for the road works, according to Resolution n. 237/97 from CONAMA; d) Restoration of the degraded environments; e) construction of a road drainage system and restoration vegetation on the road slopes; and f) Participation of the Tamandaré community in discussions of the State of Pernambuco Government's proposal for PRODETUR II.

139. By the end of 2002, the IADB adopted a requirement for states receiving loans to elaborate Integrated Development Plans for Sustainable Tourism and to establish a Council for Tourism in the Area. The creation and institution of COMDEMAs is also now a condition for municipal districts to become candidates for PRODETUR II' s financing.

140. Many municipal City Halls, however, lack expertise and resources to implement actions concerning planning and environmental administration. Frequently those municipal districts do not possess qualified personnel or adequate institutional structures to deal with environmental issues. As a consequence, the creation of COMDEMAs is not, in most cases, followed by the provision of operational resources. The case of Tamandaré is an exception in this regard, and the common shortages that harm true implementation of the Councils should be kept in mind. As a strategy to mitigate this deficiency, PRODETUR's second phase foresees the creation and implementation of COMDEMAs to be financed under a component aimed at strengthening municipal capacity for tourism administration.

141. By September 2003, the municipal district of Tamandaré created the Fortress of Santo Inácio Municipal Park. Some mitigation of the roadwork has already taken place, and the process remains under discussion to this day. The case of Tamandaré represents, nevertheless, a practical example of

86/ PRORENDA-GTZ, 2000. Sobre o Impacto das Obras do Prodetur na Costa Nordeste. Relatório do Programa PRORENDA-GTZ.

participatory management of a coastal area with a high conflict potential. It also reinforces the importance of community-level organization and development planning. From this experience onwards, it is hoped that a new phase of dialogue between the society and the government will arise, with the debate focusing much more in the planning phase than in accounting benefits and losses.
