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Eleventh meeting
Montreal, 28 November - 2 December 2005
Item 6.1 of the provisional agenda*

ENHANCING THE IMPLEMENTATION OF INTEGRATED MARINE AND COASTAL AREA MANAGEMENT (IMCAM)

Note by the Executive Secretary

1. The present document provides, for the Information of the Parties, the draft report of the Ad Hoc Technical Expert Group on Implementation of Integrated Marine and Coastal Area Management (IMCAM). This draft report is currently being finalized by the Expert Group, after which time it will be peer reviewed. A finalized report will be presented for the eighth meeting of the Conference of the Parties for discussion. Therefore, please note that the current contents of this report may not be entirely reflective of the final version.

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

PROCEDURAL REPORT

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

3. 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.

4. 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.

* UNEP/CBD/SBSTTA/11/1.

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

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

7. 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.

8. 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. 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).

9. 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.

10. 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.

11. The meeting was closed at 3.30pm 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. 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 good 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: 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.

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.

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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. 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. 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 reach 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:

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.

(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 studies10/ 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.

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.

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) Lack of political will for effective enforcement of IMCAM related legislation

(f) 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, 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 of IMCAM. Such 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 for a. 13/ In most cases, the management of shared resources also requires a commitment to regional cooperation. Without political will on the local, national and regional levels, implementing IMCAM will be extremely difficult. 14/ However, gaining political support may sometimes be a difficult process.

15. 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.

16. 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

13/ 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

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

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

17. The following societal obstacles were identified:

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

(b) Low level of 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.

18. 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 by 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 resentment. 18/ This is particularly the case when issues seen as important by local communities, such 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/ Those who depend upon the coastal zone are often the ones most aware of its value, although they may still prefer short-term exploitation over longer term gains.

19. 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 is 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 management worldwide.

20. 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

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.

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.

overexploitation. 20/ Therefore, economic development and enhancement of livelihood options must be an integral part of IMCAM programmes.

21. 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/ 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.

22. 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. However, theoretical plan development without the support of the local community may be a doomed exercise.

B. Institutional, technical and capacity-related obstacles

1. Weak institutional structures

23. 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 competent and skilled in-country staff;

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

24. 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

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.

implementation. 22/ 23/ The situation is not much different a decade later with the many agencies responsible for IMCAM still poorly integrated.

25. 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.

26. Perhaps the greatest impediment to successful implementation of IMCAM lies in *integration*. In many cases, there is also little or no co-ordination 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 compartmentalisation and fragmentation. Organisationally, this tendency works against integration. It is perhaps not surprising that IMCAM is difficult and 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 organised 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.

27. 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.

28. 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, marine mammal protection, port development), as well as land-based sectors that influence the coastal and marine environment (e.g. agriculture, forestry, mining). 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.

29. 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

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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.

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/

30. 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, insuring adequate resources for management tasks at all levels, building capacity among implementing officials, developing systems for monitoring performance and insuring accountability. 26/

31. In many developing countries, institutional structures are further challenged by the difficulty of hiring 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 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/

32. 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

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

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

(b) Governance capacity, particularly in developing countries, is severely strained by many and often deep divisions within its population *(see also section 7: Socio-economic factors).*

34. 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

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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.

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.

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 any 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.

35. 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 equally limited. 34/

36. 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

37. 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.

38. 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.

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.

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

39. 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 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. 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 hypothesis. The issue of scientific information in the management process is further discussed under the following section (section 3).

40. 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 benefits of IMCAM and the role of stakeholders in its design and implementation. Although many informational resources relating to IMCAM already exists, 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 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

41. 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) Lack of respect for intellectual and cultural knowledge and property;

(g) Fragmentation of knowledge constrains informed decision-making;

(h) Limited access to scientific publications.

42. 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, 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/

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

43. 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 to ensure timely science-based management decisions. Likewise, managers may not be defining what their needs are to the research community.

44. 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 undertake scientific research. 37/ Networking to get better contact between local managers and scientific institutions has been shown to be helpful.

45. 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. 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.

46. 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, communicate with them regarding the goals and activities of the IMCAM process, and seek their involvement in implementation.

47. 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.

48. 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.

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.

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

D. Economic, policy and financial resources

49. 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;

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

(e) Funds are not commensurate with needs resulting in inappropriate level of financing, also there is no mechanism to guarantee post-funding sustainability;

(f) Undefined fiscal and financial policies to realize benefits on IMCAM;

(g) Lack of benefit-sharing.

50. 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 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/

51. 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/

52. 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.

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.

53. 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, recognizing the longer time frame required for successful IMCAM, and the need to fund implementation and not just planning. Funding programmes need to include a means of moving towards sustainable financing. In most cases, developing countries do not plan for internal funding to ensure sustainability and continuation of donor funded projects. Whereby, at the end of these projects, most are abandoned or drastically downscaled shortly thereafter.

54. Lack of benefit-sharing can also be an obstacle to implementation of IMCAM in cases where mechanisms to share benefits from management efforts with 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 that may undermine the process in many ways.

E. Collaboration/cooperation

55. 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.

56. 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.

57. 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, in one region [a reference is needed here] there are two inter-governmental bodies that have been set up to oversee 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.

58. 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, 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. Lack of such arrangements for transboundary cooperation will provide a serious impediment for effective implementation of IMCAM.

F. Legal/juridical impediments

59. 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.

60. 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.

61. While legislative weaknesses are major shortfalls to effective implementation of IMCAM, insufficient enforcement capability is also a crucial factor. 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 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.

62. 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

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

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. Lack of legislation may be more of a perceived impediment than an actual constraint.

G. Socio-economic factors

63. The following socio-economic obstacles were identified:

(a) Overdependence and unsustainable patterns of resource use;

(b) Degradation of coastal areas due to pollution, sedimentation, urbanization; etc

(c) Demographic shift to and from coastal areas;

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

(e) Governance capacity, particularly in developing nations, is severely strained by many and often deep divisions within its population;

(f) Basic human survival needs often preclude almost any attempts to conserve resources and protect coastal environments;

(g) Population increases among the lowest income groups often nullify gains achieved by planning, management and development improvements;

(h) The incidence and relative significance of impacts among the different stakeholders; the costs of IMCAM are usually high and imposed on relatively few influential individuals or organizations 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).*

64. 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 for poor people. In addition, 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 among the lowest income groups. 43/

65. 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 as destructive, traditional, small-scale fishers may have little option to continuing in the fishery, competing over depleting resources.

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

66. According to the Millennium Ecosystem Assessment, coastal populations are rapidly increasing, mostly through migration, increased fertility 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. Additionally, a nation's governance capacity may be further constrained by many and often deep divisions among its population, including race, religion, ethnic group, linguistic group, socio-economic class, or desire for regional autonomy. These divisions can be amplified in the coastal zone, due to relatively higher population densities.

H. Natural phenomena and environmental change

67. 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.

68. The coastal zone has the highest concentration of natural hazards in the world, which include coastal erosion, landslides, river or estuary flooding, storm surge flooding and winds from ocean borne storm events (e.g. hurricanes, cyclones, and typhoons), earthquakes, tsunamis, and volcanic eruptions. However, 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/

III. ENABLING ACTIVITIES

69. 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.

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

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. The expected outcomes of the activities are indicated, as is the approximate time frame (short, medium or long term) to achieve that outcome.

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"** may imply referring to some 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	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 benefits of IMCAM, highlighting demonstrable benefits, 45/ 1.2. Promote a common vision towards mainstreaming of IMCAM into national and regional planning processes, 1.3. Integrate environment into day-to-day political agenda.	1.1 Political 1.2 Political	1&2 Government commitment to full realization of IMCAM at all levels ***(Short term)*** 1&2 Regional arrangements for promotion of IMCAM objectives ***(Medium term)***

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	EXPECTED OUTCOMES
2. Lack of political will for effective enforcement of IMCAM related legislation 3. Inadequate attention to priorities articulated by indigenous and local communities and other stakeholders in decision-making processes	2. Sensitize policy makers about the negative effects of non-implementation and non-enforcement of IMCAM related legislation and obligations. 3. Facilitate processes that enable local constituencies to articulate a common vision relating to IMCAM and to input into decision-making	1.3 Political 2. Political 3. Partnership/ Policy	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)***
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 2. Low level of involvement of stakeholders, particularly indigenous and local communities, in decision-making and enforcement processes	1.1. Sensitize the public, particularly the youth, and create greater awareness about benefits of IMCAM 46/ 1.2. Ensure integration, on an ongoing basis, of experiences from successes and failures of IMCAM programmes 2. Establish mechanisms promoting effective consultation and participation of stakeholders, particularly with indigenous and local communities, at all stages of programme planning, design, implementation and enforcement 47/	1.1 Partnership 1.2 Partnership/ Institutional 2. Partnership/	1.1 Positive changes in attitudes of public and stakeholders and better appreciation of the coastal and marine environment ***(Long terms)*** 1.2 Effective and adaptive IMCAM programmes ***(Medium term)*** 2. Established arrangements for consultation and participation of stakeholders in IMCAM programmes ***(Medium term)***

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

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

OBSTACLES	TARGETED ENABLING ACTIVITIES/TOOLS	CATEGORY	EXPECTED OUTCOMES
3. Inadequate structures for stakeholders to arrive at a consensus vision for IMCAM, for conflict avoidance and resolution	3. Establish mechanisms for conflict avoidance and conflict resolution	Institutional 3. Partnership/ Institutional	3. A consensual process of decision making is in place ***(Medium term))***
2. Institutional, technical and capacity-related obstacles **2A Weak institutional structures**			**Overall outcome:** Strong institutions that can implement IMCAM effectively.
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.	1. Political/ Institutional	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 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. An understanding of the importance of IMCAM ***(Medium to long term)***
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. 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 their individual mandates and activities.	5. Political/ Institutional	5. An existing national body or a lead/coordinating agency with legal mandate for IMCAM, or a steering committee made up of agencies for

48/ Such as the UNEP ICZM Marker Set.

OBSTACLES	TARGETED ENABLING ACTIVITIES/TOOLS	CATEGORY	EXPECTED OUTCOMES
			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. Strengthened organisation of institutions. ***(Medium term)***
B. Limited institutional capacity			***Overall outcome:*** Sufficient human resources with adequate knowledge and experience.
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. Sufficient human resources with adequate knowledge and experience. ***(Long term)***
C. Communication			***Overall outcome:*** The elimination of communication gaps between scientists, managers and local people for IMCAM implementation.
l. The low level of communication between scientists and managers.	1a) Establish two-way, consistent and regular communication through a clearing house mechanism 1b) Establish a research agenda that will incorporate local and traditional knowledge and cultural practices as recognised by managers by the use of working group(s) on research needs.	1a) Partnership 1b) Political	1. Improvement of the level of communication ***(Medium term)***
2. The inability of scientists to communicate in a non-scientific language and the failure of local managers to adequately state their needs.	2a) Encourage non-technical interpretation of scientific arguments through *i.a*. the use of third parties, where relevant 2b) Provide educational programmes for local managers through *i.a*. training programmes.	2a) Partnership 2b) Financial/ Political	2. A common understanding between scientists and managers on IMCAM issues ***(Long to medium term)***
3. Absence of appropriate language skills on local level	3. Promote use of appropriate skills through *i.a*. exchange		3. Managers and other IMCAM staff that can communicate more effectively at the local level. ***(Short to medium term)***

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OBSTACLES	TARGETED ENABLING ACTIVITIES/TOOLS	CATEGORY	EXPECTED OUTCOMES
	visits	3. Financial/ Technological	
3. Lack of accessible knowledge/information 1. The irregular or insufficient dissemination of information among scientists, managers and stakeholders; and the low level of public awareness	1a) Ensure partnerships between scientists and information/resource users through annual meetings 1b) Sharing of results of research (permitting system) and collecting data in consultation with field managers. 1c) Disseminate information using the best and most appropriate method given local, regional conditions/situation 1d) Integrate IMCAM component into World Environment Day and Oceans Day celebrations 1e) Promoting and/or developing networks between relevant groups (national, regional and global) 1f) Share best management practices on specific IMCAM needs 1g) Setting up task groups to convert scientific data into management plans	1a) Partnership 1b) Partnersnip 1c) Partnership 1d) Political/ Technological 1e) Institutional 1f) Partnership/ technological 1g) Partnership	*1*. Improved understanding and more effective working relationships among actors ***(Medium term)***
2. Management objectives and needs are not clearly defined, agreed upon and communicated among scientists, managers and stakeholders; and failure of managers to state their needs	2a) Encourage joint research between scientists, resource managers and local stakeholders – co-research 2b) Improve indicators for IMCAM 2c) Clear statement of management objectives and needs 2e) Address information requirements at different levels, particularly at the local level	2a) Partnership 2b) Technological 2c) Political 2e) Partnership	2. Management objectives are defined, developed and agreed upon collectively by all actors ***(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. 4. Dissemination of scientific work stays within the scientific community due to specialized language and format of	3. Promote IMCAM sessions at national and regional science and management meetings 4a) Develop training videos and train ambassadors 4b) Utilize all available medium for information dissemination 4c) Open marine camps for children with the aim to form	3. Political	3. Improved understanding of IMCAM at all levels, resulting in more efficient, clear and holistic decisions ***(Short term)***

OBSTACLES	TARGETED ENABLING ACTIVITIES/TOOLS	CATEGORY	EXPECTED OUTCOMES
publications	young ambassadors that in time will become leaders 4d) Make information available through all possible media 4e) Making scientific information public (free access to scientific information) 4f) Making data accessible to communities for planning purposes in an understandable way (ex. Water pollution data) 4g) Improve timeliness of availability of scientific data for immediate decision-making 4h) Make IMCAM plans adaptable to emerging scientific problems	4a) Technological 4b) Techological 4c) Partnership 4d) Political 4e) Political/ Technological 4f) Political 4g) Political/ Partnership 4h) Technological/ Political	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 5c) Include ethnoscience and para-taxonomists (taxonomic monitoring by local people) in survey and inventory of resources	5a) Political 5b) Political/ Technological 5c) Institutional/ Technological	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.	6a) Develop or create archives of knowledge related to IMCAM for countries/regions 6b) Improved GIS-based system for access to scientific data 6c) Global interactive database of IMCAM efforts 6d) Develop methods to address fragmentation of knowledge, through for example metadata bases and environmental information systems (access by all countries) 6e) Establish regional and global data centres on IMCAM/biodiversity (ex. GBIF, OBIS or through regional seas) 6f) Providing financing for creation of regional/global data centres 6g) Create clearinghouse mechanisms available at the scale at which IMCAM is being implemented (containing all relevant information and understandable to local stakeholders)	6a) Technological 6b) Technological 6c) Technological/ Institutional	6. Better informed decisions through IMCAM programmes, which have learned from experience ***(Medium term)***
7. Limited access to scientific	7. Roving libraries and free download on web sites		

OBSTACLES	TARGETED ENABLING ACTIVITIES/TOOLS	CATEGORY	EXPECTED OUTCOMES
publications		6d) Technological 6e) Technological 6f) Financial 6g) Technological/ Partnership 7. Political	7. Improved access to information and better scientific assistance to decision making ***(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: • Urging 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 • Disseminate case studies of economic benefits of IMCAM to different groups (poor people, livelihoods, economic investment) • Projections of economic benefits of IMCAM to different groups in the short, long and medium term. • IMCAM should produce tangible and measurable value added benefits to resources and stakeholders • Use, promote and finance technologies with less environmental impact • Make a case for the coastal environment to have economic value (valuation of environmental services • Wise planning of projects potentially impacting	Financial Political Institutional Financial/ Political Political Technological & Financial Financial	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)***

OBSTACLES	TARGETED ENABLING ACTIVITIES/TOOLS	CATEGORY	EXPECTED OUTCOMES
	biodiversity (benefits of projects to environment and local communities) • Putting a value on existing livelihoods based on natural resources (value of these vs. value of development projects) • Take into consideration positive and negative effects of different technologies • Develop a strategic vision emphasizing the goods and services that flow from natural ecosystems	Political Financial Political Political	
4. The imbalance between economics and the environment in decision-making.	4a) Create donors credits for countries protecting environment (Ex. Debt for nature swap) 4b) Environmental sustainability seen as foundation for economic development (integrating this issue into business practice) 4c) Public economic pressure against or in favour of products or companies depending on their environmental policy 4d) Publicize the connection between environmental degradation and economic growth on the global level 4e) Include social and cultural aspects into economic analysis 4f) Remove perverse incentives	4a) Political/ Financial 4b) Financial 4c) Political/ Financial 4d) Political 4e)Political/ Financial 4f) Political/ Financial	4. Balance achieved between economics and environment in decision-making
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. 5b) Developers should put in place a fund to mitigate environmental impacts (ex. Polluter pays) 5c) Ensure that donor support is commensurate with country needs and capacity to sustain a program. 5d) Donors must share accountability with recipient countries for long term IMCAM. 5e) Expedite procedures for funding applications and make them transparent 5f) Create guidelines on how to fund costs of IMCAM, and how to make IMCAM sustainable (also how to make	5a) Financial 5b) Political/ Financial 5c) Political/ Financial 5d)Partnership /Political 5e)Political 5f) Technological	5: • Donors enter into partnerships with recipient countries for long term IMCAM implementation; Move from project to programme mentality ***(Medium term)*** • Countries accept donor support with a commitment for post project sustainability of programme

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OBSTACLES	TARGETED ENABLING ACTIVITIES/TOOLS	CATEGORY	EXPECTED OUTCOMES
	IMCAM cost-effective) 5g) Encourage reinvestment of economic benefits derived from the environment 5h) Develop mechanisms to encourage private sector contributions to implementing IMCAM, including guidelines. 5i) Put in place an environmental impact fee 5j) Enhance the dialogue with funding organizations	5g) Financial 5h) Political/ Financial 5i) Political/ Financial 5j) Partnership	
6. Undefined fiscal and financial policies to realize benefits on IMCAM	6. Elaboration and implementation of fiscal and financial legislation mechanisms to buttress IMCAM's needs	6. Political/ Financial	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	***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. 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. 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)***

OBSTACLES	TARGETED ENABLING ACTIVITIES/TOOLS	CATEGORY	EXPECTED OUTCOMES
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. 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 49/	1. Political	1,2&3.Comprehensive and appropriate legislation ***(Short term)***
2. Lack of appropriate and adequate legislation, to enable the provisions of international instruments and address national policies	5. Enact enabling legislation to implement/ harmonize the provisions of the CBD, other international instruments relevant to IMCAM and address national policies 50/	2. Political	
3. Non-Party status to other international environmental conventions	6. Encourage States to accede to appropriate international instruments relevant to IMCAM	3. Political	
4. 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) 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 others	4b) Political/ Institutional	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 of suitable/selective fishing gear and practices (reducing wastage may be only one of the objectives) 1b) Employ positive incentives – ex. buy back destructive	1a) Political 1b) Political/	1. Sustainable use of natural resources as defined by existing Conventions

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

50/ 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	EXPECTED OUTCOMES
	gear, pay an allowance to fishermen during periods when fishing is closed	Financial	***(Medium term)***
	1c) Implement FAO Code of Conduct on Responsible Fisheries	1c) Political	
	1d) Use adequate fisheries management adapted to local circumstances	1d) Technological /Political	
	1e) Enhance post-harvest technology, processing and handling practices	1e) Technological /Political	
	1f) Diversification of economy and creation of new activities in coastal area	1f) Political	
	1g) Conduct detailed studies on the identification/development of site-specific alternative and appropriate resource use	1g) Technological	
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.	2a) Political/ Technological	2. Adherence to policies and Conventions related to environmental degradation, which includes the use of sustainable practices in the watershed ***(Medium term)***
	2b) Promotion of environmental certification for hotels	2b) Political	
	2c) Promotion of Global Programme of Action for the protection of the marine environment from land based activities	2c) Political	
	2d) Establish community based land air and water quality monitoring programmes, which adhere to national standards, linking degradation to their sources	2d) Partnership	
	2f) Establishment of national environmental standards	2f) Political	
	2g) Ensure the consistent application of strategic environmental assessments to address external and cumulative impacts of developments	2g) Political	
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. 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	4. Alternative or supplemental livelihood options have been developed collaboratively with local
	4b) Improve existing livelihoods through diversification of	4b) Partnership	

OBSTACLES	TARGETED ENABLING ACTIVITIES/TOOLS	CATEGORY	EXPECTED OUTCOMES
	alternative by experience sharing with other regions and countries. 4c) Better prices for products made locally and to community and ecological standards 4d) Villages to select, produce and advertise one product unique to it 4e) Empower local communities to develop value-added products from local sources 4f) Develop ecotourism – use knowledge of area to the maximum 4g) Mobilize human resources by involving women self help groups and unemployed youths 4h) Taking into account traditional practices and innovations in implementing IMCAM	4c) Political/ Financial 4d) Political 4e)Political 4f) Political 4g) Political 4h) Political	stakeholders ***(Medium term)***
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) Protect species and areas showing most resilience 1b) Illustrate the potential impacts of natural disasters relevant to stakeholders on all levels, especially on local level 1c) Make available data on coastal vulnerability/risk in the planning process 1d) Improve coastal resilience through improved watershed, sediment and water quality management 1e) Employ strategic sediment management by creating reservoirs (sediments of appropriate characteristics kept available for the future) 1f) Develop and implement IMCAM plans incorporating predicted impacts of severe weather and climate change, as well as biological phenomena 1g) Develop suitable predictive models of natural disasters, such as tsunamis, cyclones, floods, sea level rise 1h) Put in place risk assessment system and propose mitigation measures 1i) IMCAM should inform the decision to Protect, Mitigate or Retreat	1a) Political 1b) Technological 1c) Technological 1d) Technological 1e) Technological 1f) Technological/ Political 1g) Technological 1h) Political/ Technological 1i) Political	1. IMCAM programmes designed to adapt to unanticipated physical or biological hazards ***(Short term)***

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IV. CASE-STUDIES

69. 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

70. 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. 51/

71. 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). 52/ 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.

72. 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.

73. As a result, in 2002, a National Integrated Coastal Environment Management (ICM) Strategy was published following several years of community consultation and input. 53/ It recognises seven different strategies that need to be applied by the year 2025, and which are currently at different stages of implementation.

74. 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-

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

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

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

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.

75. 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.

76. The Tanzanian Coastal Management Partnership 54/ 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 55/

77. 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

78. 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.

79. 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. 56/ 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

54/ 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.

55/ 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.

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

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environmental education and awareness program for coastal resources management and conservation was prepared. 57/ A resource management strategy further recommended 58/ 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."

80. 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.

81. 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. 59/ Last but not least, a land use plan including screening of investment proposals has been set up. 60/ 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. 61/

82. 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 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

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

58/ 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.

59/ 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.

60/ 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.

61/ 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.

types of management interventions, including education and awareness programmes, collaborative self-management, capital development projects and micro-enterprise development. 62/

83. 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

84. 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.

85. The management of coastal resources in the UK 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.

86. 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 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.

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

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87. The Forum has developed the Dorset Coast Strategy. 63/ 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.

88. The Forum is now involved in the process of implementing the actions contained in the Strategy, 64/ 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.

89. 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.

90. 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

91. 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 reef habitats are of considerable economic importance, with fishing and tourism being the two main uses. 65/ 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.

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

64/ www.dorsetcoast.com.

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

92. 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. 66/ Two of the country's major industries, tourism and fisheries, rely on maintaining the ecological health of its coastal systems.

93. Belize has, therefore, developed and adopted an Integrated Coastal Zone Management Strategy, 67/ 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.

94. 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.

95. 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.

96. 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, 68/ 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

66/ 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.

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

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

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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.

97. 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

98. 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

99. 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

100. 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)

101. 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, 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

102. 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

103. 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

104. 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.

105. 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

106. 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

107. 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.

108. 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.

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109. 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.

110. 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.

111. 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

112. 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.

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

114. 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.

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

116. 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.

117. 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.

118. 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.

119. 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.

120. 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.

IV. CONCLUSION & RECOMMENDATIONS

121. 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 impediments are encountered in any given country at the same 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.

122. 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, 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.

123. 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:

124. 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.

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- 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.

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Annex I

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

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Annex II

DRAFT UNEP ICZM MARKER SET

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?			

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	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	*E. 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?			
	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	1. Are investments in time contributing to the implementation			

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in Investment	**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?			

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