TOWARDS THE FORMULATION OF KENYA'S INTEGRATED OCEAN MANAGEMENT POLICY INCLUDING INSTITUTIONAL FRAMEWORK

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Executive summary

Kenya is in the process of formulating her integrated ocean management policy including an institutional framework to guide the use and management of ocean space and resources within it. The policy is intended to identify critical ocean related issues and activities and subsequently provide a sound legal and institutional approach within which they can be addressed in a holistic manner. It is apparent that the key opportunities and threats related to the coastal and ocean regimes are not only multidimensional but also closely interlinked, thus the need for coordinated management approach if sustainable use of the associated resources is to be achieved for the present and future generations. This strategy can only be realised through the harmonisation of activities and programmes related to the coastal and marine areas and having in place an effective legal and institutional mechanism.

This report therefore outlines proposals related to the vision, objectives, values and principles among other iterations meant to provide a logical approach towards an integrated ocean management policy process. It postulates that the ocean policy framework should be realistic, responsive and flexible enough to accommodate the various management strategies dealing with the competing marine uses and the various interest groups while taking into account the health of the associated ecosystems as a matter of priority. It also stresses the significance of other supporting elements such as adequate funding; monitoring, evaluation and adjustments; maritime security; maritime education and research; quality ocean data and the involvement of all stakeholders in the whole process under the guidance of a relevant and able government organ in the achievement of the overall vision and objectives of the policy.

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LIST OF ABBREVIATIONS

ASFA	Aquatic Science and Fisheries Abstract		
BPA	Barbados Plan of Action		
CBD	Convention on Biological Diversity		
СВО	Community-Based Organization		
CDA	Coast Development Authority		
COFI	Committee on Fisheries		
DOALOS	Division for Ocean Affairs and the Law of the Sea		
EAME	East African Marine Ecoregion		
EAWS	East Africa Wildlife Society		
EEZ	Exclusive Economic Zone		
FAO	Food and Agriculture Organization of the United Nations		
FD	Fisheries Department		
GA	General Assembly		
GDP	DP Gross Domestic Product		
GEF	Global Environment Facility		
GPA	PA Global Programme of Action		
ICM	Integrated Coastal Management		
IMO	International Maritime Organisation		
IOC	Inter-governmental Oceanographic Commission		
IODE	International Oceanographic Data and Information Exchange		
IOMAC	Indian Ocean Marine Affairs Commission		
IUCN	International Union for Conservation of Nature		
IUU	Illegal, Unreported and Unregulated		
КАНС	Kenya Association of Hotel Keepers and Caterers		
KeNODC	Kenya National Oceanographic Data Centre		
KMFRI	Kenya Marine and Fisheries Research Institute		
KPA	Kenya Ports Authority		
KWS	Kenya Wildlife Services		
Μ	Nautical Mile (1.852 km)		
MEA	Multilateral Environmental Agreement		
MPA	A Marine Protected Area		
NGO	Non-Governmental Organization		
R&D	Research and Development		
TF	Task Force		

TOR	Terms of Reference	
UN	United Nations	
UNCED	United Nations Conference on Environment and Development	
UNCLOS	United Nations Convention on the Law of the Sea	
UNDP	United Nations Development Programme	
UNEP	United Nations Environment Programme	
UNESCO	United Nations Educational, Scientific and Cultural Organization	
UNTS	United Nations Treaty Series	
USA	United States of America	
USD	United States Dollar	
WIOMSA	Western Indian Ocean Marine Science Association	
WMO	World Meteorological Organisation	
WSSD	World Summit on Sustainable Development	
WWF	World Wildlife Fund	

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CHAPTER ONE: OVERVIEW OF OCEAN MANAGEMENT

1.1 Introduction

The marine environment including the ocean space and adjacent coastal area is known to form an essential component of the global life-support system and thus the entry into force of the United Nations Convention on Law of the Sea (UNCLOS),¹ the outcome of the United Nations Conference on Environment and Development (UNCED),² the World Summit on Sustainable Development (WSSD) ³ and many other international and regional conventions, agreements and initiatives are all clear indicators of considerable interest towards maritime issues including governance as held by the global community due to its importance. Similarly, many institutions at the international, regional, national and even local levels have been created to oversee the management of the ocean space and adjacent areas.

UNCLOS transformed what was once customary international law into a formal legal agreement and, in effect, making all nations reassess their maritime priorities and operations, to ensure conformity with this global agreement. It is evident that national marine issues are closely linked to regional and international framework conventions, agreements and initiatives, despite the many internal social, economic and political dynamics that more often influence implementation and overall results.

The outcome of UNCED and in particular Chapter 17 of Agenda 21, dealing with protection of the oceans and seas of all kinds and coastal areas outlines the needs, priorities and guiding principles for all nations in as far as the management of the ocean is concerned. Since its conclusion in 1992 and with the realization of the importance of harmonizing the

¹ UNCLOS 1833 UNTS 396, refers to the international agreement that resulted from the Third United Nations Conference on the Law of the Sea (UNCLOS III) that took place from 1973 through to 1982 with modifications that were made by the November 1994 Agreement on Implementation. The Convention defines the rights and responsibilities of nations in their interaction and use of the world's oceans, which cover about 70 percent of the Earth's surface. See UNCLOS online,

<www.un.org/Depts/los/convention_agreements/convention_overview_convention.htm> (20 June 2007).

² UNCED also called the Earth Summit took place in Rio de Janeiro, Brazil, from 3-14 June 1992. The theme was to discuss environment and sustainable development. It resulted in Agenda 21, the Rio Declaration on Environment and Development, the Statement of Forest Principles, the United Nations Framework Convention on Climate Change and the United Nations Convention on Biological Diversity. See UNCED online, <www.un.org/geninfo/bp/enviro.html> (20 June 2007).

³ WSSD also known as Earth Summit 2002 took place in Johannesburg, South Africa, from 26 August to 4 September 2002. Organised by the UN, WSSD was convened to discuss sustainable development in the world and to evaluate the effectiveness of Agenda 21 and other agreements reached at the 1992 Earth Summit. WSSD brought together heads of State and Government, national delegates and leaders from non-governmental organizations (NGOs), businesses, and other major groups. See WSSD online <www.earthsummit2002.org > (20 June 2007).

various uses, the existing legal framework and general management of the coastal and ocean regimes as carried out by various government institutions and other stakeholders, there has been remarkable increase in interest by many coastal States to manage their coastal and ocean spaces in a more holistic manner through the adoption of various strategies such as Integrated Coastal Management (ICM)⁴ and Integrated Coastal and Ocean Management.

The integrated coastal and ocean management concept is known to involve rational decisions, comprehensive planning and management of human activities in both the ocean and the adjacent coastal area for the purposes of achieving sustainable use of the resources within them. There is widespread recognition that such an approach is better placed to address the associated resource exploitation opportunities; environmental, social and economic challenges in a more holistic manner.

It is in this connection that Paragraph 17.6 of Agenda 21 encourages coastal States to consider establishing, or where necessary strengthen appropriate coordinating mechanisms (such as a high-level policy planning body) for integrated management and sustainable development of coastal and marine areas and their resources, at both the local and national levels. Such mechanisms should include consultation, as appropriate, with the academic and private sectors, non-governmental organizations, local communities, resource user groups, and indigenous people.⁵ More specifically, section 17.6(b) calls for the implementation of integrated coastal and marine management and sustainable development plans and programmes at appropriate levels.⁶

In addition to Agenda 21, the Convention on Biological Diversity (CBD),⁷ the Barbados Plan of Action (BPA),⁸ the Global Programme of Action (GPA) for the Protection

⁶ Ibid.

⁴ On the holistic management approach of coastal areas, various terminologies have been adopted though they have more or less similar objectives. The most common include Integrated Coastal Management (ICM), Integrated Coastal Area Management (ICAM) and Integrated Coastal Zone Management (ICZM).

⁵ See Chapter 17 of Agenda 21, online

<www.un.org/esa/sustdev/documents/agenda21/english/agenda21chapter17.htm> (21 June 2007).

⁷ Signed by 150 Government leaders at the 1992 Rio Earth Summit, the Convention on Biological Diversity (CBD) is dedicated to the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding. Article 6(b) calls for the integration in as far as possible and as appropriate, the conservation and sustainable use of biological diversity into relevant sectoral cross-sectoral plans, programmes and policies. CBD online. or See <www.cbd.int/convention/default.shtml> (21 June 2007).

⁸ In April 1994, a Global conference was held in Barbados to consider how small island States could face up to their special challenges. The Global Conference on the Sustainable Development of Small Island Developing

of the Marine Environment from Land-Based Sources of pollution ⁹ and the FAO Code of Conduct for Responsible Fishing ¹⁰ all call for cross-sectoral approach to the management of coastal and marine areas.

In light of the above efforts amongst many others, the integrated ocean policy framework should therefore reflect the interconnectedness between the air, sea and adjacent land and to the physical and biological dynamics of the ocean/land interface along the coastline. It is important to note that decisions made about land-based activities must take into account their effects on the sea. Management responses should also be of an integrated nature and reflect natural systems such as ecosystems, rather than on imposed boundaries as all of them tend to address more or less the same issues of sustainable use, development, and protection of coastal and marine areas and resources within it. These concepts and approaches to ocean management recognise the interrelations and interdependent nature of coastal and marine ecosystems.¹¹

In an attempt to address the ocean policy formulation process in Kenya, this research paper delves into the main policy components including the existing legal and institutional framework. This is done in five major and interrelated chapters. Chapter one gives the background information on ocean management and an overview of international, regional, national and local perspectives. It outlines initiatives that have been undertaken in Kenya to manage the coastal and marine areas. These include Marine Protected Areas (MPAs) and

States determined that sustainable development was the logical answer, and adopted the Barbados Programme of Action (BPA) for the Sustainable Development of Small Island Developing States to help bring it about. Paragraph 23(a) calls for the application of Integrated Coastal Area Management approaches, including provision to involve stakeholders, in particular local authorities and communities and relevant social and economic sectors, including Non-Governmental Organizations, women, indigenous people and other major groups. See BPA online, <www.unep.ch/regionalseas/partners/sids.htm> (21 June 2007).

⁹ The GPA is designed to be a source of conceptual and practical guidance to be drawn upon by national and/or regional authorities for devising and implementing sustained action to prevent, reduce, control and/or eliminate marine degradation from land-based activities. The GPA aims at preventing the degradation of the marine environment from land-based activities by facilitating the duty of States to preserve and protect the marine environment. In the process of establishing priorities, States should apply integrated coastal area management approaches, including provisions to involve stakeholders. See GPA online, <<www.gpa.unep.org/content.html?id=181&ln=6 (21 June 2007).

¹⁰ Paragraph 6.9 of the FAO Code of Conduct outlines that States should ensure that their fisheries interests, including the need for conservation of the resources, are taken into account in the multiple uses of the coastal zone and are integrated into coastal area management, planning and development. See FAO Code of Conduct online, <www.fao.org/DOCREP/005/v9878e/v9878e00.htm#6> (22 June 2007).

¹¹ See Towards an oceans policy for New Zealand: A Report on consultation undertaken by the Ministerial Advisory Committee on Oceans Policy, September 2001. p 5. Online

<www.mfe.govt.nz/publications/oceans/healthy-seas-healthy-society/healthy-sea-healthy-society-sep01.pdf> (22 June 2007).

Integrated Coastal Zone Management (ICZM) programmes. Chapter two gives the background information on Kenya and key areas of weakness in the existing legal, policy and socio economic framework governing the coastal and marine areas. Chapter three outlines policy guidance for oceans planning and management. The key aspects addressed include the vision statement, values and objectives of the policy. The main principles and sectoral/cross sectoral issues have also been captured in this chapter. Chapter four discusses the implementation framework of the policy. Besides outlining the legal and institutional framework, it gives proposals on the implementation mechanism and the strategy to achieve the objectives of the policy among other important aspects. It also discusses Maritime education, training and research and the importance of ocean data and information base in the management and sustainable exploitation of ocean resources. The report concludes in chapter five by suggesting the way forward for the policy framework and what it takes for it to be realised.

1.2 Ocean governance framework: legal, institutional and levels of implementation

As oceans have been known to play a critical role in influencing the world economy, climate, international law relations among many other issues, its governance has always received a lot of attention from both coastal and non coastal States. While considering this aspect, it may be important to first understand the concept of governance in general terms and the key elements that constitute it with respect to the ocean regime. It should be pointed out from the outset that the interaction of these elements largely determines the overall success of any management approach or programmes meant to address ocean related issues.

Governance has been defined as:

The process through which diverse elements in a society wield power and authority and, thereby, influence and enact policies and decisions concerning public life and economic and social development.¹²

However, with regard to ICM, governance refers to:

The structures and processes used to govern behaviour, both public and private, in coastal and ocean areas under the jurisdiction of a particular country, and the resources and activities they contain.¹³

¹² See Cicin-Sain, B. and Belfiore, S. (2003) in 'Linking Marine Protected Areas to Integrated Coastal and Ocean Management': *A review of theory and Practice. Discussion paper for CZ 2003 and for the World Parks Congress in September, 2003, Durban, South Africa.* p2.

Similarly, Edward L. Miles defines the concept of ocean governance as one that "encompasses norms, institutional arrangements, and substantive policies." ¹⁴

The above definitions have been well captured by three key elements considered to constitute ocean governance. These are the legal, institutional and levels of implementation:¹⁵

1.2.1 Legal component

The legal framework establishes obligations through rules and mechanisms which are usually aimed at securing compliance. In the ocean regime, UNCLOS is the key instrument which recognises that the problems of ocean space are closely interrelated and need to be considered as a whole through a legal mechanism which will facilitate international communication, and promote the peaceful uses of the seas and oceans, the equitable and efficient utilization of their resources, the conservation of their living resources, and the study, protection and preservation of the marine environment.¹⁶ These issues generally fall into economic and environmental regimes.

Although UNCLOS has been described as a universal legal framework for the rational management of marine resources and their conservation for future generations,¹⁷ this instrument by itself has been argued to be insufficient to take the world community into the twenty-first century¹⁸ and it has therefore been supplemented by Agenda 21; the GPA and the United Nations Agreement on Straddling Fish Stocks and Highly Migratory Fish Stocks of 1995.¹⁹ Others include the Rio Declaration on Environment and Development, the outcome of WSSD and instruments emanating from various UN organs that include IMO, UNCTAD,

¹³ *Ibid* at 2.

¹⁴ See Miles, Edward L. (1999). 'The Concept of Ocean Governance: Evolution Toward the 21st Century and the Principle of Sustainable Ocean Use', Coastal Management, 27:1, p1.

¹⁵ See Francois Bailet in "Ocean governance and Human security: Ocean and sustainable development – international regime, current trends and available tools." Online

<www.unitar.org/hiroshima/programmes/shs04/Presentations%20SHS/5%20July/Bailet.pdf> (26 June 2007)

¹⁶ See UNCLOS, note 1 at 25.

¹⁷ For a discussion on this point see, 'The oceans are the very foundation of human life'. Online, <www.un.org/Depts/los/oceans_foundation.htm> (26 June 2007).

¹⁸ See Miles, Edward L. (1999), note 14 at 7.

¹⁹ The main objective of the UN Agreement on Straddling and Highly Migratory Fish Stocks of 1995 is to ensure the long-term conservation and sustainable use of straddling fish stocks and highly migratory fish stocks through effective implementation of the relevant provisions of UNCLOS. See United Nations Secretary General "Report of the General Assembly" UN Doc. A/CONF.164/37 of 8 September 1995, Article 2. p4. Online, <www.daccessdds.un.org/doc/UNDOC/GEN/N95/274/67/PDF/N9527467.pdf?OpenElement> (02 August 2007).

FAO among many other conventions and agreements at the international, regional and national levels.

It may be worth noting that even with all these additions, the ocean governance regime is still insufficient to confront all the challenges faced by human use of the coastal and marine environments considering the continuous dynamics taking place in the frontier. In this connection, there is need for drastic measures to be taken by individual States towards addressing these ever-changing activities in their respective situations for the continued sustainability.²⁰

1.2.2 Institutional consideration

Many institutions, some created by UNCLOS and others part of the United Nations System are responsible for coordinating activities on specific aspects of the ocean under their jurisdiction. The institutions created by UNCLOS include the Division for Ocean Affairs and the Law of the (DOALOS),²¹ the Commission on Limits of the Continental Shelf (CLCS),²² the International Sea Bed Authority (ISA) ²³ and the International Tribunal on the Law of the Sea (ITLOS).²⁴ Those that are part of the UN System include the United Nations

²⁰ See Miles, Edward L. (1999), note 14 at 1.

²¹ The mandate of DOALOS as spelled out by the General Assembly of the United Nations and in the Secretary-General's Bulletin is to carry out the responsibilities entrusted to the Secretary-General upon the adoption of the Convention and fulfil the functions associated with its entry into force. More specifically, the Division monitors developments in all relevant areas in order to report annually to the General Assembly on matters relating to the law of the sea and ocean affairs. Further, it formulates recommendations to the Assembly and other intergovernmental forums aimed at promoting a better understanding of the Convention and ensures that the Organization has the capacity to respond to requests for advice and assistance from States in the implementation of the Convention. See online <www.un.org/Depts/los/doalos_activities/about_doalos.htm (02 August 2007).

²² The purpose of CLCS is to facilitate the implementation of the Convention by eligible coastal States in respect of the establishment of the outer limits of the continental shelf beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is measured. See online <www.un.org/Depts/los/clcs_new/commission_purpose.htm#Purpose> (02 August 2007).

²³ The ISA is an autonomous international organization through which States Parties to UNCLOS shall, in accordance with the regime for the seabed and ocean floor and subsoil thereof beyond the limits of national jurisdiction (the Area) established in Part XI and the Agreement, organize and control activities in the Area, particularly with a view to administering the resources of the Area.

²⁴ Part XV of UNCLOS lays down a comprehensive system for the settlement of disputes that might arise with respect to the interpretation and application of the Convention. It requires States Parties to settle their disputes concerning the interpretation or application of the Convention by peaceful means indicated in the Charter of the United Nations. If however parties to a dispute fail to reach a settlement by peaceful means of their own choice, they are obliged to resort to the compulsory dispute settlement procedures entailing binding decisions, subject to limitations and exceptions contained in the Convention. In this scenario, UNCLOS provides for four alternative means for the settlement of disputes: the International Tribunal for the Law of the Sea (ITLOS), the International Court of Justice, an arbitral tribunal constituted in accordance with Annex VII, and a special arbitral tribunal constituted in accordance with Annex VII. ITLOS is an independent judicial body established by Annex VI of UNCLOS to adjudicate disputes arising out of the interpretation and application of the

Environment Programme (UNEP),²⁵ the Food and Agriculture Organization (FAO),²⁶ International Oceanographic Commission (IOC) of UNESCO,²⁷ United Nations Conference on Trade and Development (UNCTAD)²⁸ and International Maritime Organisation (IMO).²⁹

Others include the United Nations Industrial Development Organization (UNIDO) whose mandate is to promote industrialization throughout the developing world through sustainable industrial growth,³⁰ the World Meteorological Organization (WMO) that is charged with monitoring and reporting on the state and behaviour of the Earth's atmosphere, its interaction with the oceans, the climate it produces and the resulting distribution of water resources³¹ and the Economic Commission for Africa (ECA), which is one of the UN's five regional commissions with a mandate to promote the economic and social development of its

Convention. The Tribunal is composed of 21 independent members, elected from among persons enjoying the highest reputation for fairness and integrity and of recognized competence in the field of the law of the sea. For more information on ITLOS, visit <www.itlos.org/start2_en.html> (02 August 2007)

²⁵ UNEP was established after the 1972 UN Conference on the Human Environment, held in Stockholm, Sweden, proposed the creation of a global body to act as the environmental conscience of the UN System. In response, the UN General Assembly adopted Resolution 2997 on 15 December, 1972 creating: The UNEP Governing Council, the UNEP Secretariat, and a voluntary Environment Fund to finance UNEP's environmental initiatives. UNEP is the United Nations System's designated entity for addressing environmental issues at the global and regional level. Its mandate is to coordinate the development of environmental policy consensus by keeping the global environment under review and bringing emerging issues to the attention of governments and the international community for action. The mandate and objectives of UNEP emanate from: UN General Assembly resolutions and declarations. See UNEP organization profile. Online, <www.unep.org/PDF/UNEPOrganizationProfile.pdf> (02 August 2007).

²⁶ Founded on 16 October 1945 in Quebec, Canada, FAO is mandated to improve levels of nutrition, agricultural productivity and lives of rural populations thus contributing to the growth of the world economy. However, it also participates actively in helping developing countries and countries in transition improve agriculture, forestrv fisheries practices leading to food security for all See online and <www.fao.org/UNFAO/about/index en.html> (29 January 2008)

²⁷ Established by resolution 2.31 and adopted by the General Conference of UNESCO in 1960, IOC provides member States with an essential mechanism for global cooperation in the study of the ocean. This is done through sharing of knowledge, information and technology and the coordination of national programmes. See IOC online http://ioc.unesco.org/iocweb/index.php (29 January 2008)

²⁸ Established in 1964, UNCTAD promotes the development-friendly integration of developing countries into the world economy. For more information, see online <www.unctad.org/> (29 January 2008)

²⁹ The Convention establishing the International Maritime Organization (IMO) was adopted in Geneva in 1948 and IMO first met in 1959. IMO's main task has been to develop and maintain a comprehensive regulatory framework for shipping and its remit today includes safety, environmental concerns, legal matters, technical co-operation, maritime security and the efficiency of shipping. See IMO online, <www.imo.org> (02 August 2007).

³⁰ For more information, see online <www.unido.org/doc/3352#coreFunctions> (29 January 2008)

³¹ See online <www.wmo.ch/pages/about/index_en.html> for additional information (29 January 2008)

member States and intra-regional integration, and international cooperation for Africa's development.³²

In addition, the meeting of the States parties to UNCLOS (SPLOS)³³ and the UN Open-ended Informal Consultative Process on Oceans and the Law of the Sea established by the General Assembly (GA) to facilitate the annual review by the GA of developments in ocean affairs and the law of the sea by considering the report of the Secretary-General and by suggesting particular issues to be considered by the GA have been considered key in pushing forward ocean governance agenda in the international arena.³⁴

1.2.3 Levels of implementation

Although the problems of the oceans and coastal areas have been identified to be global in nature, concerted effort and strategies at the local, national, regional and even international levels need to be put in place to address them comprehensively. One way of doing this is by ensuring that the governance mechanism to address them must be integrated horizontally, across disciplines, departments, and even specialised agencies, and between the public and private sectors, as well as vertically, across the national, regional, and global levels.³⁵ At each of these levels, it is imperative that the related institutions must be restructured and made to reflect the shift from a sectoral to an intersectoral approach especially with regard to planning and decision-making issues.

1.2.3.1 International level

The GA as the competent body at this level, makes annual reviews and considerations of the developments related to ocean affairs and the law of the sea resulting from the annual comprehensive report of the Secretary-General, which incorporates information on

³⁴ The decision to establish an open-ended informal consultative process in order to facilitate the annual review by the GA of developments in ocean affairs was arrived at the fifty-fourth session of the GA in 1999. See resolution A/RES/54/33 of 18 January 2000 adopted by the General Assembly, online

<www.un.org/ga/search/view_doc.asp?symbol=A/RES/54/33&Lang=E>. For more details on UN Open-ended Informal Consultative Process on Oceans and the Law of the Sea, see

<www.un.org/Depts/los/consultative process/consultative process.htm> (30 January 2008)

³² For more details on ECA, see online <www.uneca.org/> (30 January 2008).

³³ SPLOS meetings are held in accordance with article 319, paragraph 2 (e) of UNCLOS. However its mandate is limited to addressing administrative issues.

³⁵ See Payoyo, P.B (1994) in "Pacem in Maribus XIX." Ocean governance: Sustainable development of the Seas. United Nations University. Online

<www.unu.edu/unupress/unupbooks/uu150e/uu150e04.htm#i.%20general> (30 January 2008)

developments relating to the implementation of the UNCLOS and the work of the UN, its specialized agencies and other institutions in the field of ocean affairs and the law of the sea.³⁶

1.2.3.2 Regional level

At this level, collaborative effort between States sharing similar ocean environment or problems provides a more practical approach in addressing them. In this regard, the Regional Seas Programme of UNEP sets out regional action plans to be implemented at national levels according to this global strategy. The Regional Seas programme provides a comprehensive institutional framework for regional and global cooperation on issues relating to the seas, oceans and coasts, through its Conventions and Action Plans. It further provides an avenue for developing common regional objectives, promoting synergies and coordinated regional implementation of relevant Multilateral Environmental Agreements (MEAs).³⁷

The Eastern African Action Plan, also known as the Nairobi Convention and its related Protocols adopted in 1985 was meant to address a number of issues that include among others, the promotion of environmentally sound sustainable development and management of marine and coastal systems in the east African region and the establishment of objectives, policies and legislation for the protection of the marine and coastal environment on a national and regional level.³⁸ Similarly, the GPA has produced a regional overview and action plan on land-based pollution.³⁹

Other important issues advocated by the Regional Seas programme such as information exchange, technical assistance, capacity building and programmes requiring regional cooperation such as the Large Marine Ecosystem need to supported and always encouraged as their numerous benefits shall in the end better the ocean environment.

<www.un.org/ga/search/view_doc.asp?symbol=A/RES/49/28&Lang=E> (31 January 2008)

³⁶ The GA at its forty-ninth session in 1994 decided to undertake an annual review and evaluation of the implementation of the Convention on the Law of the Sea and other relevant developments. It requested the Secretary-General to report annually to the Assembly from the fiftieth session. See resolution adopted by the General Assembly A/RES/49/28 of 19 December 1994, online

³⁷ For more information on regional seas programme, see UNEP and the marine coastal environment, online </br/>www.unep.org/themes/marine/> (31 January 2008)

³⁸ See UNEP Nairobi Convention for more details. Online

<www.unep.org/NairobiConvention/about/Convention> (31 January 2008)

³⁹ Ibid

1.2.3.3 National level

In dealing with ocean related programmes, this aspect stresses the need for Governments to continually support and strengthen the existing institutions and initiatives for the effective implementation of marine policies, proper integration of marine issues into national development planning, and ensuring the full participation of all levels of Government and other organizations dealing with ocean planning and management.⁴⁰ However, due to the recognition of limitations of the traditional institutional arrangements and of the need to have in place a framework that would address coastal and ocean planning and management issues more effectively, many national efforts have led to a variety of institutional initiatives and programmes in coastal and marine areas.

For instance in Kenya, two key cross sectoral initiatives: the Marine Protected Areas (MPAs) and Integrated Coastal Zone Management have been practised with the purpose of enhancing coastal and ocean management and promoting sustainable use of the associated resources. These two initiatives have yielded significant results and have clearly demonstrated the positive contribution of practical management strategies in the sustainable use and protection of marine ecosystems and resources. These programmes are discussed hereunder.

a) Marine Protected Areas (MPAs)

The World Conservation Union (IUCN) defines the term 'Marine Protected Area' as:

Any area of the intertidal or subtidal terrain, together with its overlying water and associated flora, fauna, historical and cultural features, which has been reserved by law or other effective means to protect part or all of the enclosed environment.⁴¹

This spatially explicit approach to managing human impacts has many potential ecological and socio-economic benefits that can alleviate some of the problems fundamental

⁴⁰ See Stella Maris Vallejo in "Ocean governance: sustainable development of the Seas." United Nations University Press, 1994. Online <www.unu.edu/unupress/unupbooks/uu15oe/uu15oe00.htm#Contents> (03 august 2007).

⁴¹ See Kelleher, G. (1999). Guidelines for Marine Protected Areas. IUCN, Gland, Switzerland and Cambridge, UK.: *Conserving Biodiversity-Marine Plan of Action* pp xi. Online

<www.iucn.org/themes/wcpa/biome/marine/mpoaen/3focus.html> (03 August 2007).

to conventional management practices and can therefore complement, but is unlikely to supplant, the conventional practices.⁴²

MPAs are generally meant to help achieve several objectives which often differ greatly depending on the existing circumstances. Some of the objectives identified by IUCN include: 43

- Preservation of species and genetic diversity;
- Wilderness protection;
- Scientific research;
- Protection of specific natural and cultural features;
- Tourism and recreation;
- Maintenance of environmental services;
- Education;
- Maintenance of cultural and traditional attributes; and
- Sustainable use of resources from natural ecosystems.

In recognition of the above objectives and how they can be better achieved, IUCN has categorised Protected Areas depending on the objectives in which they are being managed for as illustrated below.⁴⁴

Category I Strict Nature Reserve/Wilderness Area

a) Protected Area mainly managed for science

This applies to the area with unique or representative ecosystems, geological or physiological features and/or species available mainly for scientific research and/or environmental monitoring.

b) Protected Area mainly managed for wilderness protection

This is applicable to a large area of unmodified or slightly modified land or sea retaining its natural character and influence, without permanent or significant habitation, protected and managed so as to preserve its natural condition.

⁴² See Carr M.H (2000). Marine protected areas: challenges and opportunities for understanding and conserving coastal marine ecosystems. *Environmental Conservation* 27 (2): 106–109. Online http://journals.cambridge.org/download.php (03 August 2007).

⁴³ See IUCN (1994). Guidelines for protected Area Management Categories. CNPPA with the assistance of WCMC. IUCN, Gland Switzerland and Cambridge, UK. p7

⁴⁴ Ibid

Category II Protected Area managed mainly for ecosystem protection and recreation

The land and/or sea areas are designated to protect the ecological integrity of one or more ecosystems, exclude exploitation that is contrary to the objectives of the area and to provide foundation for spiritual, scientific, educational, and recreational opportunities all of which must be environmentally and culturally compatible.

Category III Natural Monument: protected area managed mainly for conservation of specific natural features

The protected area of concern in this case contains one or more specific natural or natural/cultural feature which is of unique value because of its inherent rarity, representative or aesthetic qualities or cultural significance.

Category IV Habitats/Species Management Area: protected area managed mainly for conservation through management intervention

The land and/or sea area as applicable here is subjected to active intervention for management purposes in order to ensure the maintenance of habitats and/or to meet the requirements of specific species.

Category V Protected Landscape/Seascape: protected area managed mainly for landscape /seascape conservation

This is an area of land, with coast and sea (as appropriate), where the interaction of people and nature over time has produced an area of distinct character with significant aesthetic, ecological and/or cultural value, and often with high biological diversity. The protection of this traditional interaction is therefore important to the maintenance and evolution of such an area.

Category VI Managed Resource Protected Area: protected area managed mainly for the sustainable use of natural ecosystems

The area referred in this case contains predominantly unmodified natural systems, managed to ensure long term protection and maintenance of biological diversity, while at the same time providing a sustainable flow of natural products and services to meet community needs.

Although the above categories have been established to, among many other things, raise awareness on the significance of protected areas, reduce confusion arising from the adoption of various terms to describe protected areas, provide a framework for the collection, handling and dissemination of data on protected areas, and to provide international standards

for accounting and comparison purposes among States, it is of paramount importance to underscore the fact that any protected area should be established to meet objectives which are consistent with the local or national needs and complexities and to promote better understanding and communication among those involved in conservation.

In Kenya's case, the protected areas system is based on total protection of core areas (parks), embedded in buffer zones where limited human interaction and exploitation is allowed (reserves).⁴⁵ Thus, the marine parks are embedded in larger reserves, where 'traditional' exploitation of resources is permitted especially with regard to fisheries resources, albeit with restrictions on the type of fishing gear applicable.⁴⁶ It is also worth pointing out that in marine parks, research and recreation activities (tourism) are allowed at a fee while in reserves, although the same activities area allowed, collection of corals and molluscs is however not allowed. It can therefore be observed that the management of marine parks is hinged towards category II, while that of the reserves falls in category VI.

There are six marine reserves and four marine parks in Kenya (Figure 1) all established between 1968 and 1986 (Table 1).⁴⁷ Proposals have also been mooted to establish two more: Tana River Delta and Ras Tenewi.

⁴⁵ See Obura, D.O. (2001). Kenya. *Marine Pollution Bulletin, Vol. 42, No 12, pp1264-1278. PII S0025-326X* (01) 00241-7. Elsevier Ltd. Online <www.sciencedirect.com> (03 August 2007).

⁴⁶ The fishing gears in this case are mainly traditional and may include traps, hook-and-line and 2.5 inch mesh size net.

⁴⁷ See McClanahan, T.R *et al.* (2005). Management of the Kenyan coast. *Ocean & Coastal Management 48* (2005) 901–931, 2005. Elsevier Ltd. Online <www.sciencedirect.com> (03 August 2007).



Figure 1 Map of Kenya's coast showing marine parks and reserve areas

(Source: Adapted from McClanahan, T.R et al. 2005)

The areas were established after a great deal of pressure on the Government primarily by the tourism sector. Additionally, findings from ecological studies in the associated areas indicated a high degree of degradation, low percentage cover of hard corals, low biomass of fish and a high biomass of sea urchins. These reasons were compelling enough to prompt the immediate initiation of the programme.⁴⁸

⁴⁸ Ibid.

Table 1: Marine parks and reserves in Kenya	
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Name of MPA	Size of MPA (km ²)	Legal establishment	Resources
Mombasa Marine Park & Reserve	Reserve: 200 Park: 10	1986	Coral reef ecosystem with associated beaches.
Watamu Marine Park & Reserve*	Reserve: 1000 ha includes whole Mida creek 100 ft above high water mark Park: 1000 ha with 92 land bases	1968	Fringing reefs; coral 'gardens' in lagoons; seagrass beds; mangroves; mudflats; shorebirds.
Malindi Marine Park & Reserve*	Reserve: 165 Park: 6.3	Reserve: March 1968 Park: June 1968	Fringing reefs and coral 'gardens' in lagoons; seagrass beds; mangroves; mudflats; shorebirds.
Kiunga Marine Reserve*	250	1979	Coral reefs; islets with large nesting bird colonies; dugong; nesting for turtles; pristine mangrove stands
Kisite/Mpunguti Marine Park & Reserve	Reserve: 11 Park: 28	1973 and regazetted in 1978	Coral reefs; 4 small islets important for nesting birds; fisheries

*Represents Marine Parks and Reserves that were also designated as biosphere reserves in 1979 (*Source*: Modified from McClanahan, T.R *et al* 2005 and UNEP, 1988)

As already observed, the objectives of the MPAs vary depending on whether the MPA includes a park and reserve (e.g. Mombasa Marine Park and Reserve) or is only a marine reserve (e.g. Kiunga). Mombasa Marine Park and Reserve for instance was created to:⁴⁹

- Preserve and maintain a representative area of the coral reef ecosystem including the beaches and other ecological features.
- Encourage public understanding, appreciation and enjoyment of the natural resources through interpretation, education and provision of recreational opportunities.

⁴⁹ See UNEP (1998). Eastern Africa Atlas of Coastal Resources: Kenya. A project of the United Nations Environment Programme with the support of the Belgian Administration for Development Cooperation.

• Undertake the development of these natural resources in a manner which will generate income.

So far, the MPA has clearly demonstrated the value of protecting coral reefs and fisheries resources. Although the park is situated in a heavily populated and urbanized area, its effective management since 1991 has seen the dramatic increase in the abundance of finfish and benthic community, fish populations and coral cover.⁵⁰ The increase in the cover of the fleshly algae, coralline algae and soft corals resulted in a more diverse and robust coral reef community in the park.⁵¹

With respect to governance, the management of reefs associated ecosystems falls under the jurisdiction of several Government departments and hence the enforcement of regulations is often a challenge. The Fisheries department has jurisdiction over fishing activities, the Forestry department manages the mangrove resources while the Tourism department licences all tourism activities. Often there is little consultation between these departments, leading to user conflicts in the MPAs.⁵²

Despite the above challenge, the overall objectives of the MPAs have been achieved with remarkable success, especially with regard to conservation and sustainable utilization of associated species and ecosystems.

b) Integrated Coastal Management (ICM)

The process of Integrated Coastal Management brings together environmental, social, economic and political considerations that provide a coordinated management approach in the coastal areas.⁵³ These four considerations are recognised to form the basis for effective decision making in the area. In this connection, ICM has been defined as 'A continuous and

p264.

⁵⁰ See Obura, D.O. (2001), note 45.

⁵¹ Ibid.

⁵² For an in-depth analysis of the existing enforcement regime in the MPAs, see Muthiga, N (2003). Enforcement in Kenya's Marine Protected Area network. Paper Presented at the 'Enforcement Session, Second International Tropical Marine Ecosystems Management Symposium' 24th-27th March 2003, Manila Philippines.

⁵³ See Kay, R and Alder, J (2005). Coastal Planning and Management. 2nd ed. Taylor and Francis press

dynamic process by which decisions are made for the sustainable use, development, and protection of coastal and marine areas and resources.⁵⁴

This process is essentially designed to overcome the fragmentation inherent in the sectoral management approach and the splits in Government jurisdictions by ensuring that decisions in all sectors and at all levels of Government are harmonized and are consistent with the country's coastal policies.⁵⁵ As one of the key elements in the ICM approach is the design of institutional processes to accomplish this harmonization in a more politically acceptable way, this aspect will in turn help to minimise chances of conflicts arising among coastal and marine uses/users and in case they do, it will provide an avenue for addressing them amicably.

ICM recognises the distinctive character of the coastal area as a valuable resource and the importance of conserving it for current and future generations. The process is generally developed in response to a number of coastal management issues that cannot be addressed fully by single subject plans. ICM aims to achieve sustainable development of coastal and marine areas, to reduce vulnerability of coastal areas and their inhabitants to natural hazards, and to maintain essential ecological processes, life support systems, and biological diversity in coastal and marine areas.⁵⁶ Other key functions of ICM include the facilitation of proper planning of the uses of the coastal and marine areas, promotion of appropriate uses of coastal and marine areas, and to help in ensuring public safety in the coastal and marine area typically susceptible to natural and man made hazards.

ICM is also known to be multi purpose oriented as it analyses the implications of development, conflicting uses, and interrelationships among physical processes and human activities while promoting linkages and harmonization between sectoral coastal and marine activities.⁵⁷ In this context and in order to have in place an effective ICM programme, six typical and interrelated stages have been identified in its development and implementation (**Figure 2**).⁵⁸ These stages may however vary depending on the uniqueness of the country's physical, socio economic, cultural and political situation.

⁵⁴ See Cicin-Sain, B and Knecht, R.W (1998). Integrated Coastal and Ocean Management: *Concepts and Practices*. Island Press, Washington, D.C. p39.

⁵⁵ Ibid.

⁵⁶ *Ibid* at 40.

⁵⁷ *Ibid* at 41.

⁵⁸*Ibid* at 58.





(Source: Adapted from Cicin-Sain and Knecht, 1998)

Stage 1 Issue identification and assessment

During this initial stage, the issues that trigger the adoption of an integrated management approach are considered. They may include among others, the deterioration of the coastal environment/resources and the potential economic opportunities that exist or perceived to exist from the area. Through consultative meetings with the relevant agencies and other stakeholders, an ICM plan may be prepared by a selected team for consideration.

Stage 2 Program planning and preparation

At this stage, all the important information and data of the coastal area including that of the existing political jurisdiction and governance matters are gathered. The issues identified in the first stage as problems or opportunities are critically analysed and priorities set to address them, bearing in mind the technical and financial implications. It is at this stage that appropriate coastal area management boundaries are considered together with new management strategies.

The assessment of institutional capacities is also done at this stage with options for development of suitable governance arrangements which may include intersectoral and/or intergovernmental coordination mechanisms. As a way forward, recommendations for the policies, objectives and intended programmes are formulated and included in the ICM strategy together with appropriate monitoring and evaluations systems.

Stage 3 Formal adoption and funding

The formulated policies, objectives and the new management strategies are adopted while at the same time establishing governance arrangements or improving them if they already exist. Furthermore, the strengthening of intersectoral and intergovernmental coordination mechanisms is done.

It is important to note that important coastal issues such as management policies, principles and boundaries which often need legislative action are adopted at this phase while the required organisational changes and funding arrangements are put in place.

Stages 4, 5 and 6 Implementation, operation and evaluation

During these final stages, the governance mechanism begins to oversee the ICM process with new or revised regulations. Although the individual sectoral line agencies will continue with their line management responsibilities, these will now be done as part of the ICM programme. Certain specific projects may also be designed and implemented with the new economic opportunities identified in the area. Finally, the monitoring and evaluation programme which will give an indication of the performance of the entire ICM process is initiated.

In sum, the importance of expediting the process especially in the initial stages of programme planning and preparation has been underscored. This is mainly so as experience has shown that some of the ICM initiatives take a lot of time in the initial stages at the expense of implementation phase meant to address the pressing concerns which in most cases need urgent attention.

In light of the above, although there have been many Government policies and initiatives aimed at conserving coastal and marine ecosystems and associated resources in Kenya, the sector-oriented approach undertaken so far has failed to recognize the interrelationships and interconnectedness of these environments.

With this realisation, early efforts to initiate the Integrated Coastal Zone Management (ICZM) process in the country were made by the National Environmental Secretariat (NES) working within the Regional Seas Programme of UNEP in 1984.⁵⁹ However real impetus for

⁵⁹ See McClanahan, T.R et al (2005), note 47.

the adoption of the process can be traced to the Arusha Resolution of 1993,⁶⁰ which laid the basis for the interdependency of the ecology and economics of the coastal region and developed the policy framework on which a number of laws for coastal resource management were based.

Upon signature of the Resolution, countries of the Eastern African Region committed themselves to establish policies that promote and enhance integrated planning and management of coastal areas. The use of ICZM was cited as one such tool. The Arusha Resolution also recognized the importance of the Nairobi Convention on the Protection, Management and Development of the Coastal and Marine Environment in the Eastern African Region.⁶¹

In light of the above, the Kenya Government initiated a pilot ICZM programme in September 1994 in equal partnership with local communities and relevant private sector entities at a portion of the Kenyan coast: the Nyali-Bamburi-Shanzu area near Mombasa town (Figure 3). At the initial stages, a team of six institutions under the leadership of the Coast Development Authority (CDA) was formed to undertake the programme. The other institutions participating were the Kenya Marine and Fisheries Research Institute (KMFRI), Kenya Wildlife Services (KWS), Fisheries Department (FD), Municipal Council of Mombasa (MCM) and the Kenya Association of Hotel Keepers and Caterers (KAHC). The team members who included senior officers drawn from the above institutions developed initial strategies to address critical management issues and worked to build support within the Government, user groups and the private sector. This team received training and other forms of support from the Coastal Resources Centre of the University of Rhode Island, USA, the

⁶⁰ The Arusha Resolution on Integrated Coastal Zone Management in Eastern Africa including Island States was arrived at in April 1993 in Arusha, Tanzania by the regional environmental and natural resource management ministers in an effort to address the many problems facing coastal areas at a regional level. They considered and endorsed a resolution containing various recommendations dealing with the coastal zones of their countries.

⁶¹ The Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African Region (otherwise known as the Nairobi Convention) and its two Protocols were signed in 1985 and have been in force since 30 May 1996. The Nairobi Convention is a partnership Convention that recognises that success in the protection, management and development of the coastal and marine environment of the Western Indian Ocean region will depend on effective partnerships that are built on strategic linkages between governments, NGOs and the private sector. The Convention consists of 10 countries sharing the Western Indian Ocean Region: Kenya, Tanzania, Mozambique, Somalia, Comoros, Mauritius, Seychelles, Reunion, Madagascar and South Africa. See the Convention online <www.unep.org/nairobiconvention/> (28 August 2007).

Priority Actions Programme/Regional Activity Centre of Mediterranean Action Plan, FAO and UNEP.⁶²





Issues for ICZM in Nyali-Bamburi-Shanzu which included urbanization, decline in fisheries production, water quality concerns, erosion of the shoreline, degradation of coastal ecosystems and resource use conflicts were identified through a participatory approach

⁽Source: Adapted from Coast Development Authority, 2001)

⁶² See Okemwa, E.N. *et al.* (1997). Integrated coastal zone management in Kenya: initial experiences and progress. *Ocean & Coastal Management*, Vol. 37, No. 3, pp319-347.

involving communication with local communities, fishermen, mangrove cutters, boat operators, curio dealers, businessmen hoteliers, administrators, researchers, etc. and included stakeholders both at grass-roots and policy making level.⁶³ Two workshops that brought together all the stakeholders were held to discuss the issues compiled by the aforementioned team of six institutions. This provided an opportunity for consensus building on the issues between the team and stakeholders.

i) **Project objectives** ⁶⁴

- The pilot site was envisaged to provide a starting point for addressing the urgent coastal resources issues as demonstrated by the study area.
- It was meant to strengthen local ICZM programs outside of MPAs so that tangible governance and community benefits of ICZM are demonstrated.
- It was intended to expand stakeholder capacity and participation in ICZM processes while providing an opportunity to monitor the effectiveness of the process.
- It was anticipated that the study could serve as a model for other areas at the coast and develop a national approach to coastal management.
- It was intended to lay the foundations for a national ICZM policy besides establishing sustainable financing mechanisms.
- Enforce the 100 ft. setback regulation adjacent to the Marine Park and consider extending setback regulations along the beachfront adjacent to the Marine Reserve.
- Design criteria for emergency shoreline protection in cases where loss of property or public works is imminent.

ii) Other ICZM programmes

Other initiatives to explore the adoption of ICZM programmes have been tried in two other areas of the Kenyan coast with relative success. The management of the marine resources in the Diani-Chale area, south of Mombasa shifted from marine reserve focus of Kenya Wildlife Service (KWS) to ICZM initiative.⁶⁵ The shift was occasioned by failure of the MPA

⁶³ See Coast Development Authority (2001). Moving Coastal Management Forward. Kenya Progress Report:1994-1999. A joint initiative between the Coast Development Authority, the University of Rhode Island Coastal Resources Centre and the United States Agency for International Development-Kenya. Coastal Management Report No. 2231

⁶⁴ See McClanahan, T.R et al. (2005), note 47 and Coast Development Authority (2001), note 63.

⁶⁵ See Obura, D.O. (2001), note 45.

approach to take root in the area despite being gazetted since 1985. There was also the need to stop marine and coastal resource degradation and to ensure that local stakeholders benefit and participate in the management of the associated resources.⁶⁶ Another less formal trial form of ICZM was started in the Lamu area in 2001. It brought together local residents, hoteliers, fishers and the District Commissioner.⁶⁷

iii) Overall achievements of the pilot ICZM programme in Kenya

- It managed to raise awareness on the importance of coastal resources and ecosystem through campaigns, training initiatives and awareness materials.
- It provided a forum where the different institutions involved in oceans affairs could interact and share information.
- It brought to fore concerns of the coastal communities and this has resulted in the inclusion of important issues into the government and donor agencies agendas.
- The process provided an avenue where conflicts amongst the concerned institutions /parties could be resolved amicably.

iv) Constraints and obstacles to ICZM process.

Some of the constraints and obstacles faced by the process include competing interests and lack of priorities among users, limited understanding and experience in the whole process and lack of funding for programmes.

c) Other management tools applicable for coastal and marine areas

In addition to MPA and ICZM already discussed, zonation and special area planning among other approaches may be practised locally in the attempt to achieve conservation and sustainable use of the coastal and marine areas and related resources. Zonation entails the sub division of the coastal area into geographical zones on the basis of distance onshore from the water's edge for purposes of guiding the various uses in the area. In this instance, greater restrictions are placed on uses close to the water's edge while easing those further inland.

⁶⁶ See McClanahan, T.R. et al. (2005), note 47.

⁶⁷ See Obura, D.O. (2001), note 45.

Although this management approach is mainly meant to preserve sensitive areas and regulate the various uses in the intended area, its applicability is more often viewed with a lot of suspicion or in some cases restricted because of the privately owned land associated with most of the coastal areas.

Special area planning on the other hand encompasses the management of a particular ecosystem as a whole irrespective of the jurisdiction because of the existing circumstances. It is always important that plans for special area management are integrated into the general coastal management programme to enhance coordination and better communication with other initiatives.

On a much wider scale, regional ocean governance which usually entails a network of collaborative partnerships between States and other relevant jurisdictions to facilitate the management of marine ecosystems on large ecologically-oriented scales may be practised. More specifically, Large Marine Ecosystems (LMEs) which refer to relatively large regions of ocean space that usually cover over 200,000 km² encompassing the coastal area from river basins and estuaries to the seaward boundaries of the continental shelves and the outer margins of a major current systems and characterized by distinct bathymetry, hydrography, productivity, and trophically dependent populations may be applied.⁶⁸ As an oceans management tool, LME recognises the various biological and physical elements in the ocean ecosystem and their complex dynamics.

The Somali Current Large Marine Ecosystem which Kenya is involved in has an area of 843,937 km² and is characterised by tropical climate. Some of the key issues to be addressed by this approach include the ecosystems productivity, fish and fisheries, pollution and ecosystem health, overexploitation, the ecosystem socioeconomics and governance.⁶⁹

This regional governance initiative can also, among many other benefits, facilitate communication channels and collaboration efforts among the States involved thus translating to more efficient and effective management practices and reduction of costs involved. The recognition of regional cooperation as a necessary component of ecosystem-based

⁶⁸ See Oceans and the World Summit on Sustainable Development: A Large Marine Ecosystems Strategy for the Assessment and Management of International Coastal Waters (2003). Online <www.edc.uri.edu/lme/intro.htm> (28 August 2007)

⁶⁹ See Large Marine Ecosystems of the World: Somali Coastal Current, online <www.edc.uri.edu/lme/text/somali-coastal-current.htm> (28 August 2007)

management in Somali Current LME should therefore be given enough support as the country stands to benefit a lot from it.

1.2.3.4 Local level: Community-based ocean management

Community-based management refers to management systems that rely on a community of users to manage or assist in the management of a particular resource or an ecosystem. The participation of Indigenous people, their communities and other local communities in environmental management and development because of their knowledge and traditional practices has been underscored by Principle 22 of Rio Declaration which outlines that States should recognize and duly support their identity, culture and interests and enable their effective participation in the achievement of sustainable development.⁷⁰

In line with the above, the inshore coastal governance systems in some parts of Kenya's coast are changing from top-down systems administered by national Governments to co-managed collective institutions.⁷¹ These locally run institutions are community based and are responsible for local-level management of coastal and near shore ocean areas and related resources.

More specifically, this approach has been applied in the management of reef fisheries where local Community Based Organizations (CBO's) are effectively developing appropriate rules to limit their overexploitation and stakeholders are cooperating to achieve their sustainable use.⁷² This has been possible courtesy of Beach Management Unit (BMU) legislation that authorised fisheries landing sites along the entire coast to enact by-laws that provide locally appropriate and legally recognized additional rules.⁷³ However, it is important to realise that voluntary cooperation and compliance to regulations in area-based management from the local communities and other users is critical.

To achieve high levels of voluntary compliance, these users need to be sensitized so that they can understand the implications of their behaviour to the area and related resources. Information and education thus play an important role in promoting such an understanding.

⁷⁰ See Rio Declaration on environment and development, online

<www.unep.org/Documents.Multilingual/Default.asp?DocumentID=78&ArticleID=1163> (29 August 2007)

⁷¹ See McClanahan, T. *et al* (2006). The effectiveness of community-based organizations in managing coral reefs in the Western Indian Ocean. Online <www.wiomsa.org/?id=1313> (29 August 2007)

⁷² Ibid

⁷³ Ibid

One other way of promoting compliance by local communities is to actively involve them in consultations during the management planning process, partnering with them in management process, allowing them to interact more often with the management mechanism and through assistance in projects that relate to sustainable exploitation of ocean resources that benefit them directly or indirectly.

It has been recognized that proper cooperation in this aspect from the local community will lead to huge management savings besides improving greatly the health of the surrounding ecosystem and related opportunities. Additionally, it is also believed that support of the community can be won if issues related to how their positive interaction with the ecosystem and the existing management mechanism is going to benefit them both directly and indirectly are made clear and are seen to be the case. These issues need to be discussed and fully appreciated by all concerned.

One case that clearly demonstrates this aspect was witnessed in some of Kenya's MPAs especially in Mombasa and Diani MPAs where despite the management of these protected areas being successful for the protection of resource abundance and biodiversity, there was low appreciation of the same from the resource users and local community. Investigations on why this was the case revealed failure in the existing management to understand the perceptions and expectations of the local stakeholders in addition to poor or infrequent communications between the two sides.⁷⁴ It is therefore evident that an active approach in interacting, developing trust and educating the local stakeholders would have yielded better results.

In sum, it is clear that community-based approach to the stewardship of coastal and ocean ecosystems and resources is a viable alternative to State management. If properly implemented, it may lead to many benefits such as more equitable distribution of power and economic well being, reduced conflicts, increased consideration of traditional and modern environmental knowledge, protection of biological diversity, and sustainable utilization of available resources. However, it is of essence to point out that successful implementation of this approach requires a legal and policy framework that empowers local communities and their institutions responsibility and authority to discharge their duties besides defining how the accruing benefits are going to be shared. The approach should also prioritize the

⁷⁴ See McClanahan, T. *et al* (2004). Factors influencing resource users and managers' perceptions towards marine protected area management in Kenya. Online http://journals.cambridge.org/download.php? (29 August 2007)
livelihood needs of local communities and provide them with more appealing incentives to conserve and utilize natural resources sustainably for the benefit of all.

1.3 Integrated ocean policy framework

In order to appreciate the significance and scope of an integrated ocean policy, it is important to understand the concept in broader terms, the stages it goes through, and lessons that can be learnt from other efforts elsewhere in the world in its formulation and implementation.

An ocean policy has been defined as:

A framework to manage uses and resources within jurisdictional waters, as well as compliance with international commitments, aiming at sustainable (and equitable) development of oceans.⁷⁵

While pursuing the development of a national oceans policy, it has been stated that the directive must come from the highest level of Government and that the effort must be coordinated across all relevant agencies.⁷⁶ Other interested stakeholders including the public, environmentalists and many others must be involved in some way in order to maintain their support to facilitate policy implementation and compliance.

It is worth acknowledging the fact that problems, which necessitate the formulation of an ocean policy, cannot be solved without both horizontal coordination across national agencies and vertical coordination between different levels of Government, from national to municipal.⁷⁷ However, this coordination is a complex concept ranging from harmonization of policies across agencies with an emphasis on negotiation, consensus, and other bottom-up techniques to centralized authority systems with top-down chains of command dictating formulation and implementation of policy. This aspect therefore requires a lot of dedication and commitment from all the actors involved if it is to be achieved.

⁷⁵ See Noronha, I.T. (2005) in National Ocean Policies: Learning lessons from overseas policy experiences. Online <www.europedelamer.org/pdf/fr_23.pdf> (03 August 2007).

⁷⁶ See Miles, E. L. (1999), note 14 at 7.

⁷⁷ Ibid.

1.3.1 Stages in the development of a national ocean policy

Three broad stages have been identified in the process of developing and implementing a national ocean policy.⁷⁸

- Preparatory stage. This involves informal processes in order to prepare the nation in the formal development of an integrated national ocean policy. Definition of the vision and values through consultations with the public and other stakeholders are important at this early stage.
- ii) **Formulation stage**. It occurs when consultations with the relevant stakeholders have been done and a well-defined formal process is underway to develop an integrated national ocean policy. Identification of the tools, policies, legal and institutional frameworks necessary to achieve the vision of the policy should be done here.
- iii) **Implementation stage.** This takes place when the ocean policy has already been enacted and is already being implemented. Creation of the tools, legal and institutional frameworks identified in the preceding stage as necessary to achieve the vision are done here.

For the resultant policy framework to be successfully implemented, it should take on board and reflect a wide range of perspectives of all the stakeholders at all levels and at all stages.

1.3.2 Lessons from other experts and case studies in the formulation of a national ocean policy

While preparing an integrated national ocean policy, it may be important to consider what other countries, academicians and experts in the field have done. From the Ocean Policy summit,⁷⁹ Biliana Cicin-Sain provided useful insights in the process of development and implementation of an integrated ocean policy.

⁷⁸ See Biliana Cicin-Sain (2005) in 'The Ocean Policy Summit (TOPS): Conference Introduction'. Online, <www.globaloceans.org/tops2005/pdf/BilianaCicinSain-1.pdf> (07 July 2007); see also the example of New Zealand in 'Towards an oceans policy for New Zealand,' note 11 at 11.

⁷⁹ The Ocean Policy Summit took place in Lisbon, Portugal from 11-13 October 2005. The event brought together 218 participants from 53 countries, with governments, regional organizations, UN agencies, academia, Non-Governmental Organizations and industry represented. It was organized by the International Ocean Governance Network with support from more than 9 other bodies. The theme of the summit was "Integrated Ocean Policy: National and Regional Experiences, Prospects and Emerging Practices." A summary report of the proceedings titled 'The Ocean Policy Summit 2005 Bulletin: A summary report of The Ocean Policy Summit

She noted that:

- Case studies from various countries revealed country policies that are integrated and multifaceted, and take into account sustainable development, ecosystem protection, social advancement and, in most cases, maritime security.
- Most approaches seek to harmonise rather than replace sectoral policies.
- It is important to assess the reasons or catalysts for the development of national ocean policy. These reasons must be clearly articulated if the intended objectives are to be achieved.
- Successful policies generally require executive, legislative and interest group support, as well as industry acceptance.
- There is a congruence in national ocean policy principles being adopted by different countries.
- There is need for transparency, public involvement, incentives for joint action, and a national oceans office with clearly articulated responsibilities and a separate budget.
- The need for linkages between governance of maritime Exclusive Economic Zone (EEZ), coastal management, and fresh water issues, and the need for adaptive policies that evolve in light of monitoring and regular reviews.
- In the initial stages of the policy formulation, it is important to fully engage sectorspecific departments and agencies

Other useful lessons can be drawn from a meeting of the Research Task Force on National Ocean Policies,⁸⁰ which observed that nations should consider looking at marine and coastal problems at the national level from a functional perspective instead of jurisdictional. The meeting also noted the importance of ensuring that the institution(s) designated to implement the policy have the capacity to do it.

⁽TOPS)' can be found at <www.globaloceans.org/tops2005/pdf/TOPS2005ENBSummaryReport.pdf >. Biliana Cicin-Sain was the Co-Chair of the summit.

⁸⁰ The meeting of the Research Task Force on National Ocean Policies was held in New York on June 12, 2004. The purpose of the meeting was to analyze emerging patterns of national ocean policies, share experiences, draw lessons, and develop guidance on 'best practices.' See online

<www.globaloceans.org/nippon/pdf/ReportNOPTaskForceNYMeeting.pdf> (09 July 2007).

1.4 From MPA and ICZM to national ocean policy for Kenya

Although it has been put forth that the management of MPAs has traditionally been done separately from the governance of the larger ocean and coastal areas in which they are embedded,⁸¹ Kenya's case study has shown a situation in which an ICZM program has been superimposed and worked concurrently with an existing MPA. Among other actions addressing sectoral aspects including the protection of critical habitats, the ICZM programme has provided measures in support of the MPA, such as the installation of mooring buoys to avoid anchoring on coral reefs.⁸² The connection between the MPA and the ICZM programmes is apparent in the policy to enhance inter-sectoral communication and co-ordination to address, in an integrated manner, the various issues at stake in the coastal zone.

In addition, the programmes, along the Nyali-Bamburi-Shanzu pilot area, provide important lessons on significance of effective co-ordination and collaboration amongst the various stakeholders. They help define needs for national policy development and coordination. It is therefore evident from both MPA and the ICZM initiatives that a national integrated ocean policy is urgently needed as an overarching framework to guide the general management of the coastal and marine areas in a more holistic manner.

1.5 Summary

This chapter has discussed the concept of ocean governance by outlining several important international, regional and national legal instruments and programmes that are instrumental in the management of coastal and ocean regimes. Of great significance in this regard is UNCLOS which defines the rights and responsibilities of States in the use of the oceans resources and spaces. Similarly, the outcome of UNCED and in particular the Rio Declaration on Environment and Development, the Convention on Biological Diversity and Agenda 21 have been hailed for their significant contribution in guiding States on issues related to ocean governance. Chapter 17 of Agenda 21 also captures the critical issues in as far as sustainable development and integrated management of coastal and ocean areas and the related resources is concerned.

The main elements constituting ocean governance framework which include legal, institutional and levels of implementation, have also been considered in this chapter

⁸¹ See Ehler, C.N., (2005). 'Integrating management of marine protected areas with coastal and ocean governance: Principles and practices'. *Ocean & Coastal Management 48 (2005) 843–846.*

⁸² *Ibid*.

alongside two key marine related programmes in Kenya because of their significance and contribution in this front. These are the MPA's and ICZM initiatives.

From this chapter, it can be deduced that the problems, resources and uses of ocean space are all interrelated and need a more holistic approach in their management, achievable through the formulation and implementation of an integrated ocean management policy. This is discussed in details in chapter two with respect to Kenya's case.

CHAPTER TWO: OCEAN POLICY FORMULATION PROCESS IN KENYA

Kenya, like any other coastal State, faces a myriad of environmental challenges and impacts due to rapid development and socio-economic activities in its coastal and marine areas. These activities are mostly associated with industry, tourism, agriculture, fishing and more recently oil exploration in the offshore area. While these activities are going on, there is no overarching legal and institutional framework to guide them comprehensively, thus the many challenges and pressures being faced by the users, the existing institutional arrangement and the associated ecosystems.

In order to address the above scenario, the Kenya Government constituted and subsequently gazetted a national Task Force $(TF)^{83}$ to formulate an integrated ocean management policy including institutional framework, to guide the use and management of the ocean space and resources within it among other wide terms of reference.⁸⁴

As part of the initial activities, the TF conducted visits to various Government ministries, departments and State corporations and other important stakeholder institutions dealing with coastal and marine related issues to establish facts on policy, legal and economic aspects of the ocean. The findings revealed that the issues of concern were more or less the same across the board and this indicated some congruence in the way maritime affairs have all along been conducted by most of the institutions. In summary, the findings of the visits call for an urgent formulation and implementation of the integrated ocean policy framework that will harmonise the various sectoral legislations and institutional arrangement currently in place.

The following are highlights of the findings, which form a basis for immediate development and implementation of a national ocean policy.

⁸³ The Task Force (TF) on Delineation of Kenya's Outer Continental Shelf was gazetted on 24 May 2006 vide Gazette Notice No. 3929 by the Minister of State for Provincial Administration and Internal Security. Its membership is drawn from the lead Government ministries and departments, State corporations and the private sector dealing with ocean related issues. The TF reports to a steering committee of Permanent Secretaries (Government accounting officers) that is chaired by the Head of Public Service.

⁸⁴ Other terms of reference include to explore and recommend modalities for delineation of the country's outer continental shelf according to the provisions of Article 76 of the UNCLOS; examine and review laws relating to the sustainable utilization of resources within the maritime zones of Kenya and examine and make recommendations on the modalities for sustainable utilization of these resources including development of appropriate infrastructure, financial mechanisms and institutional framework.

2.1 Legal issues

- Most institutions have an enabling law that mandates them to carry out their specific functions. However, most of these laws are old and archaic as they were developed during the colonial era,⁸⁵ except for Environment Management and Coordination Act of 1999 which is more comprehensive and responsive to recent environmental challenges facing the country.
- While most of the laws address the need to conserve and develop the resources of the coastal and marine areas, they do not clearly address the management that sustains the resources for posterity. The laws are also silent on other important players like the local communities in the associated areas.
- The existing laws were not founded on any clear vision or policy and therefore have been used to enhance narrow interests rather than national interests.
- The existing laws on the coastal environment lack requisite regulations to enhance effective and coordinated implementation.
- The laws dealing with ocean management do not address new concepts of ocean management. They fail to address linkages and coordination amongst the various stakeholders in the ocean.
- Proper domestication of international and regional treaties that enhances good ocean management and governance is lacking.

2.2 Policy issues

- There is no comprehensive policy on ocean governance.
- None of the sectors has a responsive and enabling policy. Currently some sectors such as mining, the fisheries, the KWS have developed policy documents that are still awaiting approval by the Cabinet and Parliament. These policies have incorporated important components such as the vision and objectives unlike in the past.

⁸⁵ Of particular concern are laws related to the maritime industry and include the Merchant Shipping Act (Cap 389); the Marine Insurance Act (Cap 390); the Carriage of Goods by Sea Act (Cap 392); the Water Act (Cap 372); the Lakes and Rivers Act (Cap 409) and the Ferries Act (Cap 410).

- The existing policies are sectoral and do not enhance full utilization of ocean resources and other opportunities presented by the ocean frontier. They have resulted to duplication of efforts leading to inefficiency, conflicts and wastage of resources.
- The policies do not encourage involvement of local communities on protection and conservation of marine environment.

2.3 Socio-economic issues

- The development activities taking place are more often sector specific without addressing the interrelationship with other players.
- Most development initiatives do not address socio-economic issues adequately and to the expected standards.
- There is lack of focus and full understanding on the coastal and ocean resources and associated opportunities and their potential contribution to the economy.
- There is lack of capacity to do research for development especially with regard to well equipped marine vessels that can carry out critical offshore surveys especially those within the EEZ.
- There is lack of capacity and equipment (vessels) to conduct effective surveillance especially beyond the territorial waters to protect and stop any illegal activities that may not only threaten the security of the country, but also exploit the resources within it illegally. Currently, the Kenya Navy does the surveillance but only as a secondary role thus is quite ineffective.
- There is limited funding provided to ocean management issues.
- There is no proper and comprehensive data from Kenya's Central Bureau of Statistics (CBS) on ocean resource contribution to Gross Domestic Product (GDP) of the country.

2.4 Background information on Kenya

Kenya is located on the Eastern African Coast between latitudes 5° 40' north and 4° 04' south and between longitudes 33° 50' and 41°45' east (Figure 4).⁸⁶ The country is bordered by Tanzania to the south; Uganda to the west; Sudan and Ethiopia to the north; and Somalia and the Indian Ocean to the east. Kenya's total area is 582,646 km² (land covers 571,416 km²) while the coastline is 536 km.⁸⁷ The total population is estimated at 33,400,000 (2005 estimates) and is growing at a rate of 1.8% per annum.⁸⁸ The Economic Survey 2007 has revealed that Real GDP expanded by 6.1 per cent in 2006 and is continuing to grow at an impressive rate.⁸⁹

Kenya is a sovereign Republic State as recognised by the constitution introduced at independence on 12 December 1963 and is headed by a democratically elected president. Administratively, the country is divided into eight provinces: Central, Coast, Eastern, Nyanza, Rift Valley, Nairobi, North Eastern and Western. All the provinces are divided into Districts, which are in turn divided into smaller administrative levels. All these levels are referred to as the provincial administration and have been used by the central Government to implement policies and directives since independence. The districts in coast province are Kilifi, Kwale, Malindi, Lamu, Tana River, Taita Taveta and the newly created Msambweni. Nairobi is the capital city while Mombasa is the main seaport.

⁸⁶ See Odido, M. (1998). Marine Science Country Profiles report: Kenya. Intergovernmental Oceanographic Commission & Western Indian Ocean Marine Science Association.Report IOCINCWIO-IV/Inf. 5 p4.

⁸⁷ See Kenya's Central Bureau of Statistics Report: Facts and Figures 2006 Edition. Online <www.cbs.go.ke/downloads/pdf/Kenyafacts2006.pdf> (11 July 2007).

⁸⁸ Ibid.

⁸⁹ See Kenya Central Bureau of Statistics. Online <www.cbs.go.ke/> (11 July 2007).



Figure 4 Map of Kenya

(Source: <www.nema.go.ke/FACTS.ASP>)

2.4.1 Kenya's coastal environment, geology and climate

Kenya's coastline running in a southwesterly direction from the Somali border in the north at 1^0 41'S to 4^0 40' S at the border with Tanzania, is dominated by coral reefs, sea grass beds and mangroves with large expanses of sandy substrates where river inputs from Kenya's two largest rivers, the Tana and Athi prevent the growth of coral reefs.⁹⁰ The northern part of the coast is seasonally influenced by upwelling waters of the Somali current, resulting in lower water temperatures for a good part of the year.⁹¹

⁹⁰ See Obura, D.O. (2001), note 45.

⁹¹ Ibid.

The coastal area can be differentiated into two broad but distinct geomorphological regions. The southern half (from the Tanzanian border to Malindi), consists of tiers of Pleistocene limestone that form low coastal cliff terraces and reefs below sea level. These formations are characterised by coastal plains of up to 20km wide, with hills in the hinterland reaching maximum heights south of Mombasa, where the Shimba Hills reach an altitude of around 1,000m above sea level.⁹² These hills block inland rivers from delivering sediment and freshwater to the coast.

The northern half (from Malindi to the Somali border) lacks inland hills and is drained by the two largest rivers in Kenya, the Tana and Athi.⁹³ Here, the rocky reef terraces give way to broad sedimentary plains, long stretches of sandy beaches and dunes, and a predominantly soft marine substrate. Marine beaches and dunes which occur along northern coastal areas are usually characterized by bare sand dunes. Often they are only lightly vegetated by highly specialized colonizing plants, but at times the woody vegetation cover can be relatively heavy at 70%. There are an estimated 27,000ha of beach and dune lands in Kenya.⁹⁴

The coastline generally lies in a semiarid region and its climate is influenced by two seasonal wind regimes called monsoons.⁹⁵ The major monsoon season is the south-east monsoon, which lasts from April to October and its winds bring in the highest rainfall (55 to 272 mm) and lower temperature ranges of 20-31°C. The shorter north-east monsoon lasts from November to March and the season is characteristically drier (8-84 mm of rainfall) and hotter temperature ranges of 23-32°C. The hydrographic conditions of the ocean are also under the influence of the monsoons.⁹⁶

2.4.2 Kenya's marine jurisdiction

Kenya claims a number of maritime zones in accordance with the laid down provisions of UNCLOS, which provides the basic legal framework for oceans management and sets out the principles and norms that apply to States parties.⁹⁷ The outer limits of all these zones are

⁹² See UNEP (1998), note 49.

⁹³ Ibid.

⁹⁴ Ibid.

⁹⁵ See Okemwa, E.N. et al. (1997) and UNEP (1998).

⁹⁶ Ibid.

⁹⁷ Kenya is a state Party to UNCLOS after ratifying it on 02 March, 1989.

measured from the territorial sea baseline,⁹⁸ located at the low-water line along the coast. The zones include:

• A Territorial Sea area.⁹⁹

The territorial sea extends up to 12 nautical miles (M), measured from the baseline. Kenya does not need to proclaim this area as its sovereignty extends to the territorial sea as an inherent part of its territory. This zone includes sea; air space; bed; and subsoil. While the country has full sovereignty over its territorial sea, ships of all States, however, enjoy the right of innocent passage.

• A Contiguous Zone.¹⁰⁰

The contiguous zone extends from the outer limit of the territorial sea to up to 24 M, measured from the baseline. The country must proclaim the zone which includes the sea and seabed as it has not done so.¹⁰¹ The country may however exercise the control necessary to: prevent infringement of its customs, fiscal, immigration or sanitary laws and regulations within its territory or territorial sea; punish infringement of the above laws and regulations committed within its territory or territorial sea; control traffic in archaeological and historical objects found at sea; and punish unauthorized removal of such objects from the contiguous zone's seabed.

• Exclusive Economic Zone.¹⁰²

The EEZ extends from the outer limit of the territorial sea to up to 200 M, measured from the baseline. Kenya has already proclaimed it and its area is approximately 142,000 km². This zone includes the sea, seabed, and subsoil. The country enjoys the sovereign rights for the purpose of exploring and exploiting, conserving and managing natural resources (living or non living), and with regard to other economic activities (e.g., production of energy from

⁹⁸ Baselines in international law serve the purpose of defining the limit between internal waters and the territorial sea. Various international law principles are used in determining the baseline. See Articles 5 and 7 of section 2 of UNCLOS. Kenya established straight baselines for the measurement of all the maritime zones.

⁹⁹ See section 2 of part II of UNCLOS. See also the DOALOS Training Manual for delineation of the outer limits of the continental shelf beyond 200 nautical miles, for preparation of submissions to the Commission on the Limits of the Continental Shelf (CLCS) p I-6.

¹⁰⁰ See Article 33 of section 4 of UNCLOS.

¹⁰¹ See table of claims to maritime jurisdiction (as at 29 December 2006) online
<www.un.org/Depts/los/LEGISLATIONANDTREATIES/PDFFILES/claims_2005.pdf> (16 July 2007)

¹⁰² See part V of UNCLOS, divided into 20 Articles. See also the DOALOS Training manual, note 99 at I-8.

water, currents and winds); jurisdiction with regard to the establishment and use of artificial islands, installations and structures; marine scientific research; and protection and preservation of marine environment; and other rights and duties provided for in part V of UNCLOS.

• The Continental Shelf

This is the area between 12 M and 200 M seaward of the territorial sea baseline (it covers much of the same area as the EEZ) and any areas of physical continental shelf beyond 200 nautical miles. The country has the right to explore and exploit the living and non-living resources of the shelf.

With regard to the delineation of the extended continental shelf, Kenya is currently at an advanced stage in the process and is looking forward to making a submission to the Commission on Limits of the Continental Shelf (CLCS) before the set deadline of May 2009. Thereafter, the country shall exercise her sovereign rights over the area for purposes of exploring and exploiting the natural resources within it. ¹⁰³.

The maritime zones over which Kenya claims national jurisdiction are defined in the following legislation:

- The Territorial Waters Act of 16 May 1972.
- The Maritime Zones Act (Cap 371) of 1989.
- Presidential Proclamation of 22 July 2005.

Kenya and Tanzania have agreed to a maritime boundary at latitude 4°40'52" S and longitude 39°36'18" E for the territorial waters.¹⁰⁴

¹⁰³ Exploration and exploitation of Natural resources is stipulated in Article. 77 of UNCLOS. The natural resources referred to in this Article consist of the mineral and other non-living resources of the seabed and subsoil together with living organisms belonging to sedentary species. That is to say, organisms which, at the harvestable stage, either are immobile on or under the seabed or are unable to move except in constant physical contact with the seabed or the subsoil.

¹⁰⁴ The Maritime Boundary agreement was reached through exchange of notes between the two countries. It entered into force on 9 July, 1976. See Office of the Geographer, Bureau of Intelligence and Research, USA (1981). Maritime Boundary: Kenya–Tanzania. Limits in the sea report. Report No. 92, p6. Online <www.state.gov/documents/organization/58819.pdf> (16 July 2007).

2.4.3 Status of utilization of coastal and marine resources and other related opportunities

Kenya's coastal and marine environments provide numerous opportunities for commercial/economic, social and scientific research. These include *inter alia* tourism, fishing, aquaculture, mineral exploration and production, transportation and recreational activities. A summary of the major coastal and ocean uses and issues is contained in **Annex 1**.

The coastal area contains both terrestrial and aquatic habitats, which comprise unique ecosystems that support a rich biological diversity and valuable assortment of natural resources. Such habitats include estuarine areas, coral reefs, mangrove forests and other wetlands, tidal flats and sea grass beds.¹⁰⁵ These ecosystems do provide important feeding and shelter areas for a large variety of marine biota. It is estimated that the country's coastline has 53,000 ha of mangroves occurring mostly in creeks, bays and estuaries.¹⁰⁶ The mangroves are most significantly used for their wood, both commercially and at the subsistence level.

The various coastal resources, among others, provide food, construction material, a variety of recreational, aesthetic and spiritual values as well as significant employment.¹⁰⁷ In addition, owing to its illustrious history as an important trade route, there are a number of important sites of historic, cultural and archaeological significance along the coastline. It is estimated that 70 significant historical sites and monuments exist along the coast, out of which 58 have been designated as national monuments and reserves.¹⁰⁸ These historical sites and monuments include isolated ruins of houses, mosques, tombs and townships.

¹⁰⁵ See Twong'o, T.K and Sikoyo, M.G on "Status of the Resources of Coastal aquatic ecosystems of Kenya and Tanzania." Online

<www.acts.or.ke/pubs/books/docs/TBNRM%20%20Status%20and%20Trends%20Chpt5.pdf> (16 July 2007).

¹⁰⁶ See Doute, R. N., Ochanda, N. and Epp, H., A forest inventory of Kenya using remote sensing techniques. Kenya Rangeland Ecological Monitoring Unit Technical Report series No. 30, Nairobi, 1981.

¹⁰⁷ See UNEP (1995). The Eastern Africa coastal Resource maps: A newsletter of the Eastern African Coastal and Marine Environment Resources Database and Atlas Project (EAF/14), Vol. 1.

¹⁰⁸ See Coast Development Authority (CDA) *et al.* (1996). Towards Integrated Management and Sustainable Development of Kenya's Coast: Findings and Recommendations for an Action Strategy in the Nyali-Bamburi-Shanzu area. *A report prepared within the framework of the action plan for the protection and management of marine and coastal areas in the Eastern African Region.* p1

The Kenya coast has also been recognised as an important centre for national and regional trade, particularly through the port of Mombasa which serves the eastern Africa region.

2.4.3.1 Socio-Economic Environment

The presence of the various resources and opportunities in the coastal and marine areas has continued to support an expansion of socio-economic opportunities through various enterprises. The major economic activities that generate significant income and employment opportunities have been identified to include tourism, maritime transport, agricultural and non-agricultural based industries, fisheries, aquaculture, forestry and mining.¹⁰⁹

a) Fisheries

Kenya's waters support diverse fish populations, with an estimated 728 species of marine fish believed to be present.¹¹⁰ Two thirds of these species are associated with the coastal reef systems, which extend parallel to the coast, while 59 species are associated with deep-water and 67 species associated with pelagic waters.¹¹¹

i) Commercial Fisheries

Several factors including a narrow continental shelf, strong southeast monsoon currents, increased numbers of sea urchins, increased turf algae cover and lowered coral cover combine to constrain the coastal and marine fisheries in Kenya.¹¹² It is estimated that annual marine fisheries potential in the country is 150,000 metric tonnes. However, current production averages only 7000 tonnes, which is about 5% of the total annual fisheries landings.¹¹³ The majority of the marine catch (approximately 80%) is derived from coral reef and continental shelf, while only 20% are from pelagic and deep-sea areas.¹¹⁴

¹⁰⁹ See Okemwa, E.N. *et al* (1997), note 62.

¹¹⁰ See Fishbase (2003). List created on 21 October 2003. Online

<www.fishbase.org/Country/CountryResultList.cfm?requesttimeout=9999&Country=404&group=marine&CFI D=1275049&CFTOKEN=38210212#CountryFishList> (16 July 2007).

¹¹¹ *Ibid*.

¹¹² See RPS Bowman Bishaw Gorham (2006). 'Kenya offshore exploration drilling blocks L5 and L7: Project report'. Report prepared for Woodside energy (K) Pty. Report No: M05071 (REV 1) p41; see also FAO (2001). Information on Fisheries Management in the Republic of Kenya. Online <www.fao.org/fi/fcp/en/ken/body.htm> (17 July 2007).

¹¹³ See UNEP (1998); Obura (2001) and Johnson Kariuki (2005) in 'Review of the State of World Marine Capture Fisheries Management: Indian Ocean,' *FAO Technical Paper 489*. Online </br><www.globefish.org/files/tp_489_kenya_335.pdf> (19 July 2007).

¹¹⁴ See Obura D.O (2001), note 45.

ii) Offshore Industrial Fisheries

There are over sixty vessels from thirteen countries licensed to fish offshore Kenyan waters using longline and purse stine gear. The target fish are billfish and various tuna species.¹¹⁵ Data from the Indian Ocean Tuna Commission (IOTC)¹¹⁶ for 1999-2003 indicate that the major countries using purse seine gear off the Kenyan coast are Spain, France and the Seychelles, with tuna catches of 58,860 tonnes, 39,465 tonnes, and 20,479 tonnes respectively.

The same data reveals that the major countries using longline gear off the Kenyan coast were Japan, Taiwan and Korea with catches of tuna and billfish accumulating 763 tonnes, 494 tonnes and 260 tonnes respectively. As the country's offshore is located within one of the richest tuna belts in the Indian Ocean, revenue from this area is set to increase once the Government concludes the fisheries policy and subsequent fisheries master plan, which will form the roadmap for the management, development and investment in the sector besides reviewing the current rates charged on the above mentioned fishing vessels which stand at USD 1400 per vessel per annum.

iii) Traditional Fishing

There are an estimated 4,000 artisanal fishing crafts in Kenya's marine waters.¹¹⁷ Most artisanal fishing is conducted using low-technology craft such as dugout canoes, outriggers, dhows, cataracts and planked pirogues and as a result, traditional fishing is largely constrained to areas within 20km of the coastline.¹¹⁸

b) Tourism

Tourism contributes significantly to the country's economy besides the many employment opportunities it is continuing to create. The coastal area continues to attract growing number of visitors because of the marine parks and reserves, the white sandy beaches, historical

¹¹⁵ The tuna species include black marlin, striped marlin, swordfish, billfish, spearfish, sailfish, yellowfin tuna, bluefin tuna, big-eye tuna, skipjack tuna, albacore tuna and frigate/bullet tuna.

¹¹⁶ The Indian Ocean Tuna Commission (IOTC) is an intergovernmental organization established under Article XIV of the FAO constitution. It is mandated to manage tuna and tuna-like species in the Indian Ocean and adjacent seas. Its objective is to promote cooperation among its Members with a view to ensuring, through appropriate management, the conservation and optimum utilisation of stocks and encouraging sustainable development of fisheries based on such stocks. See IOTC online, <www.iotc.org/English/index.php> (16 July 2007).

¹¹⁷ See UNEP (1998), note 49.

¹¹⁸ *Ibid*.

monuments, contemporary culture and the warm climate.¹¹⁹ It is estimated that 47% of tourism activity in the country occurs here and 95% of visitors to Kenya use the coast as a base for inland tours.¹²⁰

The sector contributes up to 45% of foreign exchange earnings in the country thus making it one of the leading earners of foreign exchange.¹²¹ Current statistics indicate that tourism earnings expanded by 14.9% from USD 698 million in 2005 to USD 803 million in 2006, while international arrivals grew by 6.7 per cent from 1.5 million in 2005 to 1.6 million in 2006.¹²²

c) Minerals, energy resources and other opportunities

The coastal and marine areas have great potential for both living and non-living resources and opportunities. Some of these resources have already been exploited while others are yet to be explored and harnessed. These include bulk materials, sand and gravel for construction, geological and mineral resources in the ocean floor and subsoil (phosphate, manganese nodules and gas hydrates) and genetic resources. The opportunities include underwater archaeology, scientific and technological research, desalination plants and military exercises.

i) Titanium deposits

Titanium deposits discovered in 1995 along the Kenya's coast are recognized to be among the biggest unexploited deposits in the world. These deposits valued at approximately US\$132 million are found in five major titanium sites with 650 million tonnes at Mambrui, 1.2 billion tonnes at Sokoke and in Kwale where the total resource tonnage is around 200 million of mineralised sands while the ore reserves are closer to 140 million tonnes that can be economically mined.¹²³ Large quantities have also been discovered in Sabaki and Mombasa areas. All these deposits are thought to represent about 10% of known resources of titanium minerals in the world.¹²⁴

¹¹⁹ See Kenya Wildlife Service (2007). Marine National Parks and Reserves. Online <www.kws.org/marine.html> (05 September 2007).

¹²⁰ *Ibid*.

¹²¹ See Tourism Trust Fund (2007). Study on Tourism Economic Impact Analysis. Online <www.ttfkenya.org/node/267> (20 July 2007).

¹²² See Kenya's Economic Survey 2007. Online <www.cbs.go.ke/downloads/pdf/ES2007.pdf?> (20 July 2007).

¹²³ See Tiomin Resources Inc. (2005). Is it trillions, billions or millions? The Kwale Mineral Sands Project. Online<www.tiomin.com/s/Articles.asp?ReportID=20427&_Type=Articles-and-Comments&_Title=Is-it-trillions-billions-or-millions> (23 July 2007).

¹²⁴ Ibid.

ii) Limestone deposits

Limestone deposits are extensive and abundant along the coastal zone from the Tanzania border to the Malindi area forming a 4-8km wide band and approximately 70m thick, running parallel to the coast.¹²⁵ The exploitation of the limestone is widespread and is governed by local variation in the limestone texture, composition and demand for the material. In the Bamburi area north of Mombasa, it is used for cement manufacture while in Tiwi; it is used for lime manufacture.¹²⁶ However, all along the coast limestone is being exploited for building stone.

iii) Salt

Salt is regarded as the most widespread mineral in Eastern Africa and its recovery from the sea is a comparatively simple process because of the favourable environmental conditions and suitable impermeable soils. Along the coast, the total area dedicated to salt production is over 5,000 hectares and yields an average of over 170,000 tonnes annually.¹²⁷

iv) Other minerals

Several other minerals being extracted along the coast include iron ore from Jaribuni area, lead from Kinongoni, baryte from Vitengeni, pyrochlore from Mrima hills and gypsum from Roka and Tula valley.¹²⁸

v) Hydrocarbons (Oil and gas)

Lamu Basin with an aerial extent of 169,121km² covers both the onshore and offshore areas of the Kenya coast and has sediment thickness ranging from 3km (onshore) to 13km (offshore). Although there is no existing oil or gas production in the basin, the 16 exploration wells drilled so far have yielded promising results characterised by several oil and gas shows.¹²⁹

¹²⁵ See UNEP (1988), note 49.

¹²⁶ *Ibid*.

¹²⁷ *Ibid.*

¹²⁸ See Odido, M. (1998), note 86 at 20.

¹²⁹ See National Oil Corporation of Kenya. Upstream petroleum exploration opportunities–Lamu Basin. Online <www.nockenya.co.ke/> (21 July 2007).

The relative importance of the major economic activities in income generation is shown in **figure 5** below.



Figure 5 Major economic activities in the entire Kenyan coastline

(Source: Modified from Okemwa, E.N et al, 1997)

2.4.3.2 Social values and cultural heritage

Besides the aforementioned economic activities, there are many other non-economic yet important social activities that take place in the marine environment whose value is not easy to quantify. Use of the coastal environment and its rich cultural heritage sites¹³⁰ for personal, social and emotional needs is an important aspect that should be considered in the policy strategy. Cultural heritage refers to legacy of physical artefacts and intangible attributes of a group or society that are inherited from the past generation, maintained in the present and preserved for the benefit of the future generation. It is argued that our cultural and natural heritage are both irreplaceable sources of life and inspiration.¹³¹

Physical or 'tangible cultural heritage' considered worthy for preservation for the future are recognised to include among others buildings, historic places, artefacts and

¹³⁰ As defined by UNESCO World Heritage Convention (WHC), sites refer to works of man or the combined works of nature and man, and areas including archaeological sites which are of outstanding universal value from the historical, aesthetic, ethnological or anthropological point of view. See WHC online <http://whc.unesco.org/archive/convention-en.pdf> (14 February 2008)

¹³¹ See UNESCO: World heritage, online <http://whc.unesco.org/> (14 February 2008)

monuments.¹³² In Kenya's coast some of the archaeological and heritage sites of great significance include the UNESCO world heritage site of Lamu old town, which is the oldest and best-preserved Swahili settlement in East Africa, the Mombasa's old town, Fort Jesus and the Gedi ruins near Malindi, gazetted as a monument in 1927 but is now a National Museum. The unique and striking architectural designs of these sites are believed to be the result of diverse influences over the ages.

On the other hand, 'intangible cultural heritage' refers to the practices, representations, expressions, knowledge, skills as well as the instruments, objects, artifacts and cultural spaces associated therewith that communities, groups and, in some cases, individuals recognize as part of their cultural heritage.¹³³ Although this form of heritage is hard to preserve, it is constantly being recreated by communities and groups, in response to their environment, their interaction with nature, and their history. Additionally, because it provides communities and groups with a sense of identity and continuity besides promoting respect for cultural diversity and human creativity, it is notable that this aspect as associated with the tangible cultural heritage provides an opportunity for co-management practices with the local communities' thus promoting preservation and sustainable development of the related resource.

In sum, it is heartening that National Museums of Kenya has taken a leading role in the conservation of coastal heritage by joining hands with the local community in this aspect especially in Lamu and Mombasa, which host most of the 'tangible cultural heritage'. This has been possible through among other things, rigorous education campaigns, public participation and joint participation programmes such as the Swahili Cultural Centre that strives to revive and develop the dying traditional crafts of the coastal Swahili people. In all these, it has been acknowledged that the Ministry of education has played a key role of the

¹³² The UNESCO World Heritage Convention defines monuments as architectural works, works of monumental sculpture and painting, elements or structures of an archaeological nature, inscriptions, cave dwellings and combinations of features, which are of outstanding universal value from the point of view of history, art or science.

¹³³ See Article 2 of the Convention for the Safeguarding of the Intangible Cultural Heritage, online <<u>http://unesdoc.unesco.org/images/0013/001325/132540e.pdf</u>> (14 February 2008)

organisation to inform and educate the public and ensure that information on conservation is passed on and the community so that they can carry out these activities as their own.¹³⁴

Additionally, although the National Museums of Kenya is the statutory body empowered by the National Museums Act chapter 216 and the Antiquities and Monuments Act chapter 215 of the laws of Kenya to oversee all cultural heritage sites in Kenya, it is important that the State ratifies the Convention on the Protection of World Cultural and Natural Heritage which requires that States parties ensure that effective and active measures are taken for the protection, conservation and presentation of the cultural and natural heritage situated on its territory.

Some of the key benefits of ratifying this Convention and having sites inscribed on World Heritage List include the access of World Heritage fund meant to assist States Parties in identifying, preserving and promoting World Heritage sites especially those in developing countries, elaboration and implementation of comprehensive management plans that set out adequate preservation measures and monitoring mechanisms of the sites, increase in public awareness of the site and of its outstanding values, thus by extension increasing the tourist and related activities at the site. If all these issues are well planned for and organized respecting sustainable tourism principles, they have a potential of bringing in important funds to the site and to the local economy thus uplifting living standards.

¹³⁴ See Nyangila, M.J. (2006). Museums and Community involvement: A case study of community collaborative initiatives-National Museums of Kenya. Online www.intercom.museum/documents/1-34/ (2006). Museums of Kenya. Online www.intercom.museum/documents/1-34/ (2006).

¹³⁵ See Article 5 of the convention on Protection of World Cultural and Natural Heritage, online <<u>http://whc.unesco.org/archive/convention-en.pdf</u>> (14 February 2008)

¹³⁶ For more benefits of ratification of the World Heritage Convention, see http://whc.unesco.org/en/164/ (14 February 2008)

2.5 The task of ocean policy formulation – major triggers

From the global perspective, the common catalysts that have prompted countries to embark on national ocean policy formulation and implementation process have been identified to include:¹³⁷

- Multiple-use conflicts among uses, users and agencies.
- Degradation of resources.
- Awareness of missed economic opportunities for local people.
- Encouragement from international actors.

The above reasons combined with an ever-increasing population in the coastal areas and its subsequent pressures on the coastal and marine environment are compelling reasons for the development of an integrated ocean policy.

In Kenya's case, the economic importance of the coastal and ocean space has not come without a cost. Because of the many socio-economic activities taking place in the region, its population now stands at 3,031,879 (2007 estimates) and is continuing to grow at an average rate of 2% per annum.¹³⁸ This rapid growth continues to exert more pressure on the coastal environment, its resources and the supporting infrastructure.

It is also apparent that areas, which serve the ever-increasing tourism economy and related subsectors, are threatened by unplanned development, pollution and degradation. Mangrove exploitation for fuel and construction has resulted in many mangrove forests being over-harvested beyond sustainable limits. Coral reefs are over-exploited and are in decline, particularly in areas outside the marine parks. Areas outside the influence of coastal development remain unspoiled, but are under increasing threat from expanding development and human settlement. This shift is having a significant socio-economic impact on local communities, the marine environment and the economic development of the country.

 ¹³⁷ See International Institute for Sustainable Development (IISD). A summary report of The Ocean Policy Summit (TOPS). Volume 117. No. 1, 16 October 2005. Online
 www.globaloceans.org/tops2005/pdf/TOPS2005ENBSummaryReport.pdf (21 July 2007).

¹³⁸ See Kenya's Bureau of statistics. Online <www.cbs.go.ke/#> (21 July 2007).

Furthermore, the need to:

- Harmonise the existing sectoral policies to promote appropriate uses of coastal and marine areas and resources.
- Address conflicts among coastal and marine uses, users and related institutions.
- Protect and preserve the marine ecosystem and ensure sustainable use for all generations.
- Coordinate management of ocean affairs to create synergy and effectiveness among the various actors.

Together with the issues earlier mentioned as findings of the TF after conducting visits to various institutions have all been catalysts in the initiation of integrated ocean policy process in Kenya.

2.6 Summary

This chapter has started by addressing the existing legal, policy and socio economic issues in Kenya which have clearly manifested a lot of deficiencies in addressing ocean related issues especially with respect to the emerging trends in ocean governance at the international, regional and national levels. These issues, together with a general background on Kenya, which has addressed among others, the status of the country's marine jurisdiction where the policy is intended, the status of the country's coastal and marine resources and opportunities, provide an insight on why an integrated ocean policy is required.

Also discussed, are the major triggers for the development of an integrated ocean policy at the global front that have shown a lot of congruence to those at Kenya's national level. These include degradation of coastal and ocean resources, multiple use conflicts, the need to harmonise existing sectoral policies in order to promote coordination and interlinkages among sectors and agencies and the desire to protect and preserve the marine ecosystem and encourage sustainable development in the area. All these issues form an important background to a more incisive consideration of the elements that guide ocean planning and management to be dealt with in chapter three.

CHAPTER THREE: POLICY GUIDANCE FOR OCEANS PLANNING AND MANAGEMENT

3.1 Vision statement

The development of a vision statement constitutes an integral part of the initial stages of the policy formulation process. The statement, being one of the most critical components, should take into account all the aspirations and elements of what the people want for and from the ocean's frontier. It should take cognisance of the legal and institutional arrangements, ocean resources and socio-economics, environment protection and the overriding interests of the country at large. The values, principles, and objectives of the overall policy framework are other important elements that should be reflected in the vision statement. In designing it, all the stakeholders must be involved as they are the ones who will contribute directly to its realisation.

3.2 Main values and objectives of the policy framework

Because of the strategic nature of the coastal and marine areas, the leading values and objectives must be practically ambitious, credible and appealing. They must also be based on universal principles and guidelines such as the ones recognised by international and regional conventions and agreements. In this regard, the policy should:

- Define clear goals and a coordinating mechanism for all issues related to the marine realm that will lead to fair and equitable means for balancing the competing interests in the ocean regime.
- Harmonise the various sectoral laws, management structures and the various uses of the coastal and marine areas and to provide an overarching framework for the governance of the frontier.
- Provide for open and transparent decision-making that allows for informed participation at all levels by use of quality, credible and adequate data and information.
- Catalyze and encourage increased investment in knowledge, skills, technology and research for the sake of sustainable development of coastal and maritime activities.
- Encourage increased investments in maritime security.

- Preserve the range of values held in relation to the marine environment including optimal realisation of economic benefits without compromising the quality of the environment mainly through prevention of habitat destruction, pollution, and overexploitation.
- Encourage sustainable socio-economic development activities through efficient and responsible linkages and ensuring the benefits accruing reach all actors equitably and fairly. This will at the end promote a collective sense of responsibility, patriotism and ownership.
- Encourage proper domestication of international and regional treaties and agreements related to the coastal and ocean environments in which the country is party to.

3.3 Guiding Principles

Principles are regarded as the fundamental concepts, which underlie philosophic and ethical considerations and have been argued to guide government policies, legislation or programs aimed at managing human use of the world's natural resources including oceans.¹³⁹ In this connection, a number of general principles recognised by international agreements and conventions such as the Rio Declaration, which is a set of twenty-seven principles to guide national and international actions on environment, development and social issues may be adopted.

These principles provide a broad set of norms to guide nations in the pursuit of sustainable development and the protection of the integrity of the global environment. Some of the major principles may be grouped into three categories based on their underlying concepts and issues they address.

3.3.1 Ecological protection: The principles outlined in this category require that the management responsible should recognise, understand and protect the ecosystems of the ocean, in the interests of current and future generations and other life forms. They include:

3.3.1.1 Sustainable development: This principle calls for development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs. Sustainable development recognises the interdependence of environmental, social and economic systems and promotes equality and justice through the empowerment of people

¹³⁹ See Nevill, J. (2005). Good governance of the oceans: Key resource management principles. Online <www.ids.org.au/~cnevill/marineHobartPrinciples.htm> (02 August 2007).

and a sense of global citizenship. Principle 3 of Rio Declaration calls for the fulfilment of the right to development so as to equitably meet developmental and environmental needs of present and future generations.¹⁴⁰

3.3.1.2 The Ecosystem approach: This approach was adopted at the Convention on Biological Diversity and has since been included in international documents and conventions.¹⁴¹ It requires that coastal and ocean resources should be managed to reflect the relationships among all ecosystem components, including humans and non human species and the environments in which they live. While applying this principle, it is important to define the relevant geographic management areas based on ecosystem, rather than political boundaries.

3.3.2 Good governance: The principles in this category require that management regimes include the participation of all stakeholders, and should be transparent, reliable, accountable and enforceable among other attributes.

3.3.2.1 Transparency principle. It calls for decisions to be made in an open and transparent manner, with full public involvement.

3.3.2.2 The collaboration/participation approach: It requires the participation by all major groups, including women, children, youth, indigenous peoples and their communities, NGOs, local authorities, and others in achieving sustainable development and environment protection. Principle 10 of the Rio Declaration outlines that environmental issues are best addressed with the participation of all concerned citizens and at the relevant levels. It goes further to state that each individual shall have appropriate access to information concerning the environment, hazardous materials and activities in their communities that is held by public authorities and the opportunity to participate in decision-making processes.¹⁴²

3.3.2.3 Citizenship/Stewardship: It calls for every citizen to recognize the value of the oceans and coasts by supporting appropriate policies and acting responsibly while minimizing negative environmental impacts.

¹⁴⁰ See United Nations Secretary General Report in "The United Nations Conference on Environment and Development." UN Document A/CONF.151/26 (Vol. I) of 12 August 1992. Annex I. Online <www.un.org/documents/ga/conf151/aconf15126-1annex1.htm > (31 July 2007).

¹⁴¹ See UNEP/CBD: Decisions adopted by the conference of the parties to the Convention on Biological Diversity at its fifth meeting, Nairobi, 15-26 May 2000. Document UNEP/CBD/COP/5/23 Annex III. p 103. Online <www.cbd.int/doc/decisions/COP-05-dec-en.pdf> (31 July 2007).

¹⁴² See United Nations Secretary General Report (1992), note 140.

3.3.3 Resource management: The principles outlined in this category require among other aspects, that the management takes into account the rights and responsibilities of stakeholders, the need for precautionary, equity, adaptive and polluter pays approaches in the management of the ocean frontier.

3.3.3.1 The precautionary principle/risk management approach: It elucidates that lack of scientific certainty is no reason to postpone action to avoid potentially serious or irreversible harm to the environment. Principle 15 of the Rio Declaration states that "Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation".¹⁴³ The principle calls upon states to apply it according to their capabilities.

3.3.3.2 Inter and intragenerational equity principles. The intergenerational equity approach recognises that as members of the present generation, we hold the earth in trust for future generations and therefore we should not preclude the options of future generations. Similarly, the principle of intragenerational equity refers to the obligation to take into account the needs of other users, especially in the distribution of benefits of development.¹⁴⁴

3.3.3.3 Adaptive management: This approach requires the management regime to put in place measures designed to set, measure and achieve unequivocal goals while at the same time being responsive enough to address the changing circumstances through periodic reviews to ensure effectiveness and allow incorporation of new and updated information and strategies.

3.3.3.4 Polluter pays: The principle reiterates the importance of internalizing the environmental costs of economic activities, including costs of prevention of potential harm, rather than imposing them on the society as a whole. Principle 16 of the Rio Declaration calls for national authorities to endeavour to promote the internalization of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution, with due regard to the public interest.¹⁴⁵

¹⁴³ See United Nations Secretary General Report (1992), note 140.

¹⁴⁴ See Cicin-Sain, B. and Knecht, R.W. (1998), note 54 at 53.

¹⁴⁵ See United Nations Secretary General Report (1992), note 140.

3.3.4 Principles related to the oceans and coastal areas.¹⁴⁶

Although it has been recognised that there are no internationally agreed principles that apply to oceans and coasts; eleven major principles believed to capture the essence of the uniqueness of oceans and coastal areas besides providing guidance for ocean and coastal management have been documented. These eleven principles are grouped into three main categories:

3.3.4.1 Principle based on the public nature of the Ocean.

This principle affirms the traditional public view that ocean resources are part of the public domain, not to be exclusively owned or benefited from by any one group or person.

3.3.4.2 Principles related to the biophysical nature of the coastal zone.

The principles in this category are derived from the special and unique circumstances found at the coastal area and outline the following:

- It is important to maintain land forms fronting on the water's edge (e.g., sand dunes, mangroves, and fringing coral reefs) which play a key role in combating erosion and sea-level rise and contribute to long-term sustainability.
- The significance of maintaining salt marshes, coastal wetlands, and other coastal habitats in their natural condition.
- Placing emphasis on natural structures for example, using special vegetation rather than physical structures for erosion control should always be encouraged.
- In considering coastal development project, interruption of the natural longshore drift system should be kept to an absolute minimum.
- Special protection must be provided for rare and fragile ecosystems and endangered and threatened species in order to ensure that the biodiversity of the ecosystem is not reduced or lost.

¹⁴⁶ See Cicin-Sain, B. and Knecht, R.W. (1998), note 54 at 54.

3.3.4.3 Principles related to the use of coastal and ocean resources and space.

These principles relate to management of conflicts in coastal areas, development of guidelines for use, and public participation:

- The protection of living resources and their habitats should be given priority over exploitation of nonliving resources. Similarly, non-exclusive uses should be preferred over exclusive uses, and reversible exclusive uses should be preferred over irreversible exclusive uses.
- Potential conflicts should be identified early, and equitable solutions should be developed by processes that protect and enhance public order
- New developments in the coastal zone that are water dependent should have priority over those that are not.
- Adverse effects resulting from climatic changes in the coastal zone, such as increased erosion, flooding, and saltwater intrusion, should be addressed within the framework of ICM.
- While considering retreat as an adaptation option in dealing with accelerating sea level rise, efforts should be made to create or make provisions for new habitats for coastal resources (e.g. wetlands) and species that otherwise would be lost.

In summary, the guiding principles and core objectives of the policy need to be considered as a package.¹⁴⁷ No objective or principle should predominate over the others. A balanced approach is required that takes into account all these objectives and principles to pursue the overall goals of the policy strategy. Furthermore, the decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equity considerations. Finally, while developing the policy, consultations with stakeholders should dwell on issues such as the extent of the principles and whether they should be refined or broadened or omitted altogether. This will assist in establishing, evaluating and ranking priorities that stakeholders hold in relation to the marine environment.

¹⁴⁷ See National Oceans Office (2003). Oceans Policy: Principles and Processes. This document was prepared by Australia's National Oceans Office to facilitate consultation on the development of a Commonwealth framework for integrated and ecosystem-based management, as part of Australia's Oceans Policy. Online http://eied.deh.gov.au/coasts/oceans-policy/publications/pubs/principles-processes.pdf (02 August 2007).

3.4 Sectoral and cross-sectoral issues for consideration

While considering sectoral and cross-sectoral issues in relation to the policy strategy, it is important to incorporate measures that will address the many competing interests between different uses of the marine area and the coastal zone in an attempt to strike a balance between environmental concerns and economic development in the area. Important sectoral and cross-sectoral issues for consideration include:

3.4.1 Tourism

As already indicated that tourism is one of the key economic activities along the Kenya's coast, there is growing recognition that it does have some negative impacts on the environment. However, there is little empirical evidence on the subject.¹⁴⁸ Although the tourism policy encourages spatial distribution of tourists in the country, tourism marketing has continued to focus on the traditional attractions, thereby perpetuating concentration.¹⁴⁹

This has resulted to severe impacts in the areas concerned where beaches have been polluted, coral reefs destroyed, marine species adversely affected and vegetation degraded.¹⁵⁰ Other terrestrial impacts include pollution from solid and liquid waste and many other indirect environmental impacts from unplanned human population increases and deteriorating socio-economic conditions in urban areas as people move in the quest for employment in the industry.¹⁵¹

To address the above challenges and encourage growth and diversification in the sector while ensuring ecologically sustainable tourism, the policy should incorporate measures that will provide incentives to catalyse industry initiatives and participation by all the stakeholders concerned, measures to improve policy implementation and strict enforcement of environmental regulations. Furthermore, the inclusion of a framework for information exchange for environmental awareness creation amongst the concerned parties in the industry is critical.

¹⁴⁸ See Ikiara, M. and Okech, C. (2002). Impact of tourism on environment in Kenya: status and policy. *Kenya Institute for Public Policy Research and Analysis (KIPPRA)*. Online (02 August 2007).

¹⁴⁹ *Ibid.*

¹⁵⁰ Ibid.

¹⁵¹ See Obura, D.O (2001), note 45.

3.4.2 Aquaculture

The aquaculture industry in Kenya involves the culture of various species that include oyster and algae, to the farming of various fish species that include Tilapine, which forms about 90% of the farmed fish. Although the sector is still at its infancy, annual production until some few years ago had stagnated at around 1,000 tonnes mainly because of poor extension services and inadequate reporting and documentation procedures.¹⁵² However, consistent and aggressive efforts in on-farm research and training since 1999 has seen the sectors production rise to almost 1,500 tonnes annually.¹⁵³ Private sector involvement in the industry has also been unprecedented in the recent past. It is projected that the sector will grow by over 1000% in the next few years because of prevailing favourable conditions that combine good prices and high demand.¹⁵⁴

Although the Government's strategy for the industry advocates for a paradigm shift in the roles of its organs and the private sector as espoused in all its major policy documents,¹⁵⁵ and in order to ensure that the sector is managed in an ecologically sustainable and internationally competitive manner to generate substantial economic benefits for the country, the basic infrastructure, legal and policy frameworks, research and development, monitoring and evaluation systems should be developed and strengthened. These aspects need to be considered in the policy.

3.4.3 Alternative energy sources

There are five potential energy sources associated with the oceans: wind, tidal, wave, ocean thermal and ocean currents.¹⁵⁶ These sources which can be converted to electric power, present an opportunity for the capture of clean, cost effective, renewable, non-polluting ocean based energy unlike the conventional energy sources (petroleum, gas and coal). Despite all the benefits, it is important to recognise that some of these projects could result in adverse

¹⁵² See Food and Agriculture Organization (2007). Fisheries and Aquaculture Department: National Aquaculture sector overview-Kenya Report. Online

<www.fao.org/fi/website/FIRetrieveAction.do?dom=countrysector&xml=naso_kenya.xml> (04 September 2007).

¹⁵³ *Ibid*.

¹⁵⁴ Ibid.

¹⁵⁵ The policy documents include Poverty Reduction Strategy Paper, 2001(PRSP), Kenya Rural Development Strategy (KRDS), Economic Recovery Strategy for Wealth and Employment Creation, 2003(ERS-W&E) and Strategy for Revitalising Agriculture (SRA).

¹⁵⁶ See The Commonwealth of Australia (1998). Australia's Oceans policy: Specific Sectoral Measures. Trendsetting Pty Ltd, Canberra. Online <www.environment.gov.au/net/oceanspo.html> (11 September 2007).

effects, such as changes in estuaries, visual amenity or local hydrodynamics.¹⁵⁷ In addition, the hostile nature of the ocean environment for man-made structures imparts high potential costs on the fabrication, operation and maintenance of ocean energy devices.¹⁵⁸

The policy should therefore capture measures that will encourage research on the economic viability of using ocean energy schemes. This ought to be determined on a site-specific basis taking into consideration the quality of the local energy resources, their cost competitiveness compared with other energy options and any environmental impacts.

3.4.4 Marine pollution

Although shipping is recognised as one of the most important industries in global trade by carrying huge quantities of cargo cost effectively, cleanly and safely, Kenya's marine environment is at a risk from maritime transportation activities that may result in oil spills pollution and disruption of feeding, breeding and migration routes of marine mammals and other organisms.

Off the Kenya coast, there are busy shipping lanes that originate from the Middle East and traverse around the Horn of Africa at approximately 250 nautical miles.¹⁵⁹ It is estimated that at any given time there are 50 ships using the lanes of which 9 range from 50,000 tonnes to 250,000 tonnes capacity.¹⁶⁰ Oil tankers, which carry 20,000 tonnes to 100,000 tonnes of crude oil annually from the Middle East to Europe and America, use the transit routes and any accident could be disastrous for the region. These tankers are believed to be the source of tar balls on the region's beaches because they discharge ballast water in the coastal waters.¹⁶¹

In addition, with Mombasa harbour serving as the major port for Kenya as well as many other countries in Eastern and Central Africa that include Uganda, Rwanda, Burundi, Ethiopia, Southern Sudan, North Eastern Tanzania and Somalia, it continues to experience minor oil spills but with significant impact on coastal wetland habitats.¹⁶² Oil pollution may

¹⁵⁷ *Ibid*.

¹⁵⁸ See Centre for Advanced Engineeering (2003). Economic opportunities in New Zealand's Oceans: Informing the Development of Oceans Policy. p7. Online <www.mfe.govt.nz/publications/oceans/economic-opportunities-oceans-jun03.pdf> (11 September 2007).

¹⁵⁹ See Munga, D. (1983). Marine petroleum pollution monitoring along the Kenya coast. *Kenya Aquatica 1;* also Obura, D.O. (2001), note 45.

¹⁶⁰ Ibid.

¹⁶¹ See UNEP in "The State of the Marine Environment: Regional Assessments-East Africa." Online <www.gpa.unep.org/documents/regional_soe_-_part_english.pdf > (05 September 2007).

¹⁶² *Ibid*.

also result from normal oil transportation activities such as ship to shore transfers and upland tank storage at the port, bilge washings and refinery effluent discharges. The Kenya Ports Authority (KPA), under the Kenya Ports Authority Act, has the responsibility for controlling pollution in the territorial waters of Kenya. In fulfilment of this responsibility, KPA, together with representatives of the oil industry, the oil refinery, the shipping industry and bunkering services, have set up the National Oil Spill Response Committee (NOSRC) which has developed a National Oil Spill Response Contingency Plan.¹⁶³

In order to create efficient and responsible maritime infrastructure and boost shipping industry, the policy strategy should, among other things, harmonise the various existing Acts, key being the Kenya Ports Authority Act and The Environmental (Prevention of Pollution in Coastal Zone and other segments of the Environment) Regulation 2003 to incorporate strategies on ballast water management and ship-sourced pollution among others. Other initiatives and measures that will promote competitiveness of the country's main seaport such as improvement of associated forms of transport including road and railway and the simplification of logistical and other procedures at the port should be considered.

3.4.5 Effects of land-based activities

It has been pointed out that human activities on land in coastal areas and further inland pose a great threat to the productivity and biodiversity of the marine environment.¹⁶⁴ It is for this reason that an array of land-based sources of marine pollutants have been documented to endanger the coastal and marine ecosystems (mangroves, seagrass beds, lagoons, beaches, estuaries and coral reefs) and to public health in the Eastern African region. These include sewage, persistent organic pollutants (POP's), heavy metals, oil, nutrients (fertilizers), pesticides, sediments, and both agricultural and industrial wastes.

Similarly, major activities like agriculture, pastoralism, maritime harbour activities, urbanization, mining, and industrialization have also been identified to contribute in a crosscutting manner at different levels and in various ways to pollution and siltation of the coastal and marine environment. Mombasa city for instance, being a major port city in the

¹⁶³ See UNEP/GPA. Regional reports on the state of the marine and coastal environment: Eastern Africa. *Global Marine Oil Pollution Information Gateway*. Online http://oils.gpa.unep.org/framework/regional.htm> (05 September 2007).

¹⁶⁴ See UNEP/GPA (2007). Why have a Global Programme of Action?__*The Context*. Online <www.gpa.unep.org/content.html?id=180&ln=6> (06 September 2007).

region with a huge population is estimated to contribute 70-90% of most categories of pollutants to the sea.¹⁶⁵

Most of this population is found in slum areas, generally characterised by poor housing and infrastructure and this encourages environmental degradation as the dwellers try to meet some of their needs from the surroundings such as firewood. There are also many light industrial developments in the city that have mushroomed without proper environmental impact assessment (EIA) being carried out. These have contributed greatly to the dumping of wastes to rivers, beaches, creeks and the sea.¹⁶⁶

In order to address the adverse impacts from land-based pollution and activities on the coastal and marine environments, guidance can be sought from the Global Programme of Action for the Protection of the Marine Environment from Land-Based Activities (GPA) which encourages a comprehensive and multi-sectoral approach.¹⁶⁷

3.4.6 Global climate change

The world's oceans are known to play an important role in climate change. In this regard, long-term impacts of climatic change in coastal areas, such as sea level rise or storm surges, result in the increased erosion of shores and associated habitats, increased salinity of estuaries and freshwater aquifers, altered tidal ranges in rivers and bays, changes in sediment and nutrient transport, and increased coastal flooding.¹⁶⁸

Information and knowledge of the changes in the ocean's natural regime is fundamental to the development and incorporation of integrated planning and management strategies for the marine environment and resources therein. This can mainly be achieved by having a better understanding of the physical, chemical and biological processes taking place in the

¹⁶⁵ See Munga, D. (1983), note 159.

¹⁶⁶ See Alusa, A.L. and Ogallo, L.J. (1992). An overview of implications of expected climatic change in East African Coastal Region. UNEP Regional Seas Reports and Studies No. 149. Online

<www.unep.ch/regionalseas/main/eaf/rs149.html> (07 September 2007).

¹⁶⁷ Global Programme of Action for the Protection of the Marine Environment from Land-based Activities is an intergovernmental programme that addresses the major threats to the health, productivity and biodiversity of the marine environment resulting from human activities on land, in coastal areas and further inland. It was adopted on 3 November 1995 by the Intergovernmental Conference of 108 countries including Kenya held in Washington, USA. See UNEP. Global Programme of Action (GPA). UN Doc UNEP(OCA)/LBA/IG.2/7 5 of December 1995. Online <www.gpa.unep.org/documents/full_text_of_the_english.pdf> (08 September 2007); See also note 9.

¹⁶⁸ See Kay, R. and Alder, J. (2005), note 53 at 47; See also 1998 year of the ocean: Impacts of global climate change with emphasis on U.S coastal areas. Online <www.yoto98.noaa.gov/yoto/meeting/climate_316.html> (10 September 2007).

interrelated ocean-earth-atmosphere system. It is with this realisation that Kenya's Meteorological Department is working towards establishing an operational marine observational network of the Western Indian Ocean within Kenya's EEZ. As part of the effort, the department:¹⁶⁹

- Has deployed 35 drifting buoys out of which 15 are fitted with pressure sensors.
- Is installing three tidal gauges complete with meteorological sensors on board in Kilifi, Shimoni and Lamu for monitoring of tsunami, sea level and maritime weather/climate conditions.
- Is installing a marine Automatic Weather Station for deployment at the Mombasa port to improve maritime services at the port and serve maritime activities within the Exclusive Economic Zone (EEZ).

In order therefore to promote improved knowledge and information base on climate change and mitigate any negative impacts, the policy should include measures that will encourage continued investments and collaborations in data collection; research and monitoring at the national, regional and international levels.

In summary, the sectoral and cross-sectoral issues need to be addressed comprehensively as their contributions do have far reaching effects, not only to the coastal and ocean environments but also to the entire nation and the region. Proper consideration of these issues shall contribute greatly in the achievement of the overall vision and objectives of the policy strategy. The consideration of measures that promote the awareness of all stakeholders and social groups on benefits and impacts of the use of marine environment and their responsibility in its management is of paramount importance.

3.5 Summary

This chapter can be considered as the one that constitutes the crux of the ocean policy development as it discusses the vision statement, values and objectives of the policy, guiding principles and the important sectoral and cross sectoral issues that need to be considered. The vision statement, values and objectives are all about what the management mechanism, users and other relevant actors want from and for the ocean. These aspirations are guided by

¹⁶⁹ See Kenya Meteorological Department (2007). Polar Meteorology: understanding global impacts.

principles which are meant to direct the interaction between the users and the various uses with the related ecosystem.

The major principles have been grouped into four depending on the underlying issues being addressed. They include those that outline ecological protection, good governance, resource management and principles that reflect the uniqueness of the coastal and ocean areas. In this category, there are those that dwell on the public nature of oceans, those related to biophysical nature of the coastal zone and the ones related to the use of the coastal and ocean resources and related opportunities.

After addressing the general elements and framework of an ocean policy, the next chapter looks closely into the implementational aspect, with particular emphasis on the legal and institutional considerations.
CHAPTER FOUR: IMPLEMENTATION FRAMEWORK

4.1 Legal and policy framework

Kenya's legal and policy framework that relates to the management of the coastal and marine environment has for a long time been developed in response to sectoral needs and not in tandem with the actual physical environment and socio economic dynamics. It is recognised that the country has a wide variety of national, coastal and environmental legislation that result in overlapping and sometimes conflicting mandates in addressing coastal and marine issues.¹⁷⁰ For instance, the National Environment Action Plan (NEAP) identifies 77 statutes relating to the management and conservation of the environment, most of which apply to the coastal and marine environments (See annex 2).¹⁷¹ These laws, developed many years ago (some many decades ago) to address specific issues, also lack coordination. For example, regulations on pollution and its control are spread over several Acts, with different enforcing agencies. These include the Factories Act, the Public Health Act, the Merchant Shipping Act and the Local Government Act.

As part of an effort to make some of the laws more relevant and responsive to the existing situation, a multidisciplinary Task Force (TF)¹⁷² was appointed by the Government in February 2002 to review Kenya's maritime laws among other terms of reference (TOR).¹⁷³ Besides the lack of coordination, the review was also occasioned by the realisation that most of the laws were tailored along the lines of United Kingdom (UK) legislation. In fact, most of them were a replication of the UK statutes, imported into the country during the colonial era and thus were not responsive to the existing national situation.

The TF reviewed and made recommendations on nearly all maritime laws including the Maritime Zones Act (Cap 371); the Merchant Shipping Act (Cap 389); the Marine Insurance Act (Cap 390); the Carriage of Goods by Sea Act (Cap 392); the Water Act (Cap 372); the Lakes and Rivers Act (Cap 409) and the Ferries Act (Cap 410). In addition, the TF underscored the importance of an appropriate national legal, institutional and administrative

¹⁷⁰ See Obura, D.O (2001), note 45.

¹⁷¹ See Odido, M. (1998), note 86.

¹⁷² The Task Force on the review of maritime laws was appointed by Hon. Attorney General vide gazette notice No. 645 of 8th February 2002.

¹⁷³ Other TOR include the review of legislation framework on exercise of admiralty jurisdiction, implementation of International Maritime Organization (IMO) conventions and other treaty obligations through legislation; review of maritime education; review of legislative and institutional framework for maritime administration and maritime security and safety.

framework that keeps pace with the international maritime arena and conventions, which control trade, safety and the management, and exploitation of resources in the sea.¹⁷⁴

Other relevant legislations that relate to the coastal and marine areas include the Fisheries Act (Cap 378) which provides for the development, management, exploitation, utilisation and conservation of fisheries. It stipulates that the Fisheries Department, in collaboration with other appropriate agencies and Government departments, shall promote the development of traditional and industrial fisheries, fish culture and related industries; and may impose measures necessary for the proper management of any fishery.¹⁷⁵

The Maritime Zones Act (Cap 371) of 1989 consolidates the laws relating to the territorial waters and provides for the exploration, exploitation, conservation and management of resources in the maritime zones. Similarly, the Continental Shelf Act (Cap 312) of 1975 vests the rights in the Government in respect of the continental shelf, and the resources thereon, therein and thereunder. The Mining Act (Cap 306) vests in the Government all unextracted minerals, other than common minerals (e.g. clay, murram, limestone). Sand extraction is governed by local Government by-laws. The Petroleum (Exploration and Production) Act Cap 308 governs the fiscal and legal regimes for exploration and production investment in Kenya in both onshore and offshore areas. A summary of statutes related to the coastal and marine environments and when they were either enacted or revised is contained in **table 2**.

¹⁷⁴ See Government of Kenya (2002). Report of the Task Force on the review of maritime laws of Kenya.

¹⁷⁵ See Worldfish Center (2001). Economic Valuation and Policy Priorities for Sustainable Management of Coral Reefs. *Policy implications in the management of Kenya's Marine Protected Areas: A Case study prepared by Sam Weru.*

Online <www.worldfishcenter.org/Pubs/coral_reef/pdf/Coral_Reef.pdf> (24 July 2007)

Table 2: Statutes that relate to the coastal and marine areas.

Title of law /Decree	Decree /Law No. (Cap)	Year Enacted/Revised
Land Planning Act	303	1970
Continental Shelf Act	312	1975
Kenya Ports Authority Act	391	1979
Land Acquisition Act	295	1983
Merchant Shipping Act	389	1983
Wildlife Conservation and Management Act	376	1985
Agriculture Act	318	1986
Petroleum (Exploration and Production Act)	308	1986
Mining Act	306	1987
Kenya Tourist Development Corporation Act	382	1988
Maritime Zones Act	371	1989
Land Control Act	302	1989
Tourist Industry Licensing Act	381	1990
Coast Development Authority Act	449	1990
Fisheries Act	378	1991
Forests Act	385	1992
Local Government Act	265	1998
Environmental Management and Coordination Act	8	1999
Water Act	372	2002

(Source: Modified from UNEP/GPA and WIOMSA, 2004)¹⁷⁶

¹⁷⁶ See UNEP/GPA and WIOMSA, 2004 "Review of National Legislations and Institutions Relevant to Tourism, Ports, Land Reclamation and Damming of Rivers in selected countries along the Western Indian Ocean". Report prepared by Mr. Akunga Momanyi.

Of all the statutes that relate to the environment, the enactment of the Environmental Management and Coordination Act No. 8 of 1999 represents a significant step in dealing with environmental issues as it provides for the establishment of appropriate legal and institutional framework for the management of the country's environment. With regard to the coastal regime, Section 55 of the Act recognizes an ICZM approach as a tool for the protection and preservation of the coastal and marine environment. The Act, which commenced on 14 January 2000, established the National Environment Management Authority (NEMA) and National Environment Council (NEC)¹⁷⁷ charged with formulating environmental policies and setting national goals and objectives in addition to determining policies and priorities for the protection of the environment.

A full summary of the statutes and regulations governing access, use and management of the coastal and marine environments including the associated enforcement agencies is contained in **annex 3**.

4.2 Domestic Implementation of International Agreements

While formulating and implementing the country's oceans policy, it is of paramount importance to ensure it is consistent and compliant with the existing regional and international legal framework. This is so, not only because of the consequences of non-compliance, but also because of the benefits that will accrue to the country, the region and the international community at large resulting from improvement in the world's oceans as it is a shared resource. It is worth noting that international agreements offer guidance and in some instances funding for coastal and marine management regimes.¹⁷⁸

Kenya therefore in pursuit of her national interests is party to several international and regional conventions and agreements, the majority being multilateral environmental agreements (MEAs) that address several sectors of the environment.

¹⁷⁷ The National Environment Council (NEC) established by Section 4 of the Environmental Management and Coordination Act (EMCA) has the Minister for Environment and Natural Resources as its chair. Members include permanent secretaries responsible for matters in agriculture, economic planning and development, education, energy, environment, finance, fisheries, foreign affairs, health, industry, law or law enforcement, local government, natural resources, public administration, public works, research and technology, tourism and water resources; representatives of public universities; specialized research institutions; the business community and non-governmental organizations. The Director General of NEMA sits as the Secretary. For more information on EMCA, see <<www.nema.go.ke/emca.html> (16 August 2007).

¹⁷⁸ See Cicin-Sain, B. and Knecht, R.W. (1998), note 54 at 63.

They include:

- The United Nations Convention on the Law of the Sea. UNCLOS sets out party States' entitlements and responsibilities with regard to ocean space, resources and activities. Part XII sets out the obligations in so far as the protection and preservation of the marine environment is concerned.¹⁷⁹
- The Convention on Biological Diversity (CBD).¹⁸⁰
- Rio Declaration on Environment and Development.¹⁸¹
- Agenda 21 of UNCED.¹⁸²
- The United Nations Framework Convention on Climate Change (UNFCCC).¹⁸³
- Convention for the Protection, Management and Development of the Coastal Environment of the Eastern African Region (The Nairobi Convention) 1985.¹⁸⁴
- International Convention for the Prevention of Pollution of the Sea by Oil, London, 1954. It was amended in 1962, 1969 and 1971.¹⁸⁵

¹⁷⁹ Although Article 193 spells out the sovereignty of States to exploit their natural resources, Article 192 obligates them to protect and preserve the environment. Other provisions outlined in UNCLOS include access to the seas, navigation, pollution prevention and control, exploitation of living and nonliving resources, monitoring and research, dispute settlement mechanisms among others.

¹⁸⁰ The objectives of CBD, 1760 UNTS 79, are the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources. Kenya signed and ratified it on 11 June 1992 and 26 July 1994 respectively. See also note 6. Online <www.cbd.int/convention/articles.shtml?a=cbd-01> (24 July 2007).

¹⁸¹ Adopted on 14 June 1992, The Rio Declaration is a set of 27 principles intended to guide national and international action on environment, development and social issues. See United Nations Secretary General. "Report of the United Nations Conference on Environment and Development." U.N Doc. A/CONF.151/26 (Vol. I) of 12 August 1992. Annex I. Online <www.un.org/documents/ga/conf151/aconf15126-1annex1.htm> (24 July 2007).

¹⁸² Divided into 4 major sections and 40 chapters, Agenda 21 is a comprehensive plan of action intended to be taken globally, nationally and locally by Governments, major groups and organisations of the United Nations system with regard to environment, development and social issues. Online <www.un.org/esa/sustdev/documents/agenda21/english/agenda21toc.htm> (24 July 2007).

¹⁸³ The UN Framework Convention on Climate Change (UNFCCC) 1771 UNTS 107, sets out an overall framework for intergovernmental efforts to tackle the challenge posed by climate change. It recognizes that the climate system is a shared resource whose stability can be affected by industrial and other emissions of carbon dioxide and other greenhouse gases. The Convention entered into force on 21 March 1994 and has been ratified by 191 countries including Kenya, which did it on 30 August 1994. The country had earlier signed it on 12 June 1992. See online http://unfccc.int/essential_background/convention/items/2627.php (24 July 2007).

¹⁸⁴ The Nairobi Convention covers Eastern Africa and the western Indian Ocean coastal states. It deals with protection and management of the coastal zone, and is implemented through the Regional Coordinating Unit (RCU) in the Seychelles, and the Department for Environmental Conventions (DEC) at UNEP headquarters in Nairobi. This Convention stands as a strong platform for governments to commit resources to protecting the coastal zone and implement a variety of related conventions, such as the Convention on Biological Diversity. Kenya is the depositary of this convention.

- International Convention for the Safety of Life at Sea (SOLAS) 1974.¹⁸⁶
- The Ramsar Convention.¹⁸⁷
- International Convention for the Prevention of Pollution from Ships, 1973/78 (MARPOL 73/78), London.¹⁸⁸
- Convention on the Territorial Sea and the Contiguous Zone, Geneva 1958.¹⁸⁹
- Convention on the Continental Shelf, Geneva 1958.¹⁹⁰
- Convention on the High Seas, Geneva, 1958.¹⁹¹
- Convention on Persistent Organic Pollutants (POPs).¹⁹²
- Treaty on the Prohibition of the Emplacement of Nuclear Weapons and other Weapons of Mass Destruction on the Seabed and the Ocean Floor and in the Subsoil thereof, Washington/London/Moscow, 1971.
- Convention on the prevention of marine pollution by dumping of wastes and other matters, London, 1972. Kenya ratified it on 17 January 1976.

¹⁸⁵ Kenya ratified these amendments on 12 December, 1975.

¹⁸⁶ The SOLAS Convention in its successive forms is generally regarded as the most important of all international treaties concerning the safety of merchant ships. See online <www.imo.org/Conventions/contents.asp?topic_id=257&doc_id=647#top> (24 July 2007).

¹⁸⁷ The Convention on Wetlands, signed in Ramsar, Iran, in 1971, is an intergovernmental treaty, which provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. It entered into force for Kenya on 5th October 1990. See online <www.ramsar.org/> (25 July 2007).

¹⁸⁸ The 1973 MARPOL Convention is the main international convention covering prevention of pollution of the marine environment by ships from operational or accidental causes. It is a combination of two treaties adopted in 1973 and 1978 respectively and updated by amendments through the years. Kenya ratified this convention on 12 September, 1975. See online <www.imo.org/Conventions/contents.asp?doc_id=678&topic_id=258> (25 July 2007).

¹⁸⁹ 516 UNTS 205. Kenya accessioned it on 20 June 1969.

¹⁹⁰ 499 UNTS 311. Kenya accessioned it on 20 June 1969.

¹⁹¹ 450 UNTS 11. Kenya accessioned it on 20 June 1969.

¹⁹² The POP or Stockholm Convention is a global treaty to protect human health and the environment from persistent organic pollutants (POPs). POPs are chemicals that remain intact in the environment for long periods, become widely distributed geographically, accumulate in the fatty tissue of living organisms and are toxic to humans and wildlife. POPs circulate globally and can cause damage wherever they travel. In implementing the Convention, Governments will take measures to eliminate or reduce the release of POPs into the environment. Kenya signed and ratified the convention on 23 May 2001 and 24 September 2004 respectively. See online <<wr/>www.pops.int/> (25 July 2007).

 Convention Concerning the Protection of the World Cultural and Natural Heritage, Paris, 1972 (Protection of coastal ecosystems). Kenya accepted the convention on 5 June 1991 but is yet to ratify it.

4.3 Institutional framework

The diverse socio-economic activities taking place in Kenya's coastal and marine areas involve several Government ministries and departments and various other categories of stakeholders. The Government, however, plays a significant role in these activities including the management of the associated natural resources mainly for the benefit of her citizenry.

The existing marine governance in the country is rather complex as particular Government ministries and departments, and/or agencies are responsible for particular resource management or uses without proper coordination and interlinkages with the others. For instance, Kenya Wildlife Services (KWS) has the mandate to manage Kenya's marine parks and reserves while the Fisheries Department oversees the exploitation and management of the fisheries within the marine parks and reserves. In this scenario, it is notable that while the Fisheries Department promotes sustainable use, KWS only allows preservation and this conflict in management approach has resulted in confusion on the ground.¹⁹³ This therefore calls for the harmonization of the mandates of the various Government organs in order to create management efficiency and harmony.

With regard to implementation of programs, projects and plans, this has been identified to occur on three main governance levels: central administration, provincial/regional, and local.¹⁹⁴ Each authority in these levels has different mandate/roles with respect to the implementation of the programs and related activities.

The roles of central the Government ministries and departments are recognised to include *inter alia*: development of plans and budgets, formulation of policies, development of legislation and its enforcement, collection of revenue, human resource development, research and research coordination and training. All these roles are very relevant to the development and implementation of a national ocean policy.

¹⁹³ See Swanson, R. *et al.* (2006). Kenya Forest and Coastal Management Programs: *Mid Term Evaluation*. p54 Online http://pdf.usaid.gov/pdf_docs/PDACJ160.pdf> (20 July 2007).

¹⁹⁴ See WIOMSA (2001). Coastal Management in the Western Indian Ocean region: A Capacity Needs Assessment. A publication made possible through the support of United States Agency for International Development and Coastal Resources Center, University of Rhode Island. p12

Besides the mainstream Government actors, Non Governmental Organizations (NGO's) and Community-Based Organizations (CBOs) are also regarded as important actors, pressure groups, and partners in the management of coastal and marine resources,¹⁹⁵ especially those associated with the academic, industry, banking, and research activities.¹⁹⁶ This is attributed to their design, which makes them more accessible, and closer to the local communities they serve.

It is notable that a significant number of funding agencies are increasingly working with NGOs and CBOs on activities related to the management of the coastal and marine environment. Different NGOs are involved in a number of activities related to management of the coastal and marine environment and these include awareness raising and extension services, promotion of gender roles (particularly women empowerment), capacity building and technical assistance.¹⁹⁷ Other important roles that can be played by NGOs as observed by François Bailet include gathering and disseminating information; involving civil society; contributing to policy; developing programmes; and mobilizing new and additional sources of funding.¹⁹⁸ A summary of roles of the various national governance levels is contained in **table 3**.

¹⁹⁵ *Ibid*.

¹⁹⁶ See Stella Maris Vallejo in "new structures for decision-making in integrated ocean policy." Ocean governance: sustainable development of the Seas. Online www.unu.edu/unupress/unupbooks/uu150e/uu150e0b.htm#part%20ii:%20ocean%20governance:%20national%20level> (21 July 2007)

¹⁹⁷ See WIOMSA (2001), note 194.

¹⁹⁸ See the summary report of the global Conference on oceans, coasts, and islands: mobilizing for implementation of the commitments made at the 2002 world summit on sustainable development: 12-14 November 2003, Paris, France. Online <www.iisd.ca/download/asc/sd/sdvol68num2e.txt (21 July 2007)

Table 3: Governance levels in relation to formulation and implementation ofprogrammes in coastal and marine areas.

General	Governance	Types of responsibilities	
Role(s)	levels/organizations		
Policies/plans	Central Government	- Development of plans and budgets	
- Formulation of policie		- Formulation of policies	
		 Development of legislation and its enforcement Collection of revenue Harmonization of various sectoral activities 	
		- Funding assistance	
		- Human resource development through research and training	
		- Acts as a link to relevant global and regional ocean and coastal programs, conventions and agreements	
	Local Government	- Provision of infrastructure, services and other public amenities in cities, towns and local councils and surrounding areas	
		- Detailed understanding of the opportunities, problems and limitations in councils and provision of solutions	
		- Management of resources and revenue collection	
		- Support of coastal user groups and local communities	
Implementation	Government institutions and local government	Same as above	
of activities	NGO's/CBO's	- Assist in organizing communities	
		- Awareness raising	
		- Provision of extension services	
		- Promotion of gender equality and advocating for disadvantaged groups	
		- Provision of education and training	
	Private sector	- Provision of capital funds for investment	
		- Assist in enhancing operational efficiencies	

(Source: Modified from WIOMSA, 2001)

It is important to emphasise that an effective institutional framework must be interdisciplinary and interdepartmental where management and regulations must be from the bottom up and not top down. This implies that community organisations must in essence form the basis of this process and include the local Government (municipalities), NGO's as well as CBO's.¹⁹⁹

4.3.1 Institutions involved in ocean related affairs in Kenya

The leading Government ministries and departments and other institutions dealing with coastal and marine related issues are discussed hereunder while a summary of these institutions is contained in **Annex 4**.

i) Ministry of Tourism and Wildlife

The **Kenya Wildlife Services (KWS)** was established in 1990 and is charged with the protection, conservation and management of wildlife in Kenya. KWS manages Marine Protected Areas (MPAs) and the terrestrial parks and reserves in the country.

ii) Ministry of Livestock and Fisheries

- The Fisheries Department (FD) is responsible for development, management and conservation of fishery resources. This is done through licensing of fishing vessels, fish dealers and processors; provision of extension and training services, conducting of research and surveys; promotion of co-operation among fishermen, promotion of arrangement for orderly marketing of fish and value addition; providing infrastructure facilities and stocking waters with fish and supplying fish for stocking. The Department is also responsible for aquaculture development, fish safety and quality assurance.
- Kenya Marine and Fisheries Research Institute (KMFRI). Established by an Act of Parliament in 1979, KMFRI is responsible for all aspects of aquatic research including biological, physical and chemical oceanography, pollution, fisheries, aquaculture, fishing technology and fish processing. The Institute is also the advisory body for the Government on all matters related to aquatic sciences.

¹⁹⁹ See Elisabeth Mann Borges (1995). Ocean Governance and the United Nations. Centre for Foreign Policy Studies, Dalhousie University, Halifax, N.S. p168

iii) Ministry of Environment and Natural Resources

• National Environment Management Authority (NEMA)

NEMA was established under the Environment Management and Co-ordination Act (EMCA) No. 8 of 1999.²⁰⁰ However, it was not until 1 July 2002 that it became operational with a general mandate to exercise supervision and co-ordination over all matters relating to the environment and to be the principal instrument of Government in the implementation of all polices relating to the environment. More specifically, the authority is charged with the co-ordination of the various environmental management activities being undertaken by the lead agencies and to promote the integration of environmental considerations into development policies, plans and projects; take stock of the natural resources in Kenya and their utilisation and conservation; establish and review land use guidelines; carry out surveys, which will assist in the proper management and conservation of the environment or the implementation of both regional and international legal instruments.

Other responsibilities include to initiate and evolve procedures and safeguards for the prevention of accidents, which may cause environmental degradation and put in place remedial measures where accidents occur (e.g. floods, landslides and oil spills) and to undertake, in cooperation with relevant lead agencies, programmes intended to enhance environmental education and public awareness, about the need for sound environmental management, as well as for enlisting public support and encouraging the effort made by other entities in that regard.

It is important to note that under the Environmental Management and Co-ordination Act, the National Environment Council (NEC) is charged with formulating environmental policies and setting national goals and objectives in addition to determining policies and priorities for the protection of the environment.

• The Forestry Department is responsible for development and management of Kenya's forests including the mangrove forests.

²⁰⁰ In order to fully and effectively implement the Act, structures that include National Environment Council (NEC), The Board of Management, Provincial and District Environment committees, Standards and Enforcement Review Committee, National Environment Action Plan (NEAP), Public Complaints Committee (PCC), National Environment Tribunal (NET) and Technical Advisory Committee on Environmental Impact Assessment were formed.

iv) Ministry of State for national heritage

National Museums of Kenya (NMK)

NMK is a quasi-Government institution responsible for the conservation of historical and cultural environments and the identification and protection of archaeological and historical remains.²⁰¹ It manages a number of archaeological and historical resources such as Fort Jesus at the Kenyan coast. NMK draws further legislative authority from the Antiquities and Monuments Act (Cap 215).

v) Office of the President (OP)

• The **Kenya Navy** is primarily responsible for defence of Kenya's maritime territorial integrity and other maritime interests. In the absence of a Coast Guard and being the only agency of Government with the capability of going out to the Territorial Sea and EEZ, the Navy carries out many tasks in aid to civil authority as secondary roles. These include search and rescue, prevention of contraband trade and fisheries protection.

• Provincial Administration and Internal Security.

The personnel from provincial, district to divisional and other lower administrative levels are involved in various aspects of coastal and marine areas. These include approval of development plans and management of the environment. The Kenya Police in the same department is responsible for security but their capacity limits them to patrol of inshore waters, ports and harbours.

• The Government Chemists Department does the chemical analysis of samples for various Government ministries and departments. The Mombasa laboratory has been undertaking marine pollution monitoring through various tests.

vi) Ministry of Foreign Affairs

The Ministry is mandated to conclude treaties involving the Republic of Kenya. The Treaty Section within the Legal Division of the Ministry keeps records of bilateral and multi-lateral treaties involving Kenya in addition to providing information on the same. The Ministry also coordinates Kenya's responsibilities as a depositary for certain treaties.

²⁰¹ See UNEP, 1998; also National Museums of Kenya. Online <www.museums.or.ke/dg.html> (23 July 2007).

vii) Ministry of Regional Development Authority

- The Tana and Athi Rivers Development Authority (TARDA), established in 1974, is responsible for institution and co-ordination of development projects in the area drained by and bounded by the Tana and Athi Rivers and their tributaries. These are the two main rivers flowing into the Indian Ocean. The authority has initiated numerous projects in aquaculture, power generation, irrigation, and water management, which have a direct impact on the discharge level of these rivers. The authority has also undertaken studies on changes of discharge/flow rates of the rivers and the impact this has on the coastal area.
- The **Coast Development Authority** (CDA) was established by an Act of Parliament (Cap 449) in 1990 but inaugurated in August 1992. Its main mandate is to plan and co-ordinate the implementation of development projects in the whole of Coast Province and the EEZ.

viii) Ministry of Local Government

The main local authorities in the coast region are Mombasa, Malindi and Voi Municipal Councils; and Kwale, Kilifi, Lamu, Taita Taveta and Tana River County Councils. Local Government authorities (Municipal, Township and County Councils) provide services, including construction of roads, markets, garbage collection and effluent treatment and disposal within their jurisdiction.

ix) Ministry of Transport

- Kenya Ports Authority (KPA) set up by an Act of Parliament in January 1978, is responsible for operation, maintenance, improvement and regulation of ports in Kenya's coast. Currently, it manages the ports of Mombasa, Vanga, Shimoni, Funzi, Mtwapa, Kilifi, Malindi, Lamu and Kiunga. Mombasa port is the largest and busiest in the East Africa region. KPA's technical services division is involved in surveys of harbours and ports.
- The Meteorological Department is responsible for the collection of weather data and weather prediction in the country. The Department provides meteorological services to shipping in the western Indian region such as cyclone warnings for the safety of the industry. The Department hosts the regional Institute for Meteorological Training and Research in Nairobi.

• Kenya Maritime Authority was established vide Gazette Notice No. 79 of 2004. The Authority is charged with monitoring, regulation and coordination of maritime activities in the country, previously handled by Kenya Ports Authority.

x) Ministry of Science and Technology

- The National Council for Science and Technology (NCST) is responsible for making available to the Government advice on all matters relating to scientific and technological activities and research necessary for development.
- Kenya Forestry Research Institute undertakes forestry research including work on mangrove forests.

xi) Ministry of Education

Most of Kenya's public universities offer a number of marine related courses at diploma, undergraduate and post graduate levels. Although the Bandari College falls under the ministry of Transport, it does also offer specialised courses in maritime studies, but only at certificate and diploma levels. In order therefore to establish the exact status of maritime education and training in the country, there is need for an in-depth review of the issue and possibly come up with short-term and long-term plans aimed at strengthening maritime education besides making it more relevant and responsive to the current trends.

xii) Ministry of Public Works

It is responsible for construction and maintenance of public infrastructure including roads. The Structural Department within the ministry is charged with design and construction of sea protection works such as seawalls in Lamu and Pate Islands to protect the beaches.

4.3.2 Other agencies and initiatives

i) National Oceanographic Committee (NOC)

NOC, which operates within the framework of the Kenya National Commission for the United Nations Educational, Scientific and Cultural Organization (UNESCO), brings together various organisations with an interest in marine affairs. It acts as the focal point for Intergovernmental Oceanographic Commission (IOC) related activities and an advisory body on issues related to marine sciences in collaboration with the relevant institutions. Some of the objectives of the committee include to promote and develop:

• Marine science, research and training.

- Joint actions on sustainable utilisation of marine resources and conservation of the environment.
- The use of ocean services and related support activities.

ii) Natural Oil Spill Response Committee (NOSRC)

This Committee was formed to prepare the National Oil Spill Response Contingency Plan for dealing with oil spills on the Kenyan coast and also to oversee oil spill surveillance roles. Membership includes representatives of the oil industry, the oil refinery, the shipping industry, bunkering services and government agencies dealing with wildlife, maritime activities and environmental conservation. These include Kenya Navy, KPA, KWS, KMFRI, the FD and Local Government Authorities

iii) Kenya Sea Turtle Conservation Committee (KESCOM)

This committee comprising scientists, resource managers, hoteliers, NGO representatives, and private individuals was formed to oversee the national recovery of sea turtles. Through the efforts of the Committee, the use of Turtle Excluder Devices (TEDS) has now become mandatory in trawling activities.

4.3.3 Kenya's participation in international organizations

The country participates in several marine related activities of various international organizations most of which have offices in Nairobi. They include:

- The Inter-governmental Oceanographic Commission (IOC) of UNESCO where Kenya Marine and Fisheries Research Institute is the focal point.
- The UNESCO Regional Office for Science and Technology in Africa (ROSTA) is also located in Nairobi. The activities of ROSTA include co-ordination of marine science programmes of UNESCO and IOC including the Regional Project for Research and Training on Coastal Marine Systems in Africa.
- Food and Agriculture Organization (FAO) with a regional office in Nairobi, is involved in fisheries research and development activities. Kenya actively participates in the fisheries programmes of FAO where it is represented by the Fisheries Department and KMFRI.
- Kenya is also a member of the Aquatic Science and Fisheries Abstract (ASFA) Board where KMFRI acts as an Input Centre. ASFA is a partnership composed of an

international network of cooperating institutions and organizations responsible for monitoring, selecting, abstracting and indexing literature relevant to the aquatic sciences for inclusion in the ASFA bibliographic database.²⁰²

- The United Nations Environment Programme (UNEP) has its headquarters in Nairobi. The UNEP Water Branch deals with coastal and marine science activities and is the implementing agency for the Nairobi Convention for Protection, Management and Development of the Coastal Environment of the Eastern Africa Region.
- The World Conservation Union (IUCN) also has a regional office in Nairobi and has projects dealing with marine biodiversity.
- International Maritime Organization (IMO). Kenya is a member of the organization and is represented by the Kenya Ports Authority.
- World Meteorological Organization (WMO). The country is represented by the Kenya Meteorological Department and is also the regional centre for Africa and hosts the Regional Institute for Meteorological Training and Research.

4.3.4 Regional programmes and initiatives

Kenya is a member of several regional bodies that address ocean and coastal-related issues in the African sub region.²⁰³

- The Nairobi Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African Region. This is one of the two Regional Seas Conventions that serve to maintain efforts of ocean and coastal governance.
- IOC's Regional Committee for Co-operative Investigations in the North and Central Western Indian Ocean where KMFRI represents Kenya.
- Indian Ocean Marine Affairs Commission (IOMAC): Kenya is a member and is represented by the Ministry of Foreign Affairs.

²⁰² For more information on ASFA, see FAO "Aquatic Science and Fisheries Abstract". Online

<www.fao.org/fi/website/FIRetrieveAction.do?dom=org&xml=asfa_prog.xml&xp_nav=1,1>(15 August 2007).

²⁰³ See McLean, B. (2006). The global forum on oceans, coasts, and islands: African Perspectives on Linking National and Regional Efforts in Ocean and Coastal Management. Reports from the Third Global Conference on Oceans, Coasts and Islands January 23-28, 2006, UNESCO, Paris.

- Large Marine Ecosystem project (funded by the Global Environment Facility): The Agulhas and Somali Current Large Marine Ecosystems which brings together Yemen, Somalia, Kenya and Tanzania is under preparation.
- Impacts of Land-based pollution in the Western Indian Ocean (WIOLAB) which brings together Somalia, Kenya, Tanzania, Mozambique, South Africa, Comoros, Madagascar, Mauritius, France (La Reunion), Seychelles. It is supported by Norway, GPA, GEF and Nairobi Convention parties.
- Western Indian Ocean Marine Highway Development and Coastal Contamination Prevention Project brings together Comoros, Kenya, Madagascar, Mauritius, Mozambique, Seychelles, South Africa, Tanzania.
- Sustainable Coastal Tourism Project. Participating states include Senegal, Gambia, Nigeria, Ghana, Kenya, Tanzania Mozambique, and Seychelles.
- Western Indian Ocean Marine Science Association (WIOMSA). It is a regional professional, non-governmental and non-profit membership organization, registered in Zanzibar, Tanzania. The organization is dedicated to promoting the educational, scientific and technological developments of all aspects of marine sciences throughout the region of Western Indian Ocean with a view of achieving sustainable use and conservation of the region's marine resources. It brings together Somalia, Kenya, Tanzania, Mozambique, South Africa, Comoros, Madagascar, Seychelles, Mauritius and Reunion.
- Coral Reef Degradation in the Indian Ocean (CORDIO). The CORDIO programme was launched following the massive coral bleaching in 1998 in the region. In addition to providing technical information on corals, the programme supports targeted ecological as well as socio-economic studies and monitoring as well as support for alternative livelihoods among local populations affected by the coral mortality. Member states include Kenya, Tanzania, Mozambique, Madagascar, Seychelles, Reunion, Comoros, Mauritius, Maldives, India, and Sri Lanka.
- East African Marine Ecoregion (EAME). Supported by World Wildlife Fund (WWF), The EAME programme brings together local people and partners to rebuild and secure a healthy environment for the future of the East Africa marine ecoregion and ensure that both marine resources and the livelihoods of coastal communities are

protected. The countries involved include Somalia, Kenya, Tanzania, Mozambique and South Africa.

4.4 Implementing agency and strategy

The institutional mechanism to execute the coordination of activities and programs related to coastal and marine areas and associated resources plays a central role in the successful implementation of the policy framework. In this respect, the mechanism should possess the following critical attributes for it to be effective:²⁰⁴

- It must have the appropriate legal/legislative authority. The realisation and appreciation of such authority by other actors will significantly improve chances of cooperation and compliance in the actual implementation of programmes.
- It should be in a position to influence other levels of Government and actors that have decision-making authority in relation to the coastal and marine areas.
- It must have access to appropriate scientific and technical expertise and data to facilitate the making of informed and responsive decisions.

In light of the above, the selection of a lead agency and the creation of an interagency committee such as a National Coordinating Committee on Marine Affairs bringing together relevant Government ministries and other stakeholders should be the way forward for Kenya. This aspect can be greatly enriched by the already discussed ICZM experience in the Nyali-Bamburi-Shanzu area and also Agenda 21 which calls on States to consider establishing, or where necessary strengthen, appropriate coordinating mechanisms (such as a high-level policy planning body) for integrated management and sustainable development of coastal and marine areas and their resources, at both the local and national levels.²⁰⁵ It is important that such mechanism include consultation, as appropriate, with the academic and private sectors, NGOs, local communities and resource user groups.²⁰⁶

Although the composition of such a committee should be multi-sectoral comprising representatives of each of the main public sector agencies directly responsible for coastal and

²⁰⁴ See Cicin-Sain, B. and Knecht, R.W. (1998), note 35 at 62.

²⁰⁵ See paragraph 17.6 of Agenda 21, which also gives the key items that can be achieved within the national coordinating mechanism. Online

<www.un.org/esa/sustdev/documents/agenda21/english/agenda21chapter17.htm> (5 November 2007).

²⁰⁶ Ibid.

ocean management and development activities, representation should be at the decisionmaking level. Other relevant agencies may be co-opted when the need arises.

With regard to the committee's roles, in addition to executing the coordination of the activities and programs related to coastal and marine areas and associated resources achieved through the enactment or amendment of legislation, preparation of new or revised regulations and procedures and establishment of interagency mechanisms among others,²⁰⁷ the coordinating committee should also identify coastal and marine management and development issues then develop medium to long-term strategy and action plans with set targets and facilitate communication among the key actors.

Other roles may include to promote and strengthen interagency and inter-sectoral collaboration; reduce interagency rivalry and conflicts and in case they occur, provide a forum for conflict resolution, minimize duplication of functions of line agencies, create awareness and promote the participation of the public, the private sector, NGOs and CBOs in the implementation of the programmes.

Furthermore, the committee should monitor and evaluate the progress of activities and programmes and carry out the implementation of actions resulting from the evaluation exercise. The body should also carry out post-implementation functions such as ensuring compliance and subsequent periodic reporting to the relevant government organ on the state of the coastal and ocean environment and general progress. Other responsibilities of the said committee should be spelt out in the TOR.

For the coordinating mechanism to carry out its functions effectively and efficiently to realise the intended objectives, in addition to the already mentioned attributes, it should be given the necessary funding, adequate staff with appropriate training on integrated management and full support by all the stakeholders especially the Government. The planning process of integrated management should also be included in the national development planning process.

²⁰⁷ See Cicin-Sain, B. and Knecht, R.W. (1998), note 54 at 292.

Additionally,²⁰⁸

- The roles of other relevant agencies need to be clearly spelt out i.e., the institutions involved are given clear assignments of responsibilities and are held accountable.
- All stakeholders should be informed and sensitized to all coastal and marine related issues. The public should also be made fully aware of the process and its objectives.
- The policies to be followed by the programmes need to be clearly and unambiguously spelled out.
- All information pertaining to marine environment must also be readily available to guide the process and for decision-making. To achieve this, a coordinated approach is needed, especially within the planning and management authorities.

4.5 Monitoring, evaluation, and adjustments

In order to ensure that the implementation of programmes set out for the coastal and marine areas remain on track besides being continually improved through corrective measures where necessary, regular monitoring and evaluation procedures need to be carried out. This can be achieved more effectively if the overall objectives and those of individual management and/or action projects are specified as clearly and as quantitatively as possible; otherwise assessments as to how well they are being achieved will be difficult.²⁰⁹

As monitoring procedures include identification of expected performances, assessment and/or measurement of the actual performance of the strategy, this can be achieved through a series of objective indicators that ought to be developed in advance in order to make them easily measurable.

These indicators will also provide an assessment of implementation targets and overall effectiveness of programmes. The results of the programmes need to be clearly communicated to all stakeholders in order to maintain on-going involvement and understanding of progress made. Enough resources should also be availed in order to enhance the level of assessment of the programmes set out.

²⁰⁸ For a discussion on how chances for effective implementation of the Coastal Management programs can be enhanced, see The International Bank for Reconstruction and Development (The World Bank) Report (1996). Guidelines for Integrated Coastal Zone Management: Environmentally Sustainable Development Studies and Monographs Series No. 9. Jan C. Post and Carl G. Lundin, *Eds.* Washington, DC. ISBN 0-8213-3735-1.

²⁰⁹ *Ibid* at 12.

4.6 Maritime security

Although it is the responsibility of the Government to provide comprehensive maritime security as it has economic, environmental, political, and military dimensions for all the ocean users and vessels within its marine jurisdiction, this has to be coupled with an effective surveillance and enforcement strategy that addresses the various activities and threats associated with the area. These include increased illegal movement of goods, drugs, international terrorism, dumping of waste, transportation of plants and animals into and out of the country, and an increasing number of offshore installations such as those of oil and gas and submarine cables.

Surveillance is intended to provide information on legal and illegal activities in the marine jurisdictions and that related to safeguarding human life at sea. Adherence to the provisions of IMO convention with regard to safety at sea should also be properly domesticated into the country's maritime laws. Surveillance must go hand in hand with effective intelligence and enforcement action if it is to achieve the intended objectives.

Intelligence information sharing amongst the various players in the ocean frontier is an important aspect that should be encouraged in order to provide the most effective surveillance possible within available resources. The Government should also promote improved coordination and sharing of marine-related intelligence between the Kenya Navy and other players, key being the police force.

Effective surveillance and enforcement procedures are recognised to play a fundamental role in protecting and promoting national interests particularly with regard to fisheries resources. Illegal, Unreported and Unregulated (IUU) fishing operations in the EEZ, for instance, are denying the Government huge incomes apart from jeopardizing fish stocks in the area. The Government should therefore step up its efforts in this endeavour through review and rationalisation of intelligence, surveillance and enforcement mechanisms, including reviewing legislation relating to enforcement; and examining the application of cost effective technologies for achieving better surveillance of surface vessel activities in important marine environments such as the rich tuna belt.

The promotion of international collaboration is also an important aspect in the prevention of illegal activities in the offshore and in the quest for fulfilment of international obligations which can be better achieved through cooperating with other countries. In undertaking all the above, the government should not interfere with the right of innocent

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passage of ships through the country's territorial sea as espoused in Article 17 of the UNCLOS as long as such passage conforms with Article 19 and other rules of international law.²¹⁰

4.7 Funding

Funding of the programmes and activities outlined in the policy framework constitutes a critical aspect that will determine their overall success. Adequate financial resources must therefore be availed at the different phases that include development, implementation and operation, and monitoring/evaluation phases.

Currently, the Kenya Government makes annual budgetary allocations to all its ministries and departments that deal with coastal and marine issues. The importance of continued Government funding in environmental and sustainable development issues was underscored during the UNCED meeting where it was agreed that most financing for Agenda 21 would come from within a country's own public and private sectors.²¹¹ This was after the meeting failed to muster sufficient financial commitments to support all of Agenda 21.²¹²

Despite the above understanding, it has been recognised that the number of donor agencies willing to fund coastal and marine related issues such as management has increased significantly since the conclusion of UNCED. Support can therefore be sought from international organizations, specialised agencies and international aid agencies/development partners²¹³ and other initiatives such as the Global Environment Facility (GEF).²¹⁴ GEF

²¹⁰ Article 19 defines innocent passage as transit that is not prejudicial to the peace, good order or security of the coastal State.

²¹¹ See Haas, P., Levy, M. and Parson, T. 1992. Appraising the Earth Summit: How should we judge UNCED's success? *Environment* 34 (8): 6-11, 26-33. Online <www.ciesin.columbia.edu/docs/008-570/008-570.html> (27 July 2007).

²¹² *Ibid*.

²¹³ Some of the international organizations and aid agencies include The World Bank, United Nations Environment Program (UNEP), Canadian International Development Agency (CIDA), Danish International Development Agency (DANIDA), European Union (EU), Swedish International Development Cooperation Agency (SIDA), United Nations Development Programme (UNDP), Norwegian Agency for Development Cooperation (NORAD), Japan International Cooperation Agency (JICA), African Development Bank (ADB), Food and Agriculture Organization (FAO) and Finnish International Development Agency (FINNIDA) among many others.

²¹⁴ Global Environment Facility was set up in 1991. It is implemented by the World Bank, the United Nations Development Programme and the United Nations Environment Programme. Since 1991, GEF has provided grants for more than 1,300 projects in 140 countries. Online <www.gefweb.org/interior.aspx?id=50> (27 July 2007).

provides funding to developing countries for projects and programs that protect the global environment. It grants support to projects related to climate change, land degradation, persistent organic pollutants (POPs), loss of biodiversity, international waters and the depletion of the ozone layer.²¹⁵ Such funding may be obtained in association with particular coastal or marine project or as part of Government effort to enhance and strengthen the country's environmental and resource management system. Environmental costs through polluter or user pays principles may also contribute to design and implementation of the programmes.

Besides funding from the Government and donor agencies, costs for ongoing projects should also be met by the beneficiaries of such programmes. For instance, in the case of MPAs and ICM initiatives, the users of the improved or better-protected amenities or those who benefit from more productive fishery nursery grounds and habitats or even those whose property is better protected from healthy sand dunes, coral reefs or mangroves should be made to contribute.²¹⁶

At the initial stages of the programmes (development phase), dedicated seed funding mainly from the central Government and other relevant private sector stakeholders must be set aside to initiate the various programmes and activities. Costs at this early stage can be greatly reduced by relying on the already existing Government employees/staff who may be seconded from the various Government departments and other relevant stakeholders and also on the already existing data. This approach is believed to have an added advantage as these employees would already be having some background knowledge on coastal and marine issues and programmes in addition to bringing in diverse knowledge, views and a wealth of experience in the planning and implementation processes.²¹⁷

Generally, financial and economic justification is an essential aspect of all the programmes and activities as it provides an idea of its costs compared to the benefits. This is of particular interest to Government decision makers because the programmes will require huge public investments, which in most cases have other equally important uses. The development and implementation budget should be realistic and within the financial

²¹⁵ *Ibid*.

²¹⁶ On this point, see Cicin-Sain, B. and Knecht, R.W. (1998), note 54 at 168.

²¹⁷ For more discussion on the development phase, see Cicin-Sain, B. and Knecht, R.W. (1998), note 54 at 166.

capability of the Government or projected donor assistance. It should also form part of other initiatives to address poverty and economic growth in the wider perspective in the country.

4.8 Maritime education, training and research

The world oceans, which cover two-thirds of the earth's surface, represent a massive amount of scientific information where nearly all science disciplines are represented.²¹⁸ Much of the knowledge gained from the seas has implications not only for the pure sciences, but for applied sciences and technology as well. The significance of marine scientific research has been recognised by the international community as reflected in UNCLOS, which mandates States parties to cooperate and promote marine scientific activities for peaceful purposes and for the benefit of humanity.²¹⁹ Besides UNCLOS, Agenda 21 links virtually all areas to education, raising of public awareness and training and even more closely to the ones meeting basic needs, capacity-building, data and information, science, and the role of major groups.²²⁰

As coastal and ocean management involves working with diverse levels of users and stakeholder groups, it requires sound knowledge of a variety of opportunities, environmental factors and other challenges facing these areas. This therefore calls for coastal and ocean managers to have a wide range of skills to deal with the enormous complexity of these areas. They must have sound project/program management skills, understand the practice and process of integrated coastal management, have a strong technical background in any one of the natural or social sciences, demonstrate key professional skills, and be able to interact with communities and policy makers while ensuring success.²²¹ This interaction will yield to better information exchange, improved understanding and ultimately effective decision making and implementation process.

In order to achieve the above requisite expertise, deliberate measures that include capacity building and development have to be firmly put in place as a continuous process. In

²¹⁸ See UN Atlas of the Oceans: Marine scientific research. Online

<www.oceansatlas.org/servlet/CDSServlet?status=ND0xODk2JjY9ZW4mMzM9KiYzNz1rb3M~> (05 August 2007).

²¹⁹ For more information on this issue, see UNCLOS part XIII, note 1.

²²⁰ See UNCED Agenda 21: Chapter 36 on promotion of education, public awareness and training. Online <www.un.org/esa/sustdev/documents/agenda21/english/agenda21chapter36.html> (06 August 2007).

²²¹ See WIOMSA (2001). Coastal Management in the Western Indian Ocean region: A Capacity Needs Assessment. Online <www.crc.uri.edu/download/WIO_0052.PDF> (27 July 2007).

the quest to realise this, important questions that include how to develop this capacity, what skills do these managers need, how are such skills best developed and once the skills are developed, how can favourable enabling conditions be created so that they can be effectively applied need to be fully addressed. Since it is more likely that the ocean managers have different technical backgrounds, establishing and encouraging tertiary education, workplace training or even special training programmes to ensure continued development and dissemination of best practices in marine and coastal management affairs is an important aspect that should always be put into consideration. Agenda 21 outlines the importance for individual countries to identify priorities and determine the means for building capacity and capability to implement it while taking into account their own environmental and economic needs.

Capacity development has been described as:

The process by which individuals, groups, organizations and countries develop, enhance and organize their systems, resources and knowledge, all reflected in their abilities, individually and collectively, to perform functions, solve problems and set and achieve objectives.²²²

Capacity development comprises the human resources and institutions that permit and enable a country to achieve its development goals.

Chapter 37(1) of Agenda 21 describes capacity building to encompass:

The country's human, scientific, technological, organizational, institutional and resource capabilities.²²³

Chapter 37(2) of Agenda 21 recognises that building capacity to implement it will require the efforts of the countries themselves in partnership with relevant UN organizations, as well as with developed countries. In this regard, considerable progress has been recorded in the area since its conclusion in 1992, especially with respect to coastal and ocean management. This is demonstrated by the major UN bodies, which have significantly expanded their own

²²² See UNDP. Capacity Development and Public Private Partnerships. Online <www.gdrc.org/uem/undp-capacity.html> (06 August 2007).

²²³ See Agenda 21, Chapter 37 on national mechanisms and international cooperation for capacity building in developing countries. Online <www.un.org/esa/sustdev/documents/agenda21/english/agenda21chapter37.html> (06 August 2007).

capacities while at the same time sponsoring efforts to build capacity at national, regional and sub national levels in integrated coastal and ocean management. Some of these UN organizations include FAO, UNEP, IMO, UNDP, DOALOS, IOC and the World Bank.²²⁴ It is essential to point out at this stage the critical role played by the International Ocean Institute (IOI) in capacity building through training programmes focused on the ocean environment and sustainability.²²⁵

Chapter 37(2) also acknowledges the significance of technical cooperation, including that related to technology transfer and know-how, as a way of developing or strengthening individual and group capacities and capabilities. However, this should serve the purpose of long-term capacity building and needs to be managed and coordinated by the countries themselves.

On scientific and technological front, chapter 17(13) of Agenda 21 calls on States to cooperate in the development of necessary coastal systematic observation, research and information management systems. It goes further to outline that other States with the capability should provide access to and transfer of environmentally safe technologies and methodologies for sustainable development of coastal and marine areas to developing countries. Although this aspect can be better pursued within the national framework for technical cooperation, it is important to bear in mind that it will only be effective when it is related to the country's own strategies and priorities on environment and development and when development agencies and the government define improved and consistent policies and procedures to support the process.

With respect to Research and Development (R&D), albeit it being not very well established in the country, it is an important element that can play a big role in enhancing human development, economic growth, and poverty reduction. Currently, the overall mandate of the management of R&D in Kenya lies with the Ministry of Science and Technology. However, Government ministries and departments that implement R&D related activities and programmes, continue doing so individually and at the sectoral level without proper coordination. Lack of harmonization on research policies and limited research funding have also been identified as some of the major impediments facing R&D in the country. Others

²²⁴ For a discussion on how these UN organizations have contributed in capacity building in relation to ICM, see Cicin-Sain, B. and Knecht, R.W. (1998), note 54 at 109.

²²⁵ IOI is an NGO whose mandate is focused on the sustainable development of the Oceans. Its headquarters is based in Malta but has Operational Centres located in 25 countries around the world including Kenya. See online <www.ioinst.org/> (06 August 2007).

include lack of proper collaborative efforts between the various entities, limited applied research, limited mechanisms for dissemination and application of research findings, weak institutional capacity in terms of human resource and equipment and the lack of the linkage between R&D and general development. These challenges also extend to the coastal and ocean regimes and the associated institutions.

In order therefore to achieve quality and meaningful R&D, sufficient funding, recruitment and retainment of highly trained research staff, provision of adequate and appropriate facilities and equipment and encouraging collaborative research and partnerships with other government agencies, research institutions and many other entities and nations are all indispensable. It is apparent that for Kenya to meet her needs in R&D, it is of paramount importance to prioritize it in national development strategies.

On environmental education, although the Government's mission is to integrate it into the entire national education system, special emphasis should be placed on long-term marine education on the sustainability of ocean space and resources at all levels, from primary to university and even adult education and the public in general.²²⁶ This may be achieved through, where necessary, the development of relevant curricula, provision of appropriate teaching materials and staff and strengthening/expansion of institutions offering marine education especially at higher education levels. One other important aspect that closely relates to marine education is the involvement of the public in awareness creation.

In Kenya, the awareness and appreciation of the significance of coastal and marine resources and their contribution in the economy is still weak at the local level among resource-users as well at the policy-making level. Although some of the initiatives earlier mentioned, such as ICZM pilot programmes along selected coastal areas have to some degree contributed in awareness creation, it is still evident that well meaning efforts have been few, sporadic and not very well supported.

In this connection, marine education and awareness programmes targeting various categories of the public should therefore be enhanced and encouraged so that they can play an important role in decision making such as in sustainable resource use and in protection of coastal and marine environments. One way of achieving this is through tailor-made programmes, the provision of adequate resources targeting community capacity building

²²⁶ The adult education and public categories include *inter alia* ocean affairs managers, community-based managers, leaders, indigenous people, fisherfolk, coastal engineers, seamen, oil industry workers, women, and the youth.

initiatives and granting them opportunities for community representation on consultative committees that touch on marine resource management and related issues.

In summary, tangible results can be achieved by consistent efforts geared towards supporting and efficiently coordinating marine related education, human resources training, research and development, awareness creation and the strengthening of relevant marine related institutions. These efforts will ultimately lead to better knowledge and skills, innovation and management tools, which will translate to enhanced capacity to deal with issues of the ocean and coastal space accordingly. The ocean policy should come out strongly on all these issues.

4.9 Ocean data and information base

Quality marine and coastal data constitutes an integral component in the process of developing management plans and policies for the area. Although a continuing challenge in the management of coastal resources has been identified to centre on the science-policy interface, improvements in resource management usually depends on better understanding of the processes involved.²²⁷ This is only achievable through credible, timely and complete data/information.

In Kenya, three major projects have contributed in the provision of ocean-related data and information.

- The Kenya National Oceanographic Data Centre (KeNODC)
- The Eastern Africa Atlas of Coastal Resources and the Ocean Data.
- Regional Cooperation in Scientific Information Exchange in the Western Indian Ocean Region (RECOSCIX-WIO).

1. The Kenya National Oceanographic Data Centre

Based at KMFRI and adopted on 20 August 1996, the Kenya National Oceanographic Data Centre (KeNODC) is part of the network of International Oceanographic Data and Information Exchange (IODE) data centres.²²⁸ Its aim is to promote research and

²²⁷ See Cicin-Sain, B. and Knecht, R.W. (1998), note 54 at 171.

²²⁸ The International Oceanographic Data and Information Exchange (IODE) supported by the International Ocean Commission of UNESCO was established in 1961 to enhance marine research, exploitation and development by facilitating the exchange of oceanographic data and information between participating member States. In Africa, the Ocean Data and Information Network for Africa (ODINAFRICA) brings together marine institutions from twenty-five member States including Kenya. The current focus of ODINAFRICA is to improve the management of coastal and marine resources and the environment in member States through the provision of data and information that address key issues that include coastal erosion, management of key

management of Kenya's coastal resources by providing various types of support to policy makers, resource managers, researchers, educational institutions, NGOs and private companies on matters of oceanographic data and information.²²⁹ KeNODC manages data sets consisting of oceanographic station data, baseline maps and ecological field data covering the coastal zone and the various maritime zones including the EEZ and beyond. Other data sets include database of institutions involved in ocean-related activities, datasets resulting from ocean observing programmes and respective metadata and tide predictions in high-low listings and hourly values based on sea level observation.²³⁰

2. Eastern African Coastal and Marine Environment Resources Database and Atlas Project

Funded by the Belgian Government and implemented within the Eastern African Action Plan of the Regional Seas Programme of UNEP, the Eastern African Coastal and Marine Environment Resources Database and Atlas project (EAF/14) launched its first coastal resources atlas in Kenya in July 1998. With KMFRI as the lead project collaborating agency, the Kenyan Coastal Resources Database collates existing information from all agencies responsible for coastal environment and summarises the information in electronic database, maps and atlases. The database and five sets of coastal resource maps contain information on physical parameters of the coast including climate, hydrology, oceanography and coastal types. This project played an important role in providing the much needed information for the Integrated Coastal Zone Management (ICZM) pilot programme in Kenya.

3. Regional Cooperation in Scientific Information Exchange in the Western Indian Ocean Region

The Regional Dispatch Centre (RDC) based at KMFRI, coordinates the RECOSCIX-WIO information project whose main aim is to establish a lasting network of marine and aquatic institutes in the Western Indian Ocean (WIO) region, thus promoting and expanding its scientific capabilities.²³¹

ecosystems and habitats, pollution, sustainable use of living resources, and tourism. For more information, see ODINAFRICA online <www.odinafrica.org/> (20 September 2007).

²²⁹ See the Kenya National Oceanographic Data Centre (KeNODC), online <www.nodc-kenya.org/index.htm> (20 September 2007).

²³⁰ Ibid.

²³¹ See RECOSCIX-WIO for more information on its objectives and programmes. Online <www.onefish.org/servlet/CDSServlet?status=ND00MjcuMjM4OTYmNj1lbiYzMz13ZWItc2l0ZXMmMzc9a W5mbw> (20 September 2007).

Besides the above projects, coastal and marine data/information may be available in relevant mainstream Government ministries and departments, State corporations, research institutions, oil companies, universities, private sector firms, and other regional and international organizations.²³² However, access to some of the datasets may be restricted by high costs involved, constraints in technology and in some cases lack of knowledge on the presence of such data, intellectual property issues and confidentiality aspects associated with some of the data due to security reasons.

Other issues of concern include data sourcing, collection and analysis, data quality assurance, storage, access, dissemination, funding and overall management. It is evident that the acquisition of marine data is an expensive venture, which requires a lot of resources, not available in most cases. The problem is exacerbated by lack of coordination, collaboration and networking amongst the existing institutions. This in most cases leads to duplication of efforts and in some instances institutional conflicts.²³³

In an attempt to address some of the above concerns, a policy on freedom of information is currently being formulated.²³⁴ In addition, the establishment of National Environment Information Centre (NEIC) with the mandate to provide up-to-date information on the environment for development planning as recommended by the National Environment Action Plan, will go a long way in addressing the environmental data related issues. The National Environment Information Centre working in close collaboration with institutions such as NEMA and KMFRI should also establish, strengthen and coordinate long-term reliable data generation, collection, analysis, storage, dissemination, management and monitoring programmes among other responsibilities. This process will greatly aid in the

²³² The key international organizations in this case include the Food and Agriculture Organization on fisheries data, UNEP, IMO, The World Bank and IUCN.

²³³ For a detailed discussion on issues related to environmental data management, see United Nations (2002). The Kenya Country Profile. A report prepared for the Commission on Sustainable Development (CSD) as part of country profiles published on the occasion of the World Summit on Sustainable Development (WSSD), held in Johannesburg from August 26 to September 4, 2002, p 63.

²³⁴ With an aim of ensuring maximum access to information held by public authorities to all Kenyans, the draft policy on freedom of information has touched on information collection, storage, dissemination, security among other items. However, even on these issues, the policy does not take care of the special nature of coastal and marine data/information concerns. The report should therefore be enriched and made to capture the special nature of different data sets including marine data. See Report of the Ministry of Information and Communication. 'Draft Freedom of Information Policy' April 2007. Online <www.information.go.ke/docs/FOI%20Policy.pdf> (23 August 2007).

achievement of consistency and comparability of information including monitoring methodologies, and data storage formats.²³⁵

It is worth noting that more open access to major coastal and marine datasets will catalyse efforts to collect, analyse, and disseminate more data. This increased information base will provide a better understanding of the marine and coastal regimes, the ecosystems dynamics and the designing of sound management strategies.

Despite the fact that Kenya like many other coastal States lacks reasonable capacity to acquire marine data, the government should continue strengthening and expanding the existing marine related institutions and provide enough funding to facilitate the carrying out of more elaborate marine research programmes. The acquisition of marine research vessel(s) with capacity to conduct various surveys even in deep sea should be considered as a matter of priority.

All the above efforts, if well implemented shall enhance the fulfilment of Chapter 17(8) of Agenda 21, which calls on coastal States to improve their capacity to collect, analyse, assess and use information for sustainable use of resources, including environmental impacts of activities affecting the coastal and marine areas.²³⁶

The use of information for the empowerment of people to engage the authorities and decision-makers has also been recognised to play a big role in creating the demand for good governance and reducing the impact of vested interests.²³⁷ Similarly, the disclosure of information to civil society on issues related to resource exploitation such as fisheries access agreements, mineral extraction permits etc. and their benefits is equally important. There is the need to ensure that important national core baseline datasets are made available and easily accessible including those for marine boundaries, bathymetry, distribution of species, marine zones and protected areas, fishing statistics and marine habitat, and oceanographic parameters.

Regional cooperation is a critical component needed on a much larger scale especially with respect to fisheries access agreements and other extractive industries in order to encourage equitable, transparent and sustainable industries.

²³⁵ Report of The Commonwealth of Australia discusses the key aspects of information for management with regard to ocean data and information. See The Commonwealth of Australia (1998), note 156 at 31.

²³⁶ In an attempt to achieve the improved capacity, Chapter 17(8) outlines five key areas. See Chapter 17 online,
<www.un.org/esa/sustdev/documents/agenda21/english/agenda21chapter17.htm> (23 August 2007).

²³⁷ See McLean B. (2006), note 203 at 4.

In summation, the ocean management policy should provide a framework to ensure that the decision makers, the public and all other stakeholders have access to clear, objective, timely and relevant information on which to base their judgments and positions in relation to the marine environment.

4.10 Summary

The implementational aspect of the policy framework as outlined in this chapter is done from two major fronts; the legal and institutional perspectives. In the legal context, the existing legal framework related to the marine regime has been analysed with key weakness areas being pointed out. Closely related to this is the issue of implementation of international and regional conventions and agreements that the State is party to. It has been noted that it is in the interest of the country that ratification and proper domestication of these instruments is done. This will not only contribute to better ocean governance practices, but will also avail the State an avalanche of benefits that come with such an undertaking.

On the institutional arrangement, the key institutions involved in ocean affairs and their main roles have been discussed. Although the majority of the leading institutions are Government ministries and departments, it has been observed that NGOs, CBOs and other private sector oriented bodies do play a vital role, especially in awareness raising, educating and training and organising communities.

Other components that have been deliberated in this chapter include the implementing agency whose critical attributes have been outlined, implementation strategy and monitoring, evaluation and adjustments. The chapter concludes by stressing the importance of adequate funding, proper and well coordinated maritime security, comprehensive maritime education, training and research and finally quality ocean data and information base in the sustainable use and holistic management of the coastal and ocean resources and opportunities.

CHAPTER FIVE: CONCLUSION AND RECOMMENDATIONS

From the foregoing, it can be concluded that although the formulation and implementation of the Kenya's integrated ocean management policy framework should be articulated and coordinated within the existing national action plans, programmes and policies, others that have emanated from the country's commitment to international legal instruments and have since been domesticated to national law, there is urgent need to harmonise all the sectoral legislations and institutional arrangements related to the marine regime so that proper coordination and overall management of ocean activities can be achieved.

For this to happen and in order to realise the vision and objectives of the policy strategy, the Government must take a leading role as a facilitator, by providing a conducive environment, the requisite infrastructure and general support systems. The implementation of the programmes set out in the policy strategy must also be carried out alongside other broad initiatives as in itself cannot solve all the problems or facilitate the sustainable utilization of ocean and coastal resources and opportunities effectively. In this respect, the proper implementation of various management strategies such as Integrated Coastal Management (ICM), Marine Protected Area (MPA) and Large Marine Ecosystem (LME) are critical in the protection of the coastal and marine environments and in the promotion of sustainable exploitation of the resources and other opportunities available. These approaches, as already tried in the country, can greatly inform and enrich some aspects of the policy formulation and implementation processes.

Additionally, the realisation of the policy strategy objectives can only occur with the investment of time, adequate resources, political goodwill and dedicated effort by all stakeholders, coordinated by a relevant Government organ/agency with the capacity to do it. This organ must have the appropriate legal/legislative authority so that it can be seen as a legitimate and an integral part of the process. It should also be at a higher bureaucratic level than the sectoral agencies to give it the necessary authority to carry out its functions more effectively. The emphasis on use of quality data, competent personnel and inclusion of all relevant stakeholders in the entire process and the proper facilitation of monitoring, evaluation, and enforcement activities do similarly form a critical part of policy framework formulation and implementation process.

Likewise, there is need to actively involve the local communities and other stakeholders in the process through awareness and educational programmes. This will promote sense of ownership and subsequent cooperation which may translate to improved

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health of the marine environment, sustainable use of the related resources and opportunities and reduction in enforcement costs.

Equally important is the need for the policy strategy to recognize the ocean frontier as a global component, which requires collaborative efforts with other regional and international bodies and initiatives. Such an approach must be addressed within the country's existing international framework associated with the coastal and marine environment. However, there are a number of issues which need to be properly addressed for the State to exercise her maritime jurisdictional authority more effectively. As a starting point, apart from Kenya proclaiming her contiguous zone as provided in UNCLOS which it has not done, there is the need for the country to establish and have binding agreements with her adjacent neighbouring coastal states in as far as the offshore boundaries are concerned.

REFERENCES

Alusa, A.L. and Ogallo, L.J. (1992). An overview of implications of expected climatic change in East African Coastal Region. UNEP Regional Seas Reports and Studies No. 149. Online <www.unep.ch/regionalseas/main/eaf/rs149.html> (07 September 2007).

Carr, M.H. (2000). Marine protected areas: Challenges and opportunities for understanding and conserving coastal marine ecosystems. *Environmental Conservation* **27** (2): 106–109. Online http://journals.cambridge.org/download.php (03 August 2007).

Central Bureau of Statistics. Kenya Facts and Figures: 2006 Edition. Ministry of Planning and National Development, p 4-5. Online:

<www.cbs.go.ke/downloads/pdf/Kenyafacts2006.pdf> (11 July 2007).

Centre for Advanced Engineering (2003). Economic opportunities in New Zealand's Oceans: *Informing the Development of Oceans Policy*. p 7. Online www.mfe.govt.nz/publications/oceans/economic-opportunitiesoceansjun03/economic-opportunities-oceans-jun03.pdf (11 September 2007).

Cicin-Sain, B. and Knecht, R.W. (1998). Integrated Coastal and Ocean Management: Concepts and Practices, Island Press. Washington, DC 20009.

Cicin-Sain, B. and Belfiore, S. (2003). Linking Marine Protected Areas to Integrated Coastal and Ocean Management: A review of theory and Practice. Discussion paper for CZ 2003 and for the World Parks congress in September, 2003, Durban, South Africa.

Coast Development Authority (2001). Moving Coastal Management Forward. *Kenya Progress Report: 1994-1999.* A joint initiative between the Coast Development Authority, the University of Rhode Island Coastal Resources Centre and the United States Agency for International Development-Kenya. Coastal Management Report No. 2231 ISBN 1-885454-41-4. pp. 2-12.

Coast Development Authority (CDA) *et al.* (1996). Towards Integrated Management and Sustainable Development of Kenya's Coast: Findings and Recommendations for an Action Strategy in the Nyali-Bamburi-Shanzu area. *A report prepared within the framework of the action plan for the protection and management of marine and coastal areas in the Eastern African Region*.

Commonwealth of Australia (1998). Australia's Oceans Policy: Specific Sectoral Measures. Trendsetting Pty Ltd, Canberra. Online <www.environment.gov.au/net/oceanspo.html> (11 September 2007).

Doute, R.N., Ochanda, N., and Epp, H. A forest inventory of Kenya using remote sensing techniques. Kenya Rangeland Ecological Monitoring Unit Technical Report series no. 30, Nairobi, 1981.

Ehler, C.N. (2005). Integrating management of marine protected areas with coastal and ocean governance: Principles and practices. *An Editorial in Ocean & Coastal Management 48 (2005) 843–846*.

Food and Agriculture Organization of the United Nations (FAO). Fisheries and Aquaculture Department: National Aquaculture sector overview-*Kenya Report*. Online

<www.fao.org/fi/website/FIRetrieveAction.do?dom=countrysector&xml=naso_kenya.xml> (04 September 2007).

FAO (2001). Information on Fisheries Management in the Republic of Kenya. Online <www.fao.org/fi/fcp/en/ken/body.htm> (17 July 2007).

Fishbase (2005). Information by Country/Island. Online <www.fishbase.org/> (16 July 2007).

Government of Kenya (2002). Report of the Task Force on the review of Maritime laws of Kenya.

Government of Kenya (1999). The Environmental Management and Coordination Act. No. 8 of 1999. Online <www.nema.go.ke/emca.html> (16 August 2007).

Haas, P., Levy, M. and Parson, T. (1992). Appraising the Earth Summit: How should we judge UNCED's success? *Environment* 34 (8): 6-11, 26-33. Online http://www.ciesin.columbia.edu/docs/008-570/008-570.html (27 July 2007).

Ikiara, M. and Okech, C. (2002). Impact of tourism on environment in Kenya: status and policy. *Kenya Institute for Public Policy Research and Analysis (KIPPRA)*. Online <www.eldis.org/go/display/?id=21267&type=Document> (02 August 2007).

International Bank for Reconstruction and Development (The World Bank) Report (1996). Guidelines for Integrated Coastal Zone Management: Environmentally Sustainable Development Studies and Monographs Series No. 9. *Jan C. Post and Carl G. Lundin, Eds. Washington, DC.* ISBN 0-8213-3735-1. P 1-14.

International Institute for Sustainable Development (IISD). The Ocean Policy Summit 2005 Bulletin: A summary report of The Ocean Policy Summit (TOPS). Volume 117, No. 1, Sunday, 16 October 2005. Online <www.IISD.CA/SD/TOPS2005> (07 July 2007).

IUCN (1994). Guidelines for protected Area Management Categories. CNPPA with the assistance of WCMC . IUCN, Gland Switzerland and Cambridge, UK. p7

Kariuki, J. (2005). Review of the State of World Marine Capture Fisheries Management: Indian Ocean. *FAO Technical Paper 489*. Online <www.globefish.org/files/tp 489 kenya 335.pdf> (19 July 2007).

Kay, R. and Alder, J. (2005). Coastal Planning and Management. 2nd ed. Taylor and Francis press.

Kelleher, G. (1999). Guidelines for Marine Protected Areas. IUCN, Gland, Switzerland and Cambridge, UK. xxiv +107pp, ISBN: 2-8317-0505-3. Black Bear Press Ltd, Cambridge, UK.

Kenya Meteorological Department (2007). Polar Meteorology: understanding global impacts.

Kenya National Bureau of statistics. Online <www.cbs.go.ke/#> (21 July 2007).

Kenya Wildlife Service (2007). Marine National Parks and Reserves. Online <www.kws.org/marine.html> (05 September 2007).

McClanahan, T.R., Mwaguni, S. and Muthiga, N.A. (2005). Management of the Kenyan Coast. Ocean and Coastal Management 48 (2005) 901–931.

McLean, B. (2006). The global forum on oceans, coasts, and islands: African Perspectives on Linking National and Regional Efforts in Ocean and Coastal Management. Reports from the Third Global Conference on Oceans, Coasts and Islands January 23-28, 2006, UNESCO, Paris.
Miles, Edward L. (1999). The Concept of Ocean Governance: Evolution Toward the 21st Century and the Principle of Sustainable Ocean Use. *Coastal Management*, 27:1, 1-30.

Ministerial Advisory Committee on Oceans Policy (2001). Towards an oceans policy for New Zealand. A Report on consultations prepared to the Ministerial Group on Oceans Policy.

Ministry of Information and Communication (2007). Draft Freedom of Information Policy. *Republic of Kenya*.

Munga, D. (1983). Marine petroleum pollution monitoring along the Kenyan coast. Kenya Aquatica 1.

National Environment Management Authority (NEMA). Online </br/>www.nema.go.ke/FACTS.ASP> (11 July 2007).

National Museums of Kenya. Online <www.museums.or.ke/dg.html> (23 July 2007).

National Oceans Office (2003). Oceans Policy: Principles and Processes. This document was prepared by Australia's National Oceans Office to facilitate consultation on the development of a Commonwealth framework for integrated and ecosystem-based management, as part of Australia's Oceans Policy. Online

<http://eied.deh.gov.au/coasts/oceanspolicy/publications/pubs/principles-processes.pdf> (02 August 2007).

National Oil Corporation of Kenya. Upstream petroleum exploration opportunities - Lamu Basin. Online <www.nockenya.co.ke/> (21 July 2007).

Nevill, J. (2005). Good governance of the oceans: Key resource management principles. Online <www.ids.org.au/~cnevill/marineHobartPrinciples.htm> (02 August 2007).

Nyangila, M.J. (2006). Museums and Community involvement: A case study of community collaborative initiatives-National Museums of Kenya. Online www.intercom.museum/documents/1-3Mhando.pdf (14 February 2008)

Obura, D.O. (2001). Kenya. Marine Pollution Bulletin, Vol. 42, No 12, pp1264-1278.

Odido, M. (1998). Marine Science Country Profiles: Kenya. Intergovernmental Oceanographic Commission & Western Indian Ocean Marine Science Association.Report IOCINCWIO-IV/Inf. 5.

Office of the Geographer, Bureau of Intelligence and Research, USA (1981). Maritime Boundary: Kenya–Tanzania. Limits in the sea report No. 92.

Okemwa, E.N., Ruwa, R.K., and Mwandotto, B.A.J. (1997). Integrated coastal zone management in Kenya: initial experiences and progress. *Ocean and Coastal Management*, Vol. 37, No. 3, pp. 319-347.

RPS Bowman Bishaw Gorham (2006). Kenya offshore exploration drilling blocks L5 and L7: Project report. Report prepared for Woodside energy (K) Pty. Report No: M05071 (REV 1).

Swanson, R, Menczer, K., and Michaels, G. (2006). Kenya Forest and Coastal Management Programs: *Mid Term Evaluation*. p53. Online

<http://pdf.usaid.gov/pdf_docs/PDACJ160.pdf> (20 July 2007).

Tiomin Resources Inc. (2005). Is it trillions, billions or millions? The Kwale Mineral Sands Project. Online <www.tiomin.com/s/Articles.asp?ReportID=20427&_Type=Articles-and-Comments& Title=Is-it-trillions-billions-or-millions> (23 July 2007).

Tourism Trust Fund (2007). Study on Tourism Economic Impact Analysis. Online <www.ttfkenya.org/node/267> (20 July 2007).

Twong'o, T.K. and Sikoyo, M.G. Status of the Resources of Coastal aquatic ecosystems of Kenya and Tanzania. Online

<www.acts.or.ke/pubs/books/docs/TBNRM%20%20Status%20and%20Trends%20Chpt5.pdf > (16 July 2007).

United Nations Department of Public Information. Summary report of UNCED (1992). Revised 23 May 1997. Online <www.un.org/geninfo/bp/enviro.html>

UNDP. Capacity Development and Public Private Partnerships. Online <www.gdrc.org/uem/undp-capacity.html> (06 August 2007).

UNEP (1995). The Eastern Africa coastal Resource maps: A newsletter of the Eastern African Coastal and Marine Environment Resources Database and Atlas Project (EAF/14), Vol. 1.

UNEP (1998). Eastern Africa Atlas of Coastal Resources: Kenya. A project of the United Nations Environment Programme with the support of the Belgian Administration for Development Cooperation. ISBN 92-807-1447-3. pp 5-113.

UNEP/CBD "Decisions adopted by the conference of the parties to the Convention on Biological Diversity at its fifth meeting, Nairobi, 15-26 May 2000." Doc. UNEP/CBD/COP/5/23 Annex III. Online <www.cbd.int/doc/decisions/COP-05-dec-en.pdf> (31 July 2007).

UNEP/GPA. Regional reports on the state of the marine and coastal environment: Eastern Africa. *Global Marine Oil Pollution Information Gateway*. Online http://oils.gpa.unep.org/framework/regional.htm> (05 September 2007).

UNEP/GPA (2007). Why have a Global Programme of Action? *The Context*. Online <www.gpa.unep.org/content.html?id=180&ln=6> (06 September 2007).

UNEP/GPA and WIOMSA, 2004. "Review of National Legislations and Institutions Relevant to Tourism, Ports, Land Reclamation and Damming of Rivers in selected countries along the Western Indian Ocean". *Report prepared by Mr. Akunga Momanyi*.

UNEP "The State of the Marine Environment: Regional Assessments - East Africa". Online <www.gpa.unep.org/documents/regional soe - part english.pdf (05 September 2007).

United Nations DOALOS (2006). Training Manual for delineation of the outer limits of the continental shelf beyond 200 nautical miles and for preparation of submissions to the Commission on the Limits of the Continental Shelf (CLCS). Office of Legal Affairs.

United Nations (2002). The Kenya Country Profile. A report prepared for the Commission on Sustainable Development (CSD) as part of country profiles published on the occasion of the World Summit on Sustainable Development (WSSD), held in Johannesburg from August 26 to September 4, 2002.

United Nations Secretary General. "Report of the General Assembly." UN Doc. A/CONF.164/37 of 8 September 1995. Online,

<http://daccessdds.un.org/doc/UNDOC/GEN/N95/274/67/PDF/N9527467.pdf?OpenElement > (02 August 2007).

United Nations Secretary General. "Report of the United Nations Conference on Environment and Development." U.N Doc. A/CONF.151/26 (Vol. I) of 12 August 1992. Annex I. Online <www.un.org/documents/ga/conf151/aconf15126-1annex1.htm> (31 July 2007).

WIOMSA (2001). Coastal Management in the Western Indian Ocean region: A Capacity Needs Assessment. *A publication made possible through the support of United States Agency for International Development and Coastal Resources Center, University of Rhode Island.* p12.

Worldfish Centre (2001). Economic Valuation and Policy Priorities for Sustainable Management of Coral Reefs. *Policy implications in the management of Kenya's Marine Protected Areas: A Case study prepared by Sam Weru.* ISBN 983-2346-29-0X. Online www.worldfishcenter.org/Pubs/coral-reef/pdf/Coral-Reef.pdf (24 July 2007).

ANNEX 1: SUMMARY OF THE MAJOR COASTAL AND OCEAN USES AND ISSUES

Item	Main uses/issues	
Exploitation of living marine resources	 Fishing (traditional, artisanal, commercial, industrial) Aquaculture Gathering of seaweed and other marine creatures (e.g., sea cucumbers, snails, shells, corals, pearls) Marine biotechnology applications 	
Navigation and communications	 Shipping Port and harbour development Navigational aids Communication cables 	
Mineral and energy resources	 Hydrocarbon (oil and gas) exploration and production Offshore drilling, pipeline laying, platforms, installation Exploitation of sand and gravel aggregates Exploitation of other minerals (gold, placer deposits, polymetallic sulphides, manganese nodules) Other forms of ocean energy (e.g., wind, wave energy, tidal power, ocean thermal energy) 	
Tourism and recreation	 Hotels and vacation homes (cottages) Tourism infrastructure (e.g., transportation, services) Swimming and diving Recreational fishing, boating Non consumptive aesthetic uses 	
Coastal infrastructure development	 Roads, bridges and other forms of transportation infrastructure Water supply and treatment Reclamation or alteration of coastal waters (e.g., for building of human settlements, impoundment for aquaculture ponds) Erosion control programmes Protection measures (against storms, waves) Replenishment of beaches Desalination facilities 	
Military activities	 Transit and manoeuvres by navies Military special areas (e.g., test ranges and exercise areas) Enforcement of national maritime zones 	
Research	 Oceanography, marine geology and coastal processes Fisheries and marine mammal research Marine biology, biodiversity, biotechnology Archaeology Studies of human uses of the oceans 	
Pollution and waste disposal	 Siting of industrial facilities and infrastructure Sewage disposal and industrial discharges Disposal of other wastes Nonpoint sources of marine pollution (agriculture, runoff, river sedimentation) Operational discharges from shipping Spills of hazardous materials (oil and toxic substances) 	

ANNEX 2: STATUTES RELATING TO THE ENVIRONMENT

- 1. The Constitution
- 2. The Penal Code Act, Cap.63
- 3. The Chief's Authority Act, Cap.128
- 4. The Public Health Act, Cap.242
- 5. The Radiation Protection Act, Cap.243
- 6. The Local Government Act, Cap.265
- 7. The Trust Land Act, Cap.288
- 8. The Land Planning Act, Cap.303
- 9. The Mining Act, Cap.306
- 10. The Petroleum (Exploration and Production) Act, Cap.308
- 11. The Agriculture Act, Cap.318
- 12. The Water Act, Cap.372
- 13. The Wildlife (Conservation and Management) Act, Cap.376
- 14. The Tourism Industry Act, Cap.381
- 15. The Forests Act, Cap.385
- 16. The Merchant Shipping Act, Cap.389
- 17. The Traffic Act, Cap.403
- 18. The Tourist Development Corporation Act, Cap.382
- 19. The Lake Basin Development Authority Act, Cap.442
- 20. The Kerio Valley Development Authority, Cap.441
- 21. The Tana and Athi Rivers Development Authority Act, Cap.443
- 22. The Factories Act, Cap.514
- 23. The Coast Development Authority Act, No. 20 of 1990
- 24. The Fisheries Act, No.5 of 1989
- 25. The Maritime Zones Act, Cap.371
- 26. The National Water Conservation Pipeline Corporation Act of 1988
- 27. The Carriage of Goods by Sea Act, Cap.392
- 28. The Timber Act, Cap.386
- 29. The Government Lands Act, Cap.280
- 30. The Registration of Titles Act, Cap.281
- 31. The Land Titles Act, Cap.282
- 32. The Land Consolidation Act, Cap.283
- 33. The Land Adjudication Act, Cap.284
- 34. The Registration of Documents Act, Cap.285

- 35. The Land (Group Representatives) Act, Cap.287
- 36. The Mazrui Land Trusts Act, Cap.288
- 37. The Equitable Mortgages Act, Cap.291
- 38. The Way Leaves Act, Cap.292
- 39. The Distress for Rent Act, Cap.293
- 40. The Land Acquisition Act, Cap.295
- 41. The Rent Restriction Act, Cap.296
- 42. The Survey Act, Cap.299
- 43. The Registered Land Act, Cap.300
- 44. The Landlord and Tenant Act, Cap.301
- 45. The Land Control Act, Cap.302
- 46. The Mortgages (Special) Act, Cap.304
- 47. The Lakes and Rivers Act, Cap.409
- 48. The Grassfires Act, Cap.327
- 49. The Crop Production and Livestock Development Act, Cap.321
- 50. The Local Authorities Act, Cap 265
- 51. The Antiquities and Monuments Act, Cap.215
- 52. The Occupiers Liability Act, Cap.34
- 53. The Plant Protection Act, Cap.324
- 54. The Fertilizers and Animal Foodstuffs Act, Cap.345
- 56. The Town Planning Act, Cap. 134 (1948)
- 57. The Fire Inquiry Act, Cap.103
- 58. The Wakf Commissioners Act, Cap.109
- 59. The Explosives Act, Cap.115
- 60. The Petroleum Act, Cap.116
- 61. The Housing Act, Cap.117
- 62. The Methylated Spirit Act, Cap.120
- 63. The Malaria Prevention Act, Cap.246
- 64. The Use of Poisonous Substances Act, Cap.247
- 65. The Food, Drugs and Chemical Substances Act, Cap.254
- 66. The Local Authorities Services Charge Act, Cap.274
- 67. The Continental Shelf Act, Cap.312
- 68. The Suppression of Noxious Weeds Act, Cap.325
- 69. The Coconut Preservation Act, Cap.332
- 70 The. Pests Control Products Act, Cap.346

- 71. The Mineral Oil Act, Cap.307
- 72. The Irrigation Act, Cap.347
- 73. The Territorial Waters Act, Cap.371
- 74. The Ewaso Ng'iro South River Basin Development Authority Act Cap.447
- 75. The Ewaso Ng'iro North River Basin Development Authority Act, Cap.448
- 76. The Science and Technology Act, Cap.250
- 77. The National Museums Act, Cap.216.

ANNEX 3: STATUTES RELATING TO COASTAL ZONE AND ENFORCEMENT AGENCIES

ISSUE	FRAMEWORK LEGISLATION	ENFORCEMENT/IMPLEMENTATION AGENCY
Security	Continental Shelf Act and Maritime Zones Act	Kenya Navy and Kenya Police
Land Tenure	Government Lands Act	Commissioner of Lands
	Land Titles Act	Physical Planning Department
	Registration of Titles Act	Local Government Authorities
	Land (Group Representatives) Act	
	Trust Land Act	
	Mazrui Land Trust Act	
	Registered Land Act	
	Land Planning Act	
Water Use and Conservation	Water Act	Ministry of Water
	National Water Conservation and Pipeline Corporation Act	National Water Conservation and Pipeline Corporation (NWCPC)
Environment and Conservation, including pollution	Local Government Act	Provincial Administration, Municipal, Town and County councils
	Kenya Ports Authority Act	Kenya Ports Authority (KPA)
	Public Health Act	Ministry of Health (MOH)
	Fisheries Act	Fisheries Department
	Wildlife Management Act	Kenya Wildlife Service (KWS)
	Environment and Conservation Act	National Environment Management Authority (NEMA)
	National Museums Act	Ministry of State for National Heritage
	Petroleum Act	Ministry of Energy
	Mining Act	Ministry of Environment and Natural Resources
Tourism	Tourist Industry Act	Ministry of Tourism
	Wildlife Act	KWS

	Tourist Development Corporation Act	Kenya Tourism Development Corporation (KTDC)
Industrial Development	Coast Development Authority Act	Ministry of Regional Development
	Factories Act	Ministry of Labour
	Export Processing Zones Act	Export Processing Zone Authority (EPZA)
	Land Planning Act	Physical Planning Department
	Town Planning Act	Municipal, Town and County Councils
Shipping	Kenya Ports Authority Act	Kenya Ports Authority (KPA)
	Merchant Shipping Act Carriage of Goods at Sea Act.	Ministry of Transport
Agriculture	Agriculture Act, Irrigation Act,	Ministry of Agriculture
	Seeds and Plants Varieties Act,	
	Coconut Preservation Act, Irrigation Act	
	Pests Control Act,	Ministry of Livestock and Fisheries Development
	Livestock Development Act	
Forestry	Forestry Act	Ministry of Environment and Natural Resources
Research	Science and Technology Act	Ministry of Science and Technology; Research Institutions
Fisheries	Fisheries Act	Fisheries Department

ANNEX 4: GOVERNMENT INSTITUTIONS AND OTHER AGENCIES PARTICIPATING IN COASTAL AND MARINE RESOURCES MANAGEMENT

INSTITUTION	MAIN COASTAL MANAGEMENT
Coast Development Authority	Coastal planning and coordination of development
Kenya Marine and Fisheries Research Institute	Research on marine environment and resources
National Environment Management Authority	Coordinating the various environmental management activities being undertaken by other lead agencies
Kenya Wildlife Services	Conservation of biodiversity (biotopes) flora and fauna in protected areas and critical habitats and species in general
Fisheries Department	Fisheries licensing monitoring and policing
Local Authorities (Municipalities, Township and County councils)	Approval of structures such as those associated with waste management
National Museums of Kenya	Conservation of historical and cultural environments and the identification and protection of archaeological and historical remains
Kenya Navy	Naval surveillance in territorial waters
Forest Department	Licensing, reforestation and policing use of forest products
Kenya Ports Authority	Ports management and administration of maritime traffic
National Environment Secretariat	National advisory secretariat with coordination of environmental policies
Physical Planning Department	Provides physical plans but does not execute the plans
Tourist Police Unit	Security of tourists
Water Department	National planning for both surface and ground water
Water Conservation and Pipeline Corporation	Water reticulation and servicing

Tourism Department	Tourism planning and licensing			
Government Chemist	Quality control service to government and private sector			
Cooperative Department	Facilitating self help and income generating community groups			
Hotel and Tourist Industry				
Kenya Association of Hotelkeepers and Caterers	Hotel marketing, quality control, and bargaining at national and regional level			
Mombasa and Coast Tourist Board	Coast hotel and tour operators marketing group and forum			
Watamu Boat Operators Association, Malindi Boat Operators Association, Mombasa Boat Owners Association	Common bargaining, facilitation of members and lobbying forum			
Others				
National Oil Spill Response Committee	Oil spill response			
Coastal Forest Management Team	Advisory and coordination for issues on coastal forests			
Friends of Mangroves	Public awareness and re-vegetation of mangrove system			
Turtle conservation committee	Turtle conservation and education			
Fishermen's Association Safari Sellers Association	Lobbying forum			
Mangrove Cutters Association	Common bargaining, assistance to members			