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KENYA *Aquatica*



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Editorial

Western Indian Ocean Marine Science Association (WIOMSA), through the Marine and Coastal Science for Management (MASMA) programme supported the preparation and production of the current Kenya Aquatica Volume 7(1). The Chief Editor, the Editorial Board and the management of Kenya Marine and Fisheries Research Institute (KMFRI) – the home of Aquatica, sincerely appreciate the generous support and collaboration from WIOMSA.

The current issue covers research conducted in the oceanic and lacustrine environments of Kenya including the Indian Ocean coast, two coastal and two inland lakes. Two papers describe the effect of COVID 19 pandemic on coastal small scale fishers of Lamu, Malindi and Shimoni, and its relation to the unusual high mortality of sea turtles in Marereni Beach. One paper provide insight on the potential of microalgae in extraction of nutrients from Makupa Creek located adjacent to Mombasa Port. One paper shows bioaccumulation effects by heavy metals in cyprinids of Lake Victoria, while another describes how the lake flies *Chironomus* spp can be used to determine toxicity of effluents from factories that flow through streams of rivers into the lake.

This Volume also provides data and information that supports demarcation of fish breeding grounds in Lake Naivasha for purposes of improving production. It also features Lakes Chala and Jipe located along the Kenya/Tanzania boarder and highlights the benefits gained and challenges faced by the communities living adjacent to the lakes. The author provides recommendations for improvement. The current Volume finally traces evolution of the integrated coastal zone management along the Kenya coast documenting the processes, experiences gained, and the various actors involved at different time frames.

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About Kenya Aquatica

Kenya Aquatica is the Scientific Journal of the Kenya Marine and Fisheries Research Institute (KMFRI). The Aim of the Journal is to provide an avenue for KMFRI researchers and partners to disseminate knowledge generated from research conducted in the aquatic environment of Kenya and resources therein and adjacent to it. This is in line with KMFRI's mandate to undertake research in marine and freshwater fisheries, aquaculture, environmental and ecological studies, and marine research including chemical and physical oceanography.

Manuscripts may be submitted to the Chief Editor through aquatica@kmfri.go.ke

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Featured cover picture

Courtesy of cage-based fish farming in Lake Victoria (Nyandiwa), Kenya.

Genesis, initiation and institutionalization of integrated coastal zone management practice in Kenya

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Abstract

The current review paper highlights the evolution of Integrated Coastal Zone Management (ICZM) in Kenya for enhanced coastal planning and development. Initial training on Integrated Coastal Area Management (ICAM) led to the development of an Action Plan for piloting at Jomo Kenyatta Public Beach (Mombasa) and at Diani-Chale and Wasini (Kwale). Baseline information for wider actions was thus generated leading to the the Kenya Coastal Management Program (KCMP). The implementation of the Action Plan enabled the government of Kenya to adopt the ICZM tool for marine and coastal management. The ICZM approach was further upscaled by Kenya's National Environment Action Plan (NEAP) and the Kenya Coastal Development Project (KCDP). Kenya's new governance system through devolution, and its desire to promote the Blue Economy adds synergy to the full acceptance of the ICZM tool. Currently, various stakeholders are moving towards ICZM tool – a method of solving the intricate and interlinked issues of the coastal and marine environment.

Key words: ICZM tool, devolved units, Blue Economy, coastal planning and management, coastal Kenya

Introduction

The efforts to embrace the practice of Integrated Coastal Zone Management (ICZM) as a tool for coastal and marine resources utilization, development and management in Kenya, were external driven (UNEP, 1985). Adopting this tool was easy because, a fertile ground for its acceptance, existed – the country had already developed the National Environment Action Plan (NEAP), (GoK, 1985). Efforts were afoot for the country to develop a Policy on Environment and Development (GoK, 1988). There was a demand for enactment of a legislation to provide a framework for environmental management in the country. With such a background, the requisite atmosphere for initiating and, gaining

experience in, ICZM as a tool for guiding the development of, coastal and marine resources, existed.

The efforts towards acceptance of ICZM as a tool for coastal and, marine resources development and management, were at first jointly, initiated by the Coast Development Authority (CDA) and, the Kenya Marine and Fisheries Research Institute (KMFRI). This was naturally so, because the two institutions mandates, offered the atmosphere for undertaking the new assignment. The CDA, created through the CDA Act, 1990, Laws of Kenya, and operationalized in 1992 had mandate of coastal planning and, coordination of development. The Kenya Marine and Fisheries Research Institute (KMFRI), established in 1979 as a State Corporation under the Science and

Technology Act, Cap 250 of the Laws of Kenya had among its mandate, engagement in fisheries research – both in freshwater and in the marine environment. These individual mandates made them candidate choice for hosting ICZM in the Country.

Initially, KMFRI was the preferred institution for hosting the process because of its manpower capacity. However, its narrow mandate as a research organization, did not equip it adequately to mid-wife and, foster the process (Anon, 1995). Thus, the role to do so was left to CDA due to its wider mandate in coastal planning and development, including guiding exploitation and conservation of resources of the coast region. Granted this task, the CDA hosted and propagated the pioneering efforts for adoption of the ICZM process in the country. This gave the institution the opportunity to undertake the challenge of forming, storming, norming and performing ICZM activities in the country. And, as with any complex tool of learning, the introduction of ICZM in the country was preceded by training for capacity building of the institutions and the individuals who would initiate and propel the activities necessary for moving the ICZM process forward.

Initiating and progressing the process was achieved in two major stages. Stage one, dubbed the Kenya Coastal Management Initiative (KCMI) had two phases. The first phase – Towards Integrated Management and Sustainable Development of Kenya's Coast, 1994-1997 (Anon, 1995), realized through the creation of a multi-sectoral ICM Secretariat, comprised of CDA, KMFRI, Kenya Wildlife Service (KWS), Fisheries Department and the Mombasa Municipal Council. The CDA hosted the Integrated Coastal Management (ICM) Secretariat, as it was known then, which reported to the Coastal Management Steering Committee (CMSC).

The CMSC was made up of the heads of institutions from government, non-government and community-based organizations. They included the Provincial Administration, National Environment Secretariat (NES), Tourism Dept., Baobab Trust, East African Wildlife Service (EAWS), Kenya Power and Lighting Company

(KPLC), National Water Conservation and Pipeline Corporation (NWC&PC), Kenya Ports Authority (KPA), Kenya Posts and Telecommunication Corporation (KP&TC), Boat Owners Association, Fishermen's Association, Mombasa and Coast Tourist Association (MCTA) and the Forestry Department.

The CMSC was an informal group without a direct link to the government and mandate to do what it was doing, but its diverse and multi-sectoral nature, comprising of both government and non-government actors, provided the atmosphere for involving a large constituency to promote ICZM by demonstrating site activities at the Jomo Kenyatta Public Beach. The KCMI phase 1 efforts resulted in the development of an ICAM Strategy for pilot site of Nyali-Shanzu-Bamburi area – a product of a participatory process to reach broad consensus on how to address critical management issues, and to gain experience in Integrated Coastal Area Management (ICAM) for application in other areas of Kenya.

Phase 2, also called "Progress Towards Integrated Management of Kenya's Coast, 1998-2003 (UNEP-PAP-RAC, 1998), expanded the ICZM demonstration site activities to include the entire Kisauni Division as it contributed to the demonstration site impacts of the urban sprawl and socio-economic activities. Phase 2 of KCMI expanded the demonstration pilot site to include the wider Kisauni Division. The KCMI efforts were supported by IUCN through the project on Forging Partnerships between Stakeholders for the Conservation of Diani-Chale Coastal and Marine Resources. This effort expanded the ICAM experience in Kenya to the South Coast tourist area of Diani-Chale.

Stage 1 ICZM efforts comprised phases 1 and 2 that were both technically and financially supported. Phase 1 efforts of KCMI were technically supported by the Coastal Resources Centre, University of Rhode Island and financed by USAID-Kenya. While PAP-RAC, Split, Croatia, guided phase 2 with financial support coming from UNEP/FAO.

Stage 2 of the ICZM process came through the KCMP between the years 2002–2005. This came as the direct efforts of the Kenya Government and USAID. This effort transformed the activity from an initiative into a program. This stage also saw wider participation with the National Environment Management Authority (NEMA), taking a leading role through the mandate it acquired from the Environment Management and Coordination Act (EMCA), 1999. This framework legislation on the environment in Kenya, obliged the institutionalization of ICZM as a tool of coastal and marine management in the country. NEMA established ICZM Committees that rolled out the framework for its institutionalization. The instruments forming the framework included the ICZM Action Plan for managing the coastal and marine environment of Kenya, which became its main achievement as its first achievement.

Implementation of the Action Plan in a 5 year period (2010–2014), provided learning experiences and practice for ICZM. It is through this period that many documents relevant for upscaling the ICZM approach in Kenya were developed. During this period, the ICZM process was substantially promoted through the Kenya Coast Development Project (KCDP); an effort conceptualized by the ICAM Secretariat and sponsored by the World Bank, Global Environmental Facility (GEF) and the Kenya Government. KCDP was a six-year project financed to the tune of 6.0 Billion Kenya Shillings that supported the implementation of various ICZM interventions. Furthermore, ICZM Policy was entrenched as a tool for managing coastal and marine areas by the Kenyan Parliament through Sessional Paper No. 13 of 2014.

The stage 1 and 2 efforts in ICZM are herein elaborated to show progression from initiation to the present status with linkage to the prevailing environment on ICZM at the national, regional and global scales. This has taken into account the outcomes of the UN-Conference on Environment and Development (UNCED) 1992; the Ministerial Policy Conferences on ICZM – Arusha (1993), Seychelles (1996) and Maputo (1998), and the Tanga Workshop for ICZM Practitioners (1996).

The prevailing environment for initiating ICZM

This environment includes national, regional and international efforts on how coastal and marine areas are to be managed for sustainable development. All these efforts contributed to the seeding of ICZM in Kenya, including its experimentation and, adoption through policy instrument by the government. Various approaches and initiatives towards upscaling of ICZM in Kenya are as highlighted below.

The National Environment Action Plan (NEAP)

A few African countries, including Kenya, began the NEAP process in 1987 to examine cross-sectoral environmental issues. This effort received its major boost, when in June 1992, the Rio UN Conference on Environment and Development dubbed, the Earth Summit, emphasized through Agenda 21 on the Oceans and coastal areas the need for Action on environmental conservation. This was to ensure the sustained achievement of Sustainable Development Goals (SDGs). In response to this, Kenya adapted the NEAP Process and formulated a strategy to address the key issues relating to environmental protection in the development process. The NEAP was therefore established with the purpose of creating inter-disciplinary, inter-agency working groups that would introduce a systemic or holistic thinking into the utilization and management of dwindling environmental resources. In this way, NEAP provided not only a strategy for sustainable development in Kenya, but also a basis for translating Agenda 21 into a National Action Agenda.

The NEAP Agenda was rolled out through three committees: Ministerial, Coordinating and Advisory. The ministerial committee – provided guidance on the policy direction to the process; the coordinating committee, comprising of the Permanent Secretary – Ministry of Environment and Natural Resources as Chairman and, the Office of the Vice President – as the NEAP Co-ordinator. In the NEAP phase I, Inter-ministerial Task Forces were established and mandated with the responsibility of preparing the draft and final revisions of NEAP for presentation to the Ministerial Committee for review and endorsement. Such works were to be reviewed in

the subsequent NEAP II Phase. The mandate of the NEAP Advisory Committee's was to keep the donors and NGOs informed of the progress being made in the process. Its composition comprised of interested donors and Non-Governmental Organizations (NGOs).

ICZM within the NEAP Process

During the Phase I of the NEAP, water resources management was the main focus area. In this phase, coastal, marine and inland waters' issues were deliberated in a participatory manner and reported. The NEAP report showed that the participating water resource institutions lacked policy guidelines, elaborate legal framework, human and fiscal capacity to effectively discharge their roles. They also had issues on duplication of efforts, conflict and non-accountability. The report attested to the status of the coastal and marine environment as one; endowed with abundant natural resources and a variety of eco-systems rich in biodiversity.

The coastal management issues that the NEAP process identified as requiring attention included freshwater shortages, salt water intrusion into freshwater aquifers and resource use conflicts. Threats to freshwater supplies and coastal and marine resources included; discharge of untreated sewage from both and, domestic sources; industrial and oil pollution. Solid waste, sludge, other effluents and spent chemicals found their way into the sea.

The NEAP report further showed over-exploitation of reef fisheries resulting in depletion of some stocks due to poor fishing methods associated with poor enforcement. Other threats mentioned in the report included over-harvesting of mangroves to create room for salt evaporation ponds, industrial or tourist development sites; has led to the destruction of breeding sites and habitats for a variety of birds and fish species. Through the NEAP process the following mitigation measures were given, among others:

- i) Conduct comprehensive studies to generate data for strategy formulation for the sustainable exploitation of coastal and marine resources;
- ii) Review and streamline the mandates and responsibilities of the various institutions mandated to manage coastal and marine resources;
- iii) Develop and integrated management plan for coastal and marine resources, including policy and legal mechanisms on water resources, land tenure and land use, among others
- iv) Promote community participation in management and conservation of water resources to ensure sustainable use;
- v) Develop an integrated coastal management plan to address freshwater resources, fisheries, tourism, pollution, biodiversity, human settlements and industry.

The Ministerial (Policy) Conferences on ICZM

The Arusha ICZM Conference

In 1993, a Ministerial (the 1st Policy) Conference on ICZM was held in Arusha, Tanzania (SAREC). This set the stage for coastal management initiatives at both the local and national levels in East Africa. Out of this conference, dialogue was successfully established between the scientific community and high-level policy makers. It was during this conference that the Western Indian Ocean Marine Scientists' Association (WIOMSA) was formed and mandated to be the networking organization and promoter of research in the region.

In this conference the following resolutions were made:

- vi) Establish policies that promote and enhance integrated planning and management;
- vii) Develop and implement programs which address environmental concerns;
- viii) Promote effective sectoral implementation of ICZM programs through cooperation and coordination;
- ix) Clarify jurisdictional mandates agencies and government units;

- x) Promote links between natural and social scientists for effective decision making;
- xi) Strengthen management capabilities of relevant agencies;
- xii) Implement and enforce legislative and supportive incentives to reduce resource use conflicts and resource degradation;
- xiii) Build local capacity in ICZM;
- xiv) Promote environmental-friendly economic activities; and
- xv) Give special consideration to the problems of Small Island states.

The Seychelles ICZM Conference

This was the second Ministerial Conference on ICZM in the Western Indian Ocean (WIO) region which took place in the Seychelles in 1996. During this conference, it was noted that the program on the agenda set in Arusha two years earlier, had not been successful (Linden and Lundin). In order to strengthen the ICZM implementation process, an interim Secretariat (SEACAM) was created in 1997 with an office in Maputo, Mozambique, with the sole purpose of enhancing coordination and implementation of coastal management initiatives in the Region.

The implementation of the process was to be achieved through priority areas of action in the promotion of the ICZM including:

- i) Capacity building of local NGOs;
- ii) Creation of databases of ICZM programs, institutions and individuals;
- iii) Environmental Assessment;
- iv) Public Sector Management; and
- v) Sustainable financing of coastal management programs.

The Maputo Ministerial Conference on ICZM

The Maputo Ministerial Conference – now the third in a row and also known as the Pan African Conference on Sustainable Integrated Coastal

Management (PACSICOM) was held from 18th to 25th July, 1998 in Maputo, Mozambique. Its aim was to reinforce sustainable development in coastal zones and areas influenced by marine processes in Africa (UNESCO). This conference was organized by the Government of Mozambique, UNESCO, UNEP, FAO and the Government of Finland in response to UNESCO General Conference that African Countries were to draw up a comprehensive strategy for the sustainable integrated development of their coastal environments, in particular by convening a Pan African Conference on Sustainable Integrated Coastal Zone Management (PACSICM).

This was crucial since 38 of the 53 African countries (32 coastal states and 6 Islands) have their economies directly linked to coastal and marine resources. PACSICM sought to promote a scientific approach to coastal and marine area management and encourage the exchange of ideas and information concerning research; and education and training, relating to marine issues and environments.

The conference took place in two stages: a Technical Congress – which determined technical recommendations and priority actions to be developed into programmes as well as a Ministerial (Policy) Congress, which adopted the Maputo Declaration on Principles for sustainable development of African's coastal zones.

The Maputo Declaration on Sustainable development of Africa's coastal zones was centred on commitments to among other things:

- i) Review respective national policies and programs to incorporate the goals of Chapter 17 of Agenda 21 on United Nations Convention on Environment and Development (UNCED) on ICZM. These were divided into various roles which included: conducting periodic reviews on the legislative, substantive and institutional basis for action on coastal and marine environment in Africa; promoting systemic intergovernmental dialogue on the priority issues of sustainable integrated

- coastal management; using existing regional protocols, action plans and intergovernmental programmes on the marine and coastal environment, addressing issues brought out by the PACSICOM Statement; updating existing regional agreements on Africa's marine and coastal environment, highlighting the new developments as those in UNCED, the treaty establishing the African Economic Community; and ensuring in the enforcement of the UN Convention on the Law of the Sea, among other commitments.
- ii) Request the Organization of African Union and the Ministerial Conference on the environment and other UN Agencies to consider the possibility of convening the 1999 regional summit of the Heads of State and Government to heighten awareness and to focus their attention on the hot spots in Africa's aquatic environment.
 - iii) Affirmed its commitments to the PACSICOM process.
- ii) Improving Natural Coastal Resources management in targeted bio-diverse areas by and, for stakeholders – which was the goal of the Kenya Coastal Management Programme; and
 - iii) Improving management effectiveness and enhancement of revenue generation from Kenya's coastal and marine resources, which was the development objective of the World Bank in Kenya Coastal Development Project, which also fulfilled the GEF objective of strengthening conservation and sustainable use of marine and coastal biodiversity. These various efforts have been elaborated in the sections that follow.

The Kenya coastal management initiative

The Coast Development Authority (CDA) with technical support from the Coastal Resources Center, University of Rhode Island, USA, initiated the ICM as a tool for managing coastal and marine resources in 1994. ICM is an environmental management strategy that attempts to achieve sustainable multi-use of coastal resources while maintaining ecological integrity of the ecosystem. Success of ICM initiatives depended on multi-sectoral involvement and commitment. To ensure that the initiative is successful, CDA sought for the formation of an inter-agency team to steer the process. The team consisted of CDA as lead agency and member, offering secretariat services, and working together with the other members. The members included the Kenya Marine and Fisheries Research Institute (KMFRI, as the initial Chair,), Fisheries Department (FD, currently Kenya Fisheries Service – KeFS), Kenya Wildlife Service (KWS), Mombasa Municipal Council (MMC, currently Mombasa County Government), Tourism Department (TD), and the Kenya Association of Hotel Keeper's and Caterers (KAHC). The chief executives officers of these institutions would later serve as members of the CMSC with their senior technical staff who participated as members of the Secretariat. The

Local Experiences in implementing ICM programmes in Kenya

Experience in implementing ICM programmes in Kenya has been gained through three phases of experimenting and learning the process. The different learning experiences gained included:

- i) Showing the benefits of ICM through demonstration projects in the "Nyali-Bamburi-Shanzu Area – later expanded to include the whole of Kisauni Division, which was technically supported by the Priority Actions Program /Regional Activity Center, Croatia with funding from FAO; and through experimenting, "Forging Partnerships with Stakeholders for the Conservation of the Coastal and Marine Resources of Diani-Chale," achieved through the Kenya Coastal Management Initiative with the technical support of IUCN.

CDA provided secretarial services to both the Secretariat and the CMSC. The Secretariat met frequently to deliberate on ICZM issues.

A major weakness in the institutional arrangement of the CMSC and its Secretariat was the lack of legal status. The Secretariat coordinating function solely depended largely on the goodwill of the participating agencies and their mandates. Using this mandate, the demonstration of ICM interventions was initiated with the financial support of FAO and USAID.

The Nyali-Shanzu-Bamburi and expanded Kisauni ICM demo project

The Nyali-Bamburi-Shanzu (NBS) area was chosen as the first demonstration site for ICM in Kenya. The site was recommended based on its flourishing tourist beach hotels, increased opportunities for fisheries exploitation, presence of important habitats, including mangroves, coral reefs and beaches that offer breeding grounds for rare and endangered species of sea turtles. Despite such importance as a natural environment, the area was experiencing tremendous expansion through development of tourist beach hotels; exclusive residential homes and, the growth of tourism related industries and, holiday resorts. This was changing a once rural, idyllic coastal environment with clean beaches, abundant coral reefs, mangroves and, sparsely populated area as a fishing village to one, experiencing dramatic changes from the hitherto traditional resource use patterns, to new a new commercial area teaming with tourism based economic activities with a mantra of brick and stone. As a demonstration site, this area was selected for profiling of coastal environmental management issues that would be addressed through the ICM tool. Later, it was thought wise to expand the demonstration site to include the whole of Kisauni Division. Hence, both the NBS demonstration site and the expanded Kisauni site, were used to provide the learning experience in coastal management.

a) *Profiling the NBS ICM demo site*

The CMSC Secretariat profiled and prioritized a series of stakeholder engagements. Priority issues that emerged from the engagement were better provision of public services – e.g., provision of potable water, maintenance of good water quality and, support for artisanal fishery as a source of livelihood for the local population. Other areas of concern included – adoption of a framework for improved land use management for the conservation of coastal and marine habitats and, the urgent need of developing mechanisms for resolving resource use conflicts, both on water, and on land. Such issues included, the opening of access points to the beach and landing sites; improving sanitation at the Jomo Kenyatta Public Beach; address issues of crime and, harassment of tourists by beach operators; resolve on-water activities that interfere with fishing activities e.g., jet skis' and, promotion of a dress among tourists who in the culture of the local people were scantily dressed to their chagrin.

Among the demonstration activities rolled out in this period KCMI and highlighted in the Document titled "Towards Integrated Management and Sustainable Development of Kenya Coast: Findings and Recommendations for an Action Strategy in the NBS Area" and adopted by stakeholders in the first National Workshop on ICZM were:

- Development and rehabilitation of Facilities at the Jomo Kenyatta Public Beach, included:
 - ✓ Supply of potable water for use by fishermen, boat operators and other beach users
 - ✓ Rehabilitation of toilets and other facilities for use by fishermen, boat operators and other beach users;
 - ✓ Construction of two buildings for use by fishermen and for storage of engines and other gear by boat operators, etc.

- Adoption of demonstration of water conservation measures in the hotels that included:
 - ✓ Demonstration of model water conservation measures by the hotels' other public places; and,
 - ✓ Propagation of the model water conservation measures to encourage other water users to implement same interventions;
 - Provision of Public information on the importance of mangroves as a habitat through mangrove posters and coral reef brochure
 - ✓ Provide information and, educational messages to resource users in form of posters, brochures and electronic media.
- b) *Profiling of the Expanded Kisauni ICM demo site*

In the Second Phase of the KCMI, still within the EAF/5 Project on the Development and Protection of the Coastal and Marine Environment in Eastern Africa and with the technical support of PAP/RAC and funding of UNEP/FAO, it became recognized that many of the interrelated issues, affecting the Jomo Kenyatta Public Beach demo site, emanate from the entire Kisauni Division and, as such:

- Profiling of the entire Kisauni Division, detailing on the activities of the peri-urban sprawl adjacent to the site was required;
- Expansion of the Demonstration Project activities at the Jomo Kenyatta Public Beach was to be done;
- Organization of a further consultative National workshop to include decision-makers in the coastal zone process;
- Supporting NGOs to participate in ICM activities;
- Support national institutions to implement project activities by developing bankable projects supportive of the ICM process; and

- Support national experts to undertake project activities, e.g., preparation of expert reports.

Out of the above activities, the following outputs were realized:

- i) Detailed extension of the existing coastal profile area with special emphasis on:
 - Changes in land use in recent years;
 - Analysis of the social and economic effects caused by changes in land use;
- ii) Analysis of the effects of changes in land use on the physical environment with emphasis on tourism carrying capacity assessment
- iii) Enhancement of the institutional capacity for implementing ICM as shown by:
 - Formulation of sectoral strategies and/or plans which take due account of wider coastal management issues;
 - Demonstration of the benefits of ICM Strategy and the design and implementation of projects; and
 - Preparation of bankable projects.

The Diani-Chale ICM demo site

The Diani-Chale Management Area (DCMA) was the second coastal site to benefit from both the KCMI and KCMP phases of ICM. In its first phase, financial assistance was received from the McArthur Foundation through the World Conservation Union, IUCN. Intervention of ICM effort in this area were realized through the project "Forging Partnerships between Stakeholders for the Conservation of Coastal and Marine Resources in Diani-Chale. This project was also coordinated by the CDA, which offered the secretariat support in profiling and, compiling the documents on the biological and ecological aspects of the area, its issues in fisheries, socio-culture, economic and, business, and tourism; engaging stakeholders in consultative workshops for the identification of the key issues on fisheries, tourism, the *kaya*

forests and, related issues; involvement of local communities in the management of their resources and, formation of the Diani-Chale Management Committee. Support was received from Pact Kenya, which worked with this committee to develop a vision and, mission for the area and, enabling the committee members to acquire skills that would enable them perform their assigned roles and, responsibilities as leaders for the Diani Chale demonstration project.

Through other funding by the USAID, more activities for ICM experience were initiated at Mwaepi Fish Landing site as the Demo site for practicing the ICZM tool. The additional activities undertaken during this period included:

- Securing Mwaepi Fish Landing site by obtained the land title to the area;
- Construction of an improved beach access road to the site;
- Creation of an improved fish depot with necessary facilities;
- Removal of damaging fishing gears; and
- Promotion and development of sustainable tourism ventures.

The Kenya Coastal Management Program –KCMP

The Kenya Coastal Management Program (KCMP) was a partnership between the CDA and, USAID/Kenya that built on the effort of KCMI. The KCMP Work Plan extended from October 2003 through June 2006 and, build on the project activities proposed for the second year of the second phase of the KCMI. During this period, the interest of the Ministry of Regional Development Authorities on the project became more visible. It was the ministry that proposed the change in name of the effort from the term “initiative” to “programme”, stating that it was easier for the government to support a program as an on-going endeavor rather than continually, offering support, to an initiative.

During this time, KCMP demonstrated how an ICM approach could improve natural coastal resources management in targeted bio-diverse

areas by and for stakeholders to improve environmental quality and, combat poverty among local communities. Recognizing that on-the-ground results were important in developing coastal management and, environmental activities, the second year’ activities while still concentrated at the local level activities – building capacity and, constituencies at national level, was its main focus. Thus, the KCMP activities supported both CDA’s core functions and US-AID’s Strategic Objective 5 in seeking to improve natural resources management in targeted areas while fronting for institutionalization of ICZM.

The work undertaken in the second year’ activities of KCMI now renamed the KCMP included:

- Consolidation and strengthening local ICM programs outside of marine protected areas so that tangible community benefits for ICM could be demonstrated;
- Expanding stakeholder capacity and participation in ICM processes; and
- Contributing experience, information and strong constituency to support and catalyze the on-going national environmental dialogue in Kenya.

KCMP approach

The KCMP approach was to work at both local and national levels to build momentum towards national coastal management policy formulation through the successful implementation of local activities. In order for KCMP to meet its performance objectives, a key number of attributes were employed which included:

- **Results and processes** –the KCMP would strive to achieve measurable results that had been agreed upon by the partners and employ an open, participatory and transparent process for achieving those results;
- **Flexibility** –KCMP expected task level planning to be done in cooperation with those responsible for implementing them;

- **Long-term orientation** – The KCMP aimed to ensure that integrated coastal management in Kenya was sustainable over the longer term;
- **Partnerships** – Participation of the partners was critical to the success of KCMP;
- **Capacity building** – People were KCMP's most important asset, and its success depended on the capacity of the people it worked with;
- **Appropriate behavior** – In all its activities and interactions, KCMP sought to model open and transparent behavior;
- **Size and scope** – The number of staffs at KCMP was, and would, remain small. Instead of being the primary provider of service, KCMP would support its partners to deliver coastal management services and solve coastal management problems.

The Kenya Coastal Development Project –KCDP

KCDP approach

Kenya Coastal Development Project (KCDP) was a multi-sectoral development project financed by the World Bank (WB) and the Global Environmental Facility (GEF) with support from the Government of Kenya. While the goal of this project as advanced by the GEF was to promote the sustainable use of coastal and marine biodiversity; the development objective of WB was to strengthen improved management effectiveness and, enhance revenue generation from Kenya's coastal and marine resources. This project started in the year 2011 and its implementation was through the partnerships of seven government agencies in collaboration with NGOs. Initially, the project had four components, but these were whittled down to three:

- Sustainable Management of Fisheries Resources
- Sound management of Natural Resources
- Building coastal capacity for sustainable natural resource use and management

The major uniqueness of KCDP was in its many levels of multi-sectoral linkages with seven government implementing institutions namely: KMFRI, KWS, CDA, Kenya Forestry Research Institute (KEFRI), NEMA, State Department of Physical Planning (SDPP), and KeFS..

Components and their implementation

i) *Sustainable Management of Fisheries Resources*

This component promoted research and value addition and the overall improvement of the fisheries sector.

ii) *Sound Management of Natural Resources*

The aim of this component was to improve the management and regeneration of natural resources and biodiversity in the coastal region and, marine environment as well as to aid communities in the development of eco-tourism ventures.

iii) *Building coastal capacity for sustainable natural resource use and management*

This objective of this component was achieved through a) integrated spatial planning and land capability; b) environmental governance and integrated coastal management; c) development of micro, small and medium enterprise investments; d) capacity building; and e) Development Fund of the Coast "*Hazina Ya Maendeleo Ya Pwani* (HMP) – providing grants to communities, including support to vulnerable and marginalized groups.

The overarching goal of the Country Partnership Strategy (CPS) FY 14-18 was sustainable reduction of poverty and increased shared prosperity. Aligned with both Kenya's Vision 2030 and its Medium-Term Plan, the CPS highlighted three areas of engagement:

- Competitiveness and sustainability** – growth to eradicate poverty
- Protection and potential** – human resource development for shared prosperity; and
- Building consistency and equity** – delivering a devolved dividend.

The rating of KCDP by the WB is that it has contributed the competitiveness and sustainability pillar of the CPS through development of a more robust marine and coastal fishery economy, thereby addressing the government's growth and poverty reduction strategies. The project development objectives are even more relevant as a result of their consistency with the on-going devolution process in Kenya consistent with the recent priority of the national government to develop the Blue Economy. This is supported by the zeal of the coastal counties to include this effort in their County Integrated Development Plans, making ICZM a tool of development in their areas.

Output of KCDP

Key outputs of KCDP included of GoK revenue in the near shore and EEZ fisheries resources from less than USD 0.7 million in 2011 to over USD 4.09 million. The increase was through improvement in the fisheries licensing of foreign fishing vessels, fish exports, fishermen licenses, fishing registration fee, fish processing licenses, aquarium dealer licenses and inshore water revenue collection.

Direct benefit to coastal communities individually, as vulnerable and marginalized groups (VMGs) and also through Community Based Organizations (CBOs) was through sale of poles (woodlots); tree seedlings, fish (fin, milkfish, tilapia and prawns), seaweeds, waste management and eco-tourism, among others. The VMGs, whose livelihoods depend largely on the natural resources within their environment included households of the Waatha, Wakifundi, Wachwaka, Wailwana, Munyoyaya, Wasanye and Awer communities. Other output from KCDP included:

- i) Increase in number of coastal households with annual earnings of 50 USD or more from commercial natural resource management interventions;
- ii) Increase in number of conservation areas brought under effective management (including co-management) as defined by the Management Effectiveness Tracking Tool (METT);

- iii) Expansion of zones outside protected areas and improvement of their management;
- iv) Development and improvement of fishery governance instruments.

KCDP also developed capacity by funding the youth and staff of the implementing agencies to attend short courses, scholarships and internship programmes. These included:

- i) Short course at Kenya Wildlife Service Training Institute (KWSTI) ecotourism, tour guiding, community wildlife management, and nature interpretation and tour administration;
- ii) Certificate and Diploma training at the Kenya Forestry College (KFC);
- iii) Masters' Degree in natural resources management of community development at thirteen national universities in Kenya
- iv) Internship program targeting coastal students who had completed diploma, undergraduate or postgraduate studies. Internship placement was at the KCDP implementing agencies where directly supervision and mentorship of the intern was provided.

Through KCDP, several Institutional infrastructures were put up to improve the capacity of institutions to implement their mandates. These included:

- i) KMFRI - Marine and Ocean Science Centre (MOSC) in Mombasa for generation of data and information for sound management of fisheries and marine resources;
- ii) KeFS - Monitoring, Control and Surveillance (MCS) centre in Mombasa to improve Fisheries Governance;
- iii) KEFRI - Farmers resource centre in Lamu to enhance sound management of forestry resources
- iv) KWS - Floating Jetty in the south coast of Kenya to enhance tourism
- v) NEMA - Green Point in Lamu as a centre for the promotion of green growth

Institutionalization of ICZM

One of the main objectives of the KCMP was to contribute experience, information and strong constituency to support and catalyze the on-going National Environment Policy Dialogue in Kenya. This was also a time when the country was on the verge of developing its instruments for environmental management. Opportunity was taken of this, to include the ideals of evolving an ICM Policy as an instrument to guide sustainable development of the coastal and, marine environment. The KCMI set the foundation for ICM to be the tool for coastal planning and development, while the KCMP, continued to propel this agenda, and widened it to include national efforts towards developing an ICZM Policy. Given this conducive environment, agitation to make policy adoption the life of the KCMP results, became the focus.

The NEMA participation in the ICM process involved inducting her staff on the current strategies and the future plans, leading to ICM policy as co-owners of the process within the ICZM approach. The objective of evolving the ICM Policy would be attained through structured meetings, local and national workshops.

The anticipated benefits from the above strategy with NEMA was the establishment of technical rapport with the institution and, therefore catalysing the evolution of the ICM policy. As NEMA was in a position to aid capacity building strategies at all levels, selling the formulation of ICM Policy to the national government got a very big boost. This is how NEMA participated in the ICM Policy formulation process, leading to the inception of Sessional Paper No. 13 of 2014 on Integrated Coastal Zone Management (ICZM) Policy.

The road map taken to roll out the ICZM Policy has its origin in the ICZM Action Plan, whose development forms a beautiful story. When the CDA presented to NEMA to take a leading role in effort to deliver on the ICM Policy – later renamed the ICZM Policy, they accepted the challenge. However, when the idea was presented to the Minister for Environment, he saw the urgent need of the same, but in his wisdom said, “Due to the existing bureaucracy, policy formulations

take a very long to process in this country”. He instead, said, “with the policy idea in mind, produce an Action Plan for the same. From this, he opined “practicing ICZM through it, would easily convince doubting Thomas’s and stakeholders on the importance of the idea, making rolling out the policy easy as experience would have been gained through the activities of the Action plan. This advice was followed and, the result came out as had been predicted.

The enactment of the Environmental Management and Coordination Act (EMCA) in 1999 and the establishment of NEMA, enabled it (in consultation with relevant lead agencies mentioned earlier at the introductory stage of this paper), to conduct a survey of the coastal zone and prepared the ICZM Action plan, based on the report of the survey. This is how the ICZM Action Plan 2010–2014 for the Management of Kenya’s Coastal and marine environment came into being, almost 10 years after EMCA. Preparation of the ICZM Action Plan benefitted a lot from the “State of the Coast” report, which had been prepared earlier in 2009. Formulation of the Action Plan was coordinated by NEMA through the involvement of the Coastal Management Steering Committee in a highly participatory way, actively engaging all the relevant stakeholders. As stakeholders were gaining experience implementing the Action Plan, the time was now right to roll out the idea of preparing the ICZM Policy framework that would guide development planning and, management; conservation of the environment and, to accommodate the social and, economic needs of the local communities. This is how the ICZM Action Plan midwived the ICZM Policy for Kenya.

Perspectives

Introducing ICZM as a tool of managing coastal and marine resources was not a rosy affair. With institutions established on a single-sector resource management platform, introducing a multi-sectoral approach to such management was initially not welcome. While individuals brought together from the different institutions quickly grasped, and appreciated the tool, their respective heads, were not quick to do the same.

Some even thought, it was interference with their mandates. Protecting their respective turf's, the heads were initially talking at each other. It took quite some time, before talking to each other but, eventually, embraced the spirit of talking with each other. An atmosphere of friendship with benefits had been established.

Local people did not have any voice in the CMSC, and their interests were taken care of by the official institution, closely representing their mandates. For example, fishermen were represented by the fisheries department; tour operators were represented by the Ministry of Tourism, etc. In short, management of natural resources was practiced through command and control. These were some of barriers the ICZM tool had to overcome. Also, there being no direct legal basis for ICZM at the time, it was a challenge to gather stakeholders together to further the interest of this tool.

With time however, the Kenyan bureaucracy, saw the benefits of the tool; barriers in communication, started breaking down, local people got involved as resource owners within the ICZM and, the need to have a policy direction to guide the development and protection of the resources internalized. Today, most of the hurdles that faced ICZM are history. Information necessary for implementing the ICZM tool has been generated; capacity has been built for the tool; stakeholders' roles are guaranteed, the experiment in implementing the tool has matured into experience and, the Policy framework for this is there.

Conclusions and recommendations

The journey of ICZM from genesis, initiation and practice in Kenya is well established. It is a feat that has been realized over a few decades of learning and experience. It straddles the period 1992-1993 when the idea was introduced, to the time when the Kenya Government enacted Sessional Paper No. 3 of 2014 on ICZM Policy. It is a milestone achieved through many tireless efforts – effort that did go in vain. To ensure continuity of the practice, it is now recommended that the Kenya Government enacts an ICZM Act

to operationalize the Policy and advantage of the devolved system of Government taken to catalyse the effort through their own budgets, implement ICZM activities in their areas of jurisdiction. The national government efforts – promoting the Blue Economy as part of its development Agenda, should be taken advantage of to enhance the practice with County governments, enacting their own ICZM Acts, now that the national government environment is providing for it and, to roll out programs that promote it in their respective areas of jurisdiction.

Finally, it should be appreciated that the coast only exists as a result of the terrestrial and the marine environment coming together and, influencing each other. To treat each –the land, the sea, and its cultural elements –as separate individual parts, not relating to each other, is absurd. The holistic view is to acknowledge the influence each component has influence on the other and the symbiotic relationships between them. This realization shall enable us remain cognizant of the sensitivity of this land space designated – the coastal and marine environment. Realizing its importance for our welfare and livelihood, we shall be forced to treated it holistically, and with zeal; confront the ugly challenges interfering with its survival in order to sustain its ecological integrity, and hence safeguard the functions that make it remain healthy and therefore offering the appropriate support for our survival.

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