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*Eastern African Marine Ecoregion
Annual Report
10/01/2006 - 09/30/2007*

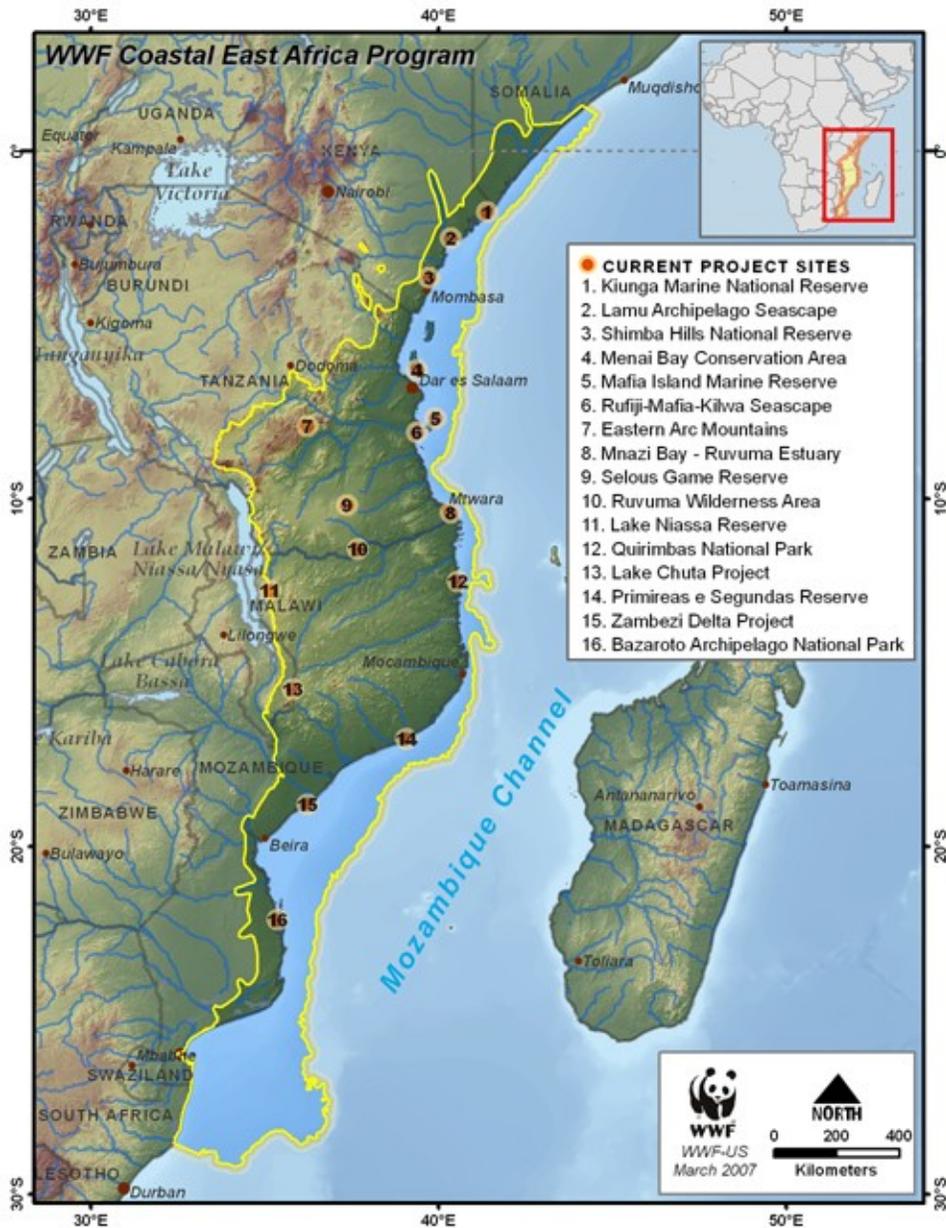
for
World Wildlife Fund

September 30, 2007
Submitted by:
Judy Oglethorpe

Acronyms:

AfD	French Development Agency (France)
AMREF	African Medical Research Foundation
AU	African Union
BMU	Beach Management Unit
CBC	Canadian Broadcasting Corporation
CCP	Community Fishing Council (Mozambique)
CDS-CZ-MICOA	Centre of Development and Sustainable Coastal Zone
CDTF	Community Development Trust Fund (Kenya)
CI	Conservation International
COMDEQ	Quirimbas Development Committee
CMS COP-8	Conference of the Parties to the Convention on Migratory Species
CORDIO	Coral Reef Degradation in the Indian Ocean (an NGO)
CSPs	Coastal Strategy Plans
DANIDA	Danish Ministry of Foreign Affairs
EEZ	Exclusive Economic Zones
EAME	The Eastern African Marine Ecoregion
EARPO	East Africa Regional Program Office (WWF)
EWT	Endangered Wildlife Trust (Mozambique)
FAO	Food and Agriculture Organization
FHI	Family Health International
FiD	The Fisheries Department
FoD	Forest Department
FPAs	Fisheries Partnership Agreements
GCLME	Guinea Current Large Marine Ecosystem (Ghana)
GIS	Geographic Information System
GTZ	German Aid Agency
ICM	Integrated Coastal Management
ICSF	International Collective in Support of Fish workers
IMS	Institute of Marine Sciences
IOSEA	Indian Ocean and South-East Asian Marine Turtle MOU
IOTC	Indian Ocean Tuna Commission
IUCN	The International Union for Conservation of Nature
IUU	Illegal, Unregulated and Unreported
JMT	Joint Management Team
KESCOM	Kenya Sea Turtle Conservation Committee
KMFRI	Kenya Marine and Fisheries Research Institute
KMNR	Kiunga Marine National Reserve
KWS	Kenya Wildlife Service
LCC	The Lamu County Council
MACEMP	Marine and Coastal Environment Management Project
MBREMP	The Mnazi Bay Ruvuma Estuary Marine Park

MICOA	Ministry for the Coordination of Acção Ambiental (Mozambique)
MITUR	Ministry of Tourism (Mozambique)
MoH	Ministry of Health
MPA	Marine Protected Area
MSC	Marine Stewardship Council
NEMC	National Environment Management Council (Tanzania)
NOAA	National Oceanographic & Atmospheric Administration
NORAD	Norwegian Agency for Development Co-operation
NP	National Park
OSPAR	Convention for the Protection of the Marine Environment of the North-East Atlantic
PIA	Program Implementation Agreement (WWF)
QNP	Quirimbas National Park
RAC	Regional Advisory Committee
RFMOs	Regional Fisheries Management Organizations
RUMAKI	Rufiji-Mafia-Kilwa
SARPO	Southern Africa Regional Program Office (WWF)
SCCaFCOM	Strengthening Community Capacity in Fisheries Co-management
Sea Sense	Formally known as Tanzania Turtle and Dugong Conservation program
SFF	Sustainable Fisheries Fund
SEA	Strategic Environmental Assessment
SIDA	Swedish International Development Cooperation Agency
SocMon	Socioeconomic Monitoring for Coastal Management
SSA	Sub-Saharan African
SWIOFC	The Southwest Indian Ocean Fisheries Commission
TCMP	Tanzania Coastal Management Partnership
TED	Turtle Excluder Devices
TPO	WWF Tanzania Program Office
TNC	The Nature Conservancy
UNEP	United Nations Environmental Program
UNFCCC	United Nations Framework Convention on Climate Change
UNIDO	United Nations Industrial Development Organization
VOA	Voice of America
WB	World Bank
WCK	Wildlife Clubs of Kenya
WCS	Wildlife Conservation Society
WIO	Western Indian Ocean
WIO-C	Consortium for Conservation of Coastal and Marine Ecosystems in Western Indian Ocean
WIOMSA	Western Indian Ocean Marine Science Association
YoT	Year of the Turtle Events (Kenya)



The WWF US Focal Area (yellow line) in the Coastal East Africa Program.

Eastern African Marine Ecoregion

Project Overview

Description of Site

The **Eastern African Marine Ecoregion (EAME)** is considered globally outstanding for marine biodiversity, supporting diverse coral reefs, extensive mangrove forests and sea grass beds, spectacular sand dunes, and a large number of ecologically critical lagoons and estuaries. Biodiversity in the ecoregion is high, with more than 11,000 species identified in an area of more than 770,000 square kilometers along the Eastern African coast. Of these, up to 15 percent are narrowly endemic to EAME. WWF is targeting key areas for coral conservation, where there is currently a lack of sufficient support from government. WWF, through this grant, has identified two of these globally outstanding priority areas for biodiversity conservation:

Kiunga Marine National Reserve (KMNR) in Kenya lies in the very north of the Lamu Archipelago seascape on the Kenya-Somalia border, an area of globally outstanding ecological and cultural richness. KMNR and the inland Dodori and Boni National Reserves (877 square kilometers) were together designated a UNESCO Man and Biosphere Reserve in 1980. KMNR extends 1–2.5 kilometers into the open sea to include 55 islands and inner reefs. In 1979, Kiunga Marine National Reserve gained protection status. In addition to a healthy coral fringing reef, the rich habitats of Kiunga support key marine species such as turtles, dugong, whales, and dolphins, and provide one of the last principle global nesting sites for the roseate tern. This reserve also has the last major stands of mangroves, and provides lobster and crabs for the tourism industry of the whole country.

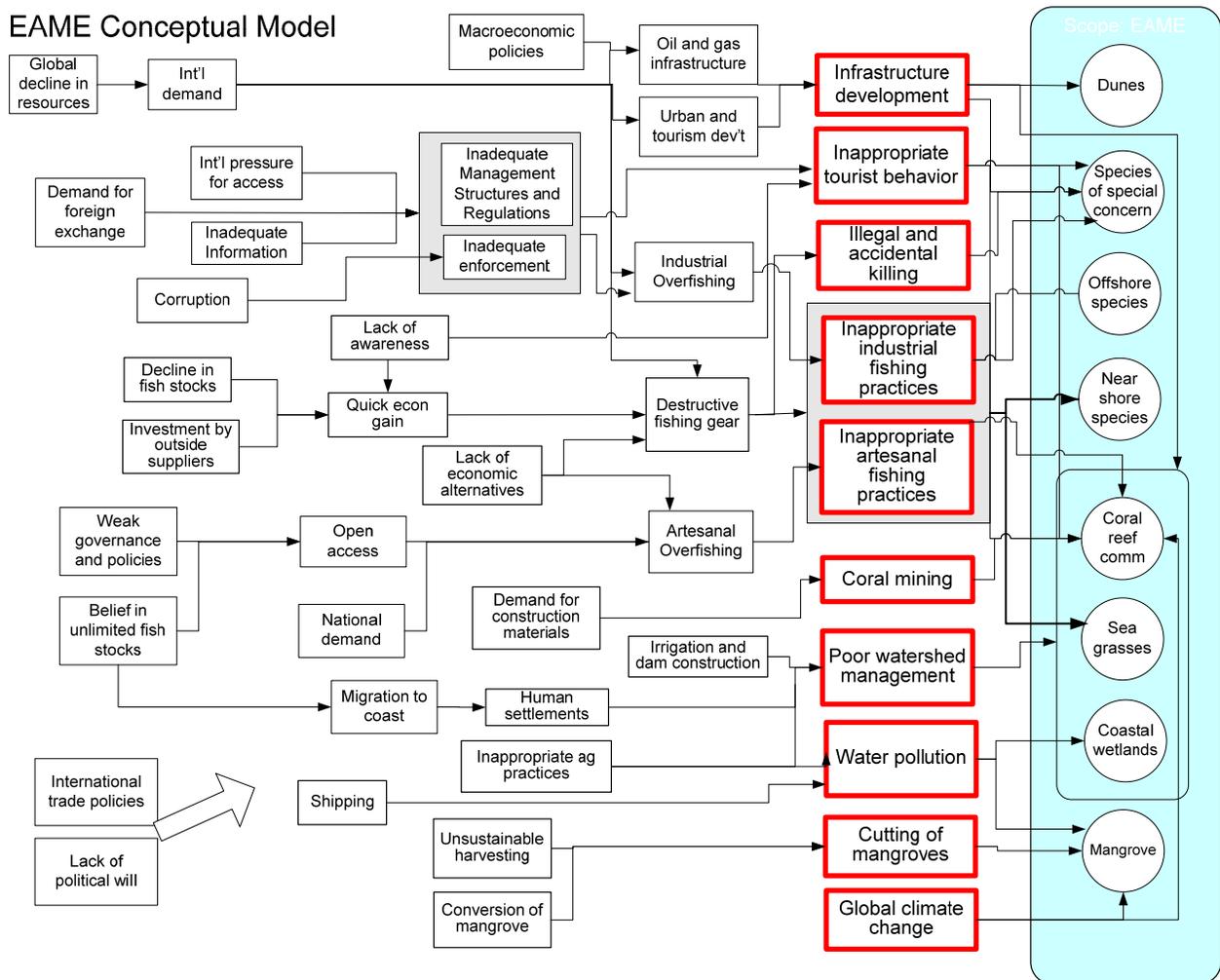
The Quirimbas Archipelago represents the centerpiece of the Mtwara-Quirimbas seascape in Mozambique which is a chain of 28 islands stretching along almost 400 kilometers of the coast. The southernmost 11 of these islands and a vast expanse of terrestrial woodland, coastal forest, and coral rag thicket are included in the **Quirimbas National Park (QNP)**, newly established in 2002. The total area of the park is 750,639 hectares—of which 152,237 hectares are in marine and island habitats—making this the largest marine protected area in the Indian Ocean and in Africa. The park also supports important turtle, whale, and dolphin populations, and provides the livelihood of 40,000 rural people.

The goal of the **EAME Secretariat** is to establish and maintain a functional enabling environment for the implementation of the jointly developed *EAME Conservation Plan: 2005-2009*, completed in 2004. The implementation of the EAME conservation plan will take place through the strategic regional and national action plans. The Secretariat will work to ensure the implementation of the ecoregion strategy so that key policy and practice barriers are being

removed, best practices are being learned, incentives for conservation are present, key research is conducted to inform management decisions, and coastal communities/fishermen have the ability to act as stewards of their natural resources, assuring sustainability.

Threats

As part of the detailed analysis to develop WWF’s EAME Action Plan and strategy we revisited (in a series of strategic planning workshops in FY2006, partly funded by GCP) our analysis of key direct threats to biodiversity in EAME. The resulting detailed conceptual model for the WWF Action Plan is below.



Flowing from this conceptual model, the direct threats are ranked as follows:

Threat	Criteria			Total	Rank	
	Areas	Intensity	Urgency			
Inappropriate artisanal fishing practices	8	6	9	23	1	HIGH
Infrastructure development	9	4	10	23	1	HIGH
Global climate change	10	10	1	21	3	MED
Cutting of mangroves	6	8	6	20	4	MED
Illegal/incidental killing	5	7	8	20	4	MED
Inappropriate industrial fishing practices	7	5	7	19	6	MED
Poor watershed management	2	9	5	16	7	MED
Coral mining	3	2	4	9	8	LOW
Inappropriate tourism practices	4	1	3	8	9	LOW
Water pollution	1	3	2	6	10	LOW

Areas: of the 21 priority areas identified in EAME, the number of areas where this threat is relevant.

Intensity: the value reflects a ranking of the threat intensity, 10 being the highest intensity of all threats.

Urgency: ranking among the ten threats according to most urgent need for action, 10 being the most urgent.

Threats (in rank order) include more specifically:

Inappropriate artisanal fishing practices - over-harvesting of pelagic fish species, marine turtles, marine mammals, invertebrates, ornamental fish and coral, and species used in traditional medicine.

Infrastructure development – development resulting in physical damage of reefs, pollution, increased demand for high-value species and building materials such as mangrove poles and coral blocks; road and bridge building resulting in unregulated open access to resources; gas and oil extraction development destroying habitat, opening up new areas to settlement, and bringing a risk of pollution.

Global climate change - among the most prominent effects are change in river run-off resulting in increased sedimentation of marine systems; change in water temperature, resulting in habitat change and coral bleaching.

Cutting of mangroves - clear cutting and conversion of mangrove forests for fuel, building materials, salt production, sand and mineral mining, and shrimp farming.

Illegal/incidental killing - marine turtles, sooty terns, dugong, cetaceans, etc.

Industrial fishing - long-distance access agreements; illegal long distance fishing fleets; destructive industrial fishing practices; bottom trawling, drift net and long-line fishing; over-harvest and over capacity, etc.

Poor watershed management - deforestation, agricultural runoff, pollution, sedimentation, water flow management.

Coral mining - live coral extraction and mangrove cutting for lime production; poor fossilized coral extraction.

Inappropriate tourism development - inadequate planning of coastal development resulting in increased water use, sewage, pollution, beach erosion, coral reef destruction, etc.

Water pollution: agricultural run-off, inappropriate or lack of water sewage treatment, pesticide, etc.

The table below shows WWF’s ranking assessment of its capacity to tackle these threats, undertaken at a strategic planning workshop in Pemba, Mozambique in December 2005:

Threat	Criteria				Total	Capacity Rank	Threat Rank
	WWF Comparative Advantage	Window of Opportunity	WWF Network Support / TA	Local WWF Capacity			
Artisanal fishing (includes by-catch and turtle poaching)	5	4	1	5	15	#2	#1
Infrastructure development	2	3	4	2	11	#3	#1
Global climate change adaptation	1	2	3	1	7	#5	#3
Cutting of mangroves	3	1	2	3	9	#4	#4
Industrial fishing (includes by-catch)	4	5	5	4	18	#1	#6

WWF Comparative Advantage: WWF holds a comparative advantage where it is better suited to deal with a given threat than other entities working in the region. A “high” level of comparative advantage exists where WWF has strong convening power or influence, experience working on policy, global reach, and access to economic and political powers.

Window of Opportunity: A window of opportunity exists if the threat can be effectively

addressed in the next 5 years.

WWF Capacity: WWF's capacity to address the threat is based on available skills and knowledge.

Institutional Gap: Is there a gap? Is there a partnership opportunity?

The ranking provided WWF with an opportunity to make strategic decisions for activities based on tangible assessments of ecological need/importance, and to strategically scale up capacity where threats are high and capacity is low. Unsustainable artisanal fishing practices were ranked as the greatest threat to the ecosystem, thereby confirming our focused efforts on mitigating this threat. USAID investments are already sponsoring a gear exchange for artisanal fishermen to trade in their harmful fishing nets for alternatives that will not decimate fish stocks. In Quirimbas NP, the threat of artisanal fishermen is being mitigated through the establishment of fishing replenishment zones that prohibit fishing activities in certain breeding areas.



As part of the gear exchange program, this local fishermen is harvesting fish from fish traps in Kiunga Marine Reserve. Fish traps are part of the sustainable gear exchange program.

Strategic Goals and Objectives

The overall 50-year Vision for EAME is *a healthy marine and coastal environment that provides sustainable benefits for present and future generations of both local and international communities, who also understand and actively care for its biodiversity.*

WWF's activities in the ecoregion are guided by *The Eastern African Marine Ecoregion Strategic Framework: 2004-2024*, a comprehensive 20-year conservation framework that was

completed in 2005 through a WWF-facilitated, collaborative process with multiple stakeholders. This plan was endorsed by key actors and includes five-year National Action Plans complimented by a Regional Action Plan, *The Eastern African Marine Ecoregion Conservation Plan: 2005-2009*. Within the 20-year framework, there are five strategy components:

1. Promoting planning and implementation within priority seascapes through a marine protected area network;
2. Conserving wide-ranging species and addressing transnational threats;
3. Enhancing the enabling policy and legal environment;
4. Supporting sustainable livelihoods;
5. Monitoring for adaptive management, catalyzing innovation, and strengthening capacity for long-term sustainability.

This suite of strategies is being implemented to ensure the long-term stability and diversity of the representative species, habitats and ecological processes across the ecoregion. **Of these, the priority focus of USAID-funded activities is the conservation of coral reefs and coral communities. Specifically, the defined target is to halt or reverse the decline in the quality of coral reef/community areas by 2010.** The anticipated overall result/output is defined as: none of the 15 priority reefs in EAME have greater than 20 percent of their total area damaged, and four medium quality¹ and three high quality² coral sites have improved by at least one status level.

Collaborators/Partners

EAME Program:

WWF is staffing and hosting the EAME Secretariat on behalf of a much wider group of stakeholders, including local, national and international NGOs, different government bodies from four of the five EAME countries (South Africa, Mozambique, Tanzania, and Kenya), academic institutions, etc. These institutions include Kenya Sea Turtle Conservation Committee (KESCOM), Sea Sense (formally known as Tanzania Turtle and Dugong Conservation program) and Endangered Wildlife Trust (EWT), Coral Reef Degradation in the Indian Ocean (CORDIO), East African Wildlife Society, FAO, KESCOM, KMFRI, KWS, IMS, MICOA, NEMC, TCMP, WORL, UNEP, MACEMP, ICM, WIOMSA, World Bank, and IUCN. The EAME Secretariat is working closely with the National EAME Committees of Mozambique, Tanzania, Kenya; the EAME Focal Institutions in these three countries; and with the Regional EAME Committee.

¹ The medium status level of coral reef communities has been defined as: widespread and advanced degradation of habitat structure and complexity; trophic structures minimally disrupted; some sensitive species missing altogether; mortality of characteristic and key taxa exceeding replacement, with net downward trend and reduction in extent and diversity of populations and structure.

² The high status level of coral reef communities has been defined as: minimally degraded habitat structure/complexity; trophic structures unaltered; some species may be depleted; mortality balanced by replenishment over time scales of 5–10 years, with no net tendency for reduction in extents of populations in habitats.

Kiunga:

The program is jointly managed by WWF as a facilitator and by the Kenya Wildlife Service (KWS) as the mandated management authority. Further, the program is implemented through collaboration with other key stakeholders including the Forest Department (FoD), the Fisheries Department (FiD), the Lamu County Council (LCC), local communities in and around the reserve, Wildlife Clubs of Kenya (WCK), Lamu District Health Management Team, the Ministry of Health (MoH), and Family Health International (FHI).

Quirimbas:

During this past year, the major collaborating agencies were the Quirimbas National Park, the Quirimbas Development Committee (COMDEQ), the Ibo District Administration, the Marine Administration of Cabo Delgado Province, the Police Commando of Ibo District, Gorongosa Wildlife College, the Fisheries Department of Cabo Delgado, the Marine Corps (Marinha de Guerra) of Mozambique, the Ministry of Defense, and the Ministry of Tourism (MITUR).

Summary: Period 10/01/06–09/30/07**Highlights****EAME Program:**

- The EAME PIA was signed by the EAME Secretariat and key WWF national and regional offices interested in supporting the WWF work program for the Secretariat
- The EAME Strategy was coordinated and championed at the country and regional level through National Committees engaged in building and strengthening partnerships with key implementation partners.
- The EAME Secretariat organized and conducted national workshops on policy and environmental aspects related to oil and gas development in Kenya and Tanzania
- EAME climate change witness testimonies were showcased in the successful WWF side event held during the UN Framework Convention on Climate Change (UNFCCC) COP 12. The information was published on the www.panda.org website.
- A fisheries pre-analysis project (a process to identify suitable fisheries for community group certification under the Marine Stewardship Council) was launched for the countries of Kenya, Tanzania and Mozambique, initiating a process towards marine fisheries certification in the ecoregion.
- The EAME Secretariat initiated discussion with the Nairobi Convention (UNEP's Convention on the Protection and Development of the Marine and Coastal Environment of the Eastern African Region) and other regional partners (WIO-C) to support development of a fisheries accord among WIO countries to address regional transboundary fisheries issues, including Fisheries Policy Agreements, by-catch and IUU.
- As a result of the EAME team's influence, the Kobe Conference held in Japan adopted by-catch and stock assessment as a course of action for all Tuna Regional Fisheries

Management Organizations .

- The Secretariat initiated a process to develop a sustainable financing mechanism for protected areas in Mozambique. USAID, AfD, GTZ and WB are all on board, and desk studies have been finalized.
- Marine protected area (MPA) managers participated in an exchange visit conducted on Mafia Island in Tanzania and learned of the challenges and successes to MPA implementation and management. A report was produced with non-GCP2 funds that documented the experience from the learning program and has been disseminated to all participants.

Kiunga:

- The new fisheries regulations recognize the Beach Management Units (BMUs) as fully functional community fisheries management groups. Eleven (11) joint sea patrols were carried out with participation of community members, FiD and KWS. BMUs were instrumental in highlighting areas of infringement, sanctioning offenders, and curbing illegal and destructive fishing gear.
- The Joint Management Team (JMT) led environmental education and awareness activities in villages within Kiunga's catchment area to improve their capacity to participate in co-management of the park. The JMT is comprised of the KWS, WWF, FiD, FoD, and communities.
- WWF conducted in-house training addressing marine ecology of mangroves, fishes, turtles, coral reefs and sea grass, for all twenty personnel (KWS, WWF and Community) working on marine conservation in KMNR. Eighteen staff from FiD were trained in formulation of by-laws for and management of Beach Management Units to enable these staff to support fishers.
- An exchange visit between WWF- Kiunga turtle team and the Watamu Turtle Watch group enabled twenty field officers from both turtle conservation groups to share information and experiences in education and awareness, turtle nest verification methodologies, incidental catch, turtle tagging and disease diagnosis and turtle database management.
- Nine functional school environmental clubs within KMNR project area noted a significant increase in total membership from 334 to 380. WWF facilitated printing and distribution of mock examinations to over 1,534 students within KMNR catchments. The impact of these mock exams was evident as Mkokoni and Ndaui emerged as the schools with the highest scores within Lamu District on the 2006 national examination.
- Between July 2006 and May 2007, over 107 sea turtle nests were found in KMNR - the highest number ever recorded. Over 6,419 turtle hatchlings emerged and successfully swam to the sea during this period. Local fishers reported more than half of the sea turtle nests (58%) recorded in KMNR.
- WWF held a workshop to review progress made in sea turtle conservation over the past two years. The workshop attracted over 30 participants drawn from BMUs, fisher groups, village youth groups and women's group representatives from all seven villages in KMNR catchment.

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- Participatory ecological monitoring was successfully undertaken in KMNR, and the coral reef monitoring report is being finalized with CORDIO. CORDIO informed the project that it would be able to jointly fund the annual KMNR coral survey. The project continues to maintain the fish catch and crustacean databases, in addition to the turtle database. Cowry shell collectors in Kiunga are also submitting data to the project.
 - Health activities trained 24 community health workers, 30 birth attendants, 17 community based distributors, and re-established family planning data collection in all villages.

Quirimbas:

- Park management was advanced through the first participatory evaluation involving 95 participants from 9 coastal communities and district representatives. All regarded fish sanctuary work as positive.
- The continuation of fish sanctuary work, including the development of one new sanctuary in the very north of the park responding to a village request, is resulting in an increase in fish catch per effort within the sanctuaries.
- Community rangers and fishing committees are now trained and actively monitoring indicators of the impact of the park on fisheries and biodiversity. Fish capture monitoring systems have been established in the Park.
- Five Community Fishing Councils (CCPs) have been formed, but are not yet officially legalized. Initial capacity building exercises followed by several meetings to exchange experiences, resulted in the protection of the sanctuaries, and in the creation of zones for rotating production of shellfish and oysters.
- Three oyster collection groups were established on Ibo, Matemo and Mussemuco islands and are in the initial stages of rotating oyster production.
- As residents' compliance with fishing regulations continues to improve, project focus continues to shift to the invasion of poachers from outside Quirimbas NP borders. Mozambique's Department of Defense has become a strong ally in the protection of MPAs and has donated two boats for use in the park's enforcement activities.

Objective 1: Promote measurable results across the ecoregion by facilitating multi-stakeholder actions from field to policy levels.

Objective 1 involves key elements of the EAME Strategic Action Plan which has been finalized and is included as Attachment 1 to this document. With USAID funding, the EAME Secretariat has worked to improve partnerships among WWF, donor agencies, field staff, focal institutions and communities; facilitate effective management of MPAs, and facilitate the process of establishing an adaptive management framework for the ecoregion. In an ecoregion such as EAME that is highly connected by ocean currents, tides, monsoon winds, and human activity, efforts have focused on promoting connectivity in strategies and learning, including across international boundaries. The EAME Secretariat seeks to compare and learn across interventions and contexts to promote a steady process of learning and improvement of marine conservation.

Below are specifics of the results achieved with USAID/GCP2 funding in FY07.

Activity 1.1: Maintain overall project management and constructive working partnerships between WWF, donor agencies, field staff, focal institutions and communities

Coordinate and champion the EAME Strategy at country and regional levels through national and regional committees, fostering the incorporation of the Strategy into government documents and supporting national governments to meet their national and international marine conservation obligations in signed international treaties and goals.

The National Committees for Kenya, Tanzania and Mozambique continued to facilitate implementation of EAME Secretariat activities in their respective countries. During the reporting period, the National Committees were engaged in building and strengthening partnerships with key implementation partners, fundraising for EAME Secretariat activities and monitoring of activities that affect marine and coastal resources.

In Kenya, a priority was discussion of interventions to influence on-going development activities in the Tana Delta. EAME-Kenya has been facilitating a process of official endorsement of the EAME conservation strategy by key government departments (Fisheries, Kenya Wildlife Service, Forestry, Environment and Tourism). So far, EAME-Kenya has obtained a letter from the National Environment Management Authority (NEMA) endorsing the EAME strategy. EAME Kenya developed 4 proposals for funding work on marine related issues, submitted to CDTF's Community Environmental Facility (CEF), Whitley Fund for Nature, Darwin Initiative, and The MacArthur Foundation.

In Mozambique, the EAME National Committee forms an integral part of the Integrated Coastal Zone Management (ICZM) Secretariat. During the reporting period, EAME-Mozambique participated in the review the Coastal Zone Management Strategy for Mozambique and spatial development plans for the districts of Mocimboa da Praia and Palma (which fall within the EAME Mtwara-Quirimbas Complex) and for the Mossuril District (which falls within the boundaries of the EAME Nacala-Mussoril Complex). The Mozambique National Committee is leading a process to obtain key government department endorsement of the EAME Conservation Plan and a process to obtain government department signatures on the MoU on the Conservation of the Marine Turtles in the Indian Ocean-South East Asian (IOSEA) region. Translation of the two documents into Portuguese, a prerequisite to completing the two processes, is planned for the next reporting period.

Also in Mozambique, EAME supported WWF-Mozambique and the Centre of Development and Sustainable Coastal Zone (CDS-CZ-MICOA) in organizing a series of public events to increase awareness of turtle issues in some coastal provinces, culminating in a National Marine Turtle Symposium in November 2006. At the symposium results were disseminated from a testing phase of turtle excluder devices (TEDs) currently being implemented by the Ministry of Fisheries in collaboration with the shrimp fishing fleet, thus increasing the Ministry of Fisheries'

awareness of the benefits of the shrimp fishing industry's use of TEDs.

In Tanzania, the EAME National Committee focused on the establishment of the Tanzania Marine Forum, which was officially launched on 1 June 2007. Two events, a public event and a scientific symposium, marked the first meeting of the forum. Activities of the public event included beach cleanups and mangrove planting. The scientific symposium included the presentation of scientific papers and posters, and special talks on different aspects of management of marine and coastal resources in Tanzania. Proceedings of the forum will contribute into production of the Tanzania State of the Coast report.

The EAME Regional Committee meeting was held in March 2007 in Nairobi, bringing together the national representatives and also, for the first time including members of key implementing partners in the region (IUCN, CORDIO, UNEP, NEPAD, WIOMSA etc). At this meeting, updates on achievements, on-going and planned activities for each EAME country were discussed.

Maintain and build strategic partnerships with global and regional institutions, agreements, and initiatives.

WIO-C established

On 1 September 2006, a strong visionary consortium known as the “Consortium for Conservation of Coastal and Marine Ecosystems in Western Indian Ocean” (WIO-C) was launched at UNEP in Nairobi. For years, the governments of the Western Indian Ocean have voiced their concern over the continued degradation of the marine and coastal environment. As a result, several regional organizations have developed strong coastal and marine conservation programs in Eastern Africa including the Island States of the West Indian Ocean (WIO). These programs include the WWF-coordinated EAME, IUCN's Eastern Africa Marine and Coastal Ecosystems Program, and other projects implemented by CORDIO, WIOMSA, WCS, UNEP and UNESCO. Due to the multiplicity of projects and programs of the various regional organizations, a number of key stakeholders have come together to discuss and agree on how the initiatives can be more effective in influencing decision making and changing the face of natural resource management in Western Indian Ocean. WIO-C has been formed to rationalize these contributions and develop synergistic partnerships that will advance the interests of marine research, conservation and management in the region.

While the nine-member leadership group will steer the Consortium, the day-to-day secretariat functions will be a revolving responsibility – initially undertaken by the EAME Secretariat team in Dar Es Salaam, Tanzania. A more formal launch will take place during the 5th Conference of Parties meeting for the Nairobi Convention in 2007.

Climate Change vulnerability assessment project in RUMAKI

Global warming is already taking a toll on coral reefs off eastern Africa. They will likely be killed off in a few decades if sea surface temperatures continue to rise. There had been catastrophic mortality among shallow-water coral reefs off East Africa following El Nino events

that pushed up sea surface temperatures in the Indian Ocean. Models suggested that rising sea surface temperatures could cause these events to be repeated on a regular basis in 20-50 years' time. Such a scenario would have grim consequences for the region's rich corals, which are crucial to East Africa's tourist industry. For this reason, WWF is implementing a project to assess the vulnerability of EAME coral reefs and mangroves to climate change and to develop strategies to adapt to climate change stresses. UNEP endorsed the primary proposal in December 2005, with funding from GEF to support work in Tanzania, Cameroon, India and Fiji. A contract was signed between WWF-US and WWF-TPO, and the coral reef monitoring in RUMAKI began in February 2007.

Fisheries certification process in Kenya, Tanzania, and Mozambique

The EAME Secretariat in partnership with the WWF-US Community Based Certification Program is conducting fisheries pre-analysis of the lobster, octopus and prawn fisheries in Tanzania, Kenya and Mozambique. They are using a model developed by the Community Based Certification Program with the goal of identifying at least one candidate suitable for Marine Stewardship Council (MSC) certification in each country. In addition, the pre-analysis will help to establish a regional plan for bringing about sustainable fisheries development in EAME countries. After the pre-analyses are completed, the EAME Secretariat will request additional funding to proceed with the full assessment of these fisheries.

SWIOFC and IOTC

The EAME Secretariat has secured an observer status with the IOTC. This status will help the Secretariat to benefit from access to IOTC data sets and scientific advice. EAME was represented at the 9th session of the IOTC meeting in Seychelles. The next Scientific Committee meeting is scheduled for November 2007. In the year under review, the South West Indian Ocean Fisheries Commission (SWIOFC) also offered EAME observer status. At the moment, the scientific committees of both regional fisheries management organizations (RFMOs) are particularly focusing on the issues of fisheries statistics, ecosystem management and by-catch, IUU, scientific research/assessments and Monitoring Control and Surveillance (MCS). It is thus important for EAME to maintain contacts with these bodies for the discussion of those and related fisheries management issues.

The EAME Secretariat is involved in reviewing the effectiveness of IOTC and recommending areas that will strengthen its position in articulating fisheries matters that would enhance sustainability in the region. A coordinated strategy is being implemented by WWF for engaging EAME states in developing their national positions at commission meetings to urge reductions in fishing mortality, thus adhering to total allowable catches and working towards reducing illegal fishing. During FY07, the EAME Secretariat followed up with IOTC on membership for Tanzania and Mozambique. This has been part of the strategy of strengthening participation of EAME states in RFMOs. Tanzania finally joined IOTC in April 2007. Kenya has been a member of IOTC since 8 September 2004. EAME will follow up with Mozambique in the next fiscal year.

The EAME Secretariat worked with WWF International at the Kobe Conference in January 2007

to implement by-catch and stock assessment as a course of action for RFMOs. As a result of the EAME team's influence, the following were some of the actions adopted: harmonizing and improvement of trade tracking programs, harmonizing the positive lists of tuna fishing vessels and creating a global negative list, harmonizing trans-shipment control measures, and standardizing the presentation of stock assessment results.

Build capacity of staff in the Ministry of Fisheries in EAME countries to negotiate fair and equitable Fishing Access Agreements, leading to increased sustainability and benefits from these agreements to EAME countries

A model agreement developed by EAME-Mozambique was used by the government in negotiations with the EU at Brussels. WWF used similar materials generated by the Secretariat in public discussions in Maputo with an EU delegation from Brussels. The discussions were centered on negotiation of EU Fisheries Partnership Agreements (FPAs) with the Government of Mozambique. The EAME Secretariat completed an assessment of FPA negotiation and capacity building needs of EAME countries. The results are as follows: Mozambique signed a renewal of their FPA agreement with EU in 2006; Kenya has never signed and is preparing for negotiation with EU; Tanzania has never signed, and the negotiations have been suspended with EU due to basic disagreements; Somalia never signed and is not negotiating; and South Africa does not have an arrangement on Fisheries Access Agreements (FAAs) with distant water nations. As a result, plans are underway for national FPA negotiation skills capacity building seminars in Kenya, Mozambique and Tanzania. It is important to realize that although Mozambique has signed a renewal of its FPA with EU, the real issue is not only about stopping EAME countries from signing the agreements, but rather to work with them to find better alternatives for engaging with distant water fishing countries in their Exclusive Economic Zones (EEZ). The WWF proposed initiative to promote EAME/WIO range states signing a fisheries accord to mitigate among other issues the FPAs will be a step forward in finding a lasting solution to this problem.

EAME By-catch initiative

The EAME Secretariat has secured funding from WWF-International for a by-catch study that will be implemented in FY08. The study will provide a comprehensive review of available data, statistics and information on the status of existing fisheries-related incidental catches, by-catch, and discards on an annual basis for both inshore and deep sea in Kenya, Tanzania and Mozambique. The study will also provide an assessment of the impact of fishing methods on the environment, and make specific recommendations on mitigation measures, including gear technology, policy initiatives and management measures. In order to roll out the EAME by-catch reduction efforts, the Secretariat will work closely with relevant key partners; governments, the private sector, regional fisheries management organizations (RFMOs, especially SWIOFC and IOTC), scientific/research institutions, conservation organizations and local communities.

SEA system and dialogue established in at least one EAME country as a basis for regional oil and gas strategy development, including production of oil and gas sensitivity maps.

Establishing a system of strategic environmental assessment (SEAs) for EAME states has involved efforts to sensitize both the public through the media, and the governments of Kenya,

Tanzania and Mozambique through workshops, conferences and policy analysis. UNEP, through the Nairobi Convention, will push for the adoption of a recommendation on the SEA system during the upcoming COP in November. Mozambique is the only country that has moved quickly on the development of site-specific-based SEAs, beginning the process with three sites. Our goal, however, is to have a national system of SEAs rather than a site-based system.

Oil and Gas Sensitivity Mapping

The problem of oil spill response can be complex if a decision has to be made in a short period of time, as is often the case during a spill. Information on the spread and distribution of natural resources along the coastline would be quite challenging to a command center grappling with operational and political pressure from various sectarian interests - all seeking quick, satisfactory responses. In order to arrive at objective compromise decisions, information must be quickly gathered and made available. Oil and gas sensitivity maps provide much needed support in effective decision-making processes for management of critical marine and coastal areas. The maps provide an environmental data dictionary to be utilized as a tool in risk assessment, clean-up prioritization, as well as appropriate methods and tools of response.

Kenya has made significant progress in this direction, completing and publishing in 2006, a sensitivity map for Kenya - a product known as **KenSea** - Environmental Sensitivity Atlas for Coastal Area of Kenya. The project was sponsored by UNDP, Geological Survey of Denmark and Greenland (GEUS), and technically produced by Kenya Marine and Fisheries Research Institute (KMFRI). Its main focus is to provide information needed on sensitive areas in order to prioritize responses in case of an oil spill in the region. The atlas shows most of the coastal/inshore resources, but lacks potential sites for petroleum deposits. An oil and gas sensitivity map can readily be produced for Kenya once an accurate overlay of oil deposits is made on KenSea together with additional information of key fish spawning sites. The atlas does not give information regarding dispersant use, but a dispersant policy is under development by Kenya Maritime Authority in collaboration with Kenya National Environment Management Authority (NEMA). The next step will be for Kenya and Mozambique to develop the same products and later synthesize the information into an EAME oil and gas sensitivity map. All this information will be critical to the process of developing oil and gas strategies, including Strategic Environmental Appraisals, for EAME states.

Oil and Gas National Workshops in Kenya and Tanzania

As part of the implementation of the oil and gas strategy, the EAME Secretariat organized and conducted national workshops on policy and environmental aspects related to oil and gas development in Kenya and Tanzania on the 10th and 14th May 2007, respectively. The main objective of the workshops was to share knowledge and experiences on the challenges and opportunities associated with oil and gas development, and how legal, policy and institutional frameworks can be strengthened to effectively deal with emerging developments in the petroleum sector in the two countries. The workshops were specially designed for high-level decision makers in the government, NGOs, and civil society. A team of oil and gas as well as policy experts from the respective governments, WWF Network, International Maritime

Organization (IMO) and IUCN Commission on Environmental, Economic and Social Policy (IUCN – CEESP) were available as resource persons. The workshops recommended strengthening legal and policy frameworks, undertaking SEAs, and adoption/domestication of relevant international instruments.

Effective reporting and overall project management of the WWF EAME Program that ensures high performance and delivery of results.

Partnership for Sustainable Fisheries Management for Sub-Saharan Africa countries

The Kenya Marine and Fisheries Research Institute (KEMFRI) is facilitating the development of a proposal for World Bank financing that includes Lamu Archipelago Seascape with focus on coastal management. A concept note for the proposal was submitted to the Permanent Secretary, Ministry of Livestock and Fisheries Development for review before passing onward. The EAME Secretariat is exploring with the Ministry of Livestock and Fisheries Development the opportunity to include in this proposal the financing of a comprehensive Lamu Archipelago Seascape Proposal in the World Bank/FAO/WWF Partnership for Sustainable Fisheries in Sub-Saharan Africa. In the next fiscal year, the EAME Secretariat will engage with the Ministry of Fisheries in Mozambique to support the government in accessing the available World Bank/FAO funding.

EAME Program Implementation Agreement (PIA)

In December 2006 the EAME PIA was signed by the EAME Secretariat and key WWF national and regional offices interested in supporting the WWF work program for the Secretariat. This agreement marks a very important milestone in the development and implementation of EAME strategy, providing financial commitments for the agreed four-year implementation plan and providing a coordinated framework for WWF contributions to implementation of the EAME strategy. Various decisions regarding the implementation of the EAME PIA will be guided by the WWF EAME Advisory Group.

Activity 1.2: Facilitate process of establishing a rigorous adaptive management framework from ecoregion to site scales.

Capacity of MPA managers built through sharing cross-site success stories and challenges in EAME during site-visit to Kiunga MNR

The second MPA learning exchange took place in Mafia Island MPA (Tanzania) in August 2006 with over 30 individuals ranging from MPA managers, national MPA management authorities, representatives from relevant government departments (KWS, Fisheries Departments in Tanzania, Ministry of Tourism in Mozambique), representatives of local communities, WWF, and the EAME team. Participants learned of the challenges and successes implemented in Mafia Island MPA, providing MPA managers with information on good practices and new initiatives being piloted in areas outside of their region. GCP2 funds were used to produce a report documenting the experience from the MPA managers learning program which has been disseminated to all participants (attached in Annex 2).

The third MPA learning exchange scheduled for FY07 did not take place as planned in Kiunga Marine National Reserve due to scheduling conflicts. It is scheduled for early October 2007.

MPA/Reserve tailor-made capacity building training advocated for future capacity of EAME's MPAs

A forum of MPA managers and other coastal practitioners in EAME has been established by the EAME Secretariat to discuss issues regarding conservation and sustainable use and management of marine resources through MPAs. This is a web-based discussion group where discussions range from training needs of Managers and MPA practitioners to issues of priority within an MPA learning program. Other contributions are simple announcements to keep participants updated on what is happening in the ecoregion. The forum is a great tool for exchange of knowledge and skills based on the needs and available expertise. The forum is also being used for offering specific expertise required by specific MPAs.

Sustainable financing of MPAs in Mozambique

The EAME Secretariat would like to facilitate a process where each EAME country evaluates its opportunities for developing sustainable financing of its network of MPAs. The aim is to help the government of Mozambique move towards achieving financial sustainability for its national system of protected areas. Mozambique will conduct an assessment of the system's current financing needs and develop a national sustainable financing strategy that identifies options for generating revenue and addresses legal, regulatory and institutional reforms needed to achieve financial sustainability. A sustainable financing workshop is scheduled for mid November 2007. USAID, AfD, GTZ, and WB have all expressed an interest in supporting this initiative.

Objective 2: Promote effective management of Kiunga Marine National Reserve (KMNR) through collaborative management structures.

The goal of the WWF Kiunga Conservation and Development Project is to: "safeguard the biodiversity and integrity of physical and ecological processes of the Kiunga Marine National Reserve (KMNR) for the health, welfare, enjoyment and inspiration of present and future generations." Conservation efforts in Kiunga will also benefit coastal Somali communities across the border, where South to North currents transport fish and other sea life into these impoverished areas. To achieve these results, better management structures are needed. The objectives of the project are to:

- Strengthen KMNR collaborative management structures and institutional mechanisms with full participation of local communities and other stakeholders;
- Establish capacity of the local community to undertake and participate in conservation management programs;
- Enhance capacity of the local community to undertake conservation-compatible income generating activities (IGA) and rural enterprises as other means of livelihood;
- Establish and implement resource management programs; and
- Enhance information management.

The KMNR project works with all stakeholders towards ensuring co-management of key fisheries resources, maintaining ecological integrity of the ecosystems, stabilizing populations of flagship species such as marine turtles and dugongs, and reducing the associated risks by promoting the formulation of sustainable-use policies, law enforcement and community based management frameworks. Investing in sustainable alternative livelihood for coastal communities is another key strategy adopted by the project to reduce pressure on declining marine resources as outlined in the EAME conservation action plan.

As a contribution towards accomplishing WWF marine program goals, the project focuses on establishing institutional and regulatory frameworks for effective management of KMNR, strengthening management operations, collecting and analyzing information on ecological, economic and social trends to inform management, ensuring all community stakeholders fully participate in conserving marine resources and facilitating government agencies to support communities' sustainable use of KMNR resources as well as exploring livelihood improvement options. During this reporting period, the key contributions to the targets include:

- Establishment of government recognized and fully functional community fisheries management units;
- Increased number of fishers participating in turtle species conservation program;
- Improved understanding of KMNR's marine ecosystem through ecological monitoring;
- Progress towards finalizing KMNR's Management Plan; and
- Securing new markets for community run sustainable livelihood initiatives.

Below are the specifics of achievements resulting from USAID/GCP2 funding in FY07.

Activity 2.1: Management frameworks, operations, personnel and infrastructure strengthened for sustainable and adaptive reserve and resource management.

GIS maps produced to support resource management, survey and management planning

In FY07, KMNR planned to produce GIS maps to support resource management, survey and management planning. This activity was deferred due to lack of adequate capacity in GIS (skills and equipment). It has been scheduled for completion during FY08 (see FY08 GCP2 work plan). Strides have been made to enhance the GIS expertise through active collaboration and partnership with the WWF-EARPO GIS department. The maps are expected to feed into the management planning process of KMNR, which is in its final stages.

KMNR boundaries maintained and fishery reproductive zones defined

KMNR's planned boundary marking for FY07 was indefinitely postponed; however, the project is still working on an ongoing study on fish spawning aggregation sites which will be completed in fiscal year 08 (see GCP2 implementation plan, FY 08). Further preliminary data collection is under way on community-identified fish no take zones to allow for regeneration and demarcation. As required under the new BMU regulations, WWF and FiD have assisted fishers in zoning their fishing grounds.

Joint preliminary scientific marine surveys requested by fishermen and led by WWF were conducted in six areas adjacent to the reserve. Initial results indicate declining catch and degradation. The team observed a population explosion of sea urchins. A follow-up survey is scheduled at the onset of the North East Monsoon winds for a better and comparative analysis of results. Results and recommendations of the survey will inform and guide the community to implement management regimes. The ultimate objective is to establish fishing zone regimes that will guarantee healthy fish stocks in the area, with the community, through the BMU, policing the areas for infringement.

KMNR camp infrastructure, transport and communications maintained to enable more effective management

In FY07, KMNR camp infrastructure, transport and communication tools received regular maintenance with support from the GCP2 grant. This enabled more effective use of equipment used in natural resource management. Further, GCP2 funds allowed all 3 boats to receive regular maintenance, along with vehicles, dive compressors, radio operations (fisheries data collectors), and communication tools such as VSat (email& internet) and radio communications. Eight handheld radios were purchased to improve communications among outposts in Kiunga, Mongo Shariff, Kiwaiyu, and Kizingitini, and to monitor boats and their safety at sea. The stable operation of these tools allowed smooth implementation of project activities.

Joint (KWS, FiD, FoD, LCC, Community, WWF) KMNR Management Team functional and supported with capacity built through exchange visits.

The Joint Management Team (JMT) regularly held its quarterly meetings. Communities have accepted and recognized the JMT as an essential and effective tool in joint management of marine resources in KMNR and solving resource use conflicts. There have been several management decisions taken by the JMT in resource utilization regimes. Key among them was the mangrove harvesting protocol between communities, Forest Department (FoD) and the KMNR Warden. Village representatives were also able to give continuous feedback on the progress made by on-going WWF conservation programs. Community resource ownership and supervision was very encouraging and increased demand for support for law enforcement from KWS and Fisheries Department (FiD). All villages reported their concerns to their JMT representatives, and all cases were deliberated at meetings.

Coral reef and fish monitoring capacity enhanced

The semi-annual participatory ecological monitoring was conducted involving local community members from villages in KMNR and its catchments. Other partners that participated in this year's exercise included: Kenya Wildlife Service – Research Department, Kenya Marine & Fisheries Research Institute (KEMFRI), and the Fisheries Department. Parameters monitored included fish and invertebrate censuses, coral species diversity, and benthic health assessment. In response to emerging threats and KMNR resource management requirements, measurements of the following new parameters were initiated: coral disease prevalence and drivers, sea grass cover and species diversity, sea cucumber census and species diversity, and sea urchin census and spatial distribution in KMNR fishing grounds.

In FY07, WWF continued to enhance the capacity for coral reef and fish monitoring in KMNR. Three KWS staff and 10 local community members from local villages and their catchments were trained for ecological and coral reef monitoring. This is an ongoing process as new participants from communities and the rangers are trained in monitoring methodology, basic reef and benthic ecology, as well as fish species identification.

Improved understanding, participation, and sustainable/adaptive management of the reserve by local communities.

The project has experienced a positive response from community and other stakeholders in creating management systems for KMNR. The Fisheries Department (FiD) has adopted policies and guidelines towards co-management of the fisheries sector in Kenya. To this end, Beach Management Units (BMUs) were established to take a leading role in the day to day management of fisheries issues at the village level. In KMNR, BMUs have had a huge impact in creating a heightened sense of resource ownership and realization that the ultimate sustainability of the resources rests with community. The Kiunga and Kizingitini BMUs have initiated community policing initiatives and have been able to curb and punish offenders who engage in trade of undersize lobsters. The lobster fishery is the highest artisanal fisheries earner for KMNR communities.

Despite the KMNR fishery being an open-access resource, fishers have realized that self regulation and enforcing best-use practices is the only option to avoid depleting fish stocks, considering that fishermen from other areas along the Kenyan coast flock to Kiunga due to its rich fishing grounds. During this reporting period, 15 no-take zones have been established within KMNR and six outside of the reserve. The zones are implemented and designed by local communities and currently used for monitoring and research. BMUs in the area have formulated by-laws to govern fishing activities. These BMUs have requested WWF to conduct research and identify reasons for declining stocks in specific fishing zones outside KMNR. WWF has also sponsored the translation of new Government BMU guidelines to the local language.

Heightened community concern for increased natural predation of turtle eggs has made the project respond by establishing temporary turtle monitoring outposts in Mvundeni and Kiungamwini. Volunteer youths based at these two new outposts monitored turtle nests in the areas and translocated nests to areas with lower natural predation levels. Fishers in the area have also volunteered to devise mechanisms to protect nests *in situ* through traditional means.

In addition, the WWF- Kiunga turtle team visited and hosted the Watamu Turtle Watch group in Kiunga. The exchange visit enabled twenty (20) field officers from both turtle conservation groups to share information and experiences in education and awareness, turtle nest verification methodologies, incidental catch, turtle tagging and disease diagnosis and most importantly turtle database management.

The capacity of KMNR teachers to deliver environmental education as an integral part of their normal education activities has been strengthened. Teachers have been equipped with the

accurate information, knowledge and teaching methodologies through training workshops and seminars. The trained teachers have been instrumental in influencing the pupils and the entire school administration in their environmental perceptions, values, attitudes and ethics, as well as in the use of natural resources. The impact of KMNR environmental education activities has significantly contributed to increased understanding and appreciation of KMNR conservation issues by the local communities.

Activity 2.2: Facilitate sustainable management through data collection and analysis of the fisheries resources and habitats in the KMNR and adjacent waters.

Community resource use groups, women health and small business groups in all villages established and equipped with the means to operate and to develop work plans, communication strategies and goals.

Beach Management Units (BMUs) as a concept is relatively new, but is heralding a new approach in marine resource management. WWF–Kiunga, partly with GCP2 funding, facilitated the participatory formulation of BMU by-laws and harmonization. This process is working to ensure that the enacted by-laws are in tandem with national legislation, do not conflict with or undermine other by-laws enacted by other BMUs, and are inherently functional and applicable. Plus, as a result of various awareness meetings and engagements, the community is now involved through the BMUs, in monitoring their resources to deter unsustainable resource use.

Health activities have resulted in the training of 24 community health workers, 30 birth attendants, 17 community based distributors and the re-establishment of family planning data collection in all villages, through partnerships with the Ministry of Health (MoH) and Family Health International (FHI).

WWF is working with small business groups to develop sustainable alternative income activities, such as youth-driven community ecotourism projects in turtle conservation and eco-friendly handicraft production. These activities are designed to alleviate dependency and over-exploitation of threatened natural resources. WWF's partnership with Kenya Gatsby Trust (KGT) and Center for International Market Access (CIMA) has promoted marketing of recycled flip flop eco-friendly products. Local women and youth in KMNR collect flip flop sandals that wash up on the turtle nesting beaches and use them to craft toys, key chains, jewelry, basketry and other items for sale. Women have received close to twenty thousand (20,000) orders for flip flop items from Ten Thousand Villages – an American handicrafts retail store. The WWF network is also working hard to market flip flop items. WWF US ordered 1,500 products for its stores, and WWF Switzerland has a similar order being processed.

The communities, especially the youth, have embraced turtle conservation not only in entirety, but as a hitherto untapped income source. Eco-tourism activities focusing on sea turtles have gained root in KMNR as two youth groups have been formed to harness various eco-tourism options, including watching egg laying, hatchlings emerge. Tour operators are slowly taking advantage of this unique opportunity by synchronizing their tours on advice of local eco-tourism

groups.

Publications and reports translated and summarized for onward distribution to local communities. Brochures on aspects of sustainable management and on aspects of the reserve produced and distributed to community.

A feedback workshop took place in FY07, which will result in the production of informational brochures and the seven-year coral reef monitoring report, among other materials. These outputs will then be translated once they are finalized and all partners are able to complete their sections of the 7 year Coral reef Monitoring report. The final feedback workshop, scheduled in FY 08, is envisioned to incorporate and disseminate the studies and research findings completed by various organizations, in a form that is easily understood by the target audience. This will involve translation into Kiswahili, printing of charts and posters, and oral presentations in villages within KMNR and its catchment area.

13th annual Marine Environment Day around resource use and environmental issues successfully held with schools participating in the event

This year schools, 4 students and 9 teachers, from KMNR participated in the 13th annual Marine Environment Day celebrations. They emerged in 2nd place in the arts competition and were awarded a trophy. The participants felt a deep sense of pride and satisfaction in making a proactive difference to their environment in a fun-filled way. The event played a significant role in publicizing WWF efforts and commitment in promoting environmental stewardship to the wider members of the community. The day provided a good opportunity to cultivate a wider positive community spirit towards environmental conservation, as well as the opportunity for KMNR schools to be exposed and inspired by other schools' environmental conservation actions. It was also a good forum for WWF staff to interact and network with representatives from various organizations and government departments.

Communication and information exchange conducted on strategies for change of fishing efforts towards a sustainable community resources use system

WWF is developing a sustainable community resource use system through communication and information exchange. The devolvement of marine resources management demands information sharing and exchange among the various stakeholders and practioners. In this instance the information exchanged was the perceptions of resource users on resource management, captured in the draft BMU by-laws formulated by the community.

In FY 07, WWF built the capacity of various Beach Monitoring Units to enable them to monitor and effectively manage their areas of jurisdiction. The officials of three BMUs and four fisher groups were trained in new BMU fisheries management regulations and in fisheries by-law formulation. The exercise covered the entire Lamu District, including all seven villages within KMNR catchments. Following these trainings, a BMU by-laws harmonization workshop was held to draft a document, jointly produced with fisher groups and the Fisheries Department.

Information was also exchanged at regular interactive meetings held with the fisher groups.

Coral reefs, fisheries, and invertebrate data jointly generated and analyzed to show the state of the resource.

KMNR participatory ecological monitoring was successfully undertaken, and a coral reef monitoring report is being finalized with CORDIO (attached in Annex 1). The draft coral reef ecological monitoring report specifically focuses on the emerging issue of coral disease.

The project continues to maintain the fish catch and crustacean databases, in addition to the turtle database. Cowry shell collectors in Kiunga are also submitting data to the project. A pilot study on establishing reef inter-connectivity through molecular genetics of coral reefs and other reef organisms has been initiated in KMNR under the auspices of WWF/CORDIO and other partners.

Fish catch data monitoring has been a continuous process that has been enhanced through closer collaboration and cooperation with FiD. Effective data sharing mechanisms between WWF and FiD have been streamlined. New standard fish catch data forms developed jointly by WWF and FiD were piloted for an initial twelve month period. Dry fish database and ecological monitoring time series excel databases were developed during this period. This has facilitated access and analysis of fish catch data spanning seven years.

Objective 3: Promote effective management of Quirimbas National Park through collaborative management structures.

The overall objective of Quirimbas NP is to conserve the diversity, abundance, and ecological integrity of all physical and biological resources in the park area, so that they may be enjoyed and used productively by present and future generations. This objective is supported through six goals:

1. to protect, conserve and, where necessary, restore the ecosystem processes and the species and genetic diversity of all terrestrial and marine resources (living and non-living) in the park area and its area of influence;
2. to promote the economic and social well-being of the park's ancestral inhabitants by the promotion of sustainable resource use strategies, the development of ecologically sensitive livelihoods options; and by prioritizing their interests in the economic opportunities deriving from the establishment of the park;
3. to insure that all stakeholders—including but not limited to residents, tourist operators, investors, and park management structures—share both the benefits and the management responsibility for the park;
4. to protect, conserve, and rehabilitate historical monuments, ruins, and other cultural resources in the park area (including local culture and tradition);
5. to stimulate and facilitate the growth of eco-tourism in the park area, the province, and the north of Mozambique; and
6. to insure the sustainability of the park itself by the adoption of appropriate fund-raising

mechanisms, cost-effective operational systems, and the development of partnerships with other stakeholders and relevant research institutions.

These goals reflect the QNP's long-term concern both with the conservation of the park area as well as the 'conservation' of its human inhabitants; the Park is intended to be of direct benefit to local users, who will also participate in the management of the park's resources. To this end, harmonization of potentially conflicting uses is a main strategy of the park, while zoning is a main tool. Three types of zones are created, allowing for a range of human uses and impacts from total protection to community development and (sustainable) use. These zones interact with each other in a synergistic way, benefiting all concerned. For example, research in neighboring countries shows that the creation of marine sanctuary areas (no-fishing zones) actually results in increases in fish capture over a wide area (known as "spillover"), thus benefiting tourists (who can visit the sanctuary), local fishermen (who catch more fish in the surrounding areas), and the environment of the park.

Fisheries co-management is one of the two key objectives in the WWF Quirimbas National Park (QNP) Project (the second objective is animal-human conflict reduction in the terrestrial part of the park), which was started in July 2002. In 2007, local leaders on Quirimba Island conducted their first rotating fish harvesting scheme without QNP or WWF support. When the local leaders decided to reopen the no-take zone, WWF staff were invited to participate for the first time. The photos below show the positive results of the initiative: 300 + kilos of *tainha* (mullet) and other species per boat, something previously unheard of in this area.



Opening Day in the Quirimba Island Rotating Fish Sanctuary



Satisfaction!

After three days of fishing, the village elders decided to close the area again, to be re-opened at an unspecified point in the future. Much technical work remains to be done with quantifying the results and in establishing best practice in terms of how many days the area should remain closed and then how many days it should remain open to fishing. However, the concept is serving as an excellent example and motivator for fisheries management for the leaders of neighboring islands.

In addition to this great success, this year we have accomplished the following:

- Development of park management through the first participatory evaluation held with 95 people from 9 coastal communities and district representatives. Fish sanctuary work was regarded positively.
- Continuation of fish sanctuary work, including the development of one new sanctuary in the very north of the park responding to a village request. Training of community rangers and fishing committees in monitoring activities; and
- Continuation of the campaign for human elephant conflict (HEC) mitigation, with damage to fields reduced to less than ten percent of pre-park levels.
- Joint WWF-Navy Coastal Security strategy developed and implemented with support from the US Department of Defense, the French AfD, and the South African Military Attaché's Office in Maputo. To date seven inshore patrol boats have been donated and deployed in various key areas of the country. A number of training sessions have been held, and the rehabilitation of the coastal radio network and the Angoche Naval Base is under way.

Below are the specifics of achievements resulting from USAID/GCP2 funding in FY07.

Activity 3.1: Address resource exhaustion, to protect vulnerable habitats, and to create a source for both fish and larval dispersal

Boundaries and extension of beds mapped, and zones marked with buoys and by GPS. Management plan for oyster beds agreed upon and signed by community leaders.

Current marine resource management measures focus mostly on exploitation of sand oyster stocks in Mussemuco and Matemo islands, and fishing in Quirimba, and center on the creation of sanctuaries, and the implementation of rotation and temporarily closed fishing areas. Fish sanctuary work has continued, with zones marked as planned, including the development of one new sanctuary in the very north of the park. At the second Park Management Council Meeting in July, the creation of this new sanctuary was approved, removing the last blockage to its formation. The area will now be mapped and formally created in the next few months.

Fishing sanctuaries have been extended to oyster beds after last year's discovery of a bed of Cape Sand Oysters, a highly threatened local delicacy, discovered at the south end of the Matemo Sanctuary. In addition to this bed, another oyster bed lying in water 5m to 15m meters deep was found approximately 1 km north of Ibo Island. This bed is very extensive with an oyster density measured at up to 100 individuals per square meter. Given the filter feeding habits of oysters this bed must make a huge contribution to maintaining water quality in the area north of Ibo.

During FY07, oyster banks were identified and mapped near Ibo, Matemo and Mussemuco islands. Three oyster collection groups on Ibo, Matemo and Mussemuco were established and are in the initial stages of rotating oyster production. Oysters are both a source of food and will be sold to nearby lodges as a source of income generation. During this period, the Ibo oyster bed was protected and marked with rotating harvest zones established around a central total protection zone, which will serve as a spawning seed bed. All surrounding communities are respecting the zone, which has the support of local leaders. One of the co-management structures (CCPs) formed was on Ibo and is responsible for the management of the oyster sanctuary.

In addition to the new sand oyster management scheme, local fishermen working with the project have also identified several banks of pearl oysters (*Pinctada capensis*). A large area of pearl oysters in Mussemuco was divided in two sections exploited alternately, over a period of six months in each section. Management schemes are being organized for these pearl oyster banks, and WWF is seeking funding and technical support for a pearl oyster farming project. Pearl oysters can be grown and sold for jewelry, thereby becoming a source for income generation.

Co-management structures to implement the above developed and implementation started; co-management committee created on Ibo Island. Women's group organized to begin pilot work with oyster kraals around Ibo Island.

Spat collection for inshore “oyster kraals” was implemented to restore oysters as a source of women’s income. A pilot activity to create stone kraals in the intertidal zone to grow Cape Sand oysters was initiated on Matemo Island, not Ibo Island as planned. Early attempts were hindered by theft problems when the first kraals were sited far from the village. These have been re-sited, and we await results and community evaluation of the idea.

Activity 3.2: Improve overall compliance with park and national fisheries regulations.

Patrolling in the park made more efficient, through further training of the ranger team resulting in improved knowledge of the law; community relations also improved due to increased control of fishermen from outside

Following last year’s identification and training of community rangers, this reporting period has seen ongoing coordination among fishing groups, rangers and local authorities.

Throughout FY07, numerous trainings were held. 25 people (12 extension workers plus 13 community auxiliaries) were trained in fish capture monitoring in Pemba by a QNP marine biologist during November and February. Training entailed measuring and weighing fish captures in the villages. A ranger supervisor leadership training was held in May for ranger unit heads and deputies, focusing on how to plan patrols, organize work, fill in data sheets and keep discipline. In addition, 40 fishery committee members were trained in participatory project identification. They were trained by the park Community Development officers in techniques in how to identify problems and prioritize them in the villages including the wishes of those traditionally marginalized.

These trainings promoted the exchange of experiences among fisheries co-management committees to build their capacity, while also increasing the formal participation of communities in park management.

During this reporting period, non-USAID funding was used to re-open the base on Ibo Island base, closed due to a lack of funding following the country’s civil war. Two patrol boats have been stationed there, funded by the US Embassy, along with a section of 16 Naval Personnel. A joint WWF-Navy Coastal Security strategy was developed and is being implemented with support from the US Department of Defense, the French AfD, and the South African Military Attache’s Office in Maputo. To date, seven inshore patrol boats have been donated and deployed in various key areas of the country. A number of trainings have been held, and the rehabilitation of the coastal radio network and the Angoche Naval Base is under way. An additional 20 arms were issued to rangers, and four fisheries co-management committees were created.

Economic losses due to illegal fishing documented and communicated to government agencies, leading to increased finances for protected area management.

The Ministry of Fisheries preempted the final activity (listed above) when the Minister announced that Mozambique loses USD \$200 million per year due to illegal fishing. Recently

the Ministry of Fisheries has begun participating in WWF-Naval collaboration meetings, and it is hoped that this collaboration will lead to a higher level of financial commitment on their part to the running costs of patrolling activities.

An increased number community fisheries committees and community ranger groups made operational thus reducing the number of small-scale infractions in the park.

During FY07, five Community Fishing Councils have been formed, but are not yet officially legalized. These CCPs have been consolidated, in collaboration with the Institute for the Development of the Small Scale Fishery (IDPPE). Initial capacity building exercises followed by several meetings to exchange experiences, resulted in the protection of the sanctuaries, and the creation of zones for rotating production of shellfish/oysters. There has been strong support from the local fishermen; in early June the Quirimba Island CCP opened the fishing-closed zone for three days, and the fishery was excellent in terms of quantities caught. Now the zone is closed again for the next six months to produce more fish.

The actual number of members of the CCPs are:

- Ibo Island: 1 CCP with 12 members (6 men and 6 women);
- Matemo: 2 CCPs, one in Palussança with 14 members (10 men and 4 women); and 1 in Muanacombo with 14 members (8 men and 6 women);
- Mussemuco: 1 CCP with 15 members (10 men and 5 women)
- Quirimba: 1 CCP with 15 members (10 men and 5 women)

Activity 3.3: Prove and make visible the fisheries and habitat conservation results of the park, monitor, evaluate, and divulge the results of Quirimbas NP ecological management activities.

Monitoring of fish sanctuaries at six-month intervals continued and further refined, and results fed back to communities and disseminated to government and management.

Alice Costa's fish monitoring continued throughout FY07. She trained rangers and community members and presented her results at the Institute of Fisheries Research early this year (2007). Results continue to show increased fish size and diversity within and near sanctuary areas.

In addition, a QNP *fish capture monitoring system* was established under the supervision of fisheries biologist Narcisa Loureiro. The availability of scientific data to show what is happening to fish stocks within the park is crucial to demonstrating how effective the QNP system of small marine total protection areas is at creating an overall benefit to fishing communities. It is expected that scientific studies will support the fishers' claims that the fisheries are regenerating. These studies can also provide a model for sustainable management of artisanal fisheries in Mozambique. At the same time, we also will get a picture of the various species and their relative abundance and importance to the local fishing industry, as well as a comprehensive overview of what is happening in the park with regards to fishing methods and efficiency. This will give us the scientific basis to make the key management decisions necessary in the next few years. While a relatively expensive program to maintain, it is one of our most essential.

Coral monitoring continued and results applied in management. Local fishermen trained to participate in monitoring activities; results divulged at village level.

During this reporting period, coral monitoring took place as planned, and the data are currently being analyzed. Since the technique involves scuba diving transects and taking digital pictures, local fishermen are not directly involved.

Three year program initiated to investigate conservation effects on artisanal fish capture throughout the QNP.

The fish capture program is taking place across the entire park. In 2007, 10 sample locations had data collected, though it is still too early to have results. Data include reef fish diversity, biomass, fishing effort, and fish tagging to see the movement of the fish from inside the no-take zone to adjacent fish areas. Data are being collected in partnership with AMA, Associação de Meio Ambiente, a local NGO with whom WWF collaborates in a number of areas.

In addition, the three-year SocMON study also began this year, which includes the socio-economic impacts of the QNP on village life within the park. WWF prepared the design and concept of the project, with funding for the project provided by CORDIO East Africa.

Ranger's use and understanding of the Event Book system continuously improved; further training in the use of the Event Book system for rangers and community monitors successfully conducted.

Two trainings in the Event Book System were held. In May of this year fourteen community guards and community monitors were trained in MOMS, the cyber version of Event Book, whereby pictograms are entered into weekly reports to document animal sightings, weather conditions, threats, and other events. These reports are then downloaded and can form future baselines of information for the park. However, further training is needed as rangers' compliance is variable. More work and close supervision is necessary.

Progress Table

Benchmark Number	Benchmark/Output	Status*
1 EAME Program		
1.1	Maintain overall project management and constructive working partnerships between WWF, donor agencies, field staff, focal Institutions and communities.	on track
1.2	Facilitate effective management of existing MPAs and help expand/establish marine protected area network(s) in EAME	on track
1.3	Facilitate process of establishing a rigorous adaptive management framework from ecoregion to site scales.	initiated and on track
2 Kiunga MNR		
2.1	Strengthen management frameworks, operations, personnel and infrastructure for sustainable and adaptive reserve and resource management.	on track
2.2	Facilitate sustainable management of the fisheries resources and habitats.	on track

	Capacity of the local community to undertake and participate in conservation management programs in the reserve strengthened (as phrased in FY07 workplan)	on track
2.3	Improve livelihoods and conservation roles of local resource users living in and around KMNR.	on track
3 Quirimbas NP		
3.1	Address resource exhaustion, to protect vulnerable habitats, and to create a source for both fish and larval dispersal.	on track
3.2	Improve overall compliance with park and national fisheries regulations.	on track
3.3	Prove and make visible the fisheries and habitat conservation results of the park; and monitor, evaluate, and communicate the results of QNP ecological management activities.	initiated and on track

* Status may include activities that are completed, on-track, delayed, mixed performance, or cancelled.

Next Steps

EAME Program:

Co-coordinate and champion the EAME Strategy at country and regional levels through national and regional committees. Continue to support national governments to meet their national and international marine conservation obligations in signed international treaties and goals through these national committees, and to initiate pilot collaborative fisheries management projects in RUMAKI and LAMU seascapes.

Maintain and build strategic partnerships with global and regional institutions, agreements, and initiatives. We will support the process of collaboration of partners in implementation of conservation programmes in WIO through the WIO-C under one umbrella of the Nairobi Convention. Since IUCN and UNEP are part of this new alliance, we can also now work directly to ensure that the necessary linkages are developed between EAME Secretariat and the Nairobi Convention.

Build capacity of staff in the Ministry of Fisheries in EAME countries to negotiate fair and equitable Fishing Access Agreements (FAAs). WWF will establish a “help desk” where governments and the general public can contact and get assistance from international experts on long-distance FAAs so that these agreements are more lucrative, fair, sustainable and equitable.

Facilitate a process for EAME range states to sign a Fisheries Accord that will address trans-boundary fisheries issues related to Fisheries Access Agreements (FAA), by-catch and Illegal, Unregulated and Unreported (IUU). EAME will work with the Nairobi Convention to have this discussed at the upcoming 5th Nairobi Convention COP.

Establish a way forward to promote best practices for oil and gas exploration and extraction, including a national Seminar on oil and gas development conducted in Mozambique

Promote fish stock assessment with World Bank (WB), Food and Agriculture Organization (FAO), SWIOFC, IOTC and national governments.

Conduct Fisheries Policy Agreements (FPAs) negotiation skills workshop for government officials.

Accelerate the process for establishment of Mtwara-Quirimbas Trans Frontier Conservation Area.

Support MPA managers training programs in collaboration with partners like WIOMSA

Provide effective reporting and sound overall project management of the WWF EAME Program to ensure high performance and delivery of results.

Kiunga:

Enhance community capacity for fisheries management and protection. Work with the BMU as the village based fisheries management authorities to conserve the fisheries through community-managed no-take zones, sustainable gear exchange, fisheries data collection and participatory research on fish spawning aggregations.

Improve monthly catch monitoring by extending data collection to the villages of Rubu and Kiwaiyu in addition to the existing ones, i.e. Mkokoni, Kiunga and Kizingitini. In these villages, WWF and KWS are collaborating with local communities in collecting data and making results available to the communities along with other information concerning the management and monitoring of the reserve. This applies to the coral reef survey described below.

Facilitate joint annual coral reef surveys in areas within and adjacent to KMNR that will provide comparative data within and outside of the reserve to measure the impact of the protected area. As mentioned above, this is a collaborative effort between the three principal units concerned with managing the reserve - WWF, KWS, and the local resident communities. WWF is training selected community members in data collection techniques and monitoring, including scuba diving.

Carry out continuous training of village-based Beach Management Units and fisheries data collection scouts as an input towards sustainable fisheries management.

Provide feedback to communities to improve their understanding of the marine ecosystem and its status, while promoting sustainable fishing methods through workshops, meetings, documents, mapping, joint management work and increased open dialogue.

Conduct a series of communication and outreach activities including the production of information material, and the translation and summarizing of key management documents and monitoring results. Translate and summarize publications and reports for community viewing, including brochures on sustainable management and the reserve. Research results and monitoring reports concerning the reserve will be summarized, illustrated, translated and presented in a suitable way for local communities to gain a better understanding of their reserve, and ways that

conservation-related behavior changes benefit them.

Scale up the work in Kiunga Marine Reserve (KMNR) to support fishing gear exchange programs in the LAMU Seascape.

Quirimbas:

Expand the program of rotating fish and oyster sanctuaries to three additional sanctuaries in FY08. Boundaries of the three sanctuaries will be mapped, and zones marked with buoys and by GPS. Management plans will be agreed upon and written down and signed by community leaders. Co-management structures (CCP's) will be developed and implementation started.

Improve the skill levels and competence of QNP rangers in various aspects of marine patrolling, with particular emphasis on small boat seamanship and, due to several incidents of turtle poaching, marine turtle monitoring and protection.

Increase the number of fisheries co-management committees to ten within QNP.

Create a collaborative, mutually supportive patrolling scheme with QNP tourist operators and sport fishing safari operators that will allow park boats to operate safely (with backup) out to the Banco Sao Lazaro, a seamount in front of Ibo Island that is zoned as a sport fishing only zone within the QNP management plan.

Conduct marine turtle monitoring based on a survey of nesting sites and feeding sites conducted during the last fiscal year under the supervision of Alice Costa.

Success Stories**EAME Program:****Climate Change witness:**

The ongoing global warming is taking a toll and affecting the coastline of Eastern Africa including the catastrophic mortality on coral reefs. Such events have adverse consequences on the shoreline. Warm sea surface temperatures, extreme weather events and sea level rise cause destruction of coral reefs and mangroves that protect the coastline against erosion. It is because of this that WWF-International in collaboration with EAME organized a side event during the UNFCCC COP-12 in November 2006 in Nairobi, where Mr. Rajabu Soselo of Kunduchi presented a story. A climate change witness story based on shoreline erosion in Tanzania was presented and published in www.panda.org.

Oil and Gas Infrastructure development based on best practices:

EAME developed a 2 year implementation plan for its intervention on oil and gas development. The plan considers both national and regional processes as WWF entry points. Key elements of

the plan include petroleum industry policy analysis, conducting national oil and gas workshops, supporting a regional process for oil and gas strategy and harmonization of the relevant policies. The implementation of the plan is on good course. Policy analysis commenced in December 2006 and the national workshops were held in May 2007. The remaining aspects of the plan will be implemented during FY08 subjected to availability of funds.

Kiunga:**KMNR Management Plan to pilot new marine protected area guidelines:**

WWF has facilitated the bulk of the review process of a KMNR management plan. Kenya Wildlife Service (KWS) has now taken the responsibility of finalizing the process up to its endorsement and adoption by its trustees. The review process has seen representation of all stakeholders through the Joint Management Team of KMNR (JMT). All government agencies have had relevant input to the review process whereas communities have presented their views after WWF/KWS undertook extensive awareness work on the importance of a management plan for KMNR. KWS intends to use KMNR management plan review process to pilot its new management plan guidelines for protected areas in the marine sector.

Positive response from community stakeholders in management systems:

There has been good progress in strengthening management structures such as the Joint Management Team and Beach Management Units. Community youth involvement in environmental conservation is encouraging and fishermen are embracing sustainable fishing gear under the gear exchange program.

Community youth involvement increased:

The involvement of youths in turtle conservation and a national call to support youths have resulted in youth planning ecotourism projects based on the knowledge they acquired in species protection program. The project has seized the opportunity to assist the youth in developing proposals with significant contribution to conservation.

Positive Results for Turtle Conservation Program:

A total of 6419 hatchlings were successfully released to sea in the species protection program. WWF-Kiunga shared findings of a scientific study detailing incidental catch of turtles in KMNR, at the Western Indian Ocean Marine Science Association (WIOMSA) Incidental Catch Conference in Mayotte from 10th – 16th November, 2006. The meeting discussed broad issues affecting turtle conservation including; current ecological status of sea turtles and marine mammals in Western Indian Ocean (WIO), incidental catches of Non- targeted species in WIO among others. The gathering also initiated the development of a regional strategy for the conservation of marine species.

Local youth volunteers were commended for their role in running turtle outposts, where a total of 40 youths were involved in the turtle volunteer program. Concerns were however raised by

Kiunga fishermen about booming trade in turtle products across the border in neighboring Somalia. Four extra patrols were carried out to check turtle poaching.

Discovery of a rare and endemic coral species in KMNR

Conservation of KMNR involves regular ecological monitoring among other activities. WWF's coral reef monitoring is conducted semi-annually with representatives from all villages alongside technical staff from Fisheries Department, Kenya Wildlife Service, Kenya Marine and Fisheries Research Institute and CORDIO-East Africa. The team monitors fish & invertebrate populations, coral reef health and diversity in addition to a benthic environment survey. This monitoring has identified 40 fish families and approximately 210 fish species, amongst them are rare & regionally endemic fish species. Interestingly, among the 150 coral species identified in Kiunga, the rare & regionally endemic *Horastrea indica* and *Siderastrea savignyana* coral species have been recorded. *Siderastrea savignyana* is widespread throughout the Indo-Pacific, but very rare in Western Indian Ocean. *Siderastrea* is one of the six oldest Caribbean reef-building genera with a fossil record tracing back to the middle to late Eocene, about 50-33 million years ago. A population of more than 20 colonies of this species has been recorded in Kiunga Marine National Reserve either partially or totally buried by shifting sands, but persistent over the 10 years of continuous coral reef monitoring.

In a joint effort to establish the biogeographic distribution and phylogenetic validity of *Siderastrea savignyana*, a group of scientists identified and collected samples of two small populations of *S. savignyana* in the Kiunga Marine National Reserve. The group consisted of scientists from WWF Kiunga Project, the Institute of Oceanography, National Taiwan University, Research Centre for Biodiversity, Academia Sinica, CORDIO and the Kenya Wildlife Service. These findings are published in a peer reviewed journal - *Zoological Studies* under the title "Relict *Siderastrea savignyana* in Kiunga Marine National Reserve, Kenya".

Quirimbas:

Development of Park Management:

Park management is key for the Park, creating the basis for all our other operations. As such, it is important to highlight a few issues here. First of these is the *participatory evaluation*, carried out in the coastal areas in February. There were 95 people from 9 coastal communities, as well as representatives of Fisheries, District government, and NGOs in the district. This is the first time this has occurred, and much useful data were collected, particularly regarding the feelings of the population regarding the park. In general, there was a strong positive feeling about the sanctuaries and the quantity of fish being caught as a result of the park's activities. Problems mentioned include some specific issues with some of the tour operators, as well as the lack of incentives for community rangers. The main importance of the exercise was the exchange of views and experiences across communities, leading to a much higher level of understanding of the park's activities.

Second, after much delay in getting 'no objections' from the various parties involved, work on

the *Ibo Marine Sub headquarters* of the park have been initiated, by a local builder who has worked with us previously in building the park gates. This is an important step to create a strong visible presence on Ibo as well as a place to centre patrolling and community education initiatives. The process of acquiring *radios* has also been completed, and the system should be in place within the next few months.

Third is the *cooperation with the Mozambican Navy*. Two speed boats have been acquired and are being run by the Navy under the operational control of the park authorities. This has already led to a much higher degree of respect for the park by illegal fishing operations, and should continue to make a positive difference.

Finally, November saw the long-awaited first meeting of the Quirimbas Development Committee (*COMDEQ*). This body, with representatives of NGOs, Communities, and government institutions (Police, Agriculture, Fisheries, etc.) will be able to consider and approve all the major management decisions of the park, greatly increasing the transparency and legitimacy of the PNQ.

Creation of Community Fishing Councils:

In addition, the creation of Community Fishing Councils has enhanced WWF's relationship with the Fisheries sector, as this is a key goal for the sector. Partnering with the fisheries personnel in the region has led to joint fisheries discussions in the area and has brought more first-hand information about the park's activities to the fisheries personnel. These aspects have helped to make a once tumultuous relationship much smoother.

Higher Yields:

According to fishermen and project staff, both the fish and oyster sanctuaries created a few years ago now reflect higher seasonal yields, both in size and biomass, and in biodiversity in the fish sanctuary at Quirimba Island. Thus, the local communities have a good understanding of the benefits of the sanctuaries.

Challenges and Lessons Learned

EAME program:

EAME as an ecoregion is under-funded. Currently, there is inadequate funding to implement policy work in the areas of fisheries and oil and gas developments, communication and monitoring programs, in addition to a lack of funding to adequately engage with partners for projects supported by National Committees.

Another challenge to EAME is weak country coordination of EAME activities. There is a need to establish dedicated EAME National Coordinators in Kenya, Tanzania and Mozambique.

Kiunga:

Empowerment of fishing communities through micro-enterprise financing schemes is very welcome and possible establishment of village banks would have tremendous results. These interventions need to go hand in hand with fiscal autonomy of BMU & fisher groups. The opportunity exists but it is also rife with bottlenecks such as the culture and attitude of fisher that does not inculcate saving for the future.

The integration of education and health support into conservation interventions have seen higher acceptance of WWF's conservation messages by the community. However, WWF's support has been misread by some leaders who forward requests for all emerging needs to WWF for assistance.

The community's high expectations of WWF beyond its mandate stress relations when these expectations are not met. WWF will have to find ways to develop the partnership in such a way that expectations are more realistic.

Predation remains a challenge, as a high number of turtle nests suffered natural mortality (predation), and an increase in capacity is needed for fishermen to effectively facilitate monitoring and protection of turtle nests in predation-prone areas.

Trawlers fishing in the area increases the turtle by-catch thereby demoralizing community members involved in species conservation work.

The unavailability of turtle tags has resulted in several turtle nesting without being tagged.

A funding shortfall in the conservation education and awareness program has constrained its activity scope.

Boundary marking in Kiunga MNR faced opposition from sections of the local community, mostly due to fear of losing their livelihoods and user rights. Fortunately, the Joint Management Team was effective in resolving the impasse on boundary marking and building trust between community and KWS. This illustrated how joint management institutions are useful to building trust with the community.

Youth participation in turtle conservation and eco-friendly projects must be sustained, as youth participation and acceptance of turtle conservation is crucial for its long-term sustainability.

Quirimbas:

According to fishermen and project staff, both the fish and oyster sanctuaries created a few years ago now reflect higher seasonal yields, both in size and biomass, and in biodiversity in the fish sanctuary at Quirimba. Thus, the local communities have a good understanding of the benefits of the sanctuaries. However, immigrant fishermen quite often violate the sanctuaries resulting in conflicts with the local communities. This is mainly critical on Quirimba and Ibo islands, where CCPs are relatively weak in dealing with immigrant fishermen.

Rotation of fishing areas on pearl oyster (*Pinctada capensis*) fishing is now a consolidated management measure implemented in Mussemuco. A large area of oysters in Mussemuco was divided in two sections and they are exploited alternately, over a period of 6 months in each section. This management approach for bivalve stocks can be improved with further measures that may include:

- Partition of the large area in four sections allowing for enhanced growth;
- Rotation of fishing areas over a shorter period (3-4 months) allowing for sustained fishing over the year;
- Control of minimum size of catch according to maritime fisheries regulations, reducing mortality of juvenile and pre-adult specimens;
- Limit daily catch for each fisher;
- Close season during the spawning period (1-2 months).

A general constraint has to do with technical capacity within the QNP. As an increasing amount of the authority given to the park in the Management Plan becomes effective, there arises a continually higher number of proposals from potential investors, existing operators, and NGOs, all of which require authorization from the park. Since these may range from plans for fisheries interventions to health and education, to wildlife, to architectural and cultural issues, the lack of technical capacity to evaluate and make decisions on these is increasingly felt. With the need for long-term sustainability, it is neither possible nor desirable to hire specialists in all these fields. It will be necessary to increasingly build linkages with other government departments in order to assess and reach quality decisions in the future.

It is important for the long term sustainability of the park that the government begins to contribute increasing financial support for its basic operating costs. There is particularly a need to ensure that park revenues from entrance and concession fees are returned to the park immediately. Linked with this is the need to begin collecting the full land concession fees in the Park during FY08. This is one of the major sources of income for QNP and is the basis of long-term sustainability for the park.

The risk of oil and gas exploration continues. In May and June of 2007 seismic studies were carried out by the Norwegian company Hydro Norsk right up to the border of the park. These will now be analyzed and then the next phase, of exploratory drilling, will be planned. The park Warden made a visit to Norway in June 2007 to see the way in which oil can be developed, and the park is of the opinion that it is highly important that the development of oil and gas in Mozambique be 1) according to this highest standards possible, using Norwegian norms as the standard, and 2) that capacity should be built here in local organizations and government institutions to be able to monitor compliance of these standards.

Subgrantees

EAME Secretariat had no GCP-funded sub-grantees in FY07.

Annexes

- 1. Coral Reef Monitoring (Fish & Invertebrates) Draft Report (2004 – 2006)**
- 2. MPA Learning Report**