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Managing Fish Stocks

he need to better manage Kenya's marine and fisheries resources has been triggered by rising resource-use conflicts and stakeholder concerns over the overexploitation of key target fishery stocks.

In Kenya management of marine and coastal fisheries is achieved through the implementation of regulations set in the Fisheries Act Cap 378 1989 and supplementary fishery management plans/regulations which form the main tools for promoting sustainable exploitation of the fishery resources.

To realize the fishery management goals, there is need to understand the status of exploited fish stocks, particularly those of high commercial value, so as to guide managers towards the design of the most appropriate and effective management strategies.

It is for this reason that KCDP under component one identified fish stock assessment as a very critical aspect of fisheries management.



Fish on sale at a local market

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Fish Stocks

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KCDP has identified priority species for stock assessment. The project has conducted retrospective data gap analysis. Here, 14 fisheries were characterized as basket trap /mud crab/coastal lakes & rivers fisheries, lobster & sea cucumber fisheries, marine ornamental fisheries, octopus fisheries, prawn fisheries, longline fisheries, beach seine fisheries,

the dominance of most fisheries in these sites. Working groups were developed and a standardized sampling protocol synergized work plans in collaboration with SWIOFP developed.

In collaboration with State Department of Fisheries, field based training workshops targeting data enumerators from department of fisheries, KMFRI and Beach

reef to target the migratory pelagic fisheries resources; hence the need to better understand the status of the small and medium pelagic fish stocks.

Undertaking fishery assessments and full stock assessment of selected key commercial species will provide a necessary benchmark for future rapid assessments and for monitoring the effectiveness of



Women prepare fish

ringnet fisheries, hookline, fisheries, gillnet Fishery, and recreational trolling (sport fisheries).

The team also conducted Scale Intensity Consequence Analysis (SICA)/Gap Analysis. Here, pilot sites were identified as Lamu, Kipini, Malindi, Kilifi & Shimoni based on data from the 2012 frame survey and Management Unit (BMU) have been conducting standardized methodologies for fisheries catch assessment.

Fish Management Plans

There is need to explore strategies for relieving fishing pressure inshore by encouraging and assisting fishers to move further offshore beyond the

management strategies that will be developed during the project period.

Other specific fishery management plans targeted for development during the project period include ringnet, aquarium and lobster fisheries.

Communities in Tana River welcome HMP team



Members of the Nur Women Group share their experiences with HMP team at Kipao Vilage

he Hazina ya Maendeleo ya Pwani team visited some parts of Tana River County to share experiences with members of the local Community Based Organizations. During the visit, the team paid a courtesy call to the Deputy County Commissioner incharge of the Tana Delta Sub-county, the Department of Water, Office of the KWS Area Warden and the Department of Gender and Social Services.

The highlights of the visit were the focused discussions held with various community groups in the Delta Sub-county. Nur Women Group at Kipao Village, Gulbante expressed their desire to start projects that will improve sanitation through provision of dependable water services to the community.

Kipini Community Development Committee explained to the HMP team how they planned and implemented the Kipini Village Power and Lighting system that now serves all the households for four hours every night.

The CBOs thanked the HMP team for the visit and expressed their enthusiasm in working with KCDP through small amnd medium enterprises.

Kipini Community Development Committee explained to the HMP team how they planned and implemented the Kipini Village Power and Lighting system that now serves all the households for four hours every night.

What is HMP?

HMP is a fund under KCDP whose goal is to enhance natural resource conservation, social well-being and increased income for small and medium entrepreneurs in coastal counties. HMP has specific objectives structured into the following windows: HMP will support at least 200 priority community projects through the following windows:

- 1. Window 1: Natural Resource Management (NRM) - This window supports community projects that promote conservation and sustainable use of fishery, forestry and other natural resources in the six coastal counties;
- 2. Window 2: Community Services (CS) - Supported projects are those that aim at maximizing the social benefits for the communities involved by promoting services and actions that enhance socialwellbeing.

Plans to Unveil Capacity Building Strategy

he Committee that advices KCDP on matters of capacity building has inched closer to unveiling the Capacity Building Strategy. This follows a series of meetings held to discuss the strategies modalites.

The Capacity Building Committee (CBC) meeting was held on on 29th November, 2013. A similar meeting was also held on 18th November where members were inaugurated.

Held at the Project Coordinating Unit (PCU) in Mombasa, the aim of the inaugural was to assist committee members understand and familiarise themselves with the terms of reference and to strategise on how to evaluate applications received following the call for KCDP scholarships in October, 2013.

The Meeting was attended by Mr. P. Gwada (KMFRI), Dr. Odallo (Tech University of Mombasa), Dr. J. Uku KCDP project Coordiantor, Ms F. Hassan (KCDP), Dr. P. Guyo (Pwani University), Mr. S. Mwakiti (KMFRI), Dr. M. Omar (KWS) and Mr. G. Morara



Cross-section of CBC members in session during the meeting held at the PCU on 29 November, 2013

(KCDP).

This activity falls under component four of the project. Component 4, which is implemented by KMFRI, is responsible for planning and rolling out programmes that support the strengthening of capacity through short courses and long term training. Specific objectives in capacity building are two fold to: 1) strengthen the capacity of the coastal communities for effective management of coastal and marine resources for improved livelihood and 2) strengthen the capacity of the Project's partner institutions for effective implementation of KCDP. Furthermore, in line with the Project Development Objective (PDO) of KCDP, Component 4 deliberately targets the coastal communities as the major beneficiaries of capacity building and related training opportunities through 6 approaches:

- 1) Target training-specific,
- 2) Activity prompted,
- 3) HMP supported projects,
- 4) Internship,
- 5) Undergraduate and
- 6) Post graduate.

FADs Implementation on high gear

CDP is in the process of implementing Fish Aggregating Device's (FADs) technology along the Kenyan Coast. FADs have been identified as a fishing technology that can encourage fishers to move beyond the reef so as to relieve fishing pressure inshore.

A technical expert is required to guide in site selection, design and construct using locally available material and deployment of two shallow water FADs at 50 m - 100 m. The expert will also facilitate hands on training of technical staff from State Fisheries Department and

KMFRI.

Kennedy Shikami Fisheries Manager says for the success of the program, community involvement is important during the FAD development and monitoring to ensure security and uptake of the technology. He said fishing around FADS will also be conducted.

He added that to develop the offshore pelagic fishery, this technology will be up-scaled to cover several sites along the Kenyan coast.

> FADs have been successfully tried in South West Asia, Western Pacific and Indian Ocean countries. In Kenya, South West Indian Ocean Fisheries Project

(SWIOFP) has initiated trials on FADs and KCDP will build on the lessons learnt and develop shallow water FAD's. Environmental and social assessments will also be conducted on selected sites before and during the FADs trails.

KCDP approves Sh310m for projects

CDP will spend more than Sh310 million for economic growth of the coastal region this financial year. The Kenya Marine and Fisheries Research Institute Director Dr. Johnson Kazungu and the Kenya Coastal Development Project (KCDP) Co-ordinator Dr. Jacqueline Uku said the World Bank and Global Environment funded project would ensure sustainable management of fisheries and natural resources and improve the socio-economic status of the local community. Under the Hazina ya Maendeleo ya Pwani initiative, registered community Based Organisations (CBOs) would receive grants to implement projects geared towards improving the living standards of residents. Speaking during the initiative's launch in Wundanyi, Taita-Taveta County yesterday, Dr Kazungu and Dr Uku said there were many alternative livelihoods in the region that had not been tapped into.

During the launch the County Governor John Mruttu presented cheques worth more than Sh11.5 million to eight CBOs that have benefited from grants to help protect marine resources and environment. "Few people are making proposals for the grant. The county has the lowest grant application," said Kazungu. Mr Mruttu warned the beneficiaries against misusing the funds as those who would do so would be arrested and prosecuted. "The funds are critical to the people of the region and should be used for the intended purpose," said the governor.

In Kwale County a total of Kshs. 11 million was granted to local Community Based Organizations (CBOs). While presiding over the event the governor Salim Mvurya said his county has put in place a minister in charge of all groups and will ensure success of the projects. "These funds should be well utilized to ensure that livelihoods are changed," he said.

Speaking in Kwale Cultural centre, the

governor stressed on the need to conserve the environment since it is one of the targets of the project.

In Kilifi County Deputy Governor Kenneth Kamto reminded residents that during elections they campaigned on the basis of development. "KCDP is a dream come true since it buttresses the long awaited government allocation," he told beneficiaries. Held at Pwani University Kamto noted that the HMP funds will assist alleviate poverty since they are interest free.

He said the Sh8.5 million allocated to CBOs in the county can assist in making changes in the county. The Deputy Governor cautioned youth groups on the usage of funds. "If you use the funds as prescribed in the rules, then this will raise the confidence of KCDP management to allocate more funds for development," he said.

He reminded residents that

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Kwale County Governor, Salim Mvurya (centre), KMFRI Director Dr. Johnson Kazungu (3rd right), presents a dummy cheque to a CBO looking on (right) is Dr. J. Uku

Dr. Uku elected WIOMSA President



KCDP project coordinator, Dr. J. Uku

r. Jacqueline Uku, KCDP Project Coordinator has been elected as the President of Western Indian Ocean Marine Science Association (WIOMSA).

Dr. Uku who doubles up as a Senior Research Scientist at the Kenya Marine and Fisheries Research Institute (KMFRI) began her term as the President on Friday the 21st of February 2014 after being elected by her fellow Board members during the 30th meeting of the WIOMSA Board of Trustees held in Nairobi, Kenva.

Speaking at the meeting, Dr. Uku said she felt honoured to have been chosen to serve as the next President of WIOMSA and that the new role would provide her with opportunities to contribute to the fulfilment of the Associations' goals and mission. She noted that she was looking forward to steering WIOMSA towards a sustainable future and to the productive interaction with WIOMSA's network of members, partners and the Secretariat.

Dr. Uku has been active in WIOMSA. serving as the WIOMSA Country Coordinator for Kenya for the past 6 vears. Dr. Uku takes over from Dr. Nirmal Shah, CEO of Nature Seychelles, who served as WIOMSA President for the period 2009-2013.

The Board of Trustees also selected Pascale Chabanet, Director IRD La Reunion and Dr. Margareth Kyewalyanga, Senior Research, the Institute of Marine Sciences, Zanzibar as Vice President and Treasurer respectively.



A new website for **KCDP**

KCDP now has a new look website. This follows a series of workshops held in Kilifi which brought together lead agencies communications officers and ICT managers. The new web site developed on Plone Content Management System, the team put into place the official KCDP colours combining with photos.

The website development team took into cognisant website attributes which include its appearance, content, functionality and usability. The team was comprised of Abednego Marube (NEMA), Sam Ngete, Edna Onduso, Maureen Awuor (all of KMFRI). Beatrice Kavemba, Angelina Mwashumbe (CDA) and Morton Saulo and Melckzedeck Osore of KCDP. The sites URL is www.kcdp.co.ke.

KCDP funds projects

conservation of the environment is key to KCDP success.

Funds misuse

HMP manager Farida Hassan said diversion of the funds to personal use would not be tolerated.

"Any level of mismanagement of the funds will result to a stop in the funding and prosecution of the officials involved," she warned the CBO officials.

She said the funds will be released in tranches of 40 %, 40 % then final 20 %. "If you use your allocation as expected then you stand a high chance of fresh re-allocation," HMP manager said.

Dr. Uku, however, said her organisation would provide technical support to ensure proper use of the funds. "There are alternative livelihoods like fisheries and the picturesque Taita hills which can be used in tourist attraction ventures to boost income but such resources have not been tapped into," she said.

HMP aims to provide micro-credits and grants to beneficiaries to implement eligible demand driven sub-projects that promote micro and

small enterprises (MSME), natural resource management and community services.

The main target beneficiaries of the HMP are Common Interest Groups (CIGs) which in this context refers to Community Based Organizations (CBOs) such as women, youth, selfhelp and vulnerable groups operating in the coastal region. These groups must be registered with the relevant government departments. Where necessary, NGOs may be engaged to provide technical support to CIGs for up-scaling best management practices in sub projects.

Saving the rare Sable Antelope

he rare Sable antelope (Hippotrgus niger roosevelti) is currently listed as a "least concern" under the International Union for Conservation of Nature (IUCN) Red list of Threatened Species. However, the declining numbers that have occurred in the last 30 years could lead to a "threatened" listing in the near future. The population size of the antelope has been declining from 265 individuals in the 1960s to 56 in 2012. This is of great concern to conservationists considering the alarming population decline in the recent past as well as their localized distribution in Kenya.

A remnant population of Sable Antelopes exists in the Shimba Hills National Reserve, and their existence was reported as early as 1975. Earlier records suggest the antelope existed outside this area over the past 20 years notably west of Malindi and west of Shimba towards the Tanzania (Lunga Lunga near Vanga). The antelopes were once sighted in both Tsavo West and Tsavo East National Parks. Currently, the rare antelope can only be found in Shimba Hills National Reserve.

It is because of the worrying trend conservationists have been

compelled to develop a comprehensive blue print to preserve the endangered and treasured Sable Antelope species.

Launched in November, the Sable Antelope strategy is a culmination of a partnership between Kenya Coastal Development Project (KCDP) a World Bank (WB)/Global Environmental Facility (GEF) sponsored project in conjunction with the Kenya Wildlife Service (KWS). The project is hosted by Kenya Marine & Fisheries Research institute (KMFRI).

According to Dr. Jacqueline Uku, the KCDP Project Coordinator the conservation strategy aims to address the current and the potential threats affecting the survival of the locally endemic antelope. "It will enhance the protection of this rare species which has been eliminated from large areas of its former range due to disease, drought-caused food shortages, and habitat loss and degradation compounded by interspecies competition," she alludes.

During the launch of the strategy, the KMFRI Deputy Director, Dr. Enock Wakwabi, indicated that subsistence hunting has posed an additional threat to the Sable antelope since its powerful stature and imposing horns have made this species a prized trophy animal to many big-game hunters. To ensure the protection of the animal Wakwabi noted that the strategy proposes to establish community conservation committees and enhance conservation education and awareness.

The strategy, he said this will assist in conservation of the entire Shimba biodiversity to attract tourists, something which will be of economic value.

The Strategy

The strategy has identified enhanced ecological monitoring and management of the antelope and its habitats as key areas of focus. There are plans to assess the habitat of the antelopes in the Shimba hills ecosystem and establish a monitoring program.

The strategy also plans to carry out DNA analysis to confirm inbreeding possibilities. It also proposes the establishment of a parasite control mechanism, the determination of the impact of mega herbivores on Sable Antelopes in the reserve and evaluation of the impact of climate change on known sable antelope ranges.



Sable Antelope

Dr. Mohammed Omar a scientist with KWS says with the help of stakeholders they plan to identify potential sites for establishing antelope sanctuaries by conducting an ecological and socio economic assessment on the sites identified.

The success of a strategy cannot be possible if review and harmonization of policies and legislation is not conducted.

The strategy also plans to enhance security and surveillance in the region. This will involve mounting of surveillance cameras within the reserve, recruitment and training of community scouts for monitoring the rare antelope.

"As a project we have elaborate plans to install satellite tags to monitor the species movements and better guide security to address issues of poaching," Dr. Mohammed added.

He says a breeding herd of impalas will be introduced in the Shimba Hills ecosystem to enhance biodiversity and promote tourism.

Implementation

For effective implementation of the conservation strategy, a National Steering Committee, a Technical Committee, a liaison officer and site specific committees have been constituted.



Environment Ministry Conservation Gideon Gathara (right) hands over a copy of the sable antelope strategy to Dr. Enock (KMFRI). Looking on is Salim Mvurya, Kwale County Governor

Kenya Wildlife Service Chairman David Mwiraria stressed that KWS is committed to ensure the successful implementation of the strategy in consultation with the communities that rely on the resources of the Shimba Hills area.

"The vision and goal of this blue print will be achieved through key strategic objectives that focus on mitigating the threats facing sable antelope as well as building a strong foundation upon which ongoing conservation efforts and programmes shall be sustained," Mwiraria said.

The Chairman said the successful implementation of the strategy is imperative as this will ensure that the species former stable populations and habitat are restored. Said he;

"This will invariably require the participation and collaboration of all stakeholders, including donors, the national and county governments, the private sector and respective local communities."

Mwiraria stressed without the strategy and its implementation the species will become extinct.

The Kwale County Governor Salim Mvrya made a commitment that his county government will ensure the Sable Antelope is protected. "We will put our resource to ensure the animal is protected and that the numbers rise," he said.

He is called on the locals to preserve the antelope since it is a tourist attraction that is unique to the Kwale County.





land-based prawn fishery survey and observer prawn fishery program has been initiated. The survey will generate data and information to assist in the management of prawn fishery.

Initiated by KCDP, the program is aimed at estimating spatial and temporal catch and efforts and trends in the artisanal fishery, determine valuation in species composition and population biology. The survey will also map fishing grounds to delineate the overlap between trawling (semi commercial) and artisanal fishing grounds as well as nursery and feeding areas.

According to Kenedy Shikami, KCDP Fisheries Manager the program will be conducted to ensure the sustainable management of prawns. He identified the State Department of Fisheries as a major partner in the program.

Upon completion of the program according to Shikami, stock status of the key species, resource maps of key fishing grounds and maps of nursery and feeding grounds for the inshore prawn stocks will be identified.

Malindi-Ungwana Bay is the most important fishing ground of semiindustrial fishery in Kenya, targeting shallow water prawns mainly for the export market. The fishery has experienced numerous management challenges mainly reflected as resources-use conflicts between artisanal and commercial fishers and stakeholder concerns on the environmental impacts including excessive fish bycatch and capture of sea turtles and mammals. The bay is also impacted by sedimentation from the Tana and Sabaki Rivers which is influencing marine productivity and environmental integrity.

Surveys were initiated on the Ungwana Bay prawn fishery in 2001 to assess the status of the stocks and the environmental and socioeconomic impacts of trawling.

Subsequent surveys have been carried out from 2002 to 2009. The information from the surveys was used to inform the prawn fishery management plan (PFMP) which was gazetted in 2010. The plan provides for continued monitoring of the fishery through structured scientific surveys and recommends use of onboard observers during the prawn fishing season to collect data.

To successfully conduct the Malindi-Ungwana bay prawn fishery surveys the KCDP plans to implement an observer program and artisanal prawn fishery survey.

"We have already developed Standard Operating Manuals and the prawn fishery strategy," Shakami said.

He noted that KCDP plans to place a scientific observer from KMFRI on a prawn trawler to collect monthly prawn fishery data during the open prawn fishing season (April to September).

MP lauds KCDP for its support of fishing industry at the Coast

he Kenya Coastal Development Project (KCDP) has been lauded for bringing change and supporting communities in the coast region.

Speaking when he paid a courtesy call to KCDP headquarters, Lamu East Member of Parliament Shariff Athman Ali acknowledged the project is doing a lot of developments in the fishing industry.

"I must accept that your team at the headquarters and at the county level has been of help in my constituency," he said. He added that his office has been in close contact with KCDP staff at the county level.

He called on the need for KCDP to explore partnerships with fishing cooperatives societies in Lamu. "We want to infuse your technical knowledge on latest fishing techniques to our local fishermen who have suffered in abject poverty by virtue of poor fishing methods," he said.

He noted that modern fishing methods are the best and KCDP has the technical capacity to provide the much needed support and expertise.

Under Component One which deals with sustainable management of fisheries resources, KCPD aims at reforming governance of fisheries in the Kenyan 200 nautical miles EEZ. The project will also address research on fish stocks, value addition and market chain enhancement including access to markets and credit for more sustainable and profitable fishing practices. KCDP will also invest in aquaculture research to inform sustainable development of the industry

The Project Coordinator Dr. Jaqueline Uku, Kennedy Shikami fisheries

Component manager, HMP manager Farida Hassan and George Morara were present.

On her part Dr. Uku said the project has interest in research and management in the fishing sector.

She noted in future if approved by the World Bank the project will also provide support for SMEs and linkages to financial institutions.

Shikami noted that already the project has commenced a pilot program in Faza. "There are challenges of storing fish hence resulting to exploitation of fishermen by middlemen," he lamented. Said he; "As a project we intend to install a machine that will generate seven to eight tonnes of ice to assist in the preservation of fish

He said the aim of KCDP is to ensure that cooperatives sell their fish directly to profit making markets and not through middlemen.

"Upon installation of ice making machine in Faza, we will do the same for Kiunga and Kizingitini areas," he said.

He acknowledged that there are illegal fishing gears being used but the project will work closely with the already established fisheries cooperatives to identify the best gears.



KEMFRI/KCDP staff harvest fish at a fish point



- 1. Members of CBO prepare to undertake sea weed farming
- 2. Women prepare fish
- 3. KCDP stakeholders plant mangroves
- 4. A sea weed farmer prepares her growing racks
- 5. Kwale County Governor Salim Mvurya is welcomed at a function by KCDP project coordinator Dr. J. Uku 6. Dr. J. Uku (left) and F. Hassan HMP Manager during a WIOMSA meeting in Maputo, Mozambique.

State moves to certify lobster fishing

he department of Fisheries through support from Kenya Coastal Development Project (KCDP) and World Wildlife Fund (WWF) is working on the certification of the lobster fishery in Lamu County to give it a competitive edge in the world market

KCDP is a World Bank funded initiative implemented by the Kenya Marine and Fisheries Research Institute (KMFRI) in collaboration with SDF and five other partner agencies.

According to Lamu County Fisheries officer, Mr Simeon Komu, marine fisheries comprise 75 per cent of the local economy. It generates 2,000 tonnes annually, with a turnover of Sh192 million.

Komu told a World Bank strategic alignment Mission meeting held in Lamu town that the fishing department has licensed 2,500 fishermen, whose activities are concentrated in the shallow waters within 5km.

"Fishermen cannot venture into the deeper more productive off-shore waters due to limited capacity in terms of equipment and gears," he said. "There are only 700 fishing boats using the longline, beach seine, monofilament nets and traps." He added that one of the key challenges has been to assess the off-shore fisheries beyond three nautical miles. KCDP has so far provided support in Lamu County in carrying out frame and catch assessment surveys, training and equipment towards fisheries management.

Fresh water fishery in the County is carried out in ox-bow lakes along

Marine fisheries comprise 75 per cent of the local economy. It generates 2,000 tonnes annually, with a turnover of Sh192 million.

River Tana, as well as the county's lakes including Lake Kenyatta, Lake Witu and Lake Moa. Komu said that Aquaculture is practiced in constructed ponds that stock tilapia, cat-fish.

Aquaculture has recorded impressive uptake with 426 ponds being run by 350 individual and institutional farmers, which produced 900 kilos last year. "KCDP has supported aquaculture through training farmers on pond construction and management, feed formulation, propagation of Clarias species, establishment of on-farm hatcheries and provision of fingerlings," the fisheries officer said.

Other activities being undertaken include surveillance of the coast through training of law enforcement officers and beach management units and baseline survey to determine the success in compliance. Komu said that the upcoming Lamu Port South Sudan and Ethiopia Transport Corridor project has raised concerns on environmental issues on loss of mangroves and fishing grounds.



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