



Credit: JABRUSON

MARINE RESOURCES CO-MANAGEMENT

LESSONS LEARNED FROM KENYA

AN ARCADIA MARINE CASE STUDY

The south coast of Kenya, from Msambweni to Vanga on the Tanzania border, is recognised by WWF's East African Marine Ecoregion as an area of exceptional biodiversity and is one of 21 sites of profound ecological importance identified along the entire East Africa coast.

Since 2004, Fauna & Flora International (FFI) has been working with the East Africa Wild Life Society (EAWLS) on the conservation of Kenya's coastal habitats. In 2007 this expanded to the south coast, predominantly to support community-led approaches to marine conservation made possible by the new Fisheries Act. The overarching vision of this programme has been to ensure that healthy, well-managed coastal ecosystems can deliver sustainable fishery benefits for local fishers and their families.

In the course of the programme, FFI and EAWLS have supported the development of a network of nine Locally

Managed Marine Areas – known in Kenya as Community Conserved Areas (CCAs)¹. Our work has focused particularly on the establishment and development of Beach Management Units (BMUs) – local governance systems to manage the CCAs.

With the evolving landscape for BMUs and the programme sites moving beyond the participatory planning stages into implementation of management plans, a need was identified to 1) reflect strategically on our inputs, 2) improve our understanding of the successes, challenges, and lessons learnt in the programme to date, and 3) provide recommendations to inform future efforts to establish locally managed coastal and marine resource governance in Kenya and elsewhere. This paper outlines the results of this review.

BACKGROUND

Kenya's south coast supports an extraordinary variety of habitats, including mangrove swamps, coral reefs, seagrass meadows, estuaries, beaches, mudflats, and sand dunes. However, ineffective controls on exploitation of marine resources have resulted in a proliferation of destructive fishing practices, over-harvesting, and unsustainable use within both the artisanal and commercial fishing sectors. In response to the rapidly deteriorating marine environment, a number of initiatives and legislative changes emerged aiming to encourage coastal communities to take ownership of their marine resources and manage them sustainably, and in so doing to decentralise marine resource governance in Kenya.

Responding to this opportunity (and to the concerns of the local community over the status of fish and coral reefs in their nearshore fishing grounds), EAWLS supported an initiative (2003-2006) to establish the country's first Locally Managed Marine Area in Kuruwitu, referred to in Kenya as a Community Conserved Area (CCA). FFI helped foster this initiative through provision of technical advice, networking with other organisations and donors, support for fundraising, and monitoring and reviewing of field activities. Subsequent surveys and reports from NGOs and local fishers indicated an increase in fish numbers and the return to a more sustainable fish harvest in areas adjoining the agreed exclusion zone, which built support for the implementation of this model more widely.

In 2007, EAWLS asked for further FFI² support to help develop a longer term programme of work for the south coast of Kenya that could translate the experiences and successes of the pilot at Kuruwitu to new areas. In the same year, new and more progressive regulations were approved under the Fisheries Act, which included comprehensive provisions for devolved management³. These gave communities both the agency and the means to engage with the authorities through the establishment of Beach Management Units (BMUs).

BMUs are typically an association of fishers, boat owners, fish traders, and other users of the fisheries revolving

around the fish landing site (which is usually a beach). As such, they bring together resource user groups and state actors to share responsibilities in resource management and conservation, establish CCAs and associated management plans, and improve livelihoods of people dependent on these resources. At that time there was no clear process for how these BMUs could be developed and approved, and EAWLS and FFI played a critical role in developing, informing, and testing this process.

From 2009, the programme focused on empowering communities in major fishing hubs and vulnerable marine sites to realise their ambitions to establish functioning CCAs. In particular:

- Supporting the development of participatory management plans for CCAs;
- Building the capacity of BMUs to manage their CCA and establish an active membership base of local fishery users;
- Understanding how to reduce dependence upon marine resources and diversify livelihoods in response to emerging opportunities.

Through to 2016, with support from Arcadia – a charitable fund of Lisbet Rausing and Peter Baldwin, Darwin Initiative, and Waterloo Foundation, the programme created important local platforms for communities to communicate among themselves, with each other, and with the authorities; supported the participatory development and approval of by-laws for each of these BMUs (expanding to new sites over time); facilitated the development and review of draft CCA management plans for all sites; catalysed greater interest in and focus on BMUs; and gave EAWLS and FFI the platform to engage with the authorities on wider fisheries management issues – particularly by assisting the development of a Ring Net Fisheries Management Plan that was recently approved and renamed Small-scale Purse Seine Fishery Management Plan (pending gazettement by the Cabinet Secretary).

Credit: JABRUSON





Credit: JABRUSON

LESSONS LEARNT

Some excellent progress has been made towards achieving the original programme vision. For example, helping to create a working example of a management model through which coastal fishers/communities are able to secure rights to engage alongside the authorities to deliver and receive benefits from sustainably managed fisheries. However, the complex operating environment for BMUs and the embryonic nature of this model has meant that the majority of BMUs are not yet effectively addressing (or able to demonstrate their influence over) destructive fishing practices, over-harvesting, and unsustainable use.

In 2016 the programme team conducted a review of programme achievements and challenges in order to identify areas that need further investment and support in the future, and to inform global learning on community conservation practice. Methods adopted included: a theory of change review; a cost analysis to determine financial and non-financial barriers facing BMUs; a review of BMU site patrol data to assess the impact of patrols on illegal fishing activity and the limitations for BMUs in conducting regular enforcement patrols; a Participatory Impact Assessment to gather information on the impacts (positive or negative) of the EAWLS/FFI initiative for participating communities in the target BMU sites along the south coast of Kenya.

"The BMU has brought the entire village together, and has been of great assistance to fishers (such as myself) as it has provided us with markets for fish, with modern fishing gear as well as with rescue services whenever a fisher is in distress. Furthermore, the BMU has taught us how to protect fish breeding sites and now we have improved fish catch. I personally have taken my children to school through the assistance of this BMU."

Jugwe Hatibu Jugwe
Fisher & Vanga BMU Member

SIGNIFICANT ACHIEVEMENTS

A WORKABLE MODEL ESTABLISHED FOR FISHERIES CO-MANAGEMENT IN KENYA

An independent evaluation commissioned by the Darwin Initiative in 2014 noted that the programme had demonstrated a workable model of fisheries co-management that can and will be useful to other nations in ensuring the sustainable management of marine resources. In addition, a peer-reviewed study of the progress of 19 Kenyan CCAs established in the last two decades, only four CCAs were deemed to have reached the final and most advanced phase in becoming fully established and functional. Three of these four most successful CCAs were designated by communities that FFI and EAWLS have worked with (Kuruwitu, Kibuyuni and Wasini)⁴.

Throughout the programme EAWLS and FFI led the way in developing new systems and models for local management of marine resources, often trialling methods in Kenya for the first time. When BMU regulations were enacted in Kenya in 2007 with no clear process for how they could be implemented in practice, EAWLS and FFI played a critical role in developing a step-wise method to allow the establishment of BMUs and CCAs along the coast.

The programme supported participatory management planning processes, also new to Kenya, which led to the development and approval of by-laws for seven BMUs, thus defining the jurisdictions for individual sites and providing the legal basis for their operation. CCAs have been delineated across an area of 220km², with the potential to deliver future benefits for marine biodiversity, fisheries, and livelihoods in the region. The development and approval of CCA management plans for Vanga and Kibuyuni, the first CCA management plans in Kenya, clarified the process and paved the way for others to follow suit.

An impressive legacy of establishing workable local management models, has been the development of a regional Shimanzi-Vanga Co-management Plan (approval pending), encompassing all seven BMUs our project started with (860 km²), with a view to strengthening management across the entire area.

In addition, the work has catalysed a greater focus on BMUs, bringing in a range of other actors to support the ongoing implementation of these sites. Recently Kenya Fisheries Service and partners, including [CORDIO](#), have led efforts to develop guidelines and a more formal coordinated legislative process for CCA establishment and operation, to which FFI and EAWLS have contributed information from our own experiences.⁴

CREATED IMPORTANT LOCAL GOVERNANCE STRUCTURES

The BMUs have created important local governance structures (often the only civic bodies in place) allowing communities to coordinate among themselves, with each other, with NGO partners, and to a certain extent with the authorities. The Participatory Impact Assessment found that programme participants valued the establishment of the CCAs and the infrastructural improvements the presence of BMUs brought (such as boardwalk repairs).

"The setting up of the CCA has been extremely beneficial as it has improved fish catch,. We now get more and bigger fish. Furthermore, this CCA has enabled us to undertake other income generating activities such as tourism and in particular scuba diving whose proceeds have gone directly to the BMU, and by extension our community."

Omari Jabiru Supi, Coordinator Kibuyuni CCA

Credit: Kate England / FFI





Credit: JABRUSON

A study conducted by Mwambao Coastal Community Network (a Tanzania-based NGO) in Shimoni, Wasini and Kibuyuni in 2013 indicated that communities felt a sense of enhanced rights and influence over resources since the inception of the CCAs, which has positive implications for compliance. In addition, data from three BMUs suggests that voluntary patrolling since 2011 and successful engagement of the authorities to apprehend illegal fishers (who are using dynamite and ring nets), has influenced perceived reductions in the use of illegal fishing gears in these sites. There also appears to be appetite for a broader remit within BMU patrol teams for example to maintain CCA boundary buoys and remove plastic waste from the ocean.

PERCEIVED INCREASE IN FISH POPULATIONS

Biodiversity surveys conducted annually since 2010 have generated information on the status of habitats and species in four of the CCAs. The results show these areas to have higher coral cover and higher coral diversity than areas open to fishing. [A recent study by the Wildlife Conservation Society \(WCS\)⁶](#) reports that fishers perceive an increase in fish populations, particularly those fishing

around the boundaries of a no-take-zone in the Kibuyuni BMU. This improvement is attributed to a reduction of illegal fishing as a result of BMU patrols at Kibuyuni, combined with habitat-enhancing effects of local seaweed farming, which is leading to a spill-over of fish into surrounding fishing grounds. These observations have been corroborated by monitoring in the programme area, which shows that Kibuyuni has higher coral cover than the Mombasa Marine Protected Area, a much larger and older no-take-zone, and among the highest fish biomass measurements of all no-take-zones on Kenya's south coast.

A COUNTY-WIDE NETWORK ESTABLISHED FOR FISHERIES MANAGEMENT

The project supported networking between representatives from CCA through the Kwale County Beach Management Unit Network, enabling communities to share information on common challenges faced in delivering site management plans. The network has also facilitated discussion on collaborative management of fishery resources at a broader scale, beyond BMU site boundaries. The Participatory Impact Assessment found that this network is now seen as representing the voice of the communities.

CHALLENGES IN PROGRAMME IMPLEMENTATION

BEACH MANAGEMENT UNIT OPERATIONAL ISSUES

Effective, transparent administration of BMUS is vital in ensuring marine conservation and social welfare goals are met. However, while the BMUs appear to have sufficient devolved powers to generate resources that underpin their activities and to engage in co-management, it transpires that few sites are actually upholding their powers, undermining the BMU/CCA concept.

This has been attributed to a limited awareness of roles and responsibilities, lack of clear benefit-sharing mechanisms, and cultural challenges in terms of asking family members for landing fees. This creates a negatively reinforced cycle whereby the BMUs do not generate sufficient revenue (from landings fees), do not deliver on their plans as promised (such as enforcement patrols), and do not incentivise participation across the wider community.

There also appears to be a narrow constituency of participants who benefit (or perceive benefits) from the BMU – largely restricted to the Executive Committee (who receive payments to participate in meetings). In turn, BMU Executive Committees have struggled to ensure awareness of the model (in terms of its purpose, function, processes, and benefits) reaches beyond fishers into the wider community and up into levels of the government responsible for supporting BMU implementation. This can mean communities are not incentivised to participate, and that BMUs do not receive the support required from the government, making the work of the BMU Executive Committee more challenging.

In addition, as the only local governance body, BMUs have supported social programmes like refuse collection, which

benefit the community but draw the focus away from fisheries management.

Improved BMU-led monitoring strategies related to CCA management interventions are also needed to track environmental change, generate support for community co-management, and inform adaptive management.

COMPLIANCE AND CONFLICTS OF INTEREST

Compliance with the agreed rules and regulations in CCAs, and effective enforcement of these, is key to ensuring motivation and momentum of fishing communities support for BMUs. However, enforcement can be undermined when there are conflicts of interest (or perceived conflicts). For example migrant fishers who are not aware of (or choose to ignore) restrictions or practices associated with a particular CCA, or commercial fisheries (e.g. small scale purse seine net, ornamental) who do not land catches at BMU landing sites and in some cases use illegal methods.

MIGRANT FISHERS

Migrant fishers operate throughout the south Kenya coast. However, their compliance with BMU by-laws to land catches in the site they visit (to enable data recording and collection of levies on the volume/type of landed catch) is low. This is perceived to be due to: limited awareness of different BMU by-laws among migrant fishers; absence of enforcement of by-laws by BMUs (see above); lack of respect for local rules; and a lack of means to transition to alternative and compliant fishing gear or management. Addressing the issues identified above regarding BMU governance may address some of the threats posed by migrant fishers.

Credit: JABRUSON





Credit: JABRUSON

COMMERCIAL FISHERIES

Commercial fisheries operating within BMU jurisdictions pose one of the greatest challenges to the efficacy of BMUs, as they are currently exempt from BMU jurisdiction. They do not land their catches through the BMU, so no levies are applied or data collected. They are also known to sometimes use illegal fishing methods. Clear national-level legislation, enforcement, and monitoring are needed to address these issues, but are currently lacking. Although the situation is complicated, it is perceived that commercial fishing activities may undermine BMU member motivation to participate in active management measures, to trust government partners, and to comply with regulations themselves. Two types of commercial fishery have caused particular concern: ornamental and ring net.

Ornamental fishers pay a one-off fee for licensing and the government does not audit or monitor catches, so there is little knowledge of this fishery's sustainability. In addition to the issues mentioned above, ornamental fisheries target similar species to BMU fishers, extract live rock and coral, and use illegal methods (such as cyanide), which in turn leads to conflict with artisanal fishers.

The case of ring or small scale purse seine net fisheries is more complex. A ring net fisheries management plan (renamed to small-scale purse seine fishery management plan), which FFI and EAWLS drafted, has been approved by the authorities and is awaiting gazettlement. The plan proposes that the small scale purse seine net fishery be restricted spatially (1 nautical mile from coral reefs, specific depths in key fish habitat areas, and enforcing BMU bylaws relating to access to fishing grounds), as well as

being limited by the number and size (minimum 12 metres) of boats licensed for this fishery, and controlled fishing times (between 6am and 6pm). These restrictions intend to manage conflicts with artisanal fishery interests and reduce damage to sensitive habitats. However, despite the plan successfully going through the approval process, it has not yet been gazetted, and in the past the commercial fisheries lobby has been powerful in overturning bans that have been issued by Ministerial Decree.

Existing conditions do not favour implementation of restrictions either. There seems to be a disconnect between national and county coastal fisheries authorities on equipping small scale purse seine net boats to access deeper offshore areas, and the targets for the number of small scale purse seine net boats operating off Kenya's coast have already been exceeded within one county alone. The situation is further complicated by the fact that small scale purse seine net fisheries provide significant employment for BMU communities (30-40 people are needed to man a boat), so although levies for landing catches are not gained, this generates a certain level of tolerance.

There may be potential for BMUs to form joint co-management plans with commercial fishing operators through outlining specific restrictions on access to resources and monitoring of catch and levies – and this has been proposed as a management measure within the small scale purse seine net management plan. For this, BMUs would require adequate devolved powers to ensure compliance with the spatial restrictions and to charge a levy on landed catch.

LEGISLATION AND RESOURCING ISSUES

Over the past ten years the shift to decentralisation of marine resource governance has been pioneering in Kenya. Yet despite there being favourable legislation for BMUs, insufficient human and financial resourcing at county level has minimised the government's ability to fulfil their role in supporting BMUs. As a result key functions are not delivered, such as auditing of BMU finances, raising awareness of management plans, supporting BMU electoral processes, and providing enforcement support.

In addition, it is considered that county-level government is not held sufficiently to account by national-level government for the lack of coastal BMU delivery. The reasons for this are not fully understood, but are likely to be a result of limited capacity in national coastal fisheries departments, and a lack of knowledge about the realities of BMU implementation on the ground.

Alignment of national and county-level laws is also needed to clarify mandate and responsibilities of different government agencies and local stakeholder groups. Improved coordination and communication between BMUs, county-level government, and national government would help address this, and would ensure those responsible are held to account.

This could be supported by the adoption of clear processes for establishing CCAs and approving by-laws and management plans, and harmonisation of laws and management plans across fisheries and marine protection initiatives beyond BMUs' jurisdiction. For example, small scale purse seine net fishing expansion and new MPA development (including transboundary), so that the efforts made at the BMU-level can be built on and not surpassed by these new approaches.

One of the factors that may contribute to the minimal resourcing of government is the relative contribution of coastal small-scale fisheries to GDP: fisheries comprise 0.5% of Kenya's recorded GDP, of which 95% is freshwater fisheries and 5% is marine fisheries. In addition, the true value of marine ecosystems (in terms of ecosystem service provision) is not well understood. As a result illegal activity has been allowed to continue and there is little incentive for fishers to adhere to by-laws or see value in BMUs. That said, a recent study by WWF found that tourism and fisheries are among the most productive components of the West Indian Ocean economy – totalling \$12.3 billion annually⁷. Therefore the imperative for conserving marine health is of national and regional interest. These issues could potentially be resolved through effective advocacy and the development of policy-related information (e.g. on economic values of ecosystem services).

Credit: JABRUSON





Credit: Patrick Leilei / FFI

CONCLUSION

PRIORITIES FOR SECURING EFFECTIVE CO-MANAGEMENT OF MARINE AND COASTAL RESOURCES ON KENYA'S SOUTH COAST

The FFI/EAWLS partnership and fisheries co-management programme on the south coast of Kenya has succeeded in drawing attention to the issue of sustainable marine resources management, and brought many new players into the field who are now active in supporting elements of BMU implementation. Given the emerging evidence that, in principle, the BMU/CCA model represents best practice fisheries co-management⁴, should Kenya wish to become a global leader in community-led marine conservation and sustainable marine livelihoods, a number of challenges still need to be overcome to ensure BMUs can function effectively and deliver benefits for both communities and biodiversity.

Reflections from our programme review suggest the following key priorities for achieving sustainable management of marine and coastal resources along Kenya's south coast.

- Ensure that the realities of CCA/BMU implementation are well understood by all relevant government agencies and that this is reflected in the steps to establishing CCAs and management plans.

- Improve coordination among all government and non-government actors operating in marine conservation to increase efficiency and track impact (both ecological and social).
- Increase levels of advocacy around the BMU model to ensure that the realities of implementation are well understood by all parties, and help to pave the way for its more effective delivery in the future.
- Mobilise and support county-level and national government to increase resources allocated to delivering BMU implementation.
- Advocate for complete alignment of county and national legislation relating to marine and coastal resource management.
- Improve management of commercial fisheries threats within and beyond BMU jurisdictions in a way that can maintain momentum and incentives for the participation of communities in local resource management efforts.

In 2013, we used to sell a kilo of seaweed at KES.9. In 2014, through the assistance of EAWLS and FFI we were linked to a better buyer who is now purchasing a kilo of seaweed at KES.30. We are doing very well and in 2015 we made approximately KES.1,276,000 as a group. We have put this money in a table bank [women's savings and loans scheme].

Fatuma Mohamed,
Seaweed Farmer – Kibuyuni BMU



ENDNOTES

¹ Shimoni, Wasini, Mkwiro, Kibuyuni, Majoreni, Vanga, Jimbo, Funzi and Bodo

² At this stage FFI was also engaged in small-scale marine conservation activities with local community institutions in Watamu to design and implement turtle conservation programmes. This drew on experiences of facilitating community-based conservation in other countries and regions, and positioned FFI to be able to support more widely on these issues along the Kenyan coast.

³ Cinner JE, Daw TM, McClanahan TR, Muthiga N, Abunge C, Hamed S, Mwaka B, Rabearisoa A, Wamukota A, Fisher E, Jiddawi N. 2012. Transitions towards co-management: The process of marine resource management in three east African Countries. *Global Environmental Change* 22,3

⁴ Kawaka, J. A., Samoilys, M. A., Murunga, M., Church, J., Abunge, C., & Maina, G. W. (2017). Developing locally managed marine areas: Lessons learnt from Kenya. *Ocean & Coastal Management*, 135, 1-10.

⁵ Kawaka J, Samoilys MA, Church J, Murunga M, Abunge C, Maina GW. 2015. Locally Managed Marine Areas (LMMAs) in Kenya: a detailed history of their development and establishment.. *CORDIO East Africa*.

⁶ McClanahan T, Muthiga NA, Abunge CA. 2016. Established of Community Managed Fisheries' Closures in Kenya: Early Evolution of the Tengefu Movement. *Coastal Management*, 44,1.

⁷ Obura D. et al. 2017. Reviving the Western Indian Ocean Economy: Actions for a Sustainable Future. *WWF International, Gland, Switzerland*

HOW TO CITE THIS CASE STUDY

Fauna & Flora International (FFI) and East African Wildlife Society (December 2017) *Marine resources co-management – lessons learned from Kenya: an Arcadia Marine case study*. FFI, Cambridge, UK.

FAUNA & FLORA INTERNATIONAL

FFI protects threatened species and ecosystems worldwide, choosing solutions that are sustainable, based on sound science and take account of human needs. Operating in more than 40 countries worldwide, FFI saves species from extinction and habitats from destruction, while improving the livelihoods of local people. Founded in 1903, FFI is the world's longest established international conservation body and a registered charity. www.fauna-flora.org

THE DAVID ATTENBOROUGH
BUILDING
PEMBROKE STREET
CAMBRIDGE, CB2 3QZ

REGISTERED CHARITY NUMBER 1011102

WEB: www.fauna-flora.org
TEL: +44 (0) 1223 747 659
EMAIL: sarah.rakowski@fauna-flora.org

EAST AFRICAN WILDLIFE SOCIETY

The East African Wildlife Society is a membership-based public benefit organization that seeks to enhance the conservation and wise use of the environment and natural resources in the East African region.

P. O. BOX 20110 - 00200
RIARA ROAD, KILIMANI
NAIROBI, KENYA

WEB: www.eawildlife.org
TEL: +254 20 3874145
EMAIL: info@eawildlife.org

ARCADIA MARINE PROGRAMME

Arcadia Marine is a fund established in 2011 by Arcadia – a charitable fund of Lisbet Rausing and Peter Baldwin to support FFI's global marine portfolio. Through Arcadia Marine, FFI secures important areas of marine biodiversity under effective management, informs and influences policies and practices affecting the marine environment, and supports key national and local institutions across the globe to enhance operations and help them to deliver effective marine conservation.