



Member's report on activities to ICRI

Presented by

Kenya Wildlife Service
P.O Box 40241-00100
Nairobi, Kenya

Reporting period (April 2009 – December 2009)

Please note that the purpose of this report is to help you share information about your activities within the ICRI community to allow discussion at the next ICRI General Meeting. The reports will be made available on the ICRIForum prior to the meeting. The ICRI secretariat is well aware of your busy schedule, thus don't hesitate to submit an incomplete report.

1. General Information

Are you an ICRI Member?	Yes
Representation to ICRI (Country / Organization):	Country
Focal Point 1:	
<i>Name:</i>	<i>Dr. Nyawira Muthiga</i>
<i>Organization:</i>	<i>Wildlife Conservation Society</i>
<i>Email:</i>	<i>nmuthiga@wcs.org</i>
Focal point 2:	
<i>Name:</i>	<i>Dr. Judith Nyunja</i>
<i>Organization:</i>	<i>Kenya Wildlife Service</i>
<i>Email:</i>	<i>jnyunja@kws.go.ke</i>
Last meeting attended:	
How do you circulate ICRI information within your country and/or organization?	Electronic information sharing. Public awareness-Dissemination of information during celebration functions of various world environmental days especially the World wetlands day.
Budget allocated for coral reef related activities (please mention for year/period):	There is no specific budget allocation by the government for coral reef research. However, coral reef related activities are conducted within other integrated multidisciplinary projects. The budget is therefore variable since Government and NGOs are all involved.

For countries only:

National Action Plan / Initiative	
Do you have a National Coral Reef action plan?	No
Is this plan publicly available? If so please provide location:	
Do you have a National Coral Reef Initiative or Task Force?	YES. A national coral reef task force was formed to develop a coral reef management strategy.

Are you engaged in any regional programs / initiatives relating to coral reefs:	Kenya is involved in several regional programs although in an informal way through management and research institutions and NGOs. Some of these activities are: Socio-economic monitoring of in Western Indian Ocean. Regular ecological monitoring of coral reef ecosystems .
If yes, please indicate which programmes/initiatives:	CRTR, CRCP (WCS), CORDIO, WIOMSA, WWF EA regional programme

2. Updates on your activities (new initiatives/programs/projects of your government /organization which will be of interest to the ICRI Members)

(i) Designation of Ramsar sites in marine areas

The continued effort to designate the Tana delta as a Ramsar site has reached its final stages.

(ii) National Coral Reef Task Force (NCRTF)

Kenya has established a NCRTF and has started the process of developing a national action plan for coral reefs.

(iii) Research and monitoring

Research by national institutions, NGOs and universities continues to provide scientific and technical expertise for management. More than 30 papers have been produced in 2009 (see attached references). Studies have mainly focused on climate change and its impacts on coral reefs including effects and recovery processes on reefs and fisheries from the bleaching of 1998-99, modeling environmental susceptibility and biodiversity to predict areas that are resilient to climate change, assessing the effectiveness of current management systems including MPAs, studies on socio-ecological systems including how fisher communities adapt to changes in their environment due to climate change and other disturbances and studies on alternative livelihood sources. Monitoring of coral reefs continues by various NGOs and government institutions and a book compiling all the findings of the long-term monitoring by WCS is in production. See references below

(iv) Training and awareness

The capacity to manage coral reefs continues to increase, many training courses have been conducted in Kenya targeted at natural resources managers and local communities. The key awareness and training activities in 2009 include:

- The 6th Western Indian Ocean Marine Science Association (WIOMSA) scientific symposium that was held in Reunion (24 – 28th August 2009). Many presentations and two round table discussions focused on coral reef and associated ecosystems (www.wiomsa.org for further information). Many scientists and students from Kenya participated;
- Training using Crime Scene Investigation techniques in Zanzibar
- Some Kenyan participants attended training activities at the International Marine Conservation Congress (IMCC) that was held in Washington including the WCPA-marine workshops;
- Training exercises conducted by NGOs to train local CBOs in coral reef monitoring and socio-economic monitoring;
- Local awareness activities including the Annual Fishers Forum, World ocean day and International Coastal Clean-up celebrations.

(v) Management interventions

The management of MPAs continues to be strengthened with the revision of the management plans of the Kisite/Mpunguti and Malindi and Watamu MPAs as part of the overall strategic changes in the management of protected areas by the Kenya Wildlife Service in Kenya. The management of coastal fisheries has improved in some areas where enforcement of beach seine legislation has been effectively implemented but overfishing in other areas continues to be a challenge. Coral reefs are also impacted by the ring-net fishery and currently there are consultative meetings to resolve this conflict. In an effort to improve fisheries management at the local level the Beach Management Unit (BMU) regulations were established. These regulations allow for closed areas as a fisheries management tool and several CBOs and BMU have sought support for the establishment of closed areas within their fishing grounds. Studies on the management capacity of these CBOs, their socio-economic profiles and biophysical profiles of these community managed closed areas are underway.

(vi) Legislative and institutional interventions

Several national policies and guidelines with the potential to improve the management of coral reefs and associated ecosystems are in development including:

- The National Fisheries and Oceans policy that was launched in July 09. The guidelines for this policy are currently under development;
- The national sea turtle committee drafted a national strategy for the conservation and management of sea turtles. The strategy was discussed at a national workshop in June 09. The draft is currently in review by the various stakeholders before its launch early in 2010;
- The Integrated Coastal Zone Management (ICZM) Steering Committee drafted an Integrated Coastal Zone Management (ICZM) Policy. Several consultative meetings have been organized to discuss the draft policy;
- The fisheries dept established a working group to review the trawler fishery. A management plan based on for the trawling fishery has been drafted and is currently under review.

- 3. Contribution to the ICRI GM:** Your responses to the following questions will assist the Secretariat in assessing contributions towards the major themes of the current ICRI action plan and objectives of the general meeting. Due to the heavy schedules of ICRI members, we have tried to keep the questions to a minimum and value any response you can provide.

NOTE: The Secretariat will compile Members' responses to the below questions into a general presentation to be given during the GM. The Secretariat will also request specific Members to highlight certain initiatives, should additional information be of interest to the full ICRI membership.

- a. **Fisheries session:** Please provide any lessons you have learned from your experiences in managing fisheries and any projects/programs you are involved in.

Challenges facing Kenyan capture fisheries

In recent times, the fisheries sub-sector has been faced with a number of problems but the Ministry of Fisheries and Development has taken necessary steps to address them in consultation and collaboration with the resource users and other stakeholders, such as researchers, processors and environmentalists.

The major problems facing the sub-sector include: -

- Declining fish stocks in the natural water bodies
- Conflict between various users of fisheries resources
- Cross-border fishing and trade conflict
- Fish marketing, especially the EU export market
- Fish quality and post harvest issues.
- Lack of a comprehensive fisheries policy and a Fisheries Master Plan.

- Low funding levels for the Department.
- Slow capacity building and staff motivation.

Areas of focus for revitalizing capture fisheries sub-sector

Measures being addressed to revitalize capture fisheries are contained in the fisheries policy and they include;

(i) Sustainable Utilization Of Fisheries Resources

Fishing pressure in the Indian Ocean has contributed to a decline in fish production. Some of the factors responsible for this are; destructive fishing technologies, excessive fishing efforts, inadequate fisheries research and environmental degradation. To overcome this problem, the following issues are being addressed;

Promote responsible and sustainable utilization of fishery resources taking into account environmental concerns through;

- Promotion of efficient and effective fisheries management
- Promote local and foreign investment partnerships in the utilization of fisheries resources
- Monitor and control fishing effort, destructive fishing practices & environmental degradation.
- Promote sustainable utilization of fisheries resources
- Promote multi-disciplinary, collaborative and demand driven research
- Promote regional & international cooperation & collaboration in fisheries research, development, management, security & access to shared resources
- Promote social responsibility and good governance in the fisheries sector

(ii) Institutional, Policy And Legal Framework

The operations of players in the fisheries have not been efficient, resulting to duplication of efforts. Weak institutional framework and lack of strong linkages among the various players in the sector has resulted in research that is not demand-driven, duplication of roles leading to inefficiency, spreading of the available capacity thinly on the ground and, ultimately, suboptimal

outcomes. To address this problem, the following need to be done:

Provide an effective institutional, policy and legal framework for the development of fisheries sector.

- Establish an efficient organisation structure for the relevant government ministries which have direct or indirect affects on fisheries
- Strengthen coordination and supervision of the activities of the Ministry and the various agencies in the fisheries sub sector
- Review Fisheries Act and fully implement finalize fisheries policy
- Provide an enabling environment for investment in the fisheries sector
- Ensure sustainable funding of fisheries programmes and research activities
- Strengthen monitoring and evaluation (M&E) of Ministry programmes and projects

- The ICRI secretariat is planning on revisiting/updating the ICRI “call to action” (http://www.icriforum.org/library/call_action.pdf) and ICRI “framework to action” (http://www.icriforum.org/library/framework_action.pdf). Please provide any guidelines you think would be useful.
- During the meeting, a full day will focus on the Caribbean region. If you have any question about the region, ongoing projects in the region,... please let us know.
- During the meeting, we are planning on having a presentation on the “Man and the Biosphere Programme (MAB)”. Could you please list your coral reef sites listed under the MAB programme.

Coral reefs within 2 marine national reserves located in the Northern coast of Kenya fall with MAB. These are:

- Malindi - Watamu Marine National Reserve
- Kiunga Marine National Reserve

- e. What other new initiatives/programs/projects/progress, in particular since April 2009, has been made by your government/organization relative to Marine Protected Areas, Ramsar site designations containing coral reefs, policy changes, economic valuation of coral reef ecosystem services, etc., which you believe would be of general interest to other ICRI Members?
- f. Please list publications, reports you have been released since April 2009
See attached list

1. Carreiro-Silva, M., T. R. McClanahan, and W. E. Kiene. 2009. Effects of inorganic nutrients and organic matter on microbial euendolithic community composition and microbioerosion rates. *Marine Ecology Progress Series* 392:1-15.
2. Cinner, J. E., T. R. McClanahan, and A. Wamukota. 2010. Differences in livelihoods, socioeconomic characteristics, and knowledge about the sea between fishers and non-fishers living near and far from marine parks on the Kenyan coast. *Marine Policy* 34:22-28.
3. Cinner, J. E., T. R. McClanahan, N. A. J. Graham, M. S. Pratchett, S. K. Wilson, and J. B. Raina. 2009. Gear-based fisheries management as a potential adaptive response to climate change and coral mortality. *Journal of Applied Ecology* 46:724-732.
4. Cinner, J. E., T. R. McClanahan, T. M. Daw, N. A. J. Graham, J. Maina, S. K. Wilson, and T. P. Hughes. 2009. Linking Social and Ecological Systems to Sustain Coral Reef Fisheries. *Current Biology* 19:206-212.
5. Cinner, J., T. Daw, and T. R. McClanahan. 2009. Socioeconomic factors that affect artisanal fishers' readiness to exit a declining fishery. *Conservation Biology* 23:124-130.
6. Cinner, J., T. R. McClanahan, C. Abunge, and G. Wamkuta. 2009. A baseline socioeconomic assessment of fishing communities along the north coast of Kenya. In J. Hoorweg and N. A. Muthiga, editors. *Coastal Ecology*. African Studies Centre, Leiden - Netherlands.
7. Eklof, J. S., S. Frocklin, A. Lindvall, N. Stadlinger, A. Kimathi, J. N. Uku, and T. R. McClanahan. 2009. How effective are MPAs? Predation control and 'spill-in effects' in seagrass-coral reef lagoons under contrasting fishery management. *Marine Ecology Progress Series* 384:83-96.
8. Hicks, C. C., T. R. McClanahan, J. E. Cinner, and J. M. Hills. 2009. Trade-offs in values assigned to ecological goods and services associated with different coral reef management strategies. *Ecology and Society* 14:10
<http://www.ecologyandsociety.org/vol14/iss11/art10/>.
9. Koch EW, Barbier EB, Silliman BR, Reed DJ, Perillo GME, Hacker SD, Granek EF, Primavera JH, Muthiga N, Polasky S, Halpern BS, Kennedy, CJ, Kappel CV, Wolanski E (2009) Non-linearity in ecosystem services: temporal and spatial variability in coastal protection. *Frontiers in Ecology and the Environment*. 7 (1): 29 – 37.
10. McClanahan TR, Muthiga NA, Maina J, Kamukuru AT, Yahya SAS (2009) Changes in northern Tanzania coral reefs during a period of increased fisheries management and climatic disturbance. *Aquatic Conservation: Marine & Freshwater Ecosystems* DOI: 10.1002/aqc.1020
11. McClanahan, T. R., and J. Paula. 2009. Special issue on the conservation and management of western Indian. Ocean coastal ecosystems. *Aquatic Conservation: Marine and Freshwater Ecosystems* 19.
12. McClanahan, T. R., B. Kaunda-Arara, and J. O. Omukoto. 2010. Composition and diversity of fish and fish catches in closures and open-access fisheries of Kenya. *Fisheries Management and Ecology* 17:63-76.
13. McClanahan, T. R., C. Ruiz Sebastian, J. Cinner, J. Maina, S. Wilson, and N. Graham. 2009. Managing fishing gear to encourage ecosystem-based management

- of coral reefs fisheries. in Proceedings of the 11th International Coral Reef Symposium,, Ft. Lauderdale, Florida, 7-11 July 2008.
14. McClanahan, T. R., E. Weil, and J. Maina. 2009. Strong relationship between coral bleaching and growth anomalies in massive Porites. *Global Change Biology* 15:1804-1816.
 15. McClanahan, T. R., E. Weil, J. Cortes, A. H. Baird, and M. Ateweberhan. 2009. Consequences of Coral Bleaching for Sessile Reef Organisms. Pages 121-138 in M. J. H. van Oppen and J. M. Lough, editors. *Coral Bleaching*. Springer-Verlag, Berlin Heidelberg.
 16. McClanahan, T. R., J. C. Castilla, A. White, and O. Defeo. 2009. Healing small-scale fisheries and enhancing ecological benefits by facilitating complex social-ecological systems. *Reviews in Fish Biology and Fisheries* 19:33-47.
 17. McClanahan, T. R., J. Cinner, A. T. Kamukuru, C. Abunge, and J. Ndagala. 2009. Management preferences, perceived benefits, and conflicts among resource users and managers in the Mafia Island Marine National Park, Tanzania. *Environmental Conservation* 35:340-350.
 18. McClanahan, T. R., J. E. Cinner, A. T. Kamukuru, C. Abunge, and J. Ndagala. 2009. Management preferences, perceived benefits and conflicts among resource users and managers in the Mafia Island Marine Park, Tanzania. *Environmental Conservation* 35:340-350.
 19. McClanahan, T. R., J. E. Cinner, N. A. J. Graham, T. M. Daw, J. Maina, S. M. Stead, A. Wamukota, K. Brown, V. Venus, and N. V. C. Polunin. 2009. Identifying reefs of hope and hopeful actions: Contextualizing environmental, ecological, and social parameters to respond effectively to climate change. *Conservation Biology* 23:662-671.
 20. McClanahan, T. R., M. Ateweberhan, J. Omukoto, and L. Pearson. 2009. Recent seawater temperature histories, status, and predictions for Madagascar's coral reefs. *Marine Ecology Progress Series* 380:117-128.
 21. McClanahan, T. R., N. A. J. Graham, S. K. Wilson, and Y. Letourner. 2009. Effects of fisheries closure size, age, and history of compliance effects on coral reef fish communities in the western Indian Ocean. *Marine Ecology Progress Series* 396:99-109.
 22. McClanahan, T. R., N. A. Muthiga, J. Maina, A. T. Kamukuru, and S. A. S. Yahya. 2009. Changes in northern Tanzania coral reefs during a period of increased fisheries management and climatic disturbance. *Aquatic Conservation: Marine and Freshwater Ecosystems* 19:758-771.
 23. Mork, E., G. L. Sjøo, N.L Kautsky, and T. R. McClanahan. 2009. Top-down and bottom-up regulation of macroalgal community structure on a Kenyan reef. *Estuarine, Coastal and Shelf Science* 84:331-336.
 24. Muthiga NA (2009) Evaluating the effectiveness of management of the Kisite-Mpunguti marine protected area. In: Hoorweg J, Muthiga N (eds) *People, Processes and Ecosystems*. African Studies Centre. African Studies Collection. Vol 20: 178-192.
 25. Muthiga NA, Kawaka JA, Ndirangu S. (2009) The timing and reproductive output of the commercial sea cucumber *Holothuria scabra* on the Kenyan coast. *Estuarine Coastal and Shelf Science*. 84: 353-360.
 26. Muthiga NA. (2009) Evaluating the effectiveness of management of the Malindi-Watamu marine protected area complex in Kenya. *Ocean and Coastal Management*. 52: 417-423.
 27. Ruiz Sebastian, C., K. J. Sink, T. R. McClanahan, and D. A. Cowan. 2009. Bleaching response of corals and their Symbiodinium communities in southern Africa. *Marine Biology*:1-14.
 28. Worm, B., R. Hilborn, J. K. Baum, T. A. Branch, J. S. Collie, C. Costello, M. J. Fogarty, E. A. Fulton, J. A. Hutchings, S. Jennings, O. P. Jensen, H. K. Lotze, P. M. Mace, T. R. McClanahan, C. Minto, S. R. Palumbi, A. M. Parma, D. Ricard, A. A. Rosenberg, Reg Watson, and D. Zeller. 2009. Rebuilding global fisheries. *Science* 325:578-585.

For any of the above questions, please provide links to further information. As appropriate, the Secretariat will compile such information to make it accessible to all Members on the ICRI Forum.

ICRI and Other Meetings - Are you considering attending any of the following meetings in 2009?

- X 15th meeting of the Conference of the Parties (CoP15) to the Convention on International Trade in Endangered Species of Wild Fauna and Flora
Doha, Qatar, from 13 to 25 March 2010
- 5th Global Oceans Conference: Ensuring Survival, Preserving Life, and Improving Governance:
 - Policy, Science, and Technical Symposium (May 3-4, 2010)
 - Policy Conference (May 6-7, 2010)
- 10th Meeting of the conference of the Parties to the convention on Biological Diversity (COP 10), October 18-29, 2010, Nagoya, Japan
- Other (please specify):

