

foraging habitat (e.g., sea grass pasture blowouts due to extreme weather events, altered reef competition due to coral bleaching events, different migration patterns for gelatinous prey) are starting to be understood. It may be that species with greater dietary flexibility are better able to adapt to such changes. An individual that can forage on a greater range of prey will undoubtedly have less difficulty gaining the resources (e.g., breeding) than a turtle with a narrower diet. Novel forensic techniques in this field, such as analysis of stable isotopes of Carbon and Nitrogen, can quickly yield much information about the

trophic width of a study animals diet, and are helping elucidate this key life history trait.

The review of the existing knowledge about climate change and marine turtles shows that there is an imperative need for more empirical data to understand how climate change might threaten sea turtles, particularly given that all seven species are of conservation concern. In order for any future management recommendations of any substance to be made, baseline data must be collected, integrated and shared from as wide a variety of geographic regions, species and populations as possible. Given that the combined threats

of climate change, through sea level rise, habitat alteration and altered thermal conditions may supersede all other known threats for turtles, this is a priority for future turtle research programs.

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The Quiet Revolution: How Rural Tanzanians are Winning Back the Rights to their Forests

Tom Blomley

Quietly and beyond the glare of the newspaper headlines, across Tanzania, communities are slowly but surely claiming back their forests and putting them under local control. Already around 4.1 million hectares of forest land in over 2,300 villages are either under, or in the process of being transferred to, local communities across the country. This includes high value montane forests in the Eastern Arc Mountains biodiversity hotspot, coastal forests and mangroves and miombo woodlands that cover large swathes of Tanzania's sparsely populated western regions. These changes have been made possible by changes in the Tanzanian forestry laws in 2002, which, for the first time, recognise and legalise forests owned and managed by village councils and community groups.

Donors such as the Danish, Norwegian and Finnish governments as well as the World Bank have been working with the Forestry and Beekeeping Division of the Ministry of Natural Resources and Tourism to support village level forestry activities. The law allows two systems of forest management. The first is where communities become owners and managers through their village councils. Forests and woodlands within the village area are declared by village governments, and then registered with the local district council as 'Village Land Forest Reserves'. Once a management plan has been drawn up and approved by the district, the villagers can start actively managing their own forests. The second system covers communities living close to larger

forests managed by either national or local government. Communities become joint managers by signing agreements with the government and in return for actively managing the forests, are able to share the benefits by accessing honey, fuelwood, poles and timber.

The changes in policy have been possible through Tanzania's unique system of local government. Communities in rural areas are divided into villages (of which there are over 10,500 on mainland Tanzania), which are managed by village councils. The councils are accountable to village assemblies consisting of all the adults living within the village area. This system dates back to the mid-1970s, when the socialist "ujamaa" programme of Tanzania's founding President Julius Nyerere gave villages a legal basis, largely as a way to fit scattered and poor rural communities into the country's socialist development agenda. Although unpopular at the time, this political initiative sowed the seeds for rural empowerment through village governments. The Local Government Act of 1982 strengthened

BATTLE OVER KENYA'S TANA DELTA

Mumias Sugar Company Ltd., and the Tana and Athi River Development Authority (TARDA), in a planned private joint venture, are proposing to turn 20,000 ha of the mostly pristine Tana River Delta over to sugarcane. The main features of the Tana Integrated Sugar Project (TISP) are: 16,000 ha of irrigated sugarcane production through estate; 4,000 ha of outgrower systems; water supply to the project; a sugar factory and co-generation facility of up to 34 megawatts power capacity; an ethanol production plant; and livestock supporting activities, including fisheries. On June 11, 2008 Kenya's National Environment Management Authority (NEMA) approved the project's EIA. Environmental organisations are opposed to NEMA's decision citing the impact of the project on the Tana Delta's ecology, biodiversity and local people's livelihoods.

When the High Court in Malindi issued stay orders against the Tana Integrated Sugar Project in July 2008, conservationists breathed a sigh of relief. With the orders in place, the Delta could continue to serve its ecological functions, support wildlife and local communities. For the time being ...

The groups had a good reason to celebrate. United under the Kenya Wetland Forum, they had engaged the project proponents and the Kenya government in a fierce and spirited media campaign to save the Kenya's largest oceanic delta from being converted into an ecological wasteland. The matter is still in court, and there is no end in sight.

I must say that most of us are wondering whether the battle will be won in the Kenyan courts. Media is still interested in the issue with many local and foreign media visiting the Delta and covering a range of issues. But even as conservationists await the outcome of the court case, many more 'development' projects are being proposed in the Delta by the day. First there is the proposal by MAT International to plant irrigated sugarcane in some 80,000 ha. The Qataris propose to grow fruits and vegetables. Nobody as yet knows the proponents of this initiative, where it will be located, or even where to seek this information. There are also proposals to plant more than 100,000 ha of *Jatropha* in the private ranches bordering the Delta.

It would look like there is a scramble for land in the Delta that is internationally recognised as an Important Bird Area. Twenty-two different species of water birds occur in the Tana Delta in globally significant numbers. The Tana River Red Colobus, one of the world's most endangered primates, is found in some riverine forest fragments. Informal meetings with pastoralists reveal that they are scared of losing their dry season and drought refuge grazing areas.

Back to the conservationists. Everybody expects us to come up with solutions. And we have realised that as long as the Delta is not accorded any form of legal protection, it will continue to attract ill-advised 'development' projects. It will continue to be classified as 'idle land'. This in spite of the results of a cost benefit study, commissioned in April 2008 by Nature Kenya and the Royal Society for the Protection of Birds (the UK BirdLife Partner), that showed that the current benefits to farmers, pastoralists and fishermen amount to Ksh. 3.7 billion compared to the Ksh. 1.2 billion that the Tana Integrated Sugar Project would generate.

The Kenya Wildlife Service (KWS) has reactivated efforts to get the Delta listed as a wetland of international importance under the Ramsar Convention. Nature Kenya has opened a local office in Garsen and employed two staff to be based in the Delta. Discussions on the development of a conservation and development master plan for the Delta have been initiated with the Kenya Wetland Forum and KWS. The development planning process is funded by the IUCN and the Community Environment Facility. The two Nature Kenya staff have the difficult task of establishing a Site Support Group at the site. The group will then be empowered through training to take conservation action and to successfully advocate for the conservation of the Delta. They also need to work with all stakeholders and build consensus for the conservation and development master plan.

Serah Munguti, Communication and Advocacy Coordinator, Nature Kenya

these powers by, among other things, enabling villages to make their own local by-laws. These by-laws are legally binding and enforceable in a court of law, and provide village governments with a powerful tool with which to enforce local forest management rules and regulations.

A second factor which supported the emergence of participatory forestry is Tanzania's size and the remote location of many forested areas. Over time, the government came to realise that it was unable to manage these huge areas - and that some alternative system is needed. Pilot projects, initiated in the early 1990s in Babati and Singida districts and funded by the Swedish government, showed quite clearly that forests under village management could be restored and protected more effectively and at less cost than those under central government control.

But can we be sure that communities manage forests better? Trees grow slowly and therefore it takes time to say with certainty whether a forest is recovering. However, a number of independent reports demonstrate that forests under village management are recovering. A project in the Shinyanga district of north western Tanzania supported the re-establishment of a traditional system used by Sukuma agro-pastoralists for reserving dry season grazing. This management practice, known locally as "ngitili", provided a locally accepted system that was quickly adopted - leading to the restoration of small patches of acacia woodland across what was previously a highly eroded landscape. Between 1994 and 1999, several hundred thousand hectares of eroded land were restored through this project and 152 species of trees, 145 bird species and 21 mammal species were reintroduced across the region.

In a second study, data were gathered

during the past five years from the same set of 13 forest areas in five regions across eastern, central and northern Tanzania. The sample included forests that were managed entirely by village councils, forests that were jointly managed by communities and government, forests under exclusive government management, and one control site in "open access" land owned by a village but lacking forest management objectives. Data was gathered from 20 x 20 m permanent sample plots. In the sample of 13 forests, there were increases in basal area and volume for forests managed with community involvement and declines for both of these variables in forests under government or open access management regimes.

A further indicator of strong local management is that, given the chance, villagers are both willing and able to protect their own forests. Recently, while in Kiteto, the author had a chance to visit the Suledo forest, which is owned by nine Maasai villages and covers about 164,000 hectares. With support from the Swedish-funded Land Management Project, the villagers have been protecting and managing this forest since 1997. At the time of the visit, villagers in Laiseri arrested illegal loggers and confiscated their equipment, vehicle and logs. These goods were then auctioned by the village committee and the funds used to support local development needs and the work of the forest management committee.

Despite this good news there are still many problems and obstacles. Perhaps the greatest is that understanding of the new forest law at village level is still very low. In some areas, the pressure to harvest trees is high and the way in which licences are issued is not always transparent. A new report produced by the environmental watchdog, TRAFFIC, makes this clear and

points out that loggers bribe village leaders, offering a pittance for the timber harvested, and are frequently protected by the local forest officer. In recent years south eastern Tanzania has seen a logging boom and one village, Migeregere, has been in the thick of it. Mr. Kipengeze makes the point: "Everyone is frustrated that the village does not have any influence in the issuing of logging licences. It always comes from the District level, and the payments to us are too small. We want to be empowered to control logging in our land, not just see people harvest the trees then leave".

Under the Mpingo Conservation Project ('Mpingo' is the Kiswahili name for ebony or blackwood) the situation is improving. Villagers are slowly learning the real value of their timber and realising that registering their own village forests, managing them sustainably and protecting them under the law will help them capture this value. Kikole village - in Kilwa District - has already found this out, as explained by Matimbanya: "We are already benefiting. We patrol the forest three times a month, and have collected fines from illegal loggers. Illegal tree felling has now been reduced in Kikole. We have also received compensation from an oil company that felled some of our trees within our village forest". He then adds, "We now have knowledge of the forest and how we can manage it using the law. This will help us with our second village forest that we are preparing, and also we will know what to do if we want to set aside more forest in the future".

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