

Sustaining communities, livestock and wildlife in the Maasai Steppe: vital facts, observations and policy actions



This policy brief draws on experience from the project “Novel forms of livestock and wildlife integration adjacent to protected areas in Africa - Tanzania” conducted from 2005 to 2009 in the semi-arid area of the Maasai Steppe of Northern Tanzania.

“Novel forms” was implemented by the Food and Agriculture Organization of the United Nations (FAO), The World Bank, African Wildlife Foundation (AWF), International Livestock Research Institute (ILRI) and the Government of Tanzania, with financial support from the Global Environment Fund (GEF).

The project was based in Monduli and Simanjiro Districts – within an ecosystem of approximately 35,000 km² that includes Tarangire and Lake Manyara National Parks, the Marang and Esimongor National Forest Reserves, and the watershed of the Northern Highland Forest in the Ngorongoro Conservation Area. Field activities have been implemented in six villages: Lolkisale, Naitolia and Mswakini Juu in Monduli; Loiborsiret, Narakauwo and Loiborsoit ‘A’ in Simanjiro.

The project aimed to contribute to the conservation of globally significant biodiversity, through improved ecological integrity, conflict resolution, food security and poverty alleviation. It focused on integrating pastoralism, cropping, and wildlife, with three main components promoting:

- Participatory land-use planning and Wildlife Management Areas
- Innovative benefit-sharing mechanisms that support wildlife-friendly land use such as pastoralism, and increase wildlife income to pastoral communities; and
- Decision support tools to help other East African communities strengthen natural-resource management.

Land use in northern Tanzania is changing rapidly and in an unplanned fashion – from extended rangeland to a patchwork containing commercial farms, subsistence plots and settlements

From the world-renowned sea of grass with abundant wildlife nearly everywhere, the landscape in northern Tanzania – particularly the Tarangire-Simanjiro ecosystem – is becoming a patchwork of protected areas, pastureland, commercial farms, subsistence fields, and settlements. Driven by population growth, economic realities, and policy, this land conversion has profound, negative implications for both wildlife and pastoralist livelihoods.

Observations

In the Tarangire-Simanjiro ecosystem, project-related research finds:

- Human population has expanded exponentially in this region during the past 25 years, with an annual increase of 3.8% p.a. between 1978 and 1988 to 5.2% p.a. between 1988 and 2002 – even faster than national growth rates, due partly to influx from other regions.

- Agriculture increased five-fold between 1984 and 2000 in the Tarangire-Simanjiro ecosystem – traditionally a pastoralist area rich in wildlife. Cultivated hectares jumped from around 17,000 to about 88,000. And the rate of conversion has been growing exponentially, from 0.6 percent per year to 3 percent a year by 2000.
- Today, 35 percent of the remaining rangeland in this ecosystem has a medium, high, or very high probability of being converted to agriculture in the foreseeable future.
- Farming as currently practiced appears unsustainable in Tarangire-Simanjiro. Fully 70 percent of acreage under the plow in 1984 had been abandoned by 2000, and nearly all of what was being farmed in 2000 was newly converted. The abandoned acreage was fit for neither livestock nor crops (Msoffe *et al.*, in preparation).
- Climate does not favour agriculture here. An analysis of long-term rainfall patterns shows severe drought one year out of three, though not in a predictable fashion (Msoffe, *et al.* in prep, unpublished data). Future forecasts include warming and substantial rainfall reduction in East Africa, including Tarangire-Simanjiro (Hulme, 2001; Thuiller *et al.*, 2006; Ogutu *et al.*, 2008). Farming the rangeland is unlikely to generate major increases in food production.

Suggested policy actions

- Limit expansion of agriculture in semi-arid areas. Given the constraints of soil fertility and water, farming in semi-arid areas is risky at best. Unless cropping practices are improved, they can destroy the soils as well as pastoralist livelihoods and wildlife corridors.
- Support sustainable pastoralism and livestock – the most productive use of these semi-arid lands, and the use that can sustain wildlife as well (see below).
- Invest in and encourage use of simple methods of participatory land-use planning. When communities have accurate information on pluses and minuses of farming, livestock, wildlife, other livelihood strategies, they can best zone their land for different activities.



Unplanned land-use changes are threatening the survival of wildlife, the backbone of the nation's tourism sector

Wildlife is one of Tanzania's most valuable resources. It is the key attraction for the more than 700,000 visitors to the country in 2007, who collectively brought in over a billion U.S. dollars (Obulutsa, 2008).

Tourism in turn has been vital to economic recovery and growth of the past two decades. The Mkukuta calls for it to become increasingly important in years to come. But at the moment, wildlife is dwindling.

Observations

- East Africa has lost more than half its wildlife in the last 30 years and the trend continues. In Tanzania, wildlife is declining in all of the nation's major wildlife areas and ecosystems, including those with national parks and game reserves. The best scientific data show dramatic drops in the populations of most species, with the exception of giraffe and elephant, since the mid-1980s (TNRF, 2008).
- Uncontrolled conversion of rangeland to farmland and settlements – particularly around the major protected areas – is the main reason for the decline of wildlife, since large mammals need extended lands outside parks to survive (Ogutu *et al.*, 2009).
- Despite attempts at community conservation, few households in northern Tanzania today economically benefit from wildlife. Financial incentives therefore drive them to try livelihood strategies such as farming, rather than conservation.
- In Tarangire-Simanjiri, land conversion already seriously threatens three of the five wildlife corridors that remained in 2000. Nine traditional wildlife routes existed in 1964 (Msoffe *et al.*, in prep; Borner, 1985; Oikos 2002).
- Wildebeest experienced a population decline of about 88% within a period of less than 15 years in the Tarangire-Simanjiri ecosystem, since their calving areas are now being farmed (TAWIRI, 2001).

Suggested policy actions

- Tanzania's Wildlife Policy gives jurisdiction over wildlife to local communities. Aligning legislation and regulations with that policy would give communities user rights to wildlife on their land – and therefore an incentive to conserve that wildlife. User rights will make conservation-based ventures more attractive, and unsustainable farming less attractive, to local residents.
- Revise hunting policy so that communities can benefit from hunting as well as photographic tourism and lodges.
- Involve all stakeholders, including communities and the private sector, in learning and deciding about uses of land that sustain wildlife and the communities themselves.





Uncontrolled land conversion also undermines pastoralism, an important livelihood and key sector of the economy

Pastoralists who once herded livestock hundreds of kilometres a year are now commonly limited to a village, in accordance with current law, or even one plot in a village, as land is privatized and subdivided. Since such space may offer inadequate resources, pastoralists too are beginning to farm – even where pastoralism with mobility remains the most suitable land-use option (ACC, 2005; Reid *et al.*, 2003).

Observations

- A large share of the meat and milk consumed in Tanzania comes from pastoral communities. Pastoral livestock is therefore the base of the beef market chain, including primary and secondary markets, butchers, shops and restaurants (Tenga *et al.*, 2008).
- When practiced in a traditional fashion – characterized by mobility and communal land ownership – pastoralism is economically viable and environmentally sustainable even in drier areas, and compatible with wildlife (Norton-Griffiths *et al.*, 2008).

- In fact at moderate levels pastoralism appears beneficial and attractive to wildlife. Livestock manure enriches grasses. In addition, shorter grass around bomas is preferred by some wild herbivores, and also makes it harder for predators to hide.
- Fostering biodiversity and living off their herds rather than bushmeat, pastoralists helped account for the fact that the Maasai Steppe features the most diverse savanna ecosystem in the world (Olson, Dinerstein *et al.*, 2000).
- Despite the adaptability of their millennia-old livelihood system, and the way livestock can be integrated with tourism ventures, pastoralists are now among the poorest members of society. While some communities benefit enough from tourism to provide health or educational services, few individual households benefit substantially from wildlife at this time.

Suggested policy actions

- Reduce legal restrictions on pastoralists' movements. Make planning units in pastoral lands larger than a village – allowing for mobility and freer access to water and dry-season pasture.
- The planning process should avoid relegating livestock to the most marginal or disease-ridden land.
- Reinvest in cattle dips and other veterinary support, since they greatly reduce the incidence of disease and death of livestock on the range.
- Support the development of local livestock markets.
- Support efforts to revitalize land and improve pasture.
- Promote “sustainable” intensification and improved practices such as agro-forestry schemes can provide win-win solutions through improving food security, land and animal productivity, benefits from ecosystem services and socio-economic benefits.
- Encourage conservation-based ventures and community wildlife management to help pastoralists diversify their income.

Wildlife Management Areas (WMAs), intended to sustain wildlife as well as bolster community economies, are working in a few places but falling far short of their potential

The WMA mechanism allows local residents to plan, manage, and benefit from their own land and wildlife. It also gives communities support to manage disputes over natural resources.

Observations

- WMAs may make communities more attractive to tourism and other businesses. Communities can earn a substantial amount from such businesses within WMAs.
- Yet planning can take place, and community-friendly, conservation-based businesses formed, in the absence of a WMA as well.
- The process for creating a WMA is arduous and costs an estimated \$100,000 to over \$250,000 – impossible for villages without considerable external support (interviews and NGO officials).
- As of September 2008, only 10 WMAs had been created in the country (TNRF, 2008).
- Most seriously, WMAs fail to ensure that local citizens benefit from wildlife since receipts must be forwarded to the central Government, which sends a fraction back to the District. Therefore WMAs may miss their primary goals: to provide local incentives for conservation and to foster local development.

Suggested policy actions

- Revamp and streamline the process for WMA development. The much simpler process for creating a Village Forest Reserve might serve as a model.
- Return to the spirit of the 1998 Wildlife Policy conferring control over wildlife resources – and resulting benefits – to the community. Allow the community to keep the majority of direct returns from wildlife businesses.
- Allow local communities the legal authority to choose projects and investors in WMAs, including hunting companies if desired.
- Provide capacity-building where called for to ensure transparency and accuracy in management and income distribution.



“Payment for Environmental Services” is among a number of new, promising ways of compensating communities for conserving wildlife

Around the world, scientists and policy makers are working out how to pay rural people for the environmental services they perform. These services might be maintaining forests and watersheds, sustaining sensitive ecosystems – or keeping populations of wild animals alive by conserving habitat and limiting poaching.

Observations

- An example in Tanzania is the Terrat Easement in Simanjiro District. Organized by tour operators and non-governmental organizations (NGOs), the Terrat Easement pays the village a yearly fee simply for living with livestock and wildlife as they have for generations and continuing to protect their traditional dry season pasture. In exchange the village agrees to prevent farming, charcoal production and wildlife poaching on the range. Participants involved hope to see the project scaled up to include other villages in vital wildlife areas (see Module 3 of the Decision Support Tool: Sustaining communities, livestock and Wildlife).

- A similar scheme in Kenya is also drawing international interest. In Kitengela, near Nairobi National Park and Nairobi, a broad partnership of stakeholders pays local households an annual fee per acre not to fence, farm, or sell their land, although they may continue to raise livestock on it. Payments are presented in public ceremonies timed to coincide with school fees, and usually directly to women. The Kitengela Conservation Lease Programme aims to protect 60,000 acres, enough to allow the seasonal migration of wildlife to and from the national park (see Module 3 of the Decision Support Tool: Sustaining communities, livestock and Wildlife).

Suggested policy actions

- Devise policy for innovative ways for communities and households to receive direct benefits from their wildlife.
- These might include payment for environmental services, land trusts, easements, or leasing of vital wildlife areas under imminent threat.



Conservation-based ventures can benefit communities when well structured and transparently managed

One of the Mkukuta's goals is to increase community income from tourism and wildlife. Conservation-based ventures (CBVs), often developed with a private investor, can do just that, whether in conjunction with a WMA or not.

Observations

- Many villages have partnered with private tourism companies, leasing out land for lodges or wildlife viewing in exchange for concession and other fees. In Loliondo, well run, community-oriented lodges and campsites pay seven villages US\$ 300,000 (TZS 360 million) a year – without a WMA (Nelson, 2007).
- How helpful a CBV is to a community depends largely on the contract, which can include clauses for local employment, connections to markets for crafts, and other benefits as well as direct fees.
- Establishing a CBV requires community land-use planning, as does a WMA, but not the complex bureaucratic paperwork.
- Depending on local resources, CBVs can take many forms, from traditional tourism to eco-tourism, trekking, water and other sports, entertainment, retreats ... (see Module 3 of the Decision Support Tool: Sustaining communities, livestock and Wildlife).
- Community CBVs may be threatened, though, by the presence of hunting concessions, which are centrally allocated and typically given priority by the government, even within WMAs.
- In 2007, new regulations began to require most fees to be paid to the Wildlife Division – reducing the income and also the incentive for conservation for the community.



Suggested policy actions

- Allow local communities to continue to receive direct payments as per their contracts with investors, although the business itself would be taxed.
- Encourage communities and the private sector to explore creative new forms of enterprise.
- Provide capacity building for management capability and transparency.
- Allow WMA communities to review hunting-block leases and decide whether to renew or not. Devolving control over – and benefits from – resident hunting and tourist hunting to the community level. Encouraging transparent public auctions for hunting concessions, so that the community obtains the best possible price.



Sustaining communities livestock and wildlife

A guide to participatory land-use planning also available at:

<ftp://ftp.fao.org/docrep/fao/011/i0821e/i0821e.pdf>

Bibliography

- African Conservation Centre (ACC).** 2005. Fact Sheet 1.
- Baldus, R.D. and Siegel, L.** 2001. *Experiences with community based wildlife conservation in Tanzania*. Tanzania Wildlife Discussion Paper No. 29. Dar es Salaam: Wildlife Division and Gesellschaft für Technische Zusammenarbeit (GTZ).
- Borner, M.** 1985. *The increasing isolation of Tarangire National Park*. *Oryx* 19: 91-96
- Coe, M., N. McWilliam, et al., eds.** 1999. *Mkomazi: The ecology, biodiversity and conservation of a Tanzanian Savanna*. London, UK, Royal Geographical Society (with the Institute of British Geographers).
- Hulme, M.** 2001. Climatic perspectives on Sahelian desiccation: 1973-1998. *Global Environmental Change* 11: 19-29
- Igoe, J. and Croucher, B.** 2007. Conservation, commerce, and communities: The story of community-based wildlife management areas in Tanzania's Northern Tourist Circuit. *Conservation and Society*.
- Ministry of Natural Resources and Tourism (MNRT).** 1998. *The Wildlife Policy of Tanzania*. Dar es Salaam: Government Printer.
- Ministry of Natural Resources and Tourism (MNRT).** 2001. *Community-based Forest Management Guidelines*. Dar es Salaam, Forestry and Beekeeping Division.
- Ministry of Natural Resources and Tourism (MNRT).** 2002. *The Wildlife Conservation (Wildlife Management Areas) Regulations*. Dar es Salaam: Government Printer.
- Msoffe, F., Kifugo, S.C., Said, M., Neselle, M., van Gardingen, P., Reid, R., Ogotu, J., and Herrero, M.** in prep. Drivers and impacts of land-use change in the Maasai Steppe of Northern Tanzania: An ecological-social-political analysis.
- Nelson, F.** 2007. *Emergent or illusory? Community wildlife management in Tanzania*. Drylands Issue Paper No. 146. London: International Institute for Environment and Development (IIED).
- Norton-Griffiths, M., Said, M.Y., Serneels, S., Kaelo, D.S., Coughenour, M., Lamprey, R.H., Thompson, D.M., and Reid, R.S.** 2008. Land use economics in the Mara area of the Serengeti ecosystem. In *Serengeti III: Human Impacts on Ecosystem Dynamics*, ed. A. R. E. Sinclair, C. Packer, S. A. R. Mduma and J. M. Fryxell, 379-416. Chicago University Press.
- George** (July 22, 2008). INTERVIEW-Tanzanian tourism revenue to hit \$1.35 bln next year. *Reuters Foundation*.
- Ogotu, J.O., Piepho, H.P., Dublin, H.T., Bhola, N., and Reid, R.S.** 2008. El Nino-Southern Oscillation, rainfall, temperature and Normalized Difference Vegetation Index fluctuations in the Mara-Serengeti ecosystem. *Afr.J.Ecol.* 46:132-143
- OIKOS.** 2002. *Analysis of migratory movements of large mammals and their interactions with human activities in the Tarangire area Tanzania, as a contribution and sustainable development strategy: Tarangire-Manyara Conservation Project (TCMP) Final Project Report*. Istituto Oikos and University of Milan, Italy in collaboration with Tanzania National Parks (TANAPA).
- Olson, D., E. Dinerstein, et al.** 2000. *The Global 200: A representation approach to conserving the earth's distinctive ecoregions*. Washington, DC, Conservation Science Program, World Wildlife Fund-US.
- Reid, R.S., Rainy, M., Ogotu, J., Kruska, R.L., Kimani, K., Nyabenge, M., McCartney, M., Kshatriya, M., Worden, J., Ng'ang'a, L., Owuor, J., Kinoti, J., Njuguna, E., Wilson, C.J., and Lamprey, R.** 2003. *People, wildlife and livestock in the Mara Ecosystem: The Mara count 2002*. Report, Mara Count 2002, International Livestock Research Institute, Nairobi, Kenya.
- Sachedina, H.** 2006. *Conservation, land rights and livelihoods in the Tarangire Ecosystem of Tanzania: Increasing incentives for non-conservation compatible land use change through conservation policy*. Conference Paper presented to: Pastoralism and Poverty Reduction in East Africa: A Policy Research Conference, International Livestock Research Institute, June 27-28th, 2006
- Tanzania Natural Resource Forum (TNRF).** 2008. (Jumiko la Maliasili), *Wildlife for all Tanzanians: Stopping the loss, nurturing the resource and widening the benefits*. An information pack and policy recommendations. Also at www.tnrf.org
- Tanzania Wildlife Research Institute (TAWIRI).** 2001. *Tarangire Ecosystem: Wet season systematic reconnaissance flight count*, May 2001.
- Tenga, R., Mattee, A., Mdoe, N., Mnenwa, R., Mvungi, S., and Walsh, M.** 2008. *A study on options for pastoralists to secure their livelihoods in Tanzania: Current policy, legal and economic issues*, Volume One: Main Report.
- Thuiller, W., Broennimann, O., Hughes, G., Alkemade, J. R. M., Midgley, G. F., and Corsi, F.** 2006. Vulnerability of African mammals to anthropogenic climate change under conservative land transformation assumptions. *Global Change Biology* 12: 424- 440.