

Ecosystems for water, water for people, ecosystems for people

Local communities are a component of the ecosystem ... a rewards-based approach that incorporates these resident communities has potential to reverse degradation of the Upper Tana landscape.

Abstracting water from River Rupinkazi for trout farming at Nyanjara Fisheries. (Photo © S.Wachira, PRESA)

PRESA - Pro-poor Rewards for Environmental Services in Africa is working at sites in Kenya, Tanzania, Uganda and Guinea to facilitate fair and effective agreements between stewards and beneficiaries of environmental services. Voluntary, conditional and negotiated agreements can reward poor farmers for good land use practices, while ensuring a clean and sustainable supply of environmental services for local and global communities.

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At 5,199 metres, Mount Kenya is the highest peak in Kenya and the second highest in Africa. The mountain has a thick forest that changes with altitude. The base is sparse woodland and savannah. Higher up is dense sub-tropical forest which gives way to bamboo then turns to alpine moorland at higher, colder altitudes.

For this reason, Mount Kenya is one of the five critical fresh water sources in Kenya and its rivers make up almost 49% of the country's biggest river, the Tana.

Tana River generates half of Kenya's electricity through a series of state-owned hydro electric power stations built along the river's course. The Tana supports irrigated agriculture, fisheries, livestock production and biodiversity conservation especially in the lower parts of its basin which are dryer than the highlands. This makes the Tana a critical natural asset in Kenya's economic development.

Partners of the PRESA (Pro-poor Rewards for Environmental Services in Africa) project are alarmed that Tana River is steadily losing its life supporting functions due to ecosystem degradation caused by human activities at the upper and middle catchment areas.

An ecosystem in danger

The prevailing attitude towards watershed management is that fresh water will always flow from the mountain for free. There is neither the urgency nor the incentive to institute sustainable use of land and water.

Economic pressure is intensifying the conversion of land from forest to farming. Modern farmers lack knowledge, incentives and recognition for their role in the provision of water to rivers. Consequently, land degradation at the upper Tana basin is inflicting heavy costs to downstream areas through the siltation of reservoirs, damage to infrastructure and reduced flows during dry seasons.

Opportunities and challenges for PRESA

Local communities are a component of the ecosystem and their decisions on land use will, for better or for worse, affect the amount of water and sediments flowing into the Tana River. A rewards-based approach that incorporates these resident communities has potential to reverse the degradation.

The potential sellers of environmental services at the Upper Tana basin are land owners and users in the upper and middle catchment areas. Potential buyers include the Kenya Electricity Generating Company (KenGen), and irrigation projects at the lower Tana River.

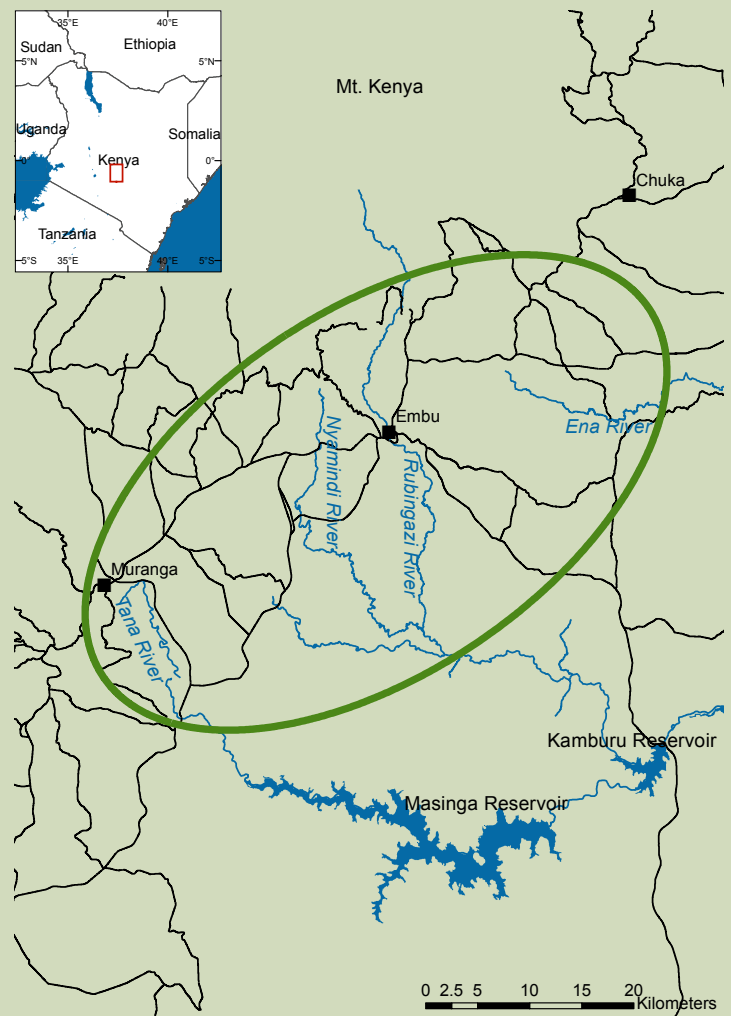
KenGen is interested in reducing sediments that threaten to clog its dams, thereby shutting down electricity production. Farmers irrigating the lower basin wish to see consistent flows of the Tana throughout the year.

PRESA is fostering links between environmental service buyers and sellers in partnership with the Mt Kenya East Pilot Project for Natural Resource management (MKEPP) and the World Soil Information Centre. MKEPP is a joint initiative by the government of Kenya, funded by the International Fund for Agricultural Development (IFAD). The World Soil Information Centre plans to implement a reward for environmental services scheme called Green Water Credits in cooperation with IFAD and the Swiss Agency for Development Cooperation.

Farmers at the Upper Tana (Murang'a area and Mount Kenya East) will be encouraged to maximize water infiltration and deep drainage techniques that will promote groundwater recharge and extended periods of stream flow. These steps will also reduce the threat posed by sedimentation on irrigation canals and dams.

PRESA sees joint forest management and agroforestry as appealing land use options, while Greenwater Credits is interested in areas of extensive farming and grazing in the entire Tana basin.

Using knowledge gained in other World Agroforestry Centre projects, PRESA is supplying a broad choice of negotiation approaches and land use options for Greenwater Credits to consider. Greenwater Credits and PRESA will share expertise in the analysis of farmer attitudes and behaviour to better understand the cultural and economic factors that influence land use decisions. PRESA will facilitate extended dialogue with private investors who use the Tana River, including KenGen.



The Upper Tana River catchment area just south of Mount Kenya. (Map © M. Mäkelä – World Agroforestry Centre)

Partners

- Mt. Kenya East Pilot Project for Natural Resource Management (MKEPP)
- World Soil Information Centre (ISRIC)
- International Fund for Agricultural Development (IFAD)

Stakeholders

- Hydroelectric power generators
- Tea and coffee factories
- Schools
- Water resource management authorities
- Highland and downstream farmers
- Irrigation and water project associations
- Kenya Agricultural Productivity Programme
- Kenya Agricultural Research Institute