

Understanding land use relations with hydrology as the key to designing equitable payments for watershed services

PRESA sees that supporting, rewarding or paying watershed communities from good land use presents a business case for Nairobi City Water & Sewerage Company.

Farmers at the Sasumua water catchment area participate in a soil sampling exercise assisted by a soil scientist from the World Agroforestry Centre. Photo \ M. Makela



Located at the southern ridges of Kenya's Aberdare Mountain, Sasumua dam provides the capital city of Nairobi with 20 percent of its fresh water needs. However, anthropogenic activities around the dam's catchment are causing sedimentation and contamination by water pollutants.

Pollution from small towns and farms results in a high bacterial count in rivers, abnormal acidity levels and a dangerous concentration of toxins. The major pollutants are plant and animal waste, municipal waste, as well as runoff from agricultural and industrial activities along river tributaries.

Water quality and allocation are fundamental issues in the area - these have been the source of

discontent and mistrust between Nairobi's water supplier and local farmers.

The implementation of policies that seek to address the conflicting interests of multiple water users is marred with challenges. Unless, the competing objectives of those living in the watershed and those consuming water in far away towns are simultaneously met, the issues around water will compound and will become more complex.

The PRESA project is helping local communities play a larger role in the management of the Sasumua catchment. PRESA finds a business case for the Nairobi Water & Sewerage Company to support restoration of the watershed through co-investment with local people.

Activities

With support from the World Bank and collaboration with communities, site and national-level partners, PRESA undertook technical studies on watershed delineation, land degradation assessment, land tenure and land use mapping, hydrological modeling, water quality assessment and environmental auditing. Trade-off analyses were done using the Polyscape model.

PRESA used the study results in working closely with partners and the Water Resources Management Authority (WARMA) to formulate a catchment management plan. This process is underway and is led by the Sasumua Water Resource Users Association (WRUA).

Ongoing engagement with the

Tanzanian Electricity Company, Pangani Water Authority and other partners interested in rewards for environmental services at the Usambara Mountains has been used to inform the process in Kenya.

PRESA worked with researchers from the Macaulay Land Use Research Institute of Scotland and from Pretoria University in South Africa to undertake poverty assessment that will inform the design of rewards for environmental services.

PRESA is engaging the Nairobi City Water and Sewerage Company in a dialogue to better understand their potential as a buyer of watershed services. Linkage has also been established with the Water Resource Management Authority (WARMA) for collaborative catchment management. Efforts at the community level are focused on joint management planning for the control of sedimentation and pollution.

An inventory of government, farmer and other stakeholder initiatives and their potential to enhance resilience has been undertaken.

Opportunities and remaining challenges for PRESA

The scoping of rewards for environmental service initiatives in the Sasumua catchment is part of a larger project called the Kenya Agricultural Productivity and Sustainable Land Management (KAPSLM) funded by

the World Bank and Government of Kenya. PRESA will continue to explore policy options to raise environmental awareness and spur discussion on new regulations and technologies for pollution control and supply of clean water.

Degradation hotspots identified in surveys and spatial analysis provide the basis for targeting interventions, including identification and adoption of sustainable land management practices. In the short term, these are expected to benefit the farmer in terms of improved production.

The bringing together of farmer groups will also enhance collective action and learning as well as improve the social capital required for implementation, self monitoring and evaluation. Case studies on poverty assessment will ensure that reward for environmental service schemes are fair and pro-poor.



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.

This programme is implemented by the World Agroforestry Centre, with funding from the International Fund for Agricultural Development, the European Commission and the Government of Finland. The views expressed in this publication do not necessarily reflect the views of the funders.



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- World Agroforestry Centre (ICRAF)
- National Environment Management Authority (NEMA) of Kenya
- Jomo Kenyatta University of Agriculture and Technology

Stakeholders

- Local farmer organizations
- Nairobi City Water and Sewerage Company
- Water Resources Management Authority
- Athi River Water Services Board
- Kenya Forestry Service
- Ministry of Livestock.

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