



UPPER TANA-NAIROBI WATER FUND

INNOVATION AT THE NEXUS OF WATER, FOOD, ENERGY, AND BUSINESS

A groundbreaking public-private partnership is mobilizing investments and collaboration to secure a lifeline for Kenya.

Water is an essential ingredient for healthy lives and healthy economies. As Kenya pursues the ambitions of Vision 2030, securing the Tana River must be a priority. It provides 95 percent of the water supply for Nairobi, and generates 50 percent of the energy that powers the nation. Flanking the river on its path to the capital are 300,000 smallholder farms, all depending on — and having an impact on — the river.

Unsustainable farming practices are sending sediment into the river, resulting in higher costs for water treatment, lower water levels, and lower hydropower output. Water security will only become more challenging as climate change brings increasingly unpredictable rainfall and the city's population continues to climb.

That's why The Nature Conservancy is bringing diverse partners together to address these challenges with a water fund, a proven model which is founded on the principle that it is less expensive to prevent water problems at the source than it is to address them further downstream. Urban water users invest in upstream watershed conservation strategies, creating benefits for themselves as well as rural populations.

Scientists have shown that for every one dollar invested in conservation strategies in the Tana River watershed, we will avoid two dollars in costs of correcting impacts on water supply and energy production.

Such funds provide a secure and transparent tool for corporate and public investors to direct resources to conservation strategies that will yield the greatest returns for the common good and the economy.

The primary focus of the Upper Tana-Nairobi Water Fund (UTNWF) is to improve farming practices in the watershed. While this water fund is the first of its kind in Africa, it builds on the expertise TNC scientists have gained from designing more than 30 water funds around the world. Already Kenya has inspired the government of Cape Town, South Africa, to begin developing a water fund.

The Nature Conservancy

OUR MISSION

The mission of The Nature Conservancy is to conserve the lands and waters on which all life depends.

TNC'S AFRICA PROGRAM

TNC works in partnership with government and local NGOs, sharing technical tools, skills, and resources, to increase the scale of their impact and implement solutions that preserve nature while improving people's lives.

TNC established the Africa Program in 2007, and today we operate in seven countries across the continent.



TNC FAST FACTS

- 65 years
- 69 countries
- 1 million members
- Nearly 50 million hectares conserved
- 3700 staff; 500 scientists

WATER FUNDS

- 30 around the world
- $10 million mobilized for watershed conservation

KEEPING SOIL OUT OF THE RIVER

For decades, forests on steep hillsides along the Tana River have been slowly converted to farming for tea, coffee, and other produce. Reduced soil productivity from erosion and competition for space have forced farmers onto steeper and steeper slopes. Now, during the rainy season, soil is washed into the river, reducing the productivity of farmland and clogging water distribution and power generation facilities with sediment.

The water fund partners are working with more than 15,000 farmers, and are on course to reach 50,000 farmers by 2020. We are providing the skills, training and resources they need to conserve water, reduce soil runoff, and improve productivity.

In just the first three years, these initiatives have led to **27 million more liters of water flowing into Nairobi each day**.



A STRONG BUSINESS CASE

Conservative results of a science-based business case demonstrate a viable return on investment for the creation of a water fund:

- Over 50% reduction in sediment concentration in rivers (varying by watershed and time of year); An 18% decrease in annual sedimentation in Masinga reservoir
- Up to a 15% increase in annual water yields across the priority watersheds during the dry season
- Up to US$3 million per year in increased agricultural yields for smallholders and agricultural producers
- Over US$600,000 increased annual revenue for KenGen as a result of increased power generation and avoided shutdowns and spillages
- Approximately US$250,000 in cost savings a year for NCWSC stemming from avoided filtration, lowered energy consumption, reduced sludge disposal costs and fewer shutdown days
- Improved water quality, with a potential decrease in waterborne pathogens, for more than half a million people.

BOARD OF TRUSTEES

Annual stakeholders' assembly

BOT Members

Eddy Njoroge, Nairobi Water Fund: President

Eng Philip Gichuki, CEO Nairobi City Water Company: Chair

Munira Bashir, TNC Kenya Program Director: Secretary

H. E. Governor Joshua Irungu: Member

Emmanuel Rurema, CEO Pentair Ltd: Member

BOARD OF MANAGEMENT

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Ravic Nijbroek, Soil Science Research, CIAT

Maryann Kibinda, Administrator, Pentair Ltd

Hon Albert M. Ndungu, CEC Agric & Irrigation, Murang'a County

Patrick Nyaga, Senior Deputy Director, Kenya Forest Service

MANAGEMENT UNIT

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SIMPLE SOLUTIONS TO BIG CHALLENGES

The water fund partners are focusing on the most at-risk areas of the watershed to help farmers take simple steps to increase water security as well as food security.

Strategies include:

- Vegetation buffer zones along riverbanks
- Agroforestry
- Terracing of steep and very steep farmlands
- Reforestation for degraded lands at forest edges
- Grass buffer strips in farmlands
- Mitigation of erosion from dirt roads



IMPROVING LIVES

Jane Kabugi is a retired grandmother who lives and farms on a steep hillside in Murang'a County. Jane was concerned that heavy rains would eventually wash all the soil away, and take her house with it. But with support from TNC and its partners, Jane learned several techniques, such as terracing and planting napier grass, to prevent soil erosion, make her farm more productive, and protect her property.

"I had a lot of challenges [living and farming on this hillside]. The rainwater was taking a lot of my soil. I was introduced to [partner] SACDEP by TNC. They helped me with advice, and gave me some materials like napier grass, which helped hold the soil in place.

"I've always said that 'soil is life' — you can't grow food without soil. That is why I try to conserve it; I don't want it to go to the river. We should all be conserving our soil, we should all be cleaning our rivers for good water, and we shall have enough food for our families."



Jane Kabugi

Stanley Kaminju is a farmer in Murang'a County. With support from TNC and the UTNWF, Stanley was able to install water pans and drip irrigation technology on his farm. The water pans allow him to harvest rainwater from his roof and use it to irrigate his crops during the dry season. Drip irrigation ensures that none of that water is wasted as it's fed directly to each plant.

"We've had fewer problems since participating in this water conservation because we can use this water during the dry season. Because when it is dry everywhere, here it's green. Our lives have changed financially: Those farmers who have children in school are not straining to pay school fees.

"When we conserve water, we conserve the soil. When we conserve the soil, we conserve the environment. And when we conserve the environment, we are sure of sustaining our life."



Stanley Kaminju

Mercy Wangechi ("Mama Christine") is a small-scale farmer in Kabiti Ward, Murang'a County.

"Our area is the driest part of the Upper Tana watershed. After years of failed crops, I rented a plot near the Maragua River. The owner took advantage of me, stealing the tomatoes that we had agreed to split. When I tried renting other plots, I faced many challenges, such as flooding, monkey invasions, and impassable roads.

"From an announcement made in our church, I learned that the water fund was helping farmers to harvest rainwater. I enrolled and got a water pan that stores 150,000 liters of water. It was the first time I got a healthy crop on my own land. After making $1,500 in profits I bought a drip irrigation kit that cut my water usage by half. I am able to start my planting early and hit the market before most of the other farmers. My profit has risen to $5,000 per season. I am also offering my time to convince those still doing riparian farming to have their own water pans."



MEASURABLE PROGRESS

In only three years, the Upper Tana-Nairobi Water Fund has generated a vast array of benefits for people living in the watershed, for the residents of Nairobi, and for all Kenyans:

- More than 15,000 farmers are applying soil conservation and water-saving methods.
- More than 7,000 coffee farmers are working toward Rainforest Alliance certification.
- 175,000 trees are planted annually in the watershed.
- 120,000 acres are under sustainable management.
- World Health Organization water turbidity standards were achieved for first time July–September 2016 (T<5 NTU).
- 26 River Gauging Stations (RGS) are now automated.
- More than 3,000 farmers are enrolled in a mobile data monitoring platform.
- 27 million more liters of water are flowing into Nairobi each day.
- A Board of Trustees for the Nairobi Water Fund was formed in April 2016 and a Board of Management is in place.
- Partnerships with expert institutions (ICRAF, National Museums of Kenya, and JKUAT) have been established to support scientific baseline studies and impact monitoring.
- The UTNWF is registered as a charitable trust in Kenya.
- The UTNWF secretariat is fully functional with eight full-time staff.
- Partnerships with three local NGOs cover the three priority sub-watersheds of Thika-Chania, Marugua, and Sagana-Gura.

"Water is everyone's business. That is why we have formed this public-private partnership to conserve the resource at its major source. Business leaders look for return on investment. With the water fund, scientists have made a clear case: For every $1 invested in conservation we will avoid facing $2 in future costs.

"Yet water fund investors are not simply contributing to our own welfare; we are contributing to the common good by preserving water sources for future generations. The endowment will ensure that our impact will endure for our children's children." — Eddy Njoroge, Nairobi Water Fund President

The UTNWF is mobilizing a $15 million (USD) endowment to generate a stable source of funding for conservation. The annual earnings will be directed to sustaining and scaling up activities in the watershed. We invite you to join this movement to transform the future of water in Africa. Kindly contact Anthony Kariuki, Water Fund General Manager, anthony.kariuki@tnc.org.

WATER FUND STAKEHOLDERS AND FUNDERS

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