

## Climate Change and the Pangani Basin

The Pangani River Basin Management Project is based on Tanzania's National Water Policy (2002), which promotes Integrated Water Resources Management principles. The Policy recommends that water be managed at the basin level in a participatory and equitable way that emphasizes sustainability and conservation of the water resource.




*Nyumba ya Mungu Reservoir with clearly visible declining water levels*

While Tanzania is not a highly significant emitter of greenhouse gases, scientists expect the country to suffer significant negative impacts from climate change. Predictions include rise in temperatures, changes in rainfall patterns and reducing surface flows.

The Pangani River Basin makes important agricultural and hydroelectric power contributions to Tanzania's national economy. The Basin also hosts globally important biodiversity resources. The expected decrease in water flows will jeopardize important natural resources, livelihoods, industrial productivity and the local and national economies.

The Pangani River Basin Management Project will address climate change preparedness and adaptation among water managers and water users in the environmentally sensitive and vulnerable Pangani Basin.

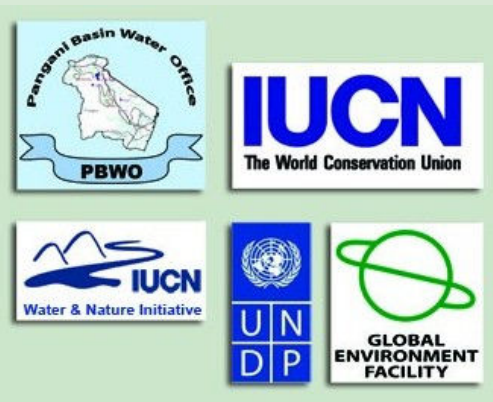


**Pangani River Basin Management Project**

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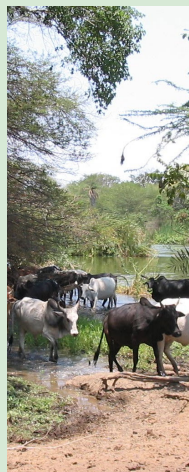
## Pangani River Basin Management Project



***Towards equitable and sustainable water allocations in the Pangani River Basin of Tanzania***

## Towards Integrated Water Resources Management

There is currently not enough water to meet the demand in the Pangani Basin, yet the Pangani Basin Water Board continues to receive requests for new water permits from local, municipal and industrial investors. The Water Board has little data on the economic, social and environmental costs and benefits of various water allocation scenarios to guide its water permit provision. Climate change and reducing water supplies have yet to be taken into consideration in the allocation process.



Conflicts are also emerging between various water users, such as commercial farms, small farmers and livestock keepers. The natural environment has yet to be recognized as a important water user and at present receives hardly any consideration in an already over-allocated resource.

The Government of Tanzania, IUCN, through its Water & Nature Initiative (WANI), and the Global Environmental Facility through UNDP are committed to preparing water users and water managers in Pangani Basin for reducing water supplies. Their goal is to mainstream the negative effects of climate change into Integrated Water Resources Management in the Pangani Basin, in order to support the equitable provision of freshwater for the environment and for livelihoods for future generations.

The Pangani River Basin Management Project will address this goal through several approaches, including: 1) an Environmental Flow Assessment 2) establishing forums for community participation in water management and 3) raising awareness about climate change impacts and adaptation strategies.

### Flow Assessment

In the past decade Environmental Flow Assessments (EFA) have been internationally recognized as a reliable methodology to make predictions about the likely environmental, social and economic impacts of river flows under various water allocation scenarios.

EFA is a process that brings together a multi-disciplinary team of scientists and socio-economists to collect and analyze data. The outcomes of the study are presented to resource managers, local decision-makers, and the broader community. This is followed by a process of debate and negotiations among stakeholders over the desired river flow regime.

This process of data collection, modeling and public debate, is relatively new to Tanzania and Eastern Africa. The project will include the formation of a Tanzania team to be trained by an experienced team of South African EFA experts. The project will build national capacity in Tanzania for Flow Assessment that may be co-opted in other basins in the country.

### Community participation

Before communities can effectively participate in the management of their natural resources, they must be organized. The project's activities and training will build capacity and awareness on the legal provisions for the principles of Integrated Water Resources Management. It will also focus on the risks and vulnerability to climate change, reducing water flows and possible adaptive measures.

The new water strategy and legislation in Tanzania provide for Sub-Catchment and Basin-level forums. This project will pilot the

establishment of the Kikuletwa Sub-Catchment Forum, which will address the many conflicts emerging in that sub-catchment. It is anticipated that some issues, such as sub-catchment water rights allocation can be debated and resolved through such forums.

The Pangani River Basin Management Project will be implemented by the Pangani Basin Water Office (PBWO) with technical assistance from IUCN. Project planning, reporting and monitoring of progress against project objectives will be conducted in a transparent and participatory way.



Mount Kilimanjaro is an important water source for the Pangani Basin. With its glacial ice cap, located 3° south of the Equator, Kilimanjaro is an international symbol for climate change. The mountain's famous glacial ice-cap is rapidly melting and several studies predict that the ice cap will melt completely by 2020.