Integrating Climate Change Adaptation in the Ugandan Water Sector

Scenario

Uganda has experienced frequent flooding and droughts, which have demonstrated the country's vulnerability to climate change. The prolonged and severe drought of 1999 and 2000 caused serious water shortages. There was a loss of livestock, milk production fell, and food insecurity and food prices increased – all of which had a detrimental effect on the economy. Similarly, severe droughts in 2004 and 2005 led to reduced water levels in the lakes and the Nile River, which badly affected hydropower generation.

The production of cash crops is dependent on regular rainfall as there are very few irrigated areas. The cattle corridor, stretching from the north-east to the south-west, is a fragile ecosystem that depends on rainwater for human consumption and production. The recently observed variability in rainfall patterns has brought shorter wet periods and heavier, more violent rains. Erosion, landslides and land degradation have gone hand in hand with the more frequent and severe floods and droughts.

A rise in temperatures can also affect agriculture. Coffee and tea are Uganda's main cash crops for export. A temperature increase of 2°C would result in significant losses of arable land currently being cultivated. If recent trends continue approximately 85% of the potential area for robusta coffee cultivation will be affected.

In 2007, Uganda responded to the emerging impacts of climate change by developing the National Adaptation Programmes of Action (NAPA). The Ministry of Water and Environment was commissioned as Uganda's national coordinator for climate change adaptation measures.

Areas of vulnerability in the water sector identified in the National Adaptation Programmes of Action are:

- Fluctuations in the water levels of Lake Victoria and the Nile River
- Water quality and human health, particularly on lake shorelines near urban areas or river mouths
- Generating electricity from hydropower
- Potential over-exploitation of groundwater by agriculture
- The general lack of historical meteorological data in Uganda and the limited scientific information, which increase speculation and render climate change predictions uncertain
- Insufficiently developed institutional capacity to respond to climate change, including a lack of cross sector coordination, despite an increased number of climate change actors and activities.

Climate change adaptation component in the Ugandan-German water programme

In response to the government's goal of developing climate change adaptation strategies in the water sector, the RUWASS programme (Reform of the Urban Water and Sanitation Sector) was asked to support the ministry in its efforts, in line with the NAPA recommendations. GTZ on behalf of BMZ supports the Government of Uganda in implementing its reforms of the urban water sector. This involves strengthening the institutional, regulatory and business competences of the partner institutions, and raising their efficiency. The significance and the level of acceptance of the Ugandan-German programme are high.

gtz International Water Policy and Infrastructure

On behalf of Federal Ministry for Economic Cooperation and Development




This is due to years of expertise in the sector as well as the prioritising of urban water supply and sanitation in a context of donor cooperation and coordination. The climate change adaptation component was added to the RUWASS programme in 2009. It involves four pillars of cooperation with the Ministry of Water and Environment:

- Enhancing the capacity of the two coordination bodies (the Department of Meteorology and the Directorate of Water Resources Management) to improve the collection, processing and management of data
- Flood modelling and the development of a strategy and action plan to prevent floods and droughts
- Improving national reservoir regulation and safety for sustainable water resources management
- Raise public awareness and promote education about climate change impacts and adaptation, and assist in coordination.

Expected results

Since 2002, the RUWASS programme has been supporting the work of the Ugandan Ministry of Water and Environment in the water sector. Effective institutions are being established that support coherent programmes of poverty reduction. This is helping to improve the urban water supply and bring adequate sanitation services, especially to the poor urban population. The adaptation component builds on this experience while also emphasising on the need for cross-sectoral coordination and planning to prepare for climate change.

If Uganda is to guarantee a sustainable water supply for its population despite the growing variability in rainfall, efforts to adapt to climate change must include measures to manage water resources and regulate reservoirs. Among the actions taken by the Ministry of Water and Environment in response to the situation is the creation of an institutional structure for reservoir regulation. GTZ is assisting the ministry in this undertaking by developing the capacity – both human and technological – for reservoir regulation and safety, and by providing technical training for the staff.

An important prerequisite for designing and implementing successful adaptation measures is the availability of comprehensive weather and hydrological data. To improve the collection of climate and water resource data in Uganda, GTZ is supporting the Department of Meteorology (which, under the UNFCCC, should act as a national focal point on climate change) and the Directorate of Water Resources Management. This is to include the establishment and upgrading of as many as 20 rainwater and meteorological stations.

The national flood and drought prevention plan will be based on comprehensive data, thus enabling the use of improved strategies for action. Data processing and modelling will help the ministry to develop different scenarios for the management of floods, which will reduce the vulnerability of people living in areas of potential risk.

Climate variability and climate change are increasingly becoming relevant in Uganda. However, in some sections of society, awareness is sometimes low and the concept of climate change tends to be misinterpreted. Even the end users of climate information, including policy makers, are often unclear about the impacts of climate change and how to adapt to them. It is therefore important for climate change data to be translated into awareness raising materials, and for these to be distributed widely to policy makers and key stakeholders, and to the general public.

Imprint

Published by:
Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH

International Water Policy and Infrastructure Programme in cooperation with Climate Change Protection Programme and RUWASS Programme Uganda

Dag-Hammarskjöld-Weg 1-5
65760 Eschborn/Germany
T: +49 6196 79 - 1327
F: +49 6196 79 - 80 1327
E: water@gtz.de
I: www.gtz.de

Fur further information please contact:
Hermann Plumm
RUWASS Programme Uganda
E: Hermann.Plumm@gtz.de

Stephanie Lorek
International Water Policy
and Infrastructure Programme
E: Stephanie.Lorek@gtz.de

Printed on 100 % recycled paper

Status: December 2009

Authors:
Hermann Plumm, Stephanie Lorek, Nana Kuenkel, Patrick Fallis

Design by:
creative republic / Thomas Maxeiner Kommunikationsdesign, Frankfurt a. M.

Photos:
© GTZ & GTZ-Uganda, iStock