

## Improving Water Security for Sustaining Livelihoods and Growth in Tanzania

The Tanzania Water Resources Assistance Strategy (TWRAS) illustrates that food security, energy security, environmental security, health security, industrial security, and social and economic security all hinge directly or indirectly on water security. The cooperative management and development of rivers, lakes, and aquifers shared with other nations also have significant implications for national security.

The TWRAS has guided the preparation of the second generation of the Bank's programmatic and sectorwide investments, emphasizing improved linkages between programmatic elements. It argues for an integrated investment program supported by a more empowered, better resourced, and accountable governance regime.

The Strategy establishes that equitable and sustainable management and development of water resources is a fundamental prerequisite for achieving the outcomes of the National Strategy for Growth and Reduction of Poverty, which identifies the following intended poverty reduction outcomes: growth and reduction of income poverty; improved quality of life and social well-being; and good governance and accountability.

### Water resources reforms and investments

Government-initiated water reforms during the 1990s have led to the development of a farsighted National Water Policy (2002) and National Water

Sector Development Strategy (2008), giving momentum to institutional reform, establishment of river basin organizations throughout the country, involvement of water user groups, and cooperative management of the country's major transboundary water bodies. A new Water Resources Management Law is being drafted.

A water sector review in 1993 resulted in reforms following two parallel but linked tracks:

#### Track 1: Reform of water resources management

This process took place in three phases:

1. **Rapid water resources assessment** undertaken in 1994–5 to identify water sector priorities;
2. **Basin level management actions through specific projects**, for example the River Basin Management and Smallholder Irrigation Project (RBMSIIP), Dar es Salaam Water Supply and Sanitation Project (DWSSP) and Lake Victoria Environmental Management Project (LVEMP);
3. **Implementation of policy, interventions, and programs sectorwide**, drawing on the experience and framework of phase 2 to implement decentralized, multisectoral water resources management nationwide (now being implemented under the Water Sector Support Project).

This note contains a summary, for practitioners, of the World Bank Report *United Republic of Tanzania Water Resources Assistance Strategy: Improving Water Security for Sustaining Livelihoods and Growth* (February 2006). The Strategy was prepared by Rafik Hirji (Lead Author), Richard Davis, and Francis Ato Brown (Team leader), with inputs from Jakob Granit, IJstrand de Jong, Reynold Duncan, Ladisy Chengula Robert Livernash and England R. Maasamba. Readers may download the report from [www.worldbank.org/water](http://www.worldbank.org/water).

## Track 2: Sectoral water developments

The second track involved development and policy reforms in the various water-using sectors that complement and support the reforms in water resources management including water and sanitation, irrigation, hydropower; and environment.

Much remains to be accomplished and significant challenges remain (see section 5 for further details).

### Water resources conflicts

Tanzania's per capita freshwater availability is amongst the highest in East Africa, but the spatial and temporal variability of flow causes significant human and economic problems. Five main river basins and the four lake basins are the legally defined units for planning, development, and management of water resources. The Pangani and Rufiji Rivers are the main sources of hydropower and irrigation. The three transboundary great lakes—Victoria, Tanganyika, and Nyasa/Malawi—contain immense volumes of freshwater and are of great ecological and economic significance as well as regional integration and trade. The newly discovered Kimbiji aquifer contains an immense quantity of high quality water that is expected to meet all future water supply needs for Dar es Salaam in conjunction with the regulation of the Ruvu River. Overall, Tanzania is endowed with abundant freshwater sources of adequate quality for meeting its present and future water needs, if harnessed and managed properly.

Poor planning, inadequate hydrological and water use information, inadequate as well as unreliable water resources development, and mismanagement of resources have created conflict between users in a number of sectors, including hydropower, irrigation, livestock, and environmental flow to support biodiversity, wildlife and tourism. Increased tension and conflict over scarce water resources is likely to center around a number of issues, including the challenge of meeting growing urban demand while increased upstream extraction reduces flow; the adverse impacts of pollution and poor land management on water quality and quantity; and joint management of transboundary water resources. Over abstraction of water from Lake Victoria has contributed to rapid lake level declines and caused enormous economic hardship to the lake shore communities that comprise several million

people and to navigation, fisheries, commerce and water supply in the three riparian nations and is a source of serious political tensions between them.

## Achievements, challenges, and lessons

The fact that Tanzania (a nation with abundant freshwater resources) continues to face very serious water problems after three decades of investments in rural, urban, and irrigation water supply and hydropower development and a decade of reforms is an indication of how complex and difficult the problem is. The TWRAS reviewed the achievements to date, the challenges remaining, and the lessons learned.

### Key achievements

- **Strong policy platform.** The 2002 National Water Policy incorporates sound principles of water resources management, including separation of operational and policy and regulatory functions; involvement of stakeholders at both policy and operational levels; and reinforcement of economic incentives.
- **Institutional reorganization.** Ministry-level functions are being streamlined, and decentralized river basin management is being strengthened.
- **Supporting legislation.** The new forthcoming Water Resources Management Legislation will provide legal support for many components of the National Water Policy, including institutional reorganization and autonomous financing of basin water resources management offices.
- **Cooperative transboundary water body management.** Several options are being pursued to foster regional cooperation in development of water resources.
- **Sectoral developments.** Water-dependent sectors, particularly irrigation and the environment, are increasingly being viewed as essential components of integrated, cross-sectoral approaches.
- **Decentralization of urban and rural water supply and sanitation.** Community willingness to pay for services and to engage in

operation and maintenance has been demonstrated in pilot projects and guidelines have been established for extension to other communities.

## Remaining challenges

Despite these achievements progress has been patchy and a number of structural weaknesses remain that, unless tackled as part of the implementation of the reforms, will hamper achieving the outcomes of the National Strategy for Growth and Reduction of Poverty (section 2). These include:

- Inadequate and unreliable infrastructure, resulting in difficulties meeting targets in urban and rural water supply and sanitation and in hydropower generation;
- Institutions for developing water resources for water supply, irrigation and hydropower production remain administratively and financially weak;
- Uncoordinated water management, particularly at cross-sectoral and transboundary levels;
- Lack of engagement of stakeholder groups, leading to conflicts between users (which is already threatening the National Irrigation Masterplan);
- Limited technical and administrative capacity;
- Weak allocation, regulation and monitoring procedures, compounded by deficiencies in data collection and management;
- Growing pollution of water resources and inadequate pollution control or land use controls to protect water sources. Inadequate consideration of environmental impacts during planning and project decision making.

## Lessons learned

From the above, a number of lessons can be drawn to inform the TWRAS:

- A solid policy, institutional, and legal framework is important but is only effective if properly implemented on the ground. Implementation must be emphasized.
- A multisectoral approach requires active intervention at all levels, with support from the highest levels of government. Strong political support must be mobilized for addressing both

national as well as transboundary water issues and conflicts (including those of Lake Victoria).

- Developing a strong basin-level institutions is key to the reforms and requires proper training, organizational systems, and sustainable financing if it is to function effectively.
- Changing to a new model of water management takes time and commitment, including from donors.
- A multisectoral approach applies not just to the borrower but to the Bank and other donors, who will need to coordinate across their sectors in formulating their lending programs.
- Alignment between country policy and Bank activities is key to effectiveness.
- Cross-sectoral compliance involving all stakeholders is essential to successful reforms.
- Knowledge is important but research needs to be management driven, with clear purposes and applications.
- Management of transboundary water bodies is challenging but achievable.

## Tanzanian Water Resources Assistance Strategy (TWRAS)

### Context

The TWRAS must fit into the context of an economy with key water-using sectors linked to the management of water resources (figure 1).

### Priority World Bank assistance areas

From the analysis of progress with water reforms and the Bank's experience in Tanzanian water management, three areas emerge as priorities for Bank assistance:

#### *Water resources reforms at local and basin levels*

Decentralization of responsibility to river basin and local levels is at the heart of the reforms. The Bank has supported the process, for example through the RBMSIIP (in the Pangani and Rufiji basins) and DWSSP (in the Wami-Ruvu basin).

**Cross-sectoral coordination**

The water resources reforms are a cross-sectoral issue requiring involvement from all water-using sectors at the national, basin, and local levels. The Bank’s experience and comparative advantage can be beneficial in several areas:

- **Support increased national-level coordination** to help overcome major issues such as mercury contamination from mining to unregulated declines in levels of Lakes Victoria, Tanganyika and Jipe;
- **Promote and strengthen education curricula** in national institutions to inform children and adults about responsible water use and train a new generation of water resource experts;
- **Increase the environmental component** of water-related activities, for example through strengthened environmental assessment capacity and efforts to improve water quality and protect water sources;
- **Ensure coordination within the Bank itself** of all lending and nonlending operations in Tanzania.

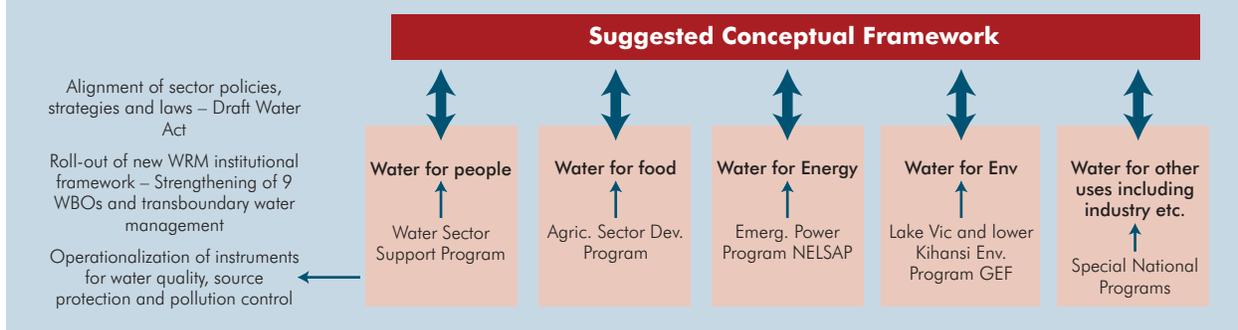
**Investments in infrastructure**

Increased infrastructure investment is vital for the water sector. Possible areas for Bank support include expansion of irrigation improvements, supply of water to Dar es Salaam (including Kimbiji aquifer and regulation of the Ruvu River), and exploration of options to improve hydropower generation within a coordinated water resources system. Support short term high priority investments in water resources infrastructure and long term investments through support for the preparations of 9 integrated river and lake basin management and development plans.

**Support for the National Strategy for Growth and Reduction of Poverty**

Completion of the reforms for the management of Tanzania’s water resources and the expansion of investments in its water-related sectors (primarily irrigation, water supply and sanitation, and energy), together with protection of its aquatic environment, will provide direct support to the country’s poverty reduction program, and will encourage sustainable economic growth by increasing the reliability of input factors such as water and electricity.

**Figure 1. Conceptual framework linking water resources management with water-dependent sectors**



The Water Sector Board Practitioner Notes (P-Notes) series is published by the Water Sector Board of the Sustainable Development Network of the World Bank Group. P-Notes are available online at [www.worldbank.org/water](http://www.worldbank.org/water). P-Notes are a synopsis of larger World Bank documents in the water sector.

