

Media Engagement on WASH Sector

Profiling the WASH sector in Tanzania

: IWRM - Consideration of Water security issues



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Introduction

- Water is central to social and economic development and elimination of poverty.
- There are many, different and inter dependent uses of water resources. uses of water resources .
 - Water for domestic use, agriculture, livestock, fisheries, wildlife, industries, mining, energy and recreation
 - Water is essential for people's livelihoods: farmers; pastoralists, fisher folks, artisan mining people etc.
- Uses are diverse, competing = conflicts.

Definition (1) IWRM

- Integrated Water Resources Management (IWRM) is global a approach which promotes processes of multi sector and multi actor coordination for management of water resources and other natural resources related to water.
- IWRM is based on 4 'Dublin Principles':
 - i). Fresh water is finite resource essential to sustain life, development & the environment
 - ii). Water development & management should be based on participatory approach
 - iii). Role of Women in management and safeguarding water resources
 - iv). Social and economic Value of water; water has an economic value, is an economic good..

Summary: Why Integrated Water Resources Perspective?

Water Is Life

- Water is a key driver of economic and social development, it plays important role in national economic and social development.
- Also water has a basic function in maintaining the natural environment.
- Water It relevant for all sectors of the economy including domestic, agriculture, livestock, fishery, wildlife, industry, mining, energy, forestry and recreation.

Water Is a Resource with

Social, economic & environmental values

Definition (2): Water Security



Picture from: Global Water Partnership

- Water Security is a complex concept, it can be viewed from 2 levels
 - Global/International level
 - National/Local level
- Working Definition (UN 2013)

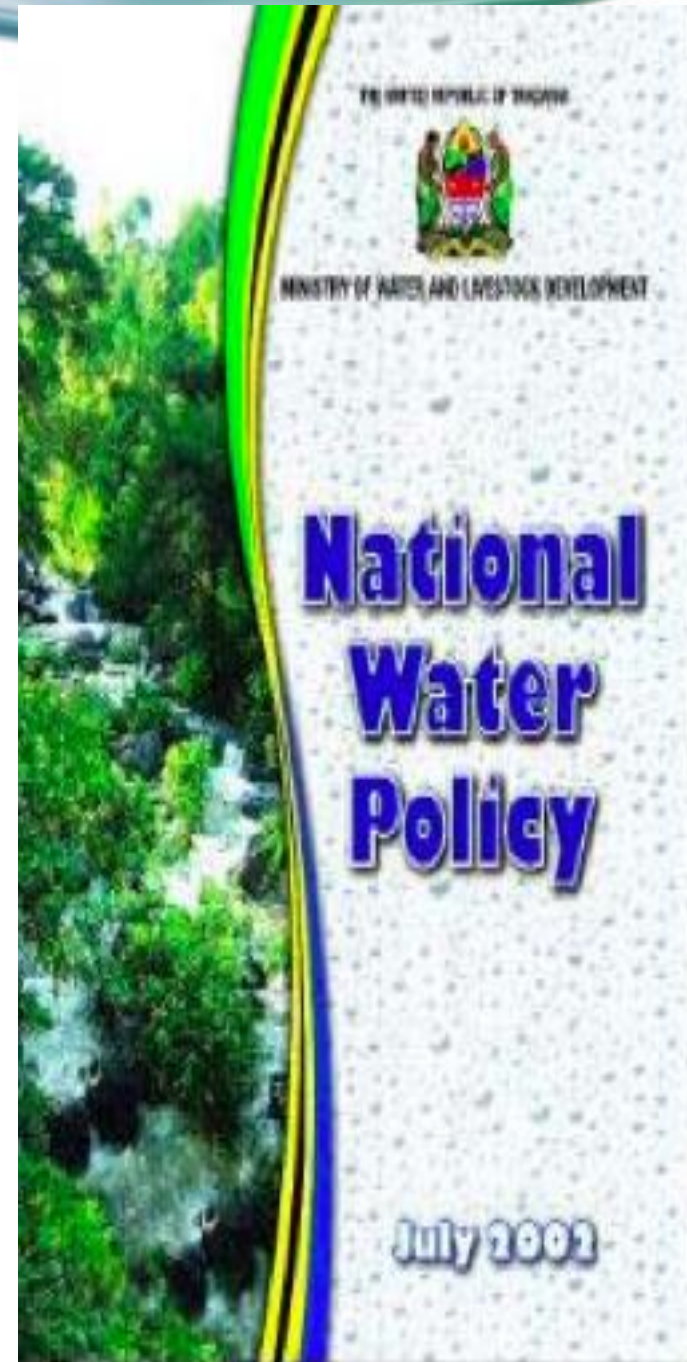
“The Capacity of a population to safeguard sustainable access to adequate quantities of acceptable quality water for sustaining livelihoods, Human well being & socio-economic development for ensuring protection against water borne pollution & water borne disasters and for preserving ecosystems in a climate of peace and political stability.

Summary: Main Principles of Water Security

- 3 main principles for water security are:
 - ✓ Availability (controlled supply + Quality)
 - ✓ Access (right of water to different user groups; i.e. people and environment))
 - ✓ Addressing conflicts (mechanisms in place to address competing Uses)

Tanzania Context: Water Sector Frameworks

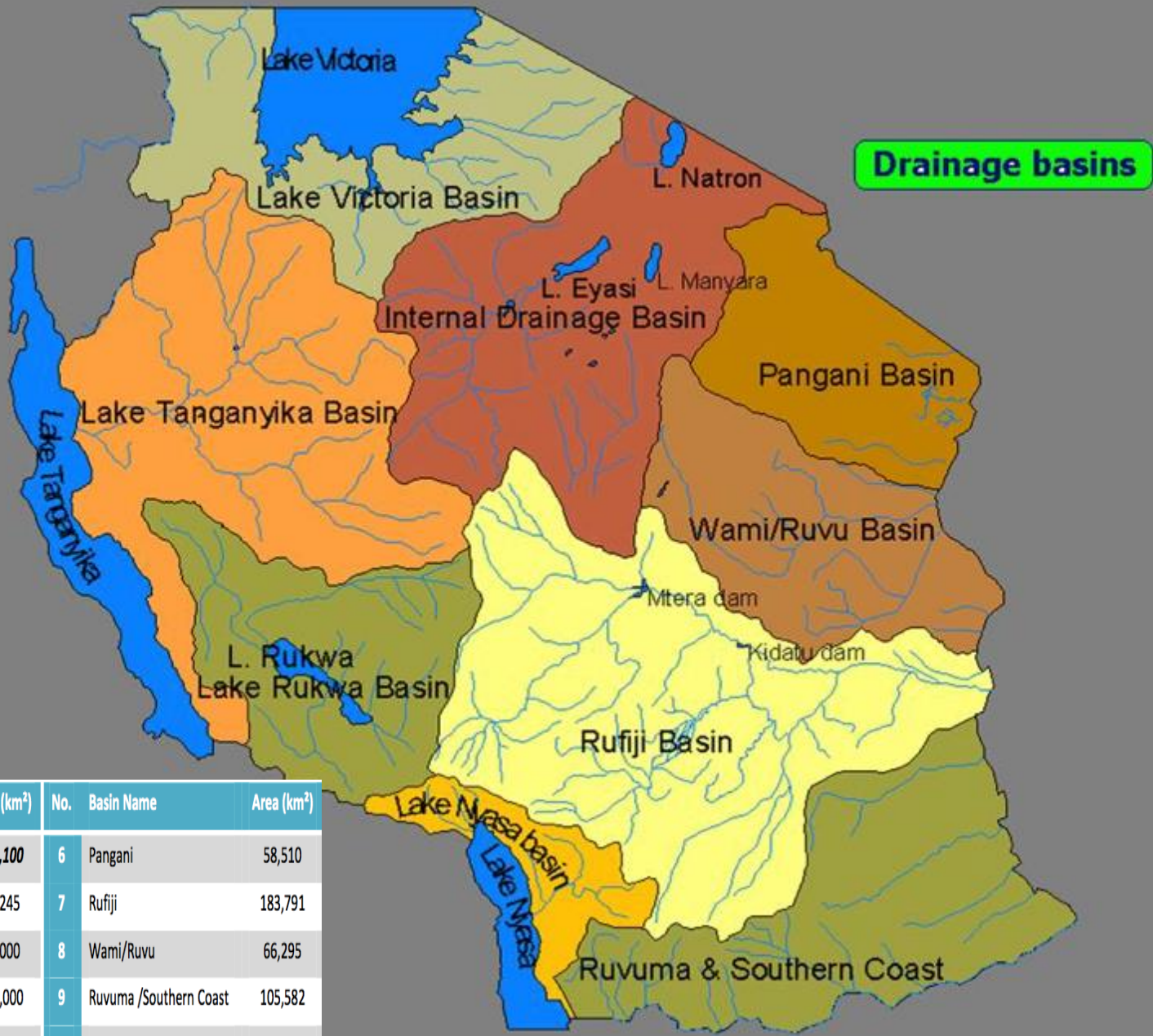
- Policy: NAWAPO has adopted the IWRM approach.
- NAWAPO advocates devolution of responsibility for water resources to River/Lake Basins and catchments management entities with active Multi Stakeholder participation (including local government and community based organizations).
- Institutional Frame:
 - Ministry: co-ordination, policy and guideline formulation, and regulation.
 - National Water Board, Basin Water Boards, Catchment Water Committees, and Water User Associations and Council Facilitation Teams.



Tanzania Context: Water Sector Frameworks (2)

- WRM Act 2009, Governs Water Resources.
- The legislation devolves WRM to basin level (There are 9 Basins).
- The main objective of management at basin level is:

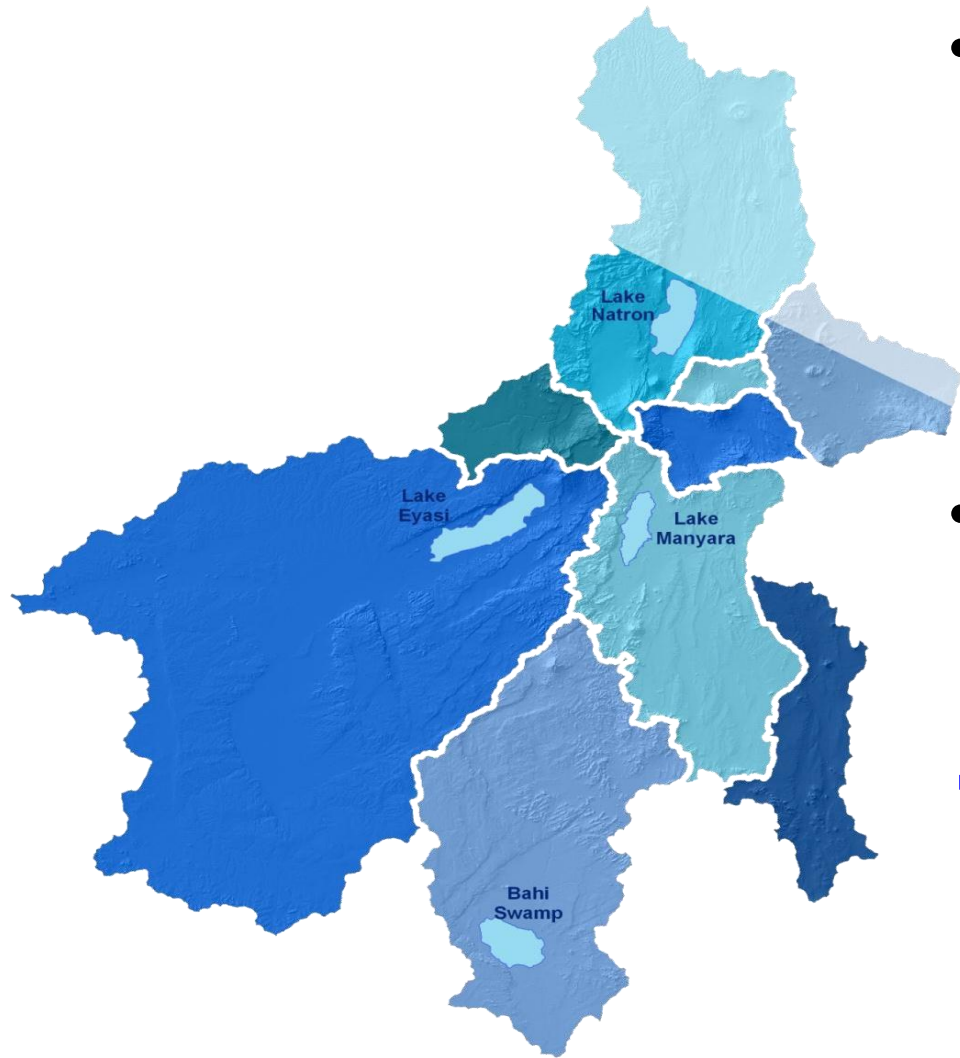
To scientifically assess the water resource, so that it can be equitably allocated and efficiently utilized for various social- economic purposes and ensure sustainability of the water resources for present and future generations’.



Drainage basins

No.	Basin Name	Area (km ²)	No.	Basin Name	Area (km ²)
1	Internal Drainage Basin	143,100	6	Pangani	58,510
2	Lake Nyasa	47,245	7	Rufiji	183,791
3	Lake Rukwa	88,000	8	Wami/Ruvu	66,295
4	Lake Tanganyika	137,000	9	Ruvuma /Southern Coast	105,582
5	Lake Victoria	121,650			

IWRMDP: A tool for Water Security? – Example from Internal Drainage Basin



- Covers parts of Arusha, Shinyanga, Manyara, Dodoma, Singida Tabora Simiyu & Kilimanjaro Regions. 143,100 Kms²
- It is trans boundary, approx. 11.5 % of the basin is in Kenya

This has implication on water security issues (International level).

What IWRMDP Offers (1)

- Information on availability of Surface and Ground water
- Quality of Water (Pollution sources), estimates on pollution and social and environmental risks
- Socio – Economic information
- Environmental and Ecological water requirements

What IWRMDP Offers (2)

- Sectoral and Thematic water plans:
 - Water for domestic use,
 - industrial / mining use,
 - Irrigation and agriculture related water use,
 - Hydropower generation,
 - Ecosystem conservation and other environmental water needs.
- Capacity Building Programme
- Data Bases including Maps and satellite imageries.

Example: Water Resources Availability and Use (1)

- Average annual rainfall in IDB receives is about 700 mm (99 billion cubic meters.)
- Where does this water go to?
 - Directly evaporation,
 - Taken up by plants
 - Seeps into ground
 - About 6 billion cubic meters becomes surface runoff into rivers & drain into lakes and swamps.
 - NB Most of the rivers in the basin are seasonal.
 - There are a few permanent rivers and springs in the northern part of the basin

Example: Water Resources Availability and Use (2)

- Total water potential about 6,900 MCM of which 6,000 MCM is surface water resources & the remaining is groundwater.
- Current total water demand by different sectors is more than 752 MCM p.a.
- irrigation (takes about 406 MCM) while domestic consumption is 159 MCM.
- These 2 sub sector demand almost 75% of total water demand
- What about other sub sectors?
- What about future demands?

Example: Water Resources Availability and Use (3)

- It is important to think about future demands.
- According to district irrigation plans, water demands expect to increase from 406 MCM to 1736 MCM in 2035.
- Other sectors whose demand will also increase include livestock; energy, social sectors, etc
- Other factors influencing water availability include climate change.
- IWRMDP presents that cc will reduce surface runoff by 1.6%, (2015) 7.1% (2025) and 18.1% 2035.

What Can be Done to Enhance Water Security (1)

- Addressing Security of Access
 - Enforcing priorities
 - Addressing Equity Issues
 - Meeting demands (Quality, Quantity and distribution)
- Addressing Competition
 - Uncertainties and complexity (Unexpected changes, multi issues & stakeholders)
 - Climate Change
 - Nature Conservation
 - Coordination and Collaboration between the Multiple Water Dependent Sectors (Land, Tourism, Industries, Mining, Energy, Agriculture & Irrigation, Waste Management, Social Services, Culture)

What Can be Done to Enhance Water Security (2)

- Addressing Vulnerability (Water Resources and Poverty Alleviation)
 - **Partly connected to equity issues** (vulnerable and marginalised groups; underserved, and voiceless)
 - Commitment to poverty Alleviation
 - Meeting MDGs/SDGs
 - Enhancing Governance in WRM/WASH
 - Application of Rule of law (locally and internationally)
 - Upstream, down stream linkages and shared responsibilities
 - Institutional arrangement from community to national and international levels.
 - Power and Corruption
- Adopting Water Friendly Technologies.

Examples of Actions Proposed

- Water Storage and Hydropower
 - Large Dams
 - Small Dams
 - Off-Stream Storages
- Small Scale proposed plans by stakeholders
- Groundwater Management
- Fresh Water Lake Utilization
- Rainfall Harvesting
- Water Transfer from Neighbouring Basins
- Infrastructural Management
- **Good Water Governance including popularisation and dissemination**

Case Study: Shift from Common Irrigation practices

Farms are located close to running rivers, river banks, wetlands, and ground water from shallow wells; and to some limited extent use of harvested rainwater from a reservoir.

Application: Unlined irrigation canals, manual application using buckets (Labour intensive, water inefficient).



Case Study: Improved Farming Practices



Innovative improved bucket irrigation Issuna

Drip Irrigation Mkiwa

Source: IWRMDP, Internal Drainage Basin, Singida



Tomato at 3 growing stages at the same time in Kisasida Cluster Irrigation Scheme

Source: IWRMDP, Internal Drainage Basin Vol. 3

In Short.....





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