

Presentation given the TransLinks workshop:

Modeling and Managing Watersheds

September 13-16, 2011

Kigali, Rwanda

Umubano Hotel, Boulevard de l'umuganda

This workshop was hosted by the Wildlife Conservation Society, the United States Forest Service (USFS) and the United States Agency for International Development (USAID)



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**WATER MANAGEMENT ISSUES IN GREAT
RUAHA CATCHMENT, TANZANIA**
Modeling and Managing Watersheds
Workshop Agenda

September 13-14, 2011

- ❖ Grace Chitanda -RWBO
- ❖ Godwell Ole Meing'ataki -RUNAPA
- ❖ Rogasian Mtana –WCS-RLP

Map of Tanzania



The Drainage Basin in Tanzania

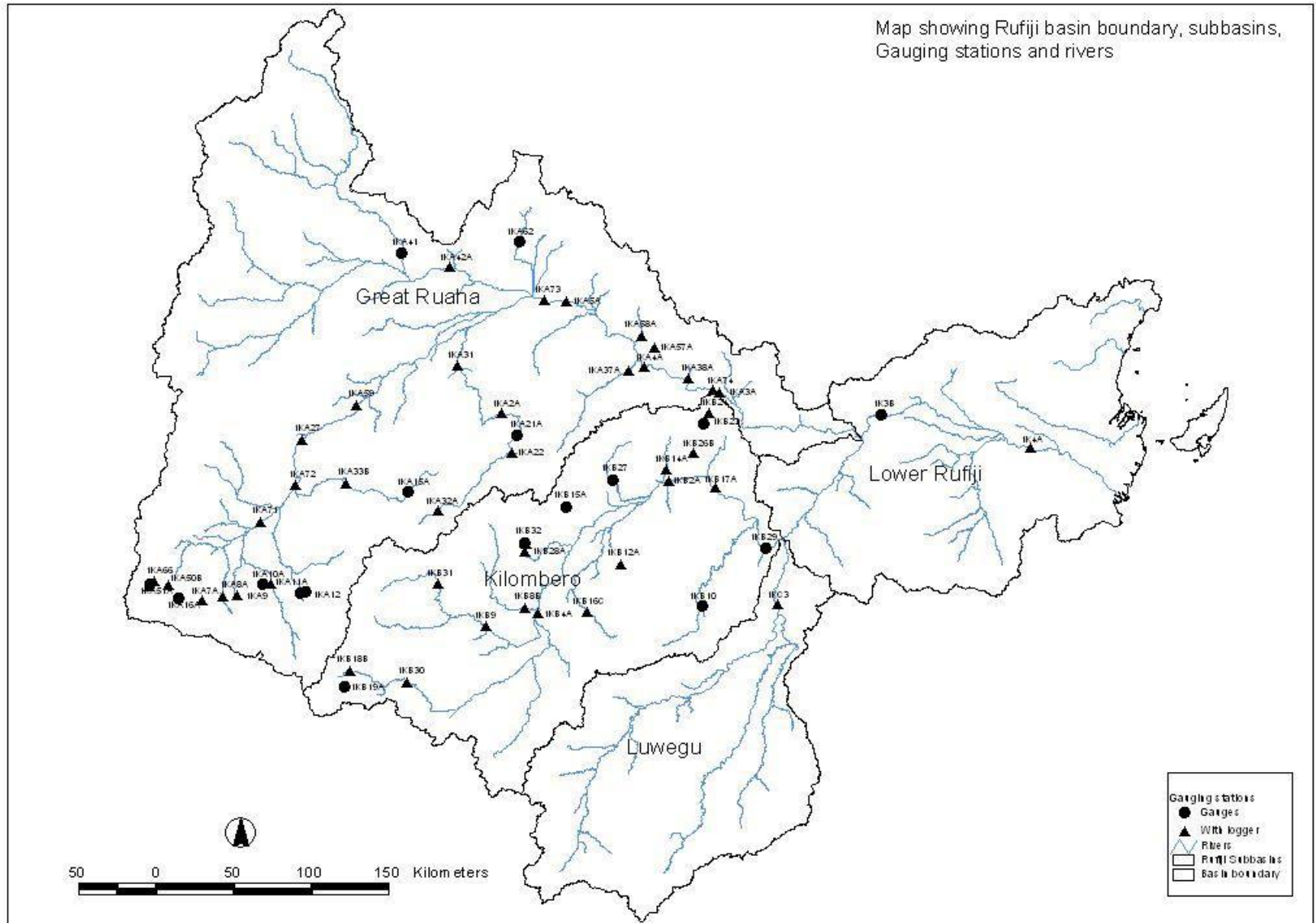


The Rufiji Basin...

- The Rufiji Basin covers an area of 183,791 square kilometers (about 20% of Tanzania).
- The river drains into the Indian Ocean.
- It has four major Rivers
- Great Ruaha 85,554 square kilometres
- Kilombero 40,430 square kilometres
- Luwegu 25,288 square kilometres
- Rufiji 32,619 square kilometres

The Boundary of Rufiji Basin

Map showing Rufiji basin boundary, subbasins, Gauging stations and rivers



Institutional Framework

- The National water Policy (NAWAPO 2002), sets out the institutional setup at the following levels:
 - National
 - Basin
 - Catchment
 - Sub-catchment
 - Water User Association

Institutional Framework...

The Rufiji Basin Water Board

- The RBWB was established under Section 22 of WRMA No. 11 of 2009

The Board consists of 10 members

- The Board has mandates of :-
 - ✓ allocating water resources,
 - ✓ controlling water pollution,
 - ✓ protecting water sources
 - ✓ Other general Water resources management matters

Institutions ...

Other Main Actors in IWRM in the Basin Include:

- District Councils and local authorities
- Regional and District Authorities (Central Government)
- Vice Presidents Office (Directorate of Environment)
- National Environment Management Council
- Ministry of Natural Resources and Tourism
 - Wildlife Division
 - Forestry and Beekeeping
- Water use Sectors (Ministries like Industries and Trade, Energy; water utilities)
- Law enforcement authorities
- Some NGOs (WWF, WCS, WCST, IUCN, etc)
- Some CBOs (normally in conservation activities)
- Private Sector (some companies like UniliverCo. ltd, TANWAT; Kilombero Valley Teak Co, individuals etc)
- Research Institutions (including Universities)

Reservoirs and Sensitive Ecosystems

- There are three major HEP plants in the Rufiji Basin namely Mtera 80 MW, Kidatu 204 MW, Kihansi 180 MW
- There exist three major sensitive areas namely
 - Utengule Wetland (including Ihefu)
 - Kibasila Wetland
 - Mangrove swamps at the Rufiji Delta)
 - There are over 87 national forest reserves
- Other important systems include the protected areas (Rungwa-Ruaha NP ecosystem, Kitulo NP, Mpanga-Kipengere GR, Udzungwa (and the Eastern Arc Mts, Part of Mikumi NP and Selous GR)

Key Issues and Challenges in the Rufiji Basin

FLOODS

- In the Basin there are various occurrences of floods in all the four major tributaries of the Rufiji
- In certain areas like the Lower Rufiji the frequency of floods has diminished due to regulation by damming in the Great Ruaha River.
- This has brought hardships to the socio-economic welfare and livelihoods of the people in the Coast Region

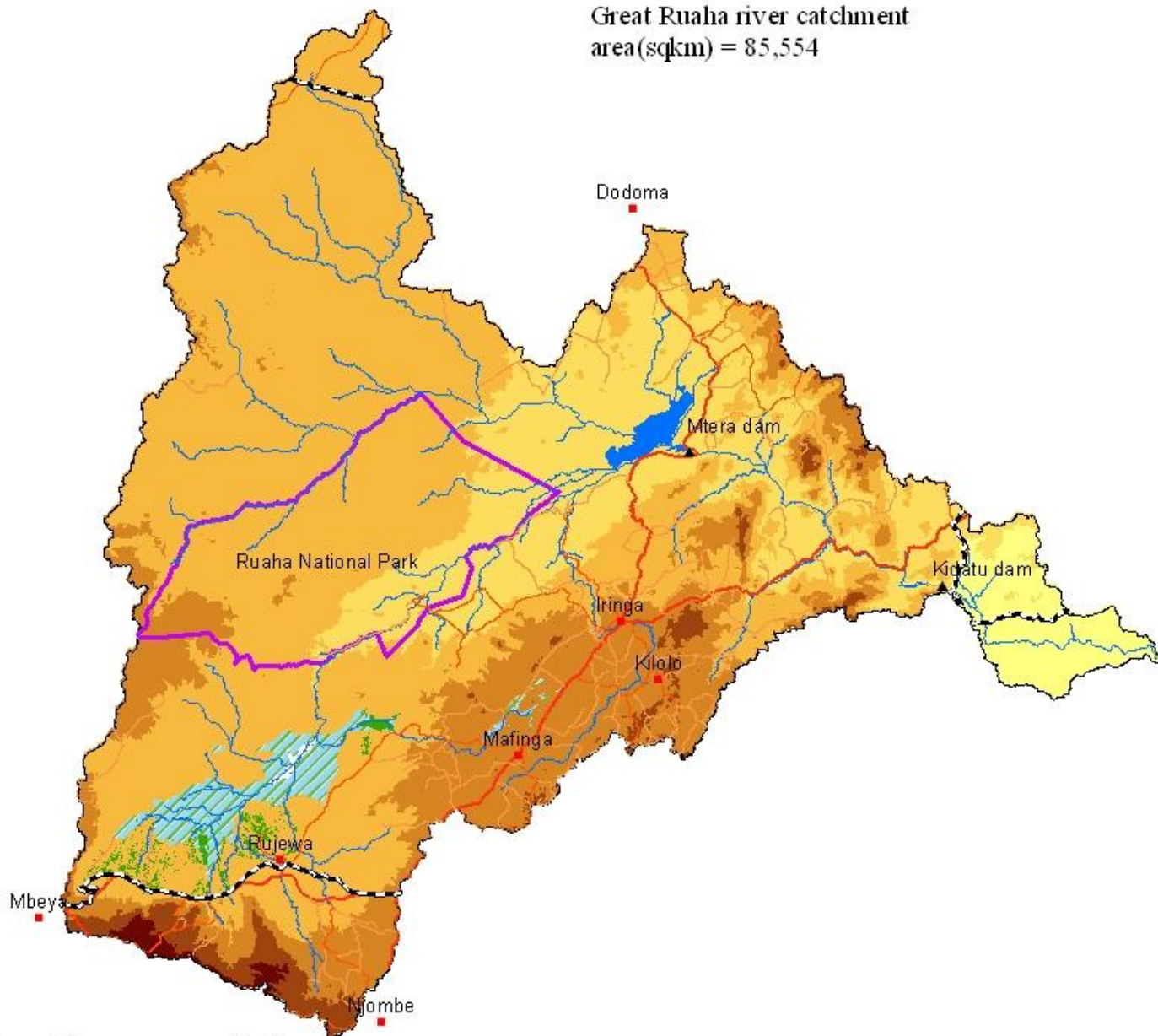
DROUGHTS or WATER SHORTAGE

- Droughts are a common phenomenon in the Rufiji Basin especially in the Great Ruaha Sub-basin. The Northern portion of the sub-basin is dry.
- Due to growth in economic developments in the basin, there instances when water is not enough to every need.
- There is always competition when the demand for water exceeds supply (especially in small streams and in the Great Ruaha Sub-basin)

Key Issues ...

- Excessive Water Use which leading to the drying up of rivers
- There are number of conflicts over water use especially in the Great Ruaha (We have recorded over 15 Conflicts since July 2007).
- There are many unauthorized water uses.
- Payment for water use is still an illusion to some users.
- Vandalism of monitoring instruments and equipment
- Excessive use of agro chemicals (in farms and gardens) and unregulated disposal of industrial wastes and human waste (in urban centers).
- Changing of the River courses
- Environmental degradation(deforestation, valley bottom cultivation, wild fire , brick making)

Great Ruaha river catchment
area(sqkm) = 85,554



Legend

- Towns
- ▲ Dam
- Railway line
- Roads
 - All other roads
- Road_ID
 - Main roads
 - All weather roads
 - Other roads
- Rivers
- Inba swamp
- Impati farms
- ▨ Wetlands
- ▭ Ruaha National Park
- Reservoir
- Great Ruaha catchment

Elevation

VALUE
100 - 500
500 - 1,000
1,000 - 1,500
1,500 - 1,971
2,000 - 2,500
2,500 - 2,982





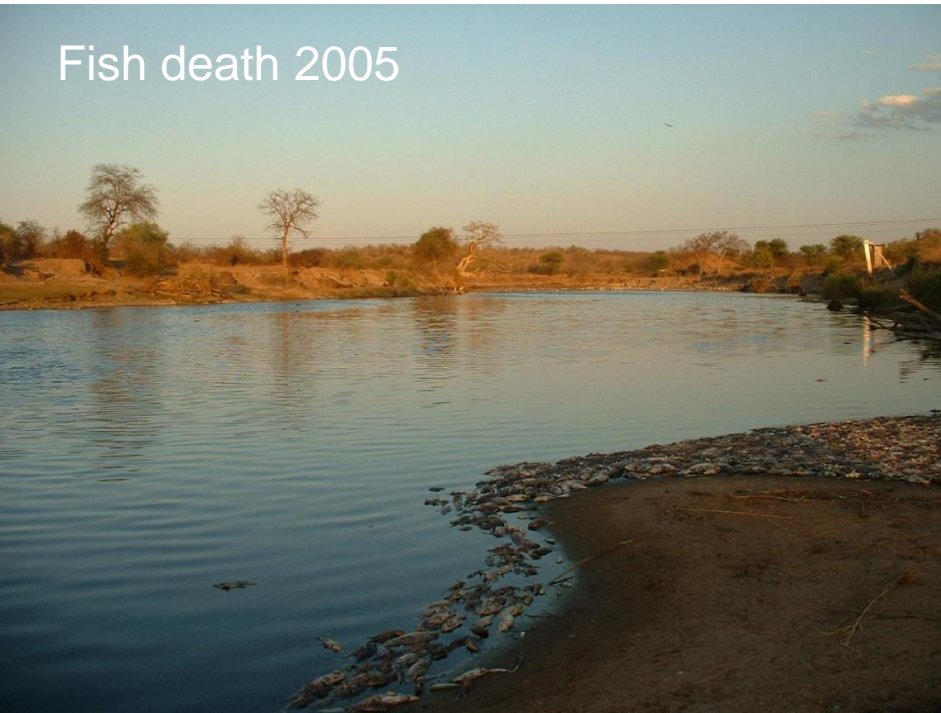
In 2003; nearly 3000 Fish died;



Dead hippos



Fish death 2005



- Fish death as a result of very highly stressful environmental conditions; a combination of high temperatures and hypoxic conditions.
- Highly stressed Hippos succumb easily to infections like Anthrax and they die

End of March 2008



End of October 2007



End of March 2008



End of October 2007











Water Resources Management Interventions

WSDP with the following

- Strengthening basin level water resources management
 - IWRMD Plans
 - Priority investment projects under WSDP (preparations are on going).
- Construction of the Lugoda dam on the Ndembera River in Mufindi District
 - Training of the Great Ruaha river in Mbarali District
 - Borehole drilling for irrigation purposes in Mbarali district
 - Restoration of water course for Lukosi River and provision of W/S scheme for a village in Kilolo District (completed except for village w/s).
- Construction and Rehabilitation of Control gates and Traditional furrows in the basin.

Interventions....

- The World Wildlife Fund For Nature (WWF) is currently implementing “The Ruaha Water Program “(RWP) in collaboration with RBWO, LGAs and other stakeholders.

The main objective of the program is to insure that the Great Ruaha River is Flowing throughout the year.

- Introduction of alternative activities to the community like CBOs, Bee keeping, making of batics and soap.
- Conduct EFA’s
- Rain water harvesting
- Establishment and strengthening of water use Associations
- Awareness creation to the water users on IWRM and CC.

Interventions....

- Addressing water use conflicts through Water Users Associations (Dialogue)
- Monitor and facilitate environment management especially for water source protection
- Control and regulation exercises of water use
- Stakeholders involvement
- Planting of hydrophilic plants and uprooting hydrophobic plants from the water sources
- Enforcement of the new WRMA No. 11 of 2009

Interventions....

Trained over 300 small scale farmers in efficient use of water in rice/paddy production using Farmer Field School Approach (FFS)





Strengthening WUA



Meeting with stakeholders



Water monitoring

2006 9 22



Celebrating after assisting farmers in the construction of their irrigation Scheme



Control and Regulation
of water use



Gauging station



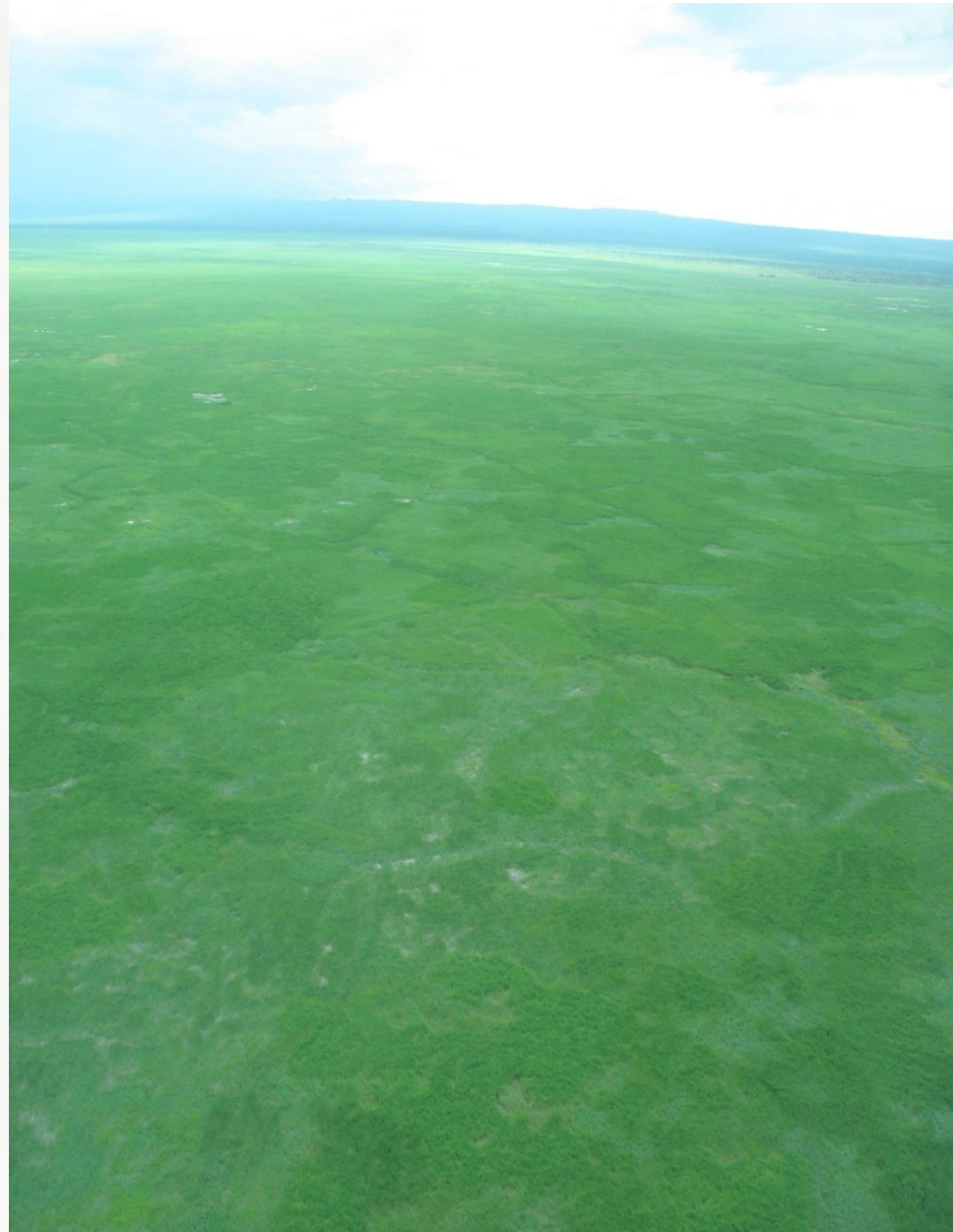
Control and Regulation of
water use



In need for water
unplanned canal



Ihefu wetland



Technical and financial capacity of the Basin Water Board

- Financing the Basin Programs is through, the Central Government Budgets, Water User fees (including water pollution fees).

Thank you.

