

# **The State of Water Resource Management in Ethiopia: Opportunities and Challenges.**

**Water Sector Working Group – Water Resource Management Joint  
Technical Review Kick –Off Meeting Presentation held at Getfam Hotel  
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# Presentation Outline

- 1. Water and Ethiopia**
- 2. Water Development and Management**
- 3. Water Resource Management issues and in Ethiopia**
- 4. Where Ethiopia Stands in IWRM implementation**
- 5. RBA – responsibilities and needs**
- 6. Way forward**

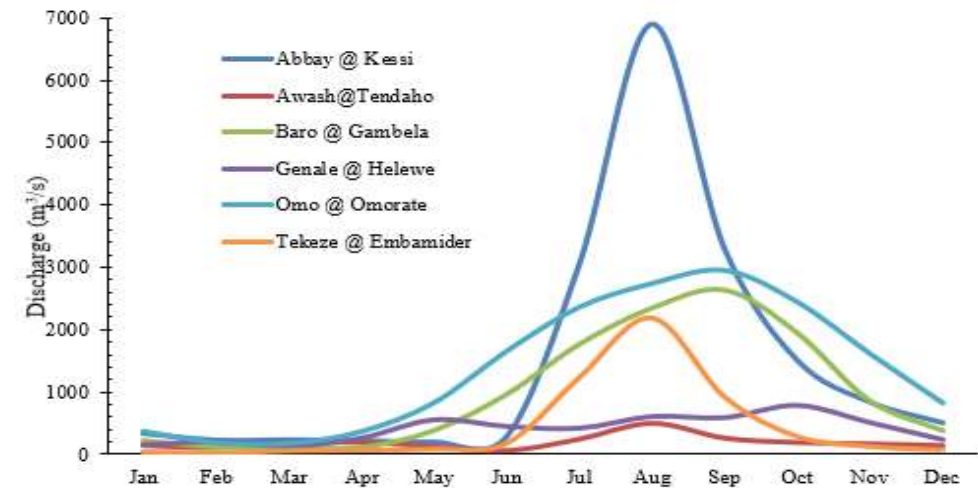
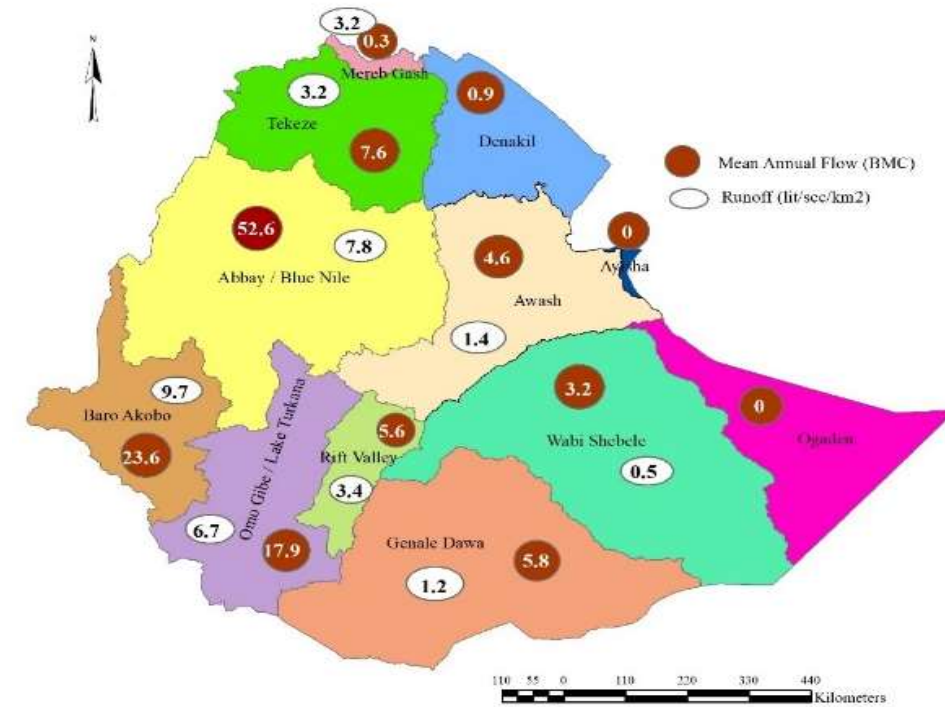
# 1. Water and Ethiopia

All countries depend on water; but some countries are more dependant on their water resources than others- Ethiopia is top in the list.

Agric. – Energy – Industry- Peace/security –etc  
(we are building hydro-economy)

Ethiopia is blessed with significant amount of water -- ‘white oil’ or ‘blue oil’. But has not been benefiting as much as it should.

Despite the huge improvement in the development of water resource for hydro-power, irrigation and water supply, a lot can and needs to be made!



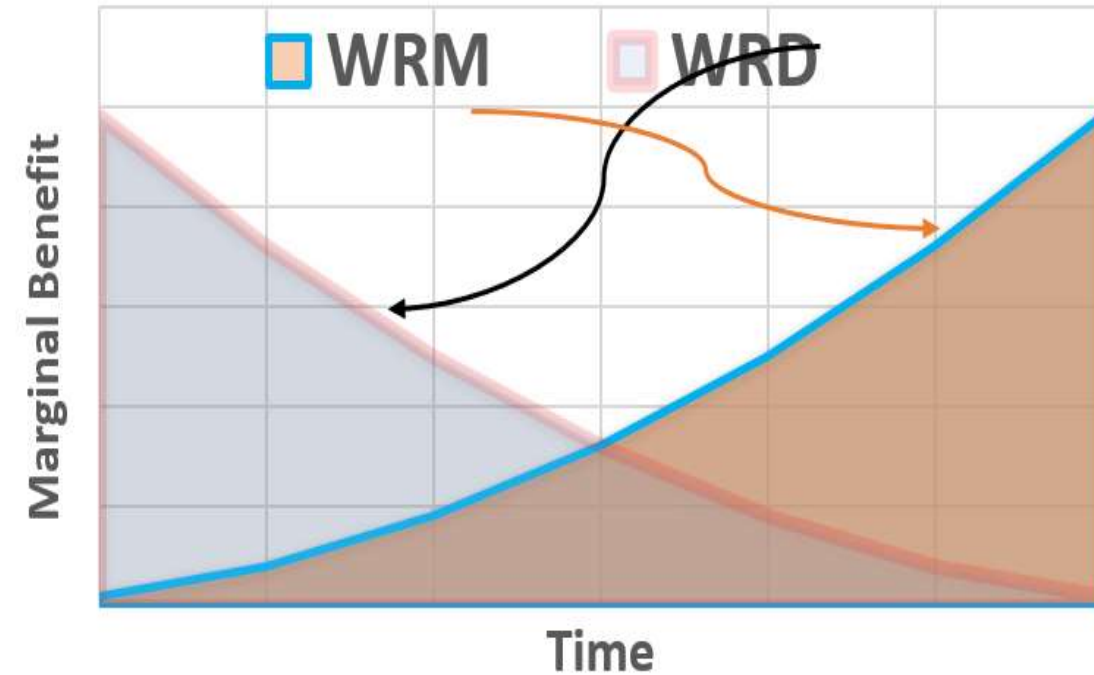
## 2. Water Resources Development and Management

Ethiopia has long way to go to develop its water resources.

Hydraulic infrastructures are expensive.

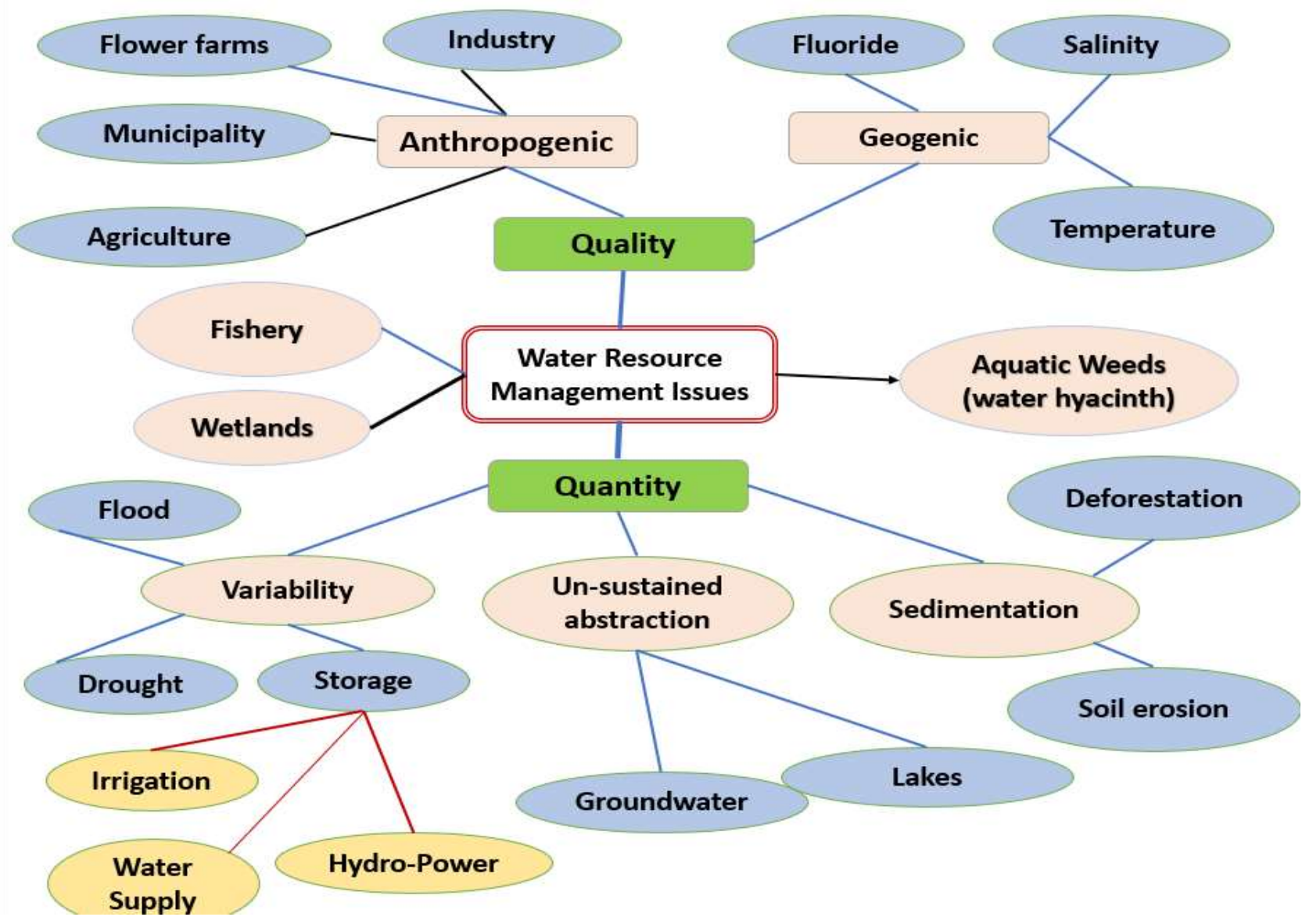
We cannot afford to see their design life shortened.

As we develop more, we should be organized to better manage our water.



**Every drop we mismanage is, at least, at the expense downstream beneficiaries.**

# 4. Water Resources Management Issues in Ethiopia

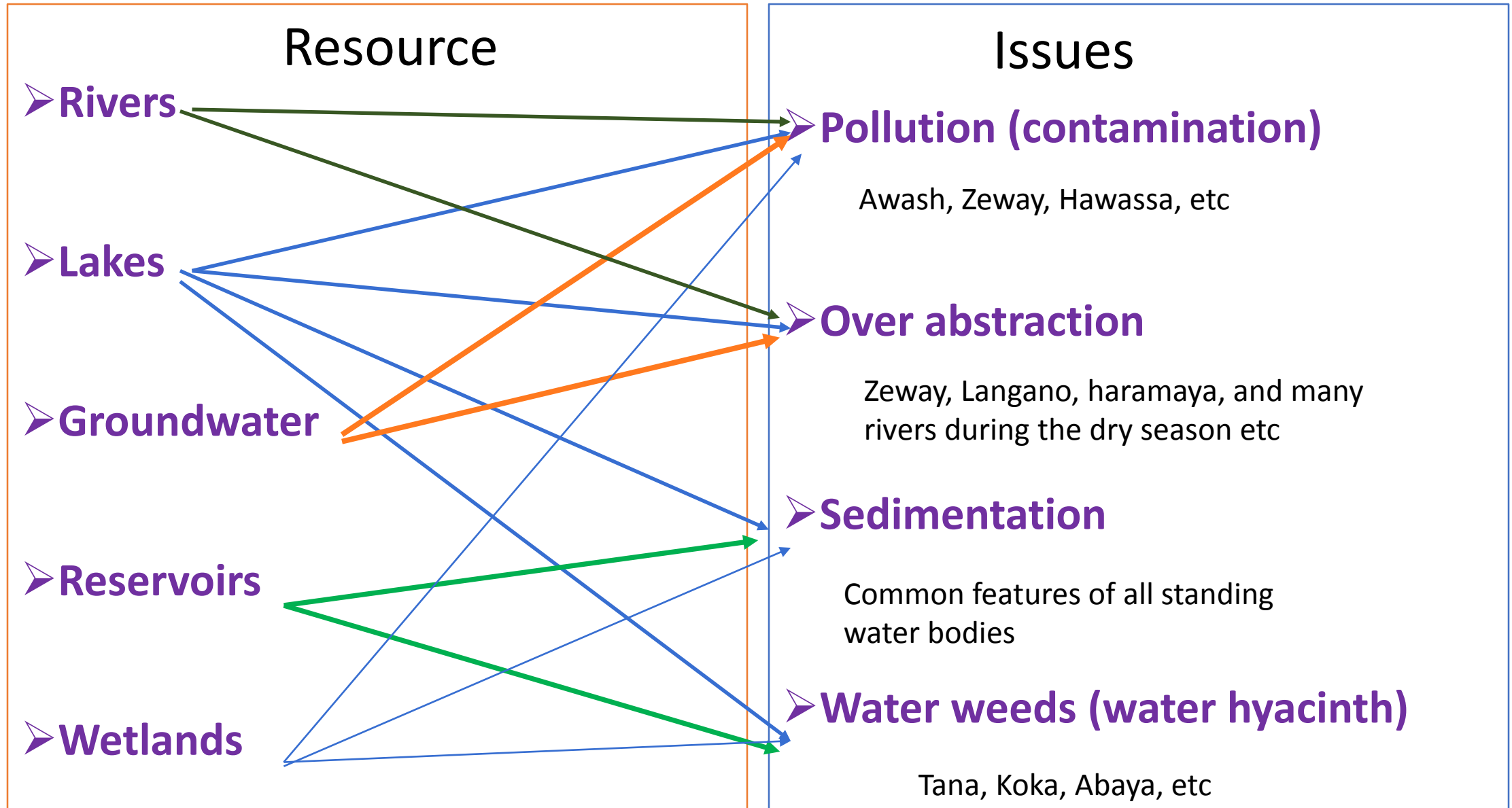


It is understandable why this looks complex !

Water touches many aspect of life!

We have to deal with this complexity.

# Water Resources Management Issues in Ethiopia



# i. Over Abstraction: Groundwater

## ➤ Groundwater – Well fields

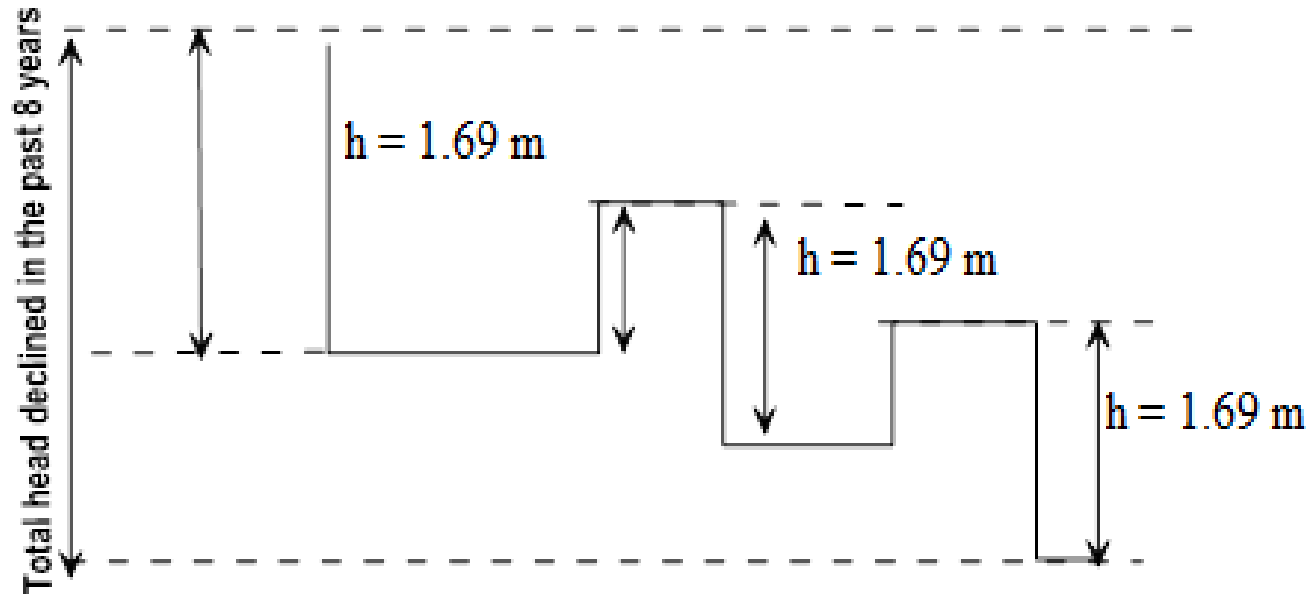
➤ Haramaya and Dire Dawa

➤ Mekele, etc

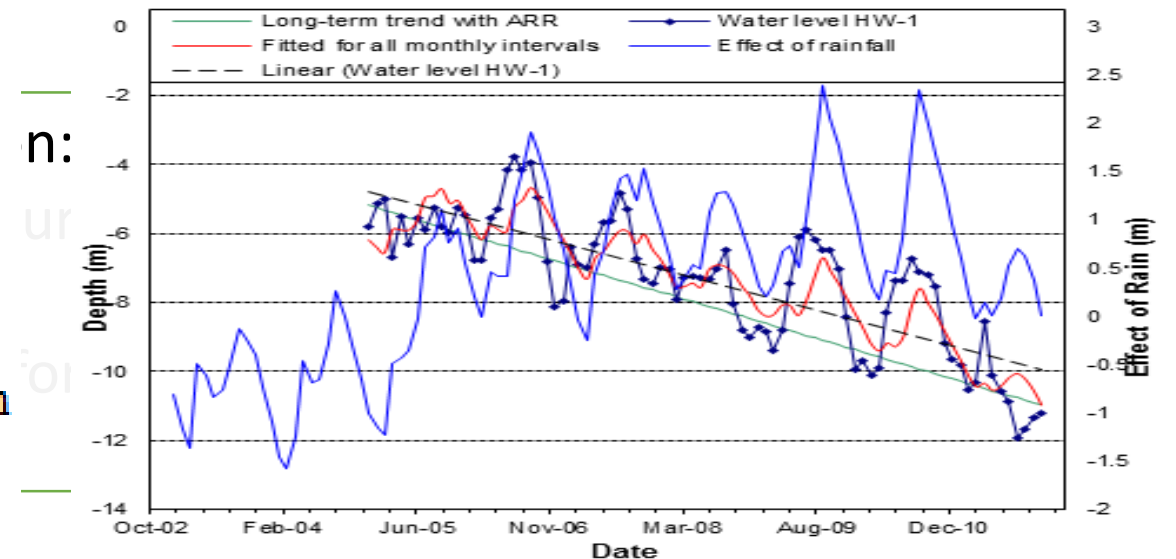
➤ Groundwater suffers from both under development and unsustainable management.

➤ Managing the recharging catchment.

➤ Sustainable level withdraw



Water levels with accumulative annual residual rainfall for HW-1 (0 months de





## ii. Over Abstraction: Lakes + Rivers

- ☞ Langano
  - ☞ Zeway
  - ☞ Haramaya is no more lake!
  - ☞ etc
- 
- ☞ There are also rivers that fully diverted during the dry season.

- Manage Abstraction – irrigation water use efficiency.
- Larger schemes should go high efficiency irrigation.
- Water recycling – flower industry  
(Red-fox is good example for their corporate social and environmental responsibility)
- Develop lake water management plan – like 'Imersha Naivasha'



## iv. Pollution: Groundwater

### ➤ Groundwater – Well fields

☞ Akaki Well field

☞ Dire Dawa well field

☞ Fluoride

☞ Salinity

☞ Temperature

**Natural**

➤ Leaking septic tanks

➤ Leachate from land fills

➤ Recharge from contaminated rivers and streams, oxidation ponds

➤ Limited technology of wastewater treatment

## v. Sedimentation: Lakes, Reservoirs, and Wetlands

- Lakes, large and small reservoirs
  - ☞ Haramaya's Demise
  - ☞ Koka being decommissioned
  - ☞ Nearly all our standing water bodies are threatened

- Stop silt from the watershed (Catchment management)  
Prevention is better than cure!  
  
Catchment management from campaign to culture!

## vi. Water Weeds (Hyacinth) Lakes; reservoirs and wetlands

- Tana,
- Koka,
- Abaya
- Gambelia

- **Early detection and rapid response**
- **Integration of methods: physical, mechanical and biological.**
- **Look also if control by utilization is possible**

## vii. Bottleneck Analysis of WRM in Ethiopia

Based on the study in 2013/14

### Enabling

- Legal framework (3.75)
- Policy and plans (2)
- Support for WRM (2)
- Finance (1.25)
- Information base (1.5)
- Human capacities (1.5)
- Equipment and systems (1.7)

### Developing

- Basin planning (1.75)
- Stakeholder participation (1.7)
- Water allocation (1.5)
- Pollution control (1.5)
- Monitoring (1.25)
- Economic management (1)
- Flood and drought management (2.25)

### Sustaining

- Adaptive management (1.3)
- Enforcement (1.5)
- Institutional and technical sustainability (1.3)
- Environmental and social sustainability (n/a)

# 4. Where Ethiopia stands in Implementing IWRM

## The water Goals

- 6.1. Drinking water
- 6.2. Sanitation
- 6.3. Reducing pollution
- 6.4. Water-use efficiency
- 6.5. IWRM
- 6.6. Ecosystems`

## Summary Consensus-based Scores for Indicator 6.5.1

Section 1 Enabling Environment	40
Section 2 Institutions and Participation	37.5
Section 3 Management Instruments	27.8
Section 4 Financing	20
<b>Overall Average IWRM implementation status</b>	<b>31.3/100</b>

# How are the individual indicator measured

## 1. Enabling Environment (40/100)

- 1.1 What is the status of policies, laws and plans to support IWRM at the national level?
- 1.2 What is the status of policies, laws and plans to support IWRM at other levels?

## 2. Institutions and Participation (37.5/100)

- 2.1 What is the status of institutions for IWRM implementation at the national level?
- 2.2 What is the status of institutions for IWRM implementation at other levels?

### ➤ **3. Management Instruments (27.8/100)**

**3.1 What is the status of management instruments to support IWRM implementation at the national level?**

**3.2 What is the status of management instruments to support IWRM implementation at other levels?**

### ➤ **4. Financing (20/100)**

**4.1 What is the status of financing for water resources development and management at the national level?**

**4.2 What is the status of financing for water resources development and management at other levels?**

**Message: With 31% level of IWRM implementation, we need to focus our effort towards meeting the targets(indicators).**



# 5. RBA and their Responsibilities

1. **Strategy and Plan:** Basin wide Water Resource Management Plan
2. **Water Allocation**-Supply and Demand Side Management]
3. **Pollution Control** (ABA.RVLBA, ABA)
4. **Catchment Management**
5. **Management Instruments:** Economic and Financial
6. **Basin Information System:** Data - information- Knowledge.
7. **Stakeholder Participation**, (Conflict Management, Capacity Building, Communication).
8. **Flood and Drought** (Risk Management)
9. **Monitoring and Evaluation**-internal and external



# What do RBAs Need

- ⇒ **Institutional Issues:** Mandate related issues) [Regions vs RBA; Bureaus vs RBA; Sectors vs RBA.
- ⇒ **Capacity Gaps-** from designing water resource management plan to stakeholder engagement and communication.
- ⇒ **BIS** - The need to know how much water they have and when. That information need to be verifiable and accessible.
- ⇒ **PES** - Development of F&E Instruments and enforcement (not targeted to generate fund but protect the resource)
- ⇒ **Enabling Environment** - Effective Basin High Council may have to be more effective.
- ⇒ **Governance support:** Political commitment and the ability to enforce objective decision.

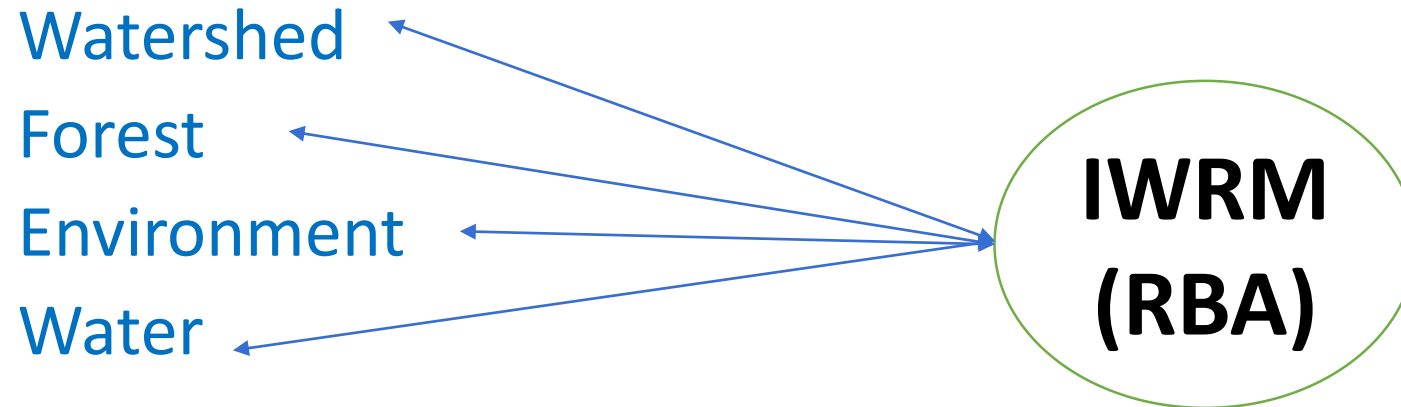
## 7. Way forward – Home take message!

### i. We all have to celebrate

- ☞ the recognition given to the water sector in general and water resource management in particular.
  - ☞ the support given by the development partner.
- 
- understand and embrace that water resource development and management should be made in an **integrative manner (all sources, all users, all actors)** following IWRM principles (equitable, efficient, **sustainable**) with all its challenges and shortcomings).
  - Appreciate and embrace that there is a logic behind the basin approach to water resource management.

## ii. Ministries/Bureaus

There is more complementarity in the work we do



Goal of one Ministry/Bureau is the co-benefit of the other.

Leadership at the top can steer in the right direction we wanted.

### iii. Regional Governments/Water Bureaus

- ➡ After all both RBA and RWB are striving to serve the people.
- ➡ River Basin Authorities are there for win-win solutions to the water problem.
- ➡ Let us sit and plan together, prioritize developments and management options so that water is shared equitably (NB. Does not mean equally)
- ➡ All what we call mandates is not as rigid as we claim it be, sure not stationary – we can develop them together.

#### iv. River Basin Authorities

- Diagnose the health of your basin, **develop strategic plans**, prioritize interventions, and tell to the public interventions required and follow implementation. Say it!
- If you want to deliver, you have to work through **stakeholders** to enforce agreed decision.
- **BIS** – for evidence based management decision – with continued enhancement of spatial and temporal resolution – is critical
- **Capacity** (information to action) development is an ongoing processes should be imbedded as institutional culture.

## v. Academic Institutions

- ☞ There is a problem means we have to seek a solution – there we have a role
- ☞ Engage in primary data generation. Modeling in the absence of good data to validate a model is GIGO!
- ☞ Have a strategy for WRM research and get it endorsed by the University
- ☞ Establish Model Observatories
- ☞ Engage in Action Research sites



## vi. Development Partners

- ☞ Water resource management is a very important tool to bring sustainable development and poverty reduction in Ethiopia!
- ☞ Help Ethiopia (and the Region) to effectively manage the water resources
- ☞ You cannot do all the work by yourself but you can help to shape by establishing model study areas (schemes) through the RBAs and RWBs and ensure that they are scalable.
- ☞ You are doing very well with WaSH. Your contribution helped in meeting the MDGs. With you, we can also strive to meet the SDGs for which IWRM is one.

# Concluding Remarks

## vii. Government (Ministries and BHC)

- ☞ Natural resource management in general requires leadership commitment
- ☞ Water resource management is not as glamorous as water resource development, but when crises happens it can be catastrophic – **NB. the Harar crises in 2005/6, Rift Valley 2015/16.**
- ☞ Hence water resource management institution need to be resourced and capacitated.
- ☞ As every basin is unique in terms of its challenges and opportunities; river basin organizations should be established for all river basin.
- ☞ Basin High Council need to develop pragmatic **modus operandi** to spearhead head water resource management nationally.

Water is said 'managed' only when we do not have reason to complain about its quantity, quality, equity and sustainability.



**Thank you**