Managing Economic Sector's Water Needs For IWRM

In Tana Sub Basin

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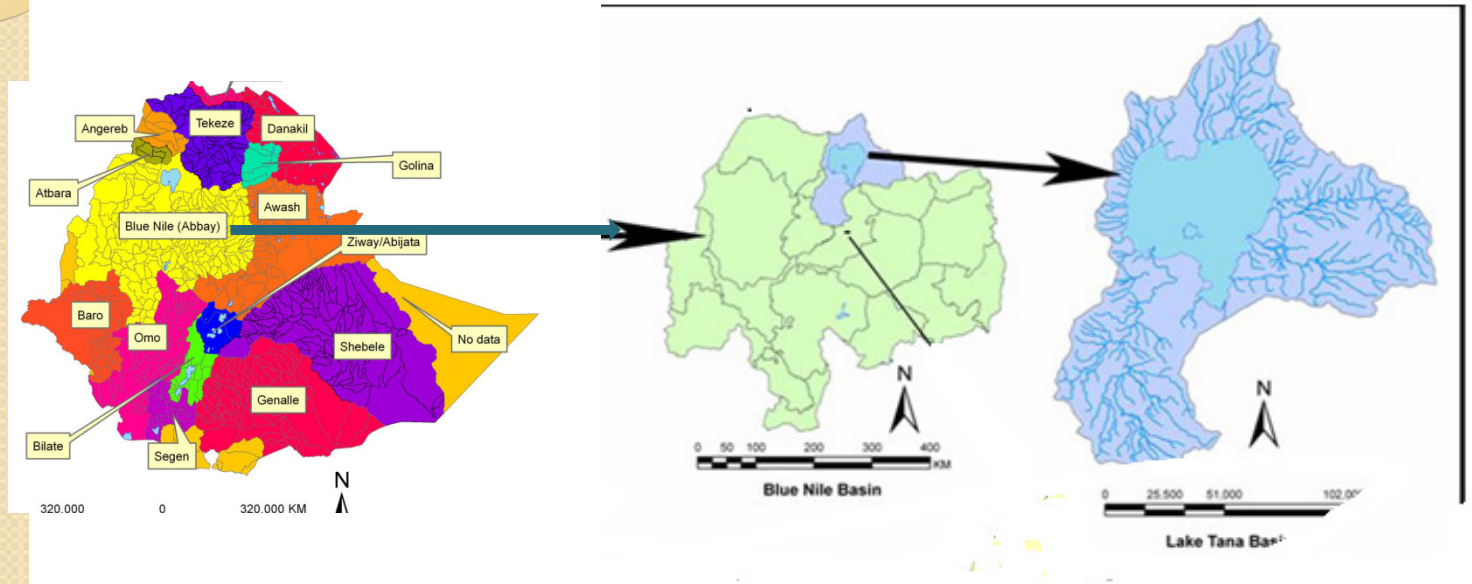
Presentation Outlines

1. Background of Tana Sub Basin
2. IWRM
3. Basin as a Water Resource Management Unit
4. River Basin Authorities and Sub Basin Organizations in Ethiopia
5. Schematic view of RBO's Position for IWRM
6. Key Issues of Tana Sub Basin
7. Scenarios(Development interventions)
8. Draft Strategic Long term plan for IWRM of TaSB

1.Background Of Tana sub basin



12 River Basins of Ethiopia

Abay River Basin

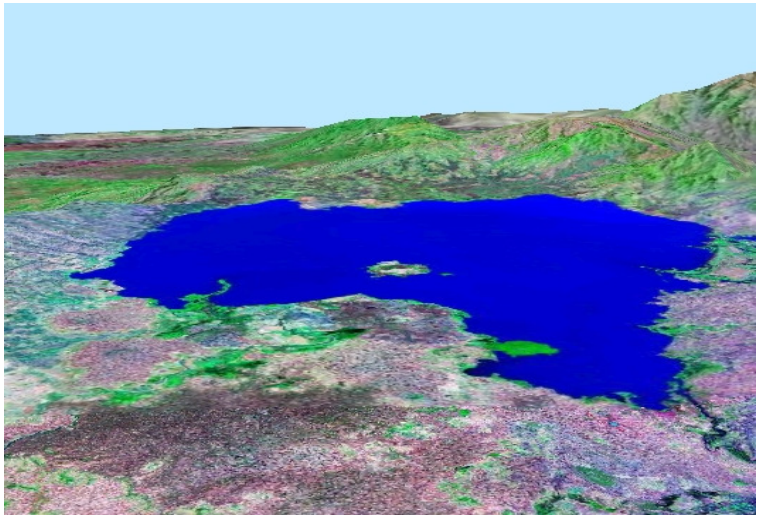
Tana Sub Basin

- **Ethiopia is divided into 12 river basins, among these Abay Basin is one**
- **Abay River Basin is divided in to 16 sub basins, Tana sub basin is one**

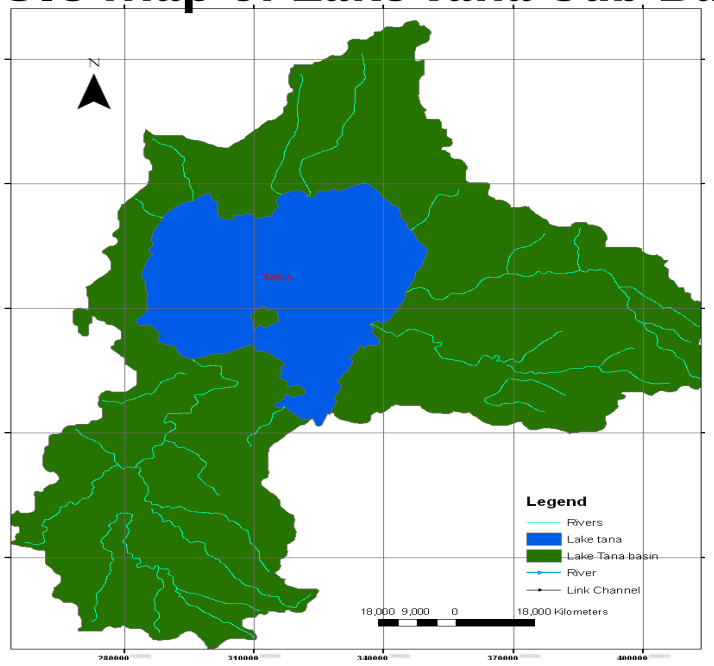
1.Background Of Tana sub b---

- One of 16 sub basins of Abay Basin
- Has Lake and catchment part
- Altitude 1786-4000 masl
- Total CA at lake outlet is 15,321 km^2
  - Lake area 3156 km^2 (20%)
- Mean annual inflow is 4,986 Mm^3y^{-1}
- Lake fed by 40+ rivers
- but 93% from Gilgel Abbay, Ribb, Gumara and Megech
- Mean annual outflow is 3,753 Mm^3y^{-1}

3 D View of Lake Tana Sub Bas



GIS map of Lake Tana Sub Basi

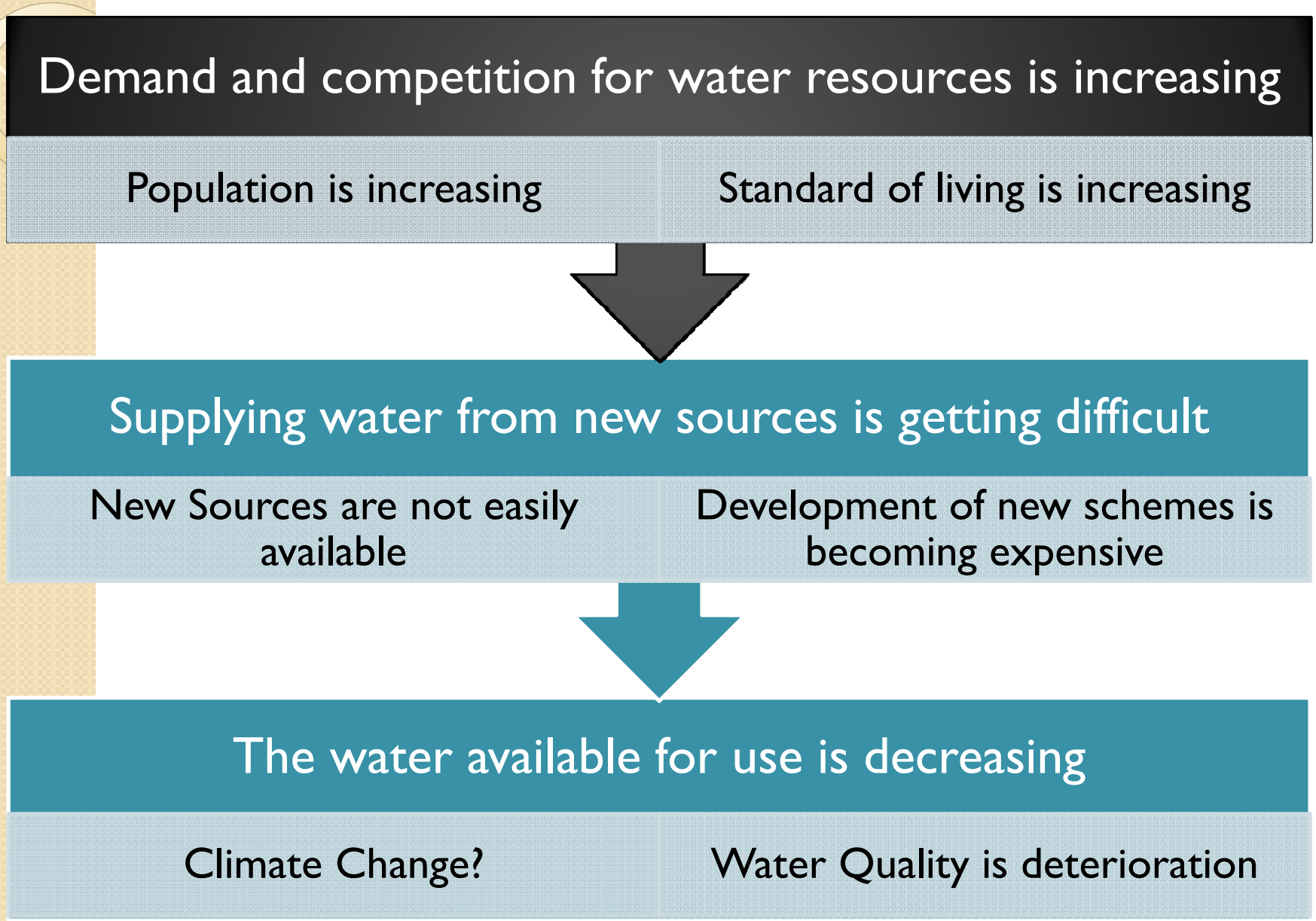


2. IWRM

- **IWRM is a process which promotes the coordinated development and management of water, land and related resources in order to maximize the resultant economic and social welfare in an equitable manner without comprising the sustainability of the vital ecosystems (GWP 2000)**

- **IWRM is a systematic process for the sustainable development, allocation and monitoring of water resource use in the context of social, economic and environmental objectives**

3.The need for change to an integrated approach…..



The need for change to an integrated approach…..

The Water Resource Management System is not Dynamic

- It was designed when population was small
- And when water quality was not a problem

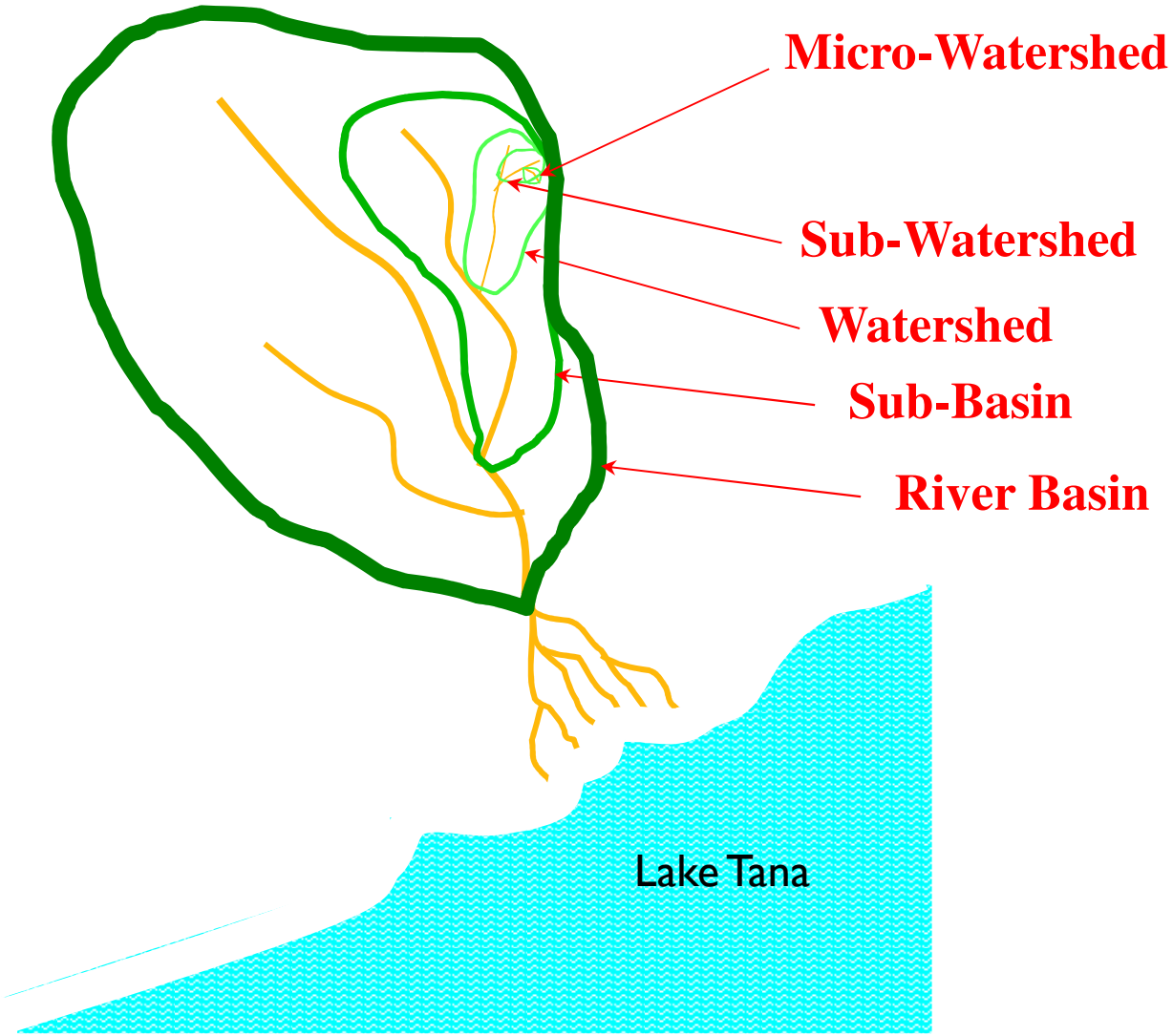
It is therefore important to make frequent and continuous changes

- From Supply Driven and top bottom, engineering biased
- To Demand Driven, stakeholder involvement & Socio Economic considerations

Water Resources Management is Dynamic

- Population is Dynamic
- Environment is Dynamic

4. Basin as a water Resource Management Unit(EWM-policy-1999)



5,River Basin and Sub Basins Established(as a Tool for IWRM)

3-River Basin Authorities

- Awash River Basin Authority(ARBA)
- Abay River Basin Authority(ABA)
- Rift Valley Basin Authority(RVBA)

3-Sub Basin Organizations

- Tana Sub Basin Organization(TaSBO)
- Beles Sub Basin Organization(BeSBO)
- Didesa Sub Basin Organization(DeSBO

6. Schematic view of RBO's Position and Coordination role to promote IWRM in the River Basin/Sub basin

I. REGIONAL DEVELOPMENT plans:

Amhara, Oromia &B/GUMUZ

II. Water resources DEVELOPMENT SECTORS

1. **Hydropower**
2. **Irrigation**
3. **Water supply**
4. Other sector plans:
   - **Fisheries** sector
   - **Navigation** sector
   - **Tourism** sector

RIVER BASIN ORGANIZATIONS have

- **High council**
- **Authorityies**
- **Consultative commit**

A platform for integration and participatory consensus building to promote IWRM through

- **Coordination of planning**
- **Water Allocation & Regulation**
- **Knowledge building**
- **Information exchange**
- **Capacity building**

III. Water and env.Prot.secto

1. **Watershed mgnt. plans**
2. **Pollution** control plans
3. **Flood & drought amgt** plans
4. **Biodiversity conser.** Plans

IV. Other STAKEHOLDER INTERESTS:

1. Main water users
- Sugar estates
- EEPCO
- Flower industry
- Water utility companies
- Mining industries

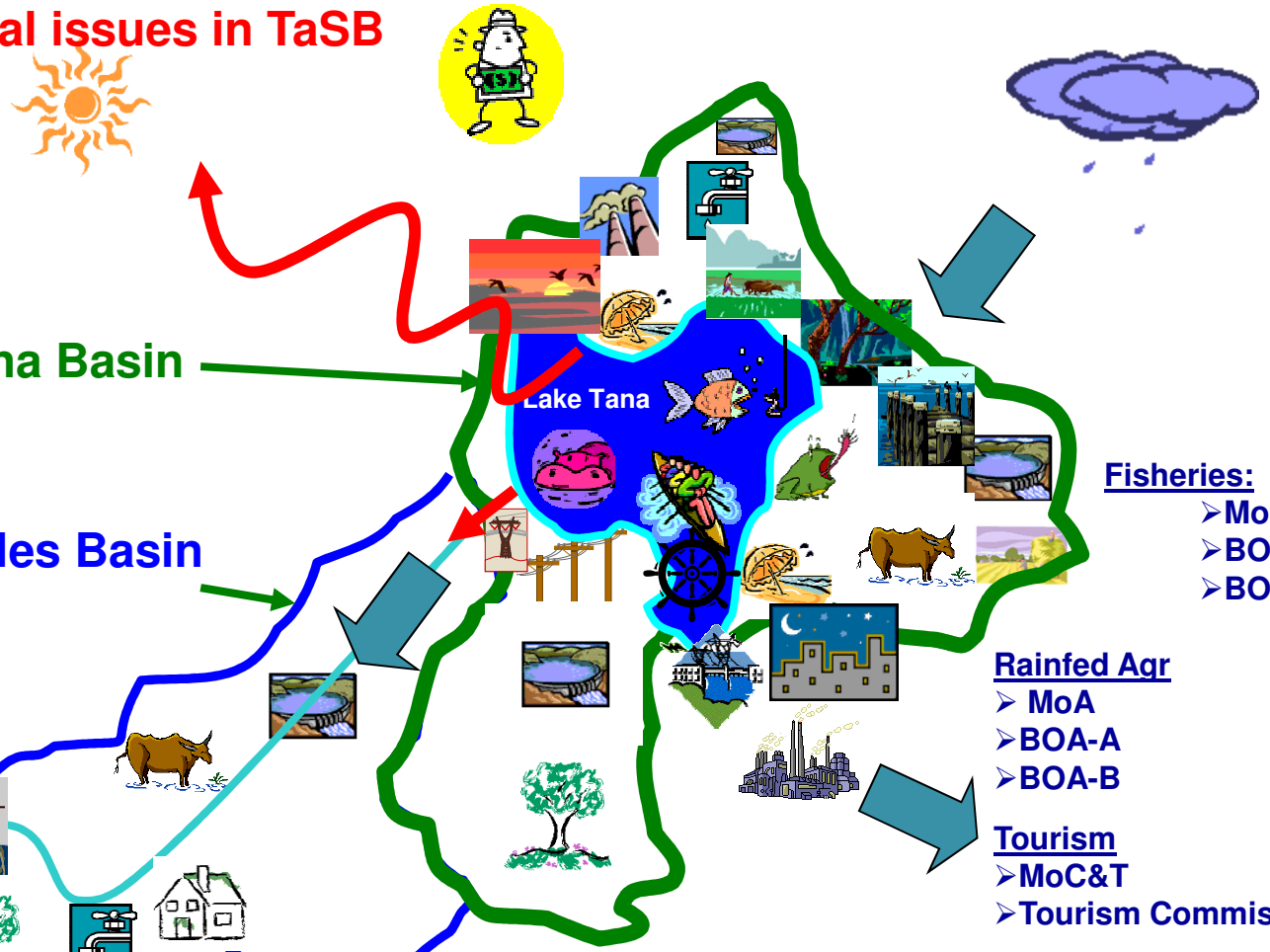
2. **Others**
- National NGO's
- International NGO's
- Donors
- NBI
- etc.

- **The arrows reflect flows of information exchange and consensus building to achieve IWRM**
  - **Information flow from relevant sectors to RBO in order to have a complete overview of the varies development and management plans and projects in the River Basin**
  - **Feed back from RBO to the relevant sectors on their plans in order to ensure coordination and integrity with other sector plans and stakeholder needs in the River Basin**

Steps: Managing Economic sector's water needs in TaSB

Step-1 . Identify water using sectors and their water demands

Institutional &sectoral issues in TaSB



Watershed Mgmt:
- EPA+Land Admin;
- BoA-A;
- BoA-B

Planning:
- MOFED;
- BOFED-A;
- BOFED-B

Investment:
- Investment Authority;
- BoI-A;
- BoI-B

Indigenous People:
- MoL&SA;
- BoL&SA-B

Water Supply
- MoWR;
- BoWRD-A;
- BoWREM-B
- WASAs
- Municipalities

Irrigation
- MoWR
- BOWRD-A
- BOWREM-B

Livestock:
- MoA
- BOA-A
- BOA-B

Fisheries:
- MoA;
- BOA-A;
- BOA-B

Rainfed Agr
- MoA
- BOA-A
- BOA-B

Tourism
- MoC&T
- Tourism Commissions

Ecology:
- Wildlife Mgmt Authority

Environment
- EPA
- EPA-A
- EPA-B

Navigation
- Tana Transport Authority-A

Hydropower
- EEPCO
- MoWR

Industry:
- MOI,
- Trade/Commerce Bureaus-A&B;
- Muncipalities

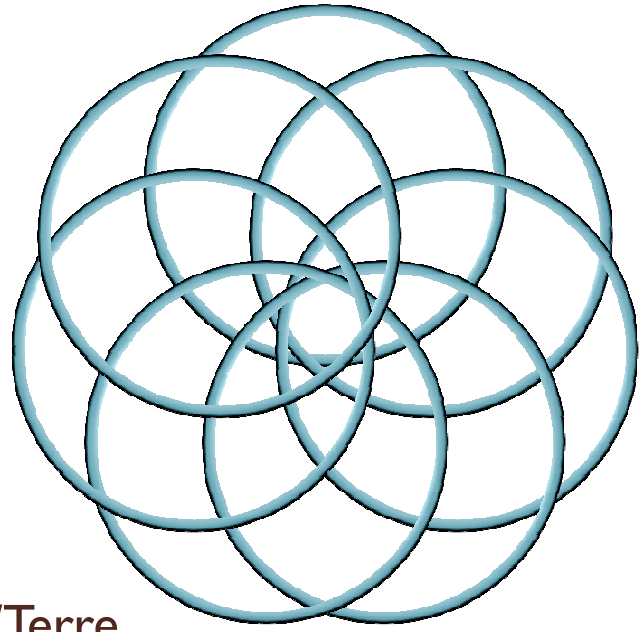
…this is why an integrated basin approach is required

Key Issues

Hydropower/Tana Beles (460mw)

Navigation/Lake Tana(Different Kinds of Transports)

Industry/Large and Medium



Water supply/ Urban and Rural

Fishery/Lake Tana(>1000tone/ year)

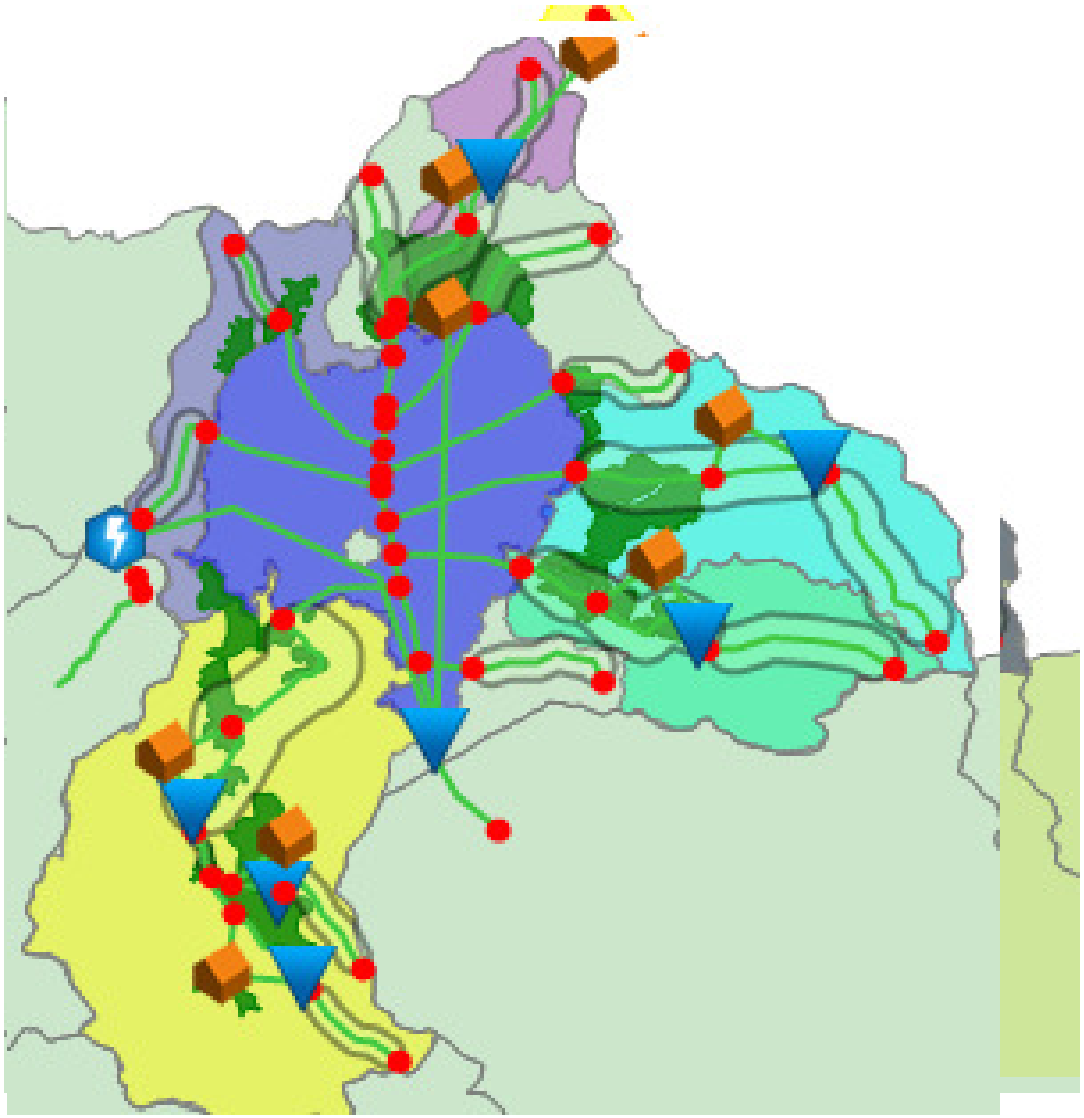
Environment/Terre strial and water bodies(Lake, river & wetlands)

Irrigation/Six large scale with pump(114,000ha)

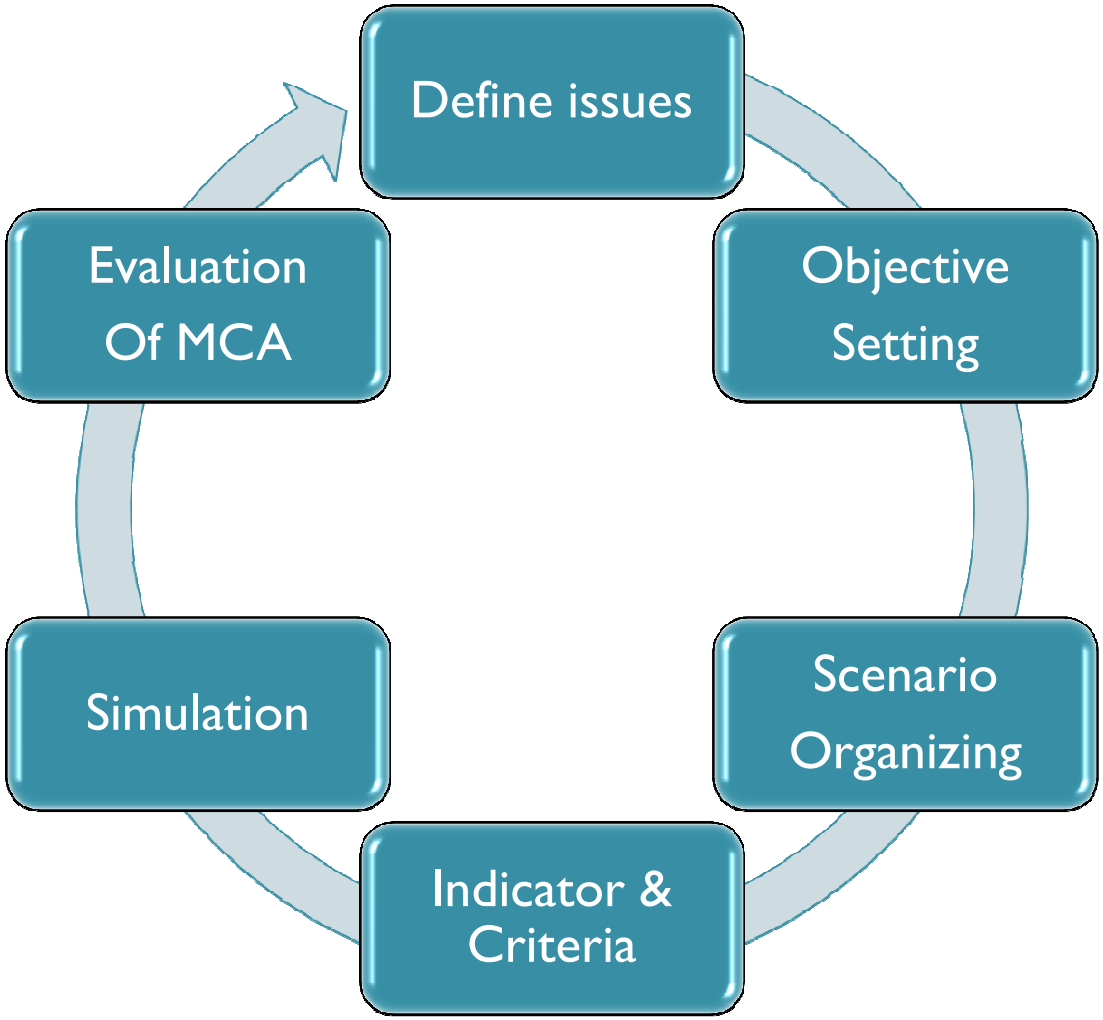
Step 2- Scenario Definition

Development Interventions	SC_0 Baseline	SC_1 Small Scall	SC_2 Medium Scale	SC_3 Full scale
Chaera Chara	32BCM	32BCM	32BCM	32BCM
TB HP	460mw	460mw	460mw	460mw
Koga	7,000ha	7,000ha	7,000ha	7,000ha
Megech	-	7,311ha	7,311ha	7,311ha
Ribb	-	18,700ha	18,700ha	18,700ha
Gondar w/supply	-	80l/s	80l/s	80l/s
G/Abay	-	-	14,552ha	14,552ha
Jemma	-	-	7,786ha	7,786ha
Gumara	-	-	14,000ha	14,000ha
Pump	-	-	-	44,650ha

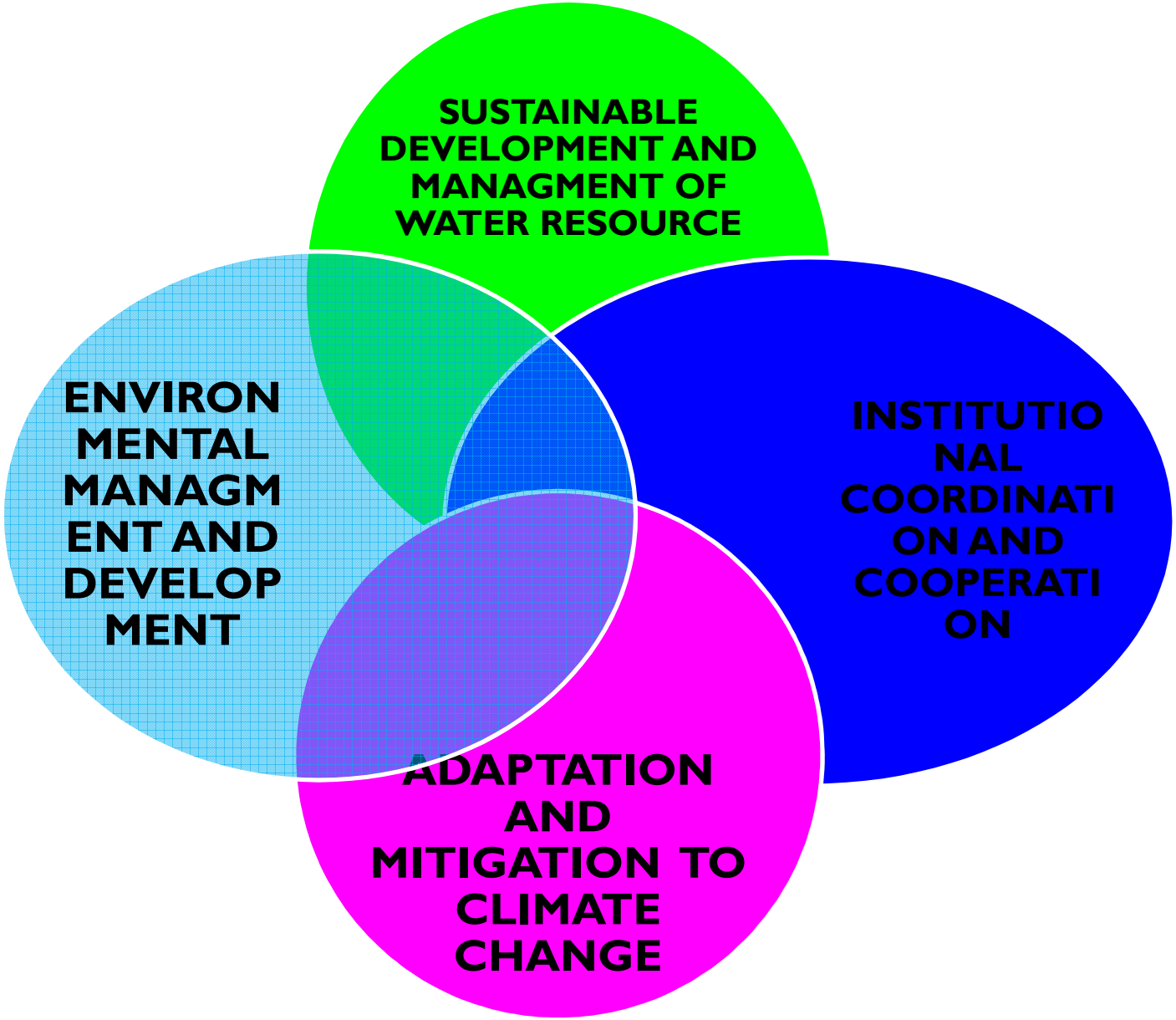
Schematization for different scenarios



Step 3 -Use of multi-criteria analysis to identify optimal scenarios to balance economic, social and environmental needs



Step 4 – Draft Sub-basin plans allocate water use according to different planning scenarios around Four Key Result Areas



THANK YOU FOR ATTENTION