Freshwater is a basic natural resource, which sustains life and provides for various social and economic needs. In its natural state, water is an integral part of the environment whose quantity and quality determine how it can be used (MW&I, 2002)
Water Resources Management (WRM):
WRM is a mult-sectoral activity that requires an effective collaboration and coordination mechanism among sectors at all levels.

Specific Objectives of WRM
- To develop equal and fair procedures in access and allocation of the water resources.
- To ensure that social and productive sectors, and the environment receive their adequate share of the water resources.
- To ensure effectiveness and efficiency of water resources utilization.
Specific Obj. of WRM Cont'

- To promote integrated planning and management of water resources.
- To raise public awareness and broaden stakeholder participation in the planning and management of water resources.
- To promote the management of water quality and conservation.
- To improve the management and conservation of ecosystems and wetlands.

Specific Obj. of WRM Cont'

- To ensure financial sustainability and autonomy of Basin Water Boards,
- To promote regional and international cooperation in the planning, management and utilization of water by respecting the principle of international obligations on trans-boundary water resources.
- To provide the basis for future institutional framework and legislation for water resources management.
**Water Basins**

- **WRM program implementation**
  - The country is divided into nine (9) hydrological zones/Basins that do not follow administrative boundaries such as Regions and District for purposes of water resources management.

---

**Water Basins cont’…**

- **These basins are**
  1. Pangani
  2. Wami/Ruvu
  3. Rufiji
  4. Ruvuma and Southern Coast
  5. Lake Nyasa
  6. Lake Rukwa
  7. Lake Tanganyika
  8. Lake Victoria
  9. the Internal drainage basins of Lake Eyasi, Manyara and Bubu depression
WRM Levels

- *The management of WR have five levels;*
  i. National,
  ii. Basin,
  iii. Catchment,
  iv. District *and*
  v. Community (WUA).

---

The Lake Victoria catchment area

<table>
<thead>
<tr>
<th>Country</th>
<th>Catchment area (km²)</th>
<th>Lake Surface area (km²)</th>
<th>Length of shoreline (km)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tanzania</td>
<td>79,570 (44%)</td>
<td>33,756 (49%)</td>
<td>1,150 (33%)</td>
</tr>
</tbody>
</table>
Main Rivers that drain into Lake Victoria Basin.

**Kagera River** (starts at Rwanda and Burundi to Uganda via Tanzania)

**Mara River** (starts Kenya – Mau Forest to Tanzania via Serengeti National Park)

**Mbalageti, & Grumeti** (starts in Serengeti National Park)

**Mori and Suguti** (starts from agricultural fields)

**Simiyu**, (starts from agricultural fields)
<table>
<thead>
<tr>
<th>Functions of Lake Victoria Basin Water Office</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ Data collection, processing and analysis,</td>
</tr>
<tr>
<td>▪ Water allocation and pollution control</td>
</tr>
<tr>
<td>▪ Preparation of water utilization and plans</td>
</tr>
<tr>
<td>▪ Resolution of various water related conflicts</td>
</tr>
<tr>
<td>▪ Collection of the various fees and charges</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Potentiality of Lake Victoria Basin</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ Support for abundant natural resources in wildlife, forestry, minerals and fertile soils.</td>
</tr>
<tr>
<td>▪ Agriculture, trade and industry.</td>
</tr>
<tr>
<td>▪ Fisheries and tourism;</td>
</tr>
<tr>
<td>▪ Transport and communications;</td>
</tr>
<tr>
<td>▪ Water and energy,</td>
</tr>
</tbody>
</table>
Potentiality of LVB Cont’…

- Most of its populations (80%) are engaged in agricultural production and livestock keeping whereby mostly they produce *maize and cash crops such as banana, sugar, tea, coffee, cotton and meat.*

Threats in the LVB

- The lake is the final recipient of point and non-point sources pollution (nutrients + chemicals) which leads to eutrophication.
- The Ecosystem has increasingly degenerated since 1960s (Land/forest degradation)
- High population increase and associated activities
- Increase in loss of biodiversity, ill health and cases of water borne diseases
Suspended sediment load trend at Nyakanyasi - Kagera River

\[ y = 0.95x + 288.37 \]
\[ R^2 = 0.9967 \]

Years

1971 1972 2004

0 200 400 600 800 1000 1200 1400 1600

1971 1972 2004

Point sources pollution (Textile industry- Musoma)

Threats in the LVB cont’..
Threats in the LVB cont’..

Mercury release for gold amalgamation (Buhemba gold mine)

Threats in the LVB cont’..

Land/forest degradation
Siltation/sedimentation of water bodies
Mara River

Soil erosion

Threats in the LVB cont’..
For so many years, community who lives in LVB has experienced tremendous environmental degradation such as changes in the abundant species; the reduction of the fish species diversity; and the recent emergence of water hyacinths in the Lake Victoria.

Incidences of HIV/AIDS at shoreline settlements and Islands.

In the catchments, major environmental shocks are high deforestation rates, poor agricultural practices and encroachment of wetlands.

The implications of water pollution is more pronounced at Littoral zones (shallow waters) Gulfs and Bays.
**Threats in the LVB cont’..**

Wetlands degradation (Mara River).

---

**Challenges in LVB**

- Despite of its vast potential opportunity and investments its most population lives below the poverty line.
- The LVB has a variety of resources that should be managed in a rational manner and exploited on a sustainable basis.
- How would awareness of policy and legislation at local government and community level be increased
To ensure effective WRM system is in place and pollution control legislations are enforced

Employ effective methods to reduce/minimize nutrients loads and pollutant inputs into the Basin

Control wild/bush fires which contribute to increased atmospheric nutrient deposition

Improve sanitary conditions in shoreline settlements

Emphasize environmental education through schools.
Solutions to LVB challenges cont’..

The End

Thank you for Listening