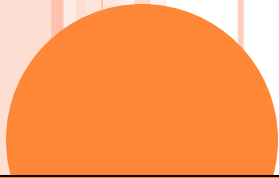


INTEGRATED RESOURCE MANAGEMENT: OPPORTUNITIES AND CHALLENGES IN ZAMBIA AND NEPAL

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BACKGROUND

Natural Resource Management

- Management of natural resources with particular focus on management effect on quality of life.
- Brings together all the management aspects like land planning , biodiversity conservation, water management, forestry, tourism, mining etc.

Resources

- Land
- Water
- Forest
- Soil
- Flora and Fauna

Goal: Increase production, enhance food security, maximize profits, minimize risks, maintain natural resources.

WATER

- Basic human need, No water No life on earth
- Back bone of economic development
water is recognized as an economic good **BUT** treated as a common good with common responsibility and common use)
- Increase in demand for water resource
Industrial, residential and agricultural sectors.

Major concern

Land use change effect on hydrology

eg.

- A study in Andean Paramo
(Buytaert et al.2007)



INTEGRATED WATER RESOURCE MANAGEMENT

- **a process**
- **for what????**
For promoting **the coordinated development and management** of water, land and related resources
- **Why**
in order to **maximize the resultant economic and social welfare** in an equitable manner
- **How???**
without compromising the **sustainability** of vital ecosystems.”

(WSSD, 2002)

INTRODUCTION OF ZAMBIA AND NEPAL



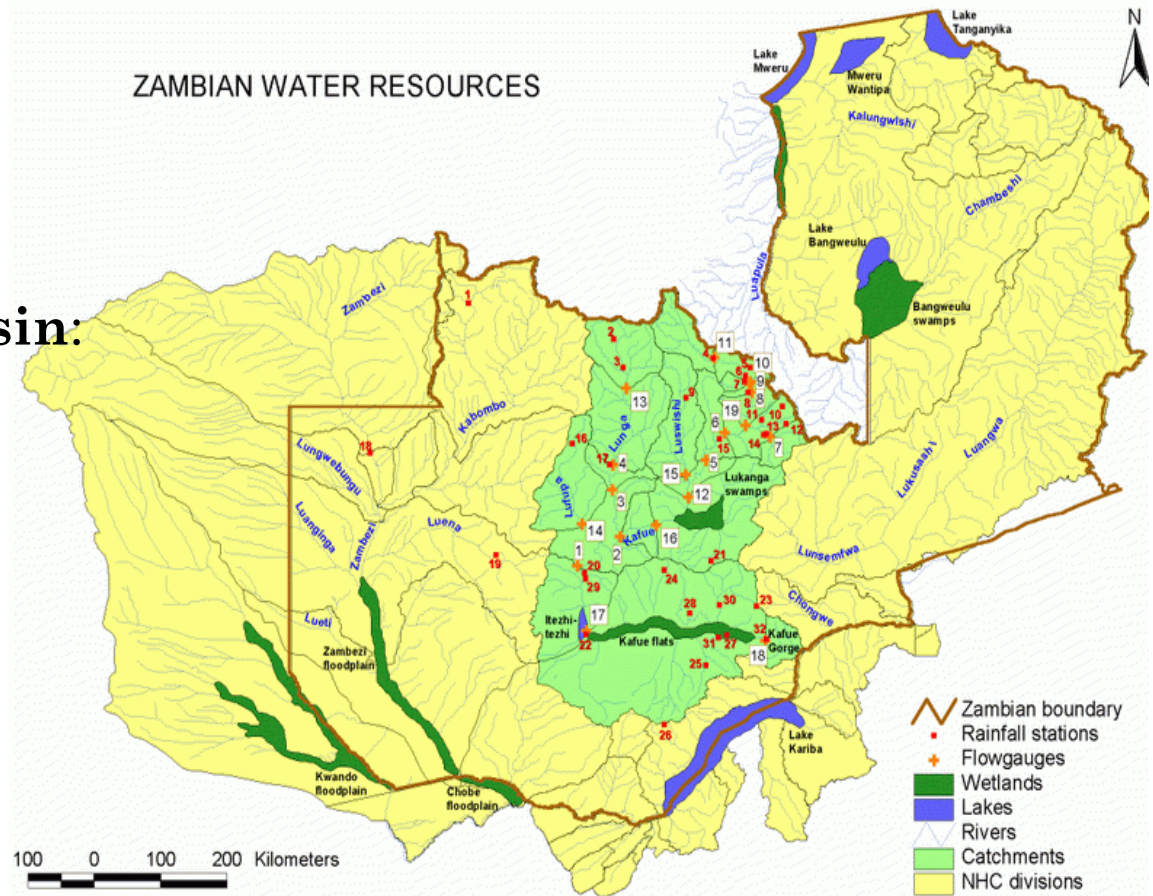
SCENARIO OF ZAMBIA

Major hydrology:

1. Zambezi basin
2. Congo river basin

Important river basin:

Kafue river



Services:

hosts 40% of population (GoZ, 2008), Agriculture, hydropower, biodiversity, fisheries

Source: apfm.info

SCENARIO OF NEPAL

Hydrology

More than 6000 rivers
33 rivers with drainage
exceeding 1000 sq. km.
(WECS 2011)

Major river Basins (all
originating from Himalaya)

- a) The Mahakali
- b) The Karnali
- c) The Gandaki
- d) The Koshi

Services

Hydroelectric power, Irrigation
for agriculture, Supply for
domestic and industrial
purposes.



MANAGEMENT APPROACHES

In zambia

- Ministry of energy and water development
- Ministry of local government and housing (Sanitation)
- Water affairs department
- NGOs
- Traditional leaders
- Water development body

In Nepal

- Water and energy commissions secretariat under Government of Nepal.
- Ministry of Forest and soil conservation.
- Irrigation Department.
- NGOs
- Users groups (WUGs, FUGs in community level from last 20 years)

OPPORTUNITIES IN ZAMBIA

Hydropower



Kariba North bank power supply

Biodiversity



Lechwe in Busangu plain, Kafue- Zambia

AGRICULTURE

Irrigation : Sugar plantations
Corn fields and other crops

Sugar plantations contribute
to 90% of local sugar supply



Vegetable Farm in Katuba area of Zambia.



Irrigation of sugar cane, Zambia

OPPORTUNITIES IN NEPAL

Hydropower



Kali Gandaki Hydropower

Micro Hydropower



Irrigation



Sikta irrigation Project

OPPORTUNITIES IN NEPAL

River basin approach



Thak khola in Upper Mustang

www.Google image .com

Ecotourism

- Landscapes for Trekking and Hiking.
- Rare Animals e.g. One-Horned Rhino, Royal Bengal Tiger, Snow leopard, Red Panda.

CHALLENGES (1)

In Zambia

Water pollution from agriculture and mining activities



[www.google image.com](http://www.google.com)

CHALLENGES (2)

Scarcity of water (construction of dams for electricity)



Kaufe River

[www.google image.com](http://www.google.com)

- Less water available for domestic use, irrigation and other services
- Problem with water access in rural areas
- Fragmentation in institutional framework

CHALLENGES

In Nepal

- a) Farming on slopping terrain
- b) Land degradation
- c) Out migration (lack of manpower for community work)
- d) Water Pollution in Urban areas



Agriculture in slope land

www.Google image .com

CONCLUSION

- Natural resources Play a major role in livelihood and economic development.
- Demand of water in future will increase. Hence, a sound management of water resources is obligatory.
- Integrated river basin approach must be implemented to ensure sustainability and efficient utilization of the resources.
- Land Use disturbances such as deforestation and forest treatment are likely to affect the hydrological system of an area negatively.
- Full realization of potential utility of resources can be achieved through integrated resource management approach.



Thank you

Photo by: Prajapati, Sabina M.

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