



# **An overview of values & conservation challenges in selected wetlands of East Africa.**

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# Appreciations

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- Appreciation to the organizing committee (Ramsar secretariat, WRC and DEA- SA) for invitation and facilitation
- Grateful to J. Dominic, Tanzania RAMSAR-STRP national focal point for information and knowledge sharing
- Thanks to Star alliance Biosphere-connections program for travel sponsorship.



# Outline

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- Introductory background
- East African Wetlands and their characteristics
- Ecological values and functions of wetlands
- Socioeconomic values and benefits
- Management Challenges
- Distribution of wetland benefits
  - Public resource for private benefit



# Outline.../cont.

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- The 'ignorance factor' of wetland values.
- Conclusions



# Introductory background

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- Wetlands hold immense benefits to humans including;
  - food, medicine, recreation, water, fodder for livestock, buildings and craft materials.
  - In some ethnic groups, traditional ceremonies and cultural practices are performed in wetlands;
- Wetlands functions include;
  - control floods, filter toxicants, pollutants and sediments



## .../cont Problem statement

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- Wetlands provide feeding grounds and refugia for certain fish species and resting stations for migrating birds.
- Despite these and other values, wetlands are under tremendous pressure in East Africa and all over the world largely on account of increasing population, competing uses for economic activities and settlements. There is enormous social, economic, political and other pressures including rent seeking motives for conversion of wetlands into competing uses.



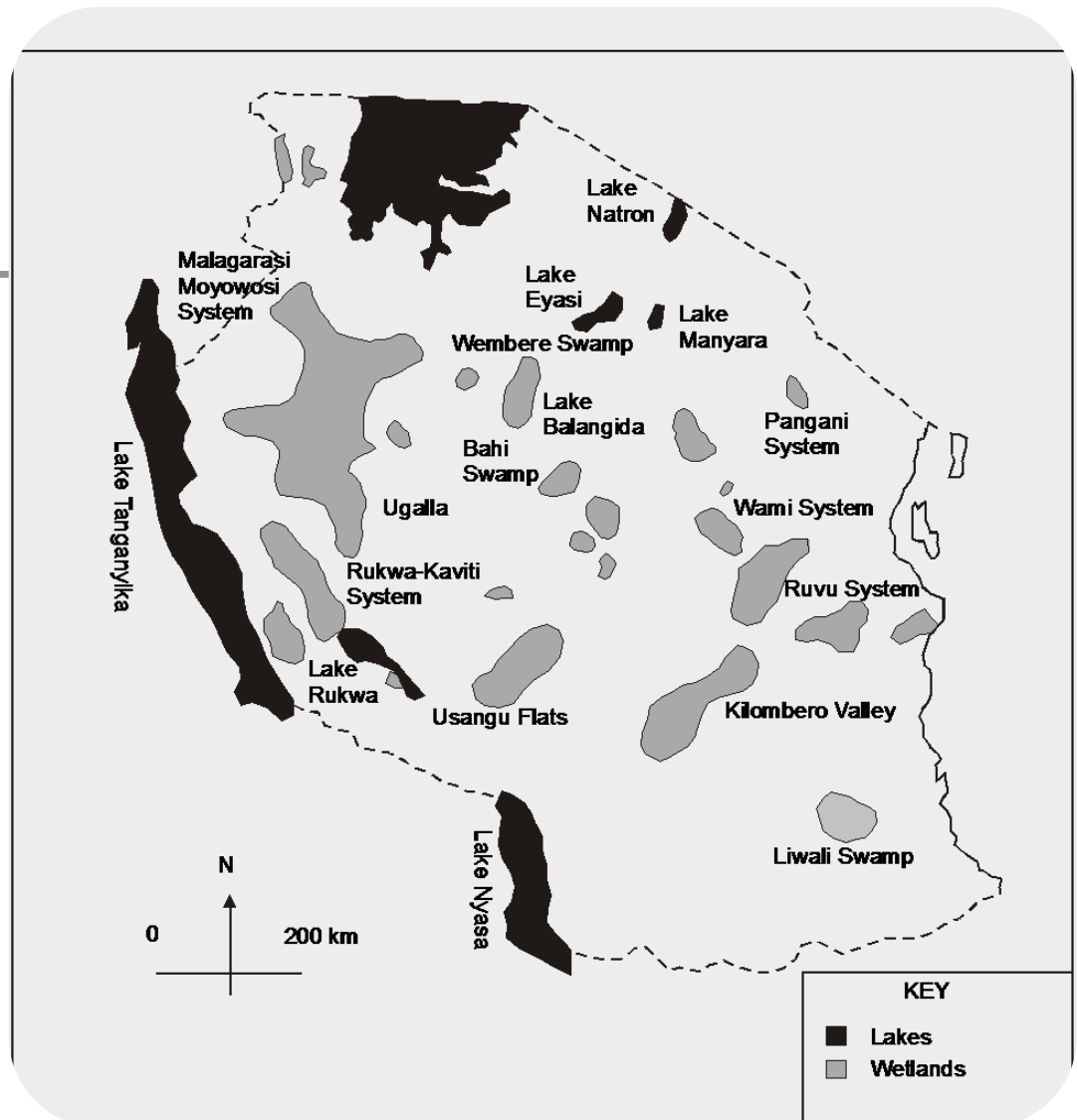
# East African Wetlands and their characteristics

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- Uganda, Kenya and Tanzania ratified the Ramsar convention in 1988, 1990 and 2000 respectively.
  - in principle follow the definition and classification of wetlands as provided
  - in Mbale Uganda 1996, the regional wetland biodiversity group including IUCN agreed to wetland classification system for East Africa which had:
    - 5 categories of: Marine, freshwater, saline, estuarine and manmade
    - 14 classes (see FAO/SAFR 1998)

# The distribution of important wetlands of Tanzania

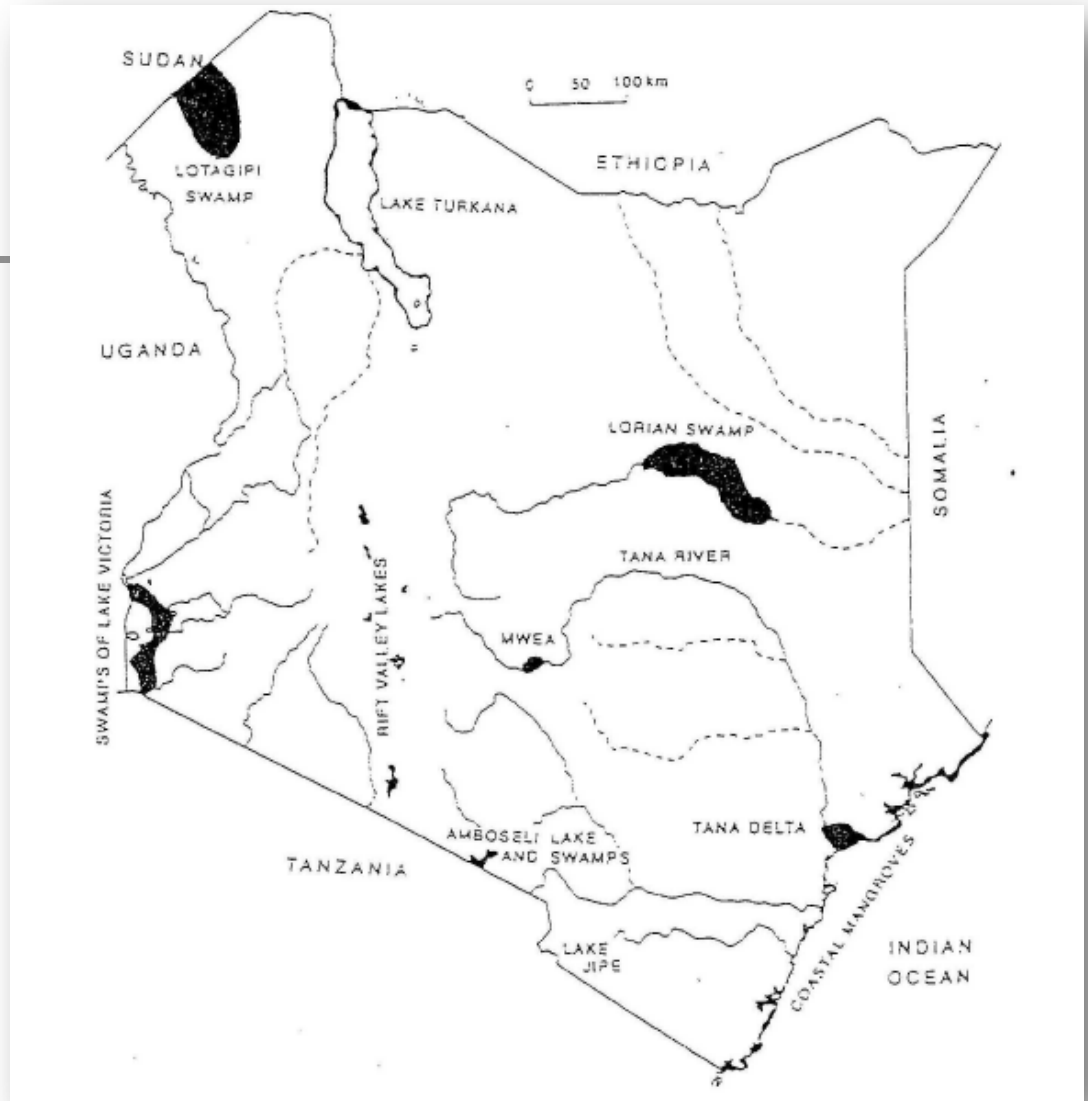
- The area occupied by wetlands is about 10% of total land surface area
- Tanzania wetlands comprise of naturally occurring coastal/marine wetlands
  - mudflats, marshes, mangrove swamps, estuaries and deltas
- rift valley system wetlands
- and highland drainage basins comprising of
  - Long rivers flowing through plains forming lakes, swamps, flood plains etc.





# The distribution of important wetlands of Kenya

- The area occupied by wetlands is between 2-3% of total land surface area
- Kenya wetlands comprise of coastal/marine wetlands
  - mudflats, marshes, mangrove swamps and deltas
- rift valley system wetlands
- and highland drainage basins comprising of
  - Long rivers flowing through plains forming lakes, swamps, flood plains etc.







# Ecological values and functions of E. African wetlands

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- Ecological values existing in E. African wetlands are similar to those found in similar types of wetlands elsewhere
- In the Mara, Yala and Katonga (L. Victoria basin) wetlands which are being studied under VicRes functions identified include
  - Aquatic habitat, breeding, feeding grounds and refugia (for some tilapia species, cichlid etc ),
  - Terrestrial habitat, carbon sink, microclimate regulation



# Socio-economic values and benefits of E. African wetlands

- Direct Use values (Wild Foods + Energy+ craft papyrus + medicine + construction etc.)
  - edible plants and animals e.g. fruits, roots, vegetables, variety of animals, birds and insects, firewood, charcoal, Timber, building poles/stones, soil, thatch grass, papyrus
  - Medicinal use for: Headaches, Stomach aches, wounds, fever, pregnancy, cough, eye, skin diseases, dental medicine etc.
    - 8%, 19.7% for Mara and Yala respectively

## ■ Fish

- 7%, 37% for Mara and Yala respectively



# Socio-economic values and benefits .....cont.

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- Domestic Water Use
  - 6%, 5% for Mara and Yala respectively
- Livestock pasture and water
  - 70%, 10% for Mara wetland and Yala respectively
- Agriculture
  - 8%, 28% for Mara and Yala respectively



# Management Challenges

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- Conversion threats
  - Multiple use competition
- Modification threat
  - Pollution
- Wetland Conversion Decision criteria
  - Wetland values dynamism
    - ❖ Current and future values
    - ❖ Trade off between conservation and poverty eradication/economic growth



# .../cont. Management challenges

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- Inadequate capacity for management
  - Human resources
    - Need training and involvement of stakeholders at all levels, national, trans-boundary and global to work together on relevant issues
  - Financial resources
    - Global and local sources ought to be mobilised to cater for management of wetlands. PES mechanism should be used as one of mechanisms for this.



# Wetlands conversion threats

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## ■ Agriculture

- **Biofuels** in Tana River Delta, Kenya
  - Court recently overruled appeal by communities

## ■ Aquaculture

- **Prawn farming** in Rufiji delta, Tanzania

## ■ Construction of

- Industrial and Residential projects
  - Nairobi, Mathare and Motoine River basins (supply of water and habitat for diverse aquatic life – Nairobi.
  - Nakivubo wetland filter municipal effluents - Kampala



## Industrial and residential conversion threat

- Major ecological function of Nakivubo wetland is treatment and purification of wastewater from Kampala city
- Value of water treatment and purification est. at 1763.5 – 2,480 Ushs /yr (Emerton et al 1998)

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## ■ Nakivubo wetland in Kampala



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## Sugarcane plantations for biofuel feedstock

- Total land area  
130,000ha
- 20,000 earmarked  
for biofuels (15%)
- 40,000 for rice and  
maize farms (30%)
- 30,000 for  
sugarcane (23%)
- 25,000 villagers  
from 30 villages  
face eviction

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Africa.

## Tana River Delta wetland

- Water, fish, subsistence farming,  
listed as Important Bird Area (IBA)



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South Africa, 30th Nov - 2nd Dec  
2010



# Wetland modification

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## ■ Pollution from mining

- Mara gold mines tailings; people's health, livestock and wetland biodiversity impacts

## ■ Nutrient loading

- Agricultural chemicals – Dominion farms, Yala

## ■ Damming threats

- Kihansi spray toads

## Dried Lake Kirumi, Mara wetland October 2006.

- Lake Kirumi is an oxbow lake within the Mara rivers system whose upstream irrigation activities affect water flow
- Trans-boundary





# Distribution of wetland benefits

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- Redistribution away from the poor to the rich/ investors
  - 'Intended' Rufiji shrimp/prawn farming example.
    - Relocation of communities from the delta to unfamiliar environments and new livelihood activities!
    - Denying communities of wetland goods and services they have always enjoyed for their livelihoods
    - Availing profit making ventures to a few at the cost of the environment and communities far < the total livelihood enjoyed by alienated communities



# The cost of 'ignorance' of wetland values

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- Strong sustainability form vs Conversion and modification
  - The case of non substitutable ecological functions.
- Ignorance of undiscovered ecological values e.g. the endemic Kihansi spray toad being endangered due to damming for electricity and
- Opportunity cost of wetland ecosystem change for saving the toad from extinction amount to > US\$ 3.5m debt to Tanzania!

## Cost of wetland modification

- The Kihansi spray toad was declared extinct in the wild in 2009 by IUCN
- The toad has been saved by a captive breeding program, funded by an IDA-World Bank loan to Tanzania (US\$3.5m!) in 2007. Global or local Tz heritage?

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## ■ **Kihansi Spray Toad, Tanzania**



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# Conclusions

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- The E.A. wetland provides substantial ecological and livelihood benefit to communities around them but are still being degraded and converted at an alarming rate.
- Causes include livelihood activities, Governments' development priorities, profitable ventures and trade off between poverty eradication
- Insufficient appreciation of ecological values & costs
- Management capacity inadequacies

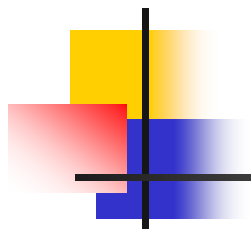




# Recommendations

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- Conservation efforts be guided by a management plan under participatory/stakeholder approach, this will lead to a sustainable utilisation/ wise use of wetland resources.
- More effort should be made by experts to demonstrate and impress upon decision makers the value of wetlands and to justify their conservation.



# THANK YOU

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the STRP NFPs of  
Africa.

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