Strategic planning and management of aquatic ecosystems: Land, Water and Biodiversity

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KENWEB

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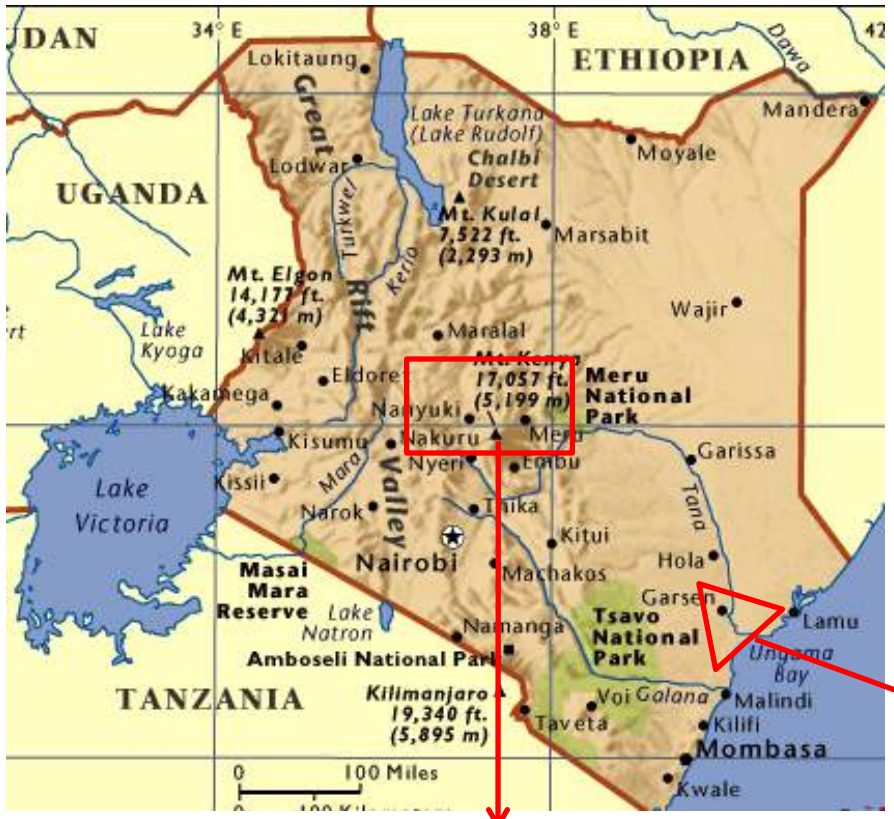
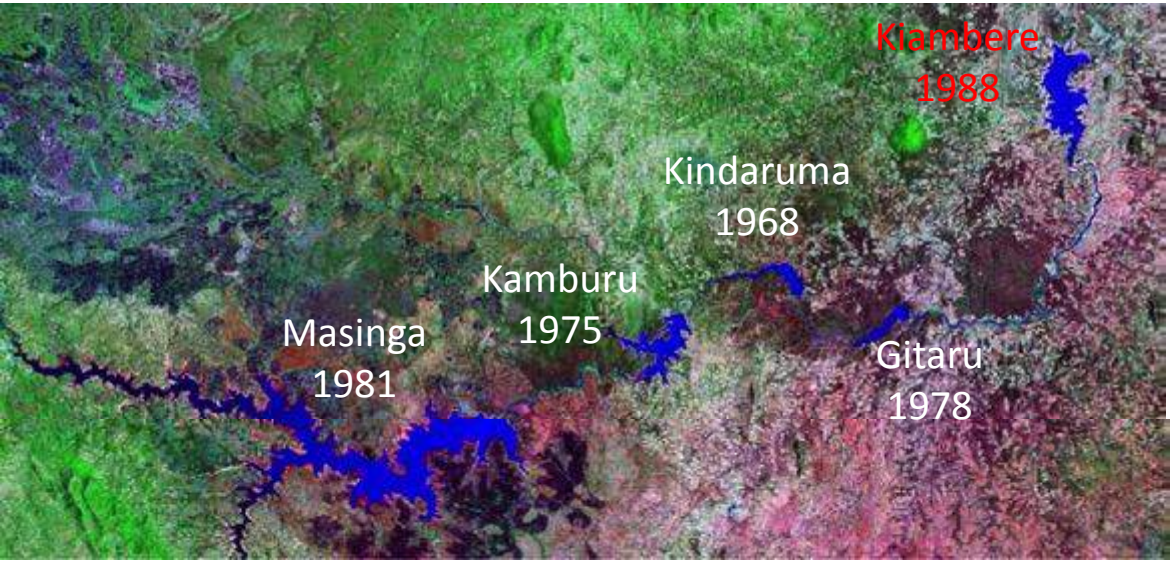
Institut de recherche pour le développement

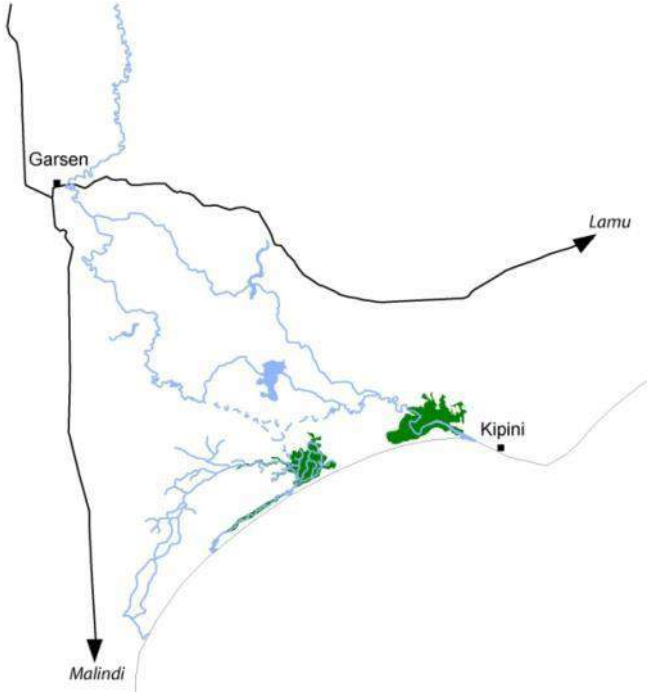
NATIONAL MUSEUMS OF KENYA

Tana River Basin

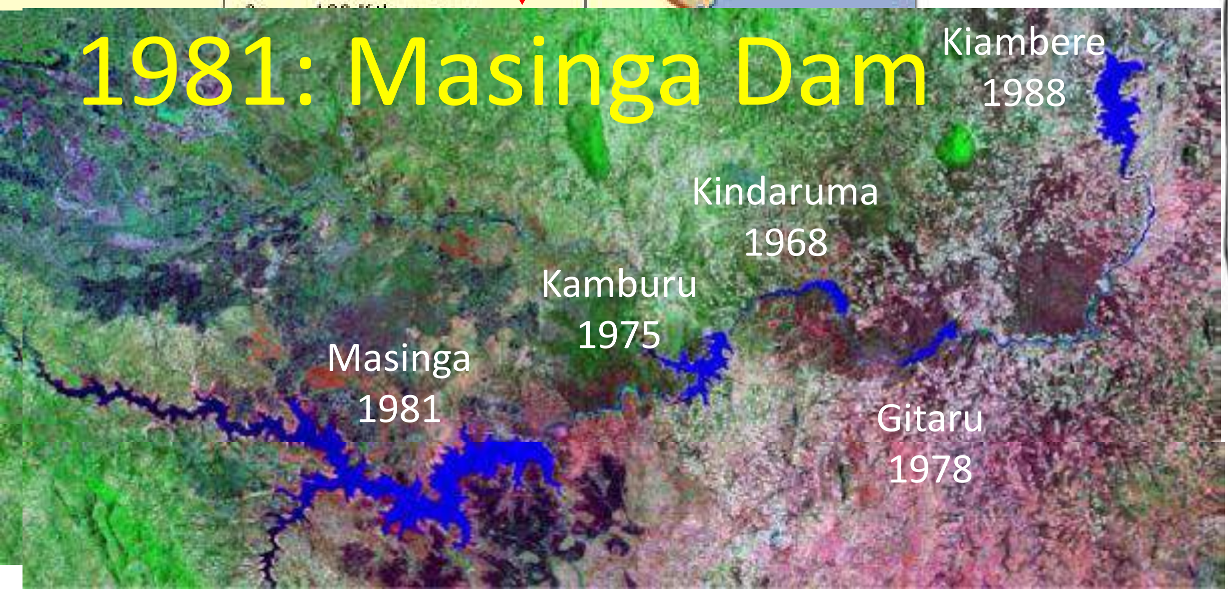
- main river in Kenya but small: only 100 m^3/s at Garsen
- 5 hydropower dams built in the 1970s and 1980s provide 50% of Kenya's power
- dams halved average flooded surface area (the engine in the system) while the Delta population has doubled to 200,000
- new 2 G$US dam, capable of storing 2 yrs of flow, is planned at High Grand Falls

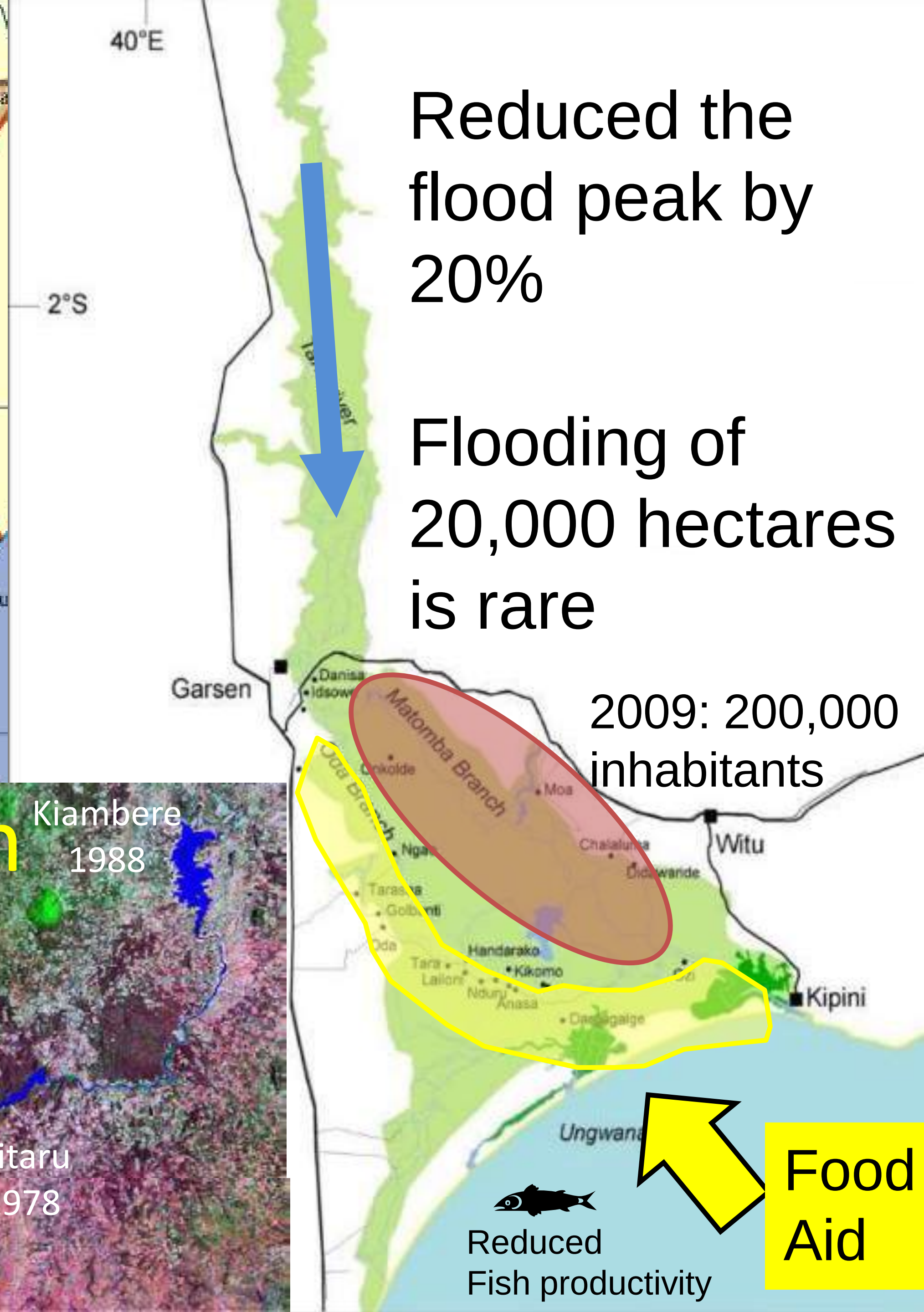







DAN
34° E
38° E
ETHIOPIA
Dawa
Lokitaung
Great
Lake Turkana
(Lake Rudolf)
Chalbi
Desert
Mandera
Moyale
Lodwar
UGANDA
Turkwel
Mt. Kulal
7,522 ft.
(2,293 m)
Marsabit
Kerio
Mt. Elgon
14,177 ft.
(4,321 m)
Rift
Wajir
Lake
Kyoga
Maralal
Kitale
Mt. Kenya
17,057 ft.
(5,199 m)
Eldoret
Meru
National
Park
Kakamega
Nanyuki
Kisumu
Nakuru
Meru
Garissa
Lake
Victoria
Nyeri
Embu
Kisii
Mara
Valley
Tana
Narok
Thika
Kitui
Nairobi
Masai
Mara
Reserve
Machakos
Hola
Garsen
Lake
Natron
Namanga
Tsavo
National
Park
Lamu
Amboseli National Park
Ungama
Bay
TANZANIA
Kilimanjaro
19,340 ft.
(5,895 m)
Voi
Galana
Malindi
Taveta
Kilifi
Mombasa
0
100 Miles
Kwale


1981: Masinga Dam
Kiambere
1988
Kindaruma
1968
Kamburu
1975
Masinga
1981
Gitaru
1978


40°E
2°S
Reduced the flood peak by 20%
Flooding of 20,000 hectares is rare
Garsen
2009: 200,000 inhabitants
Matomba Branch
Oda Branch
Witu
Kipini
Ungwana
Reduced
Fish productivity
Food Aid

Mosaic of Coastal Deltaic & Floodplain Ecosystems

- Flood-dependent ecosystems: no flood = no production
- High Biodiversity: 2 endangered primate taxa, > 700 plant species of which > dozen threatened trees, other groups not sufficiently studied, indications of Congo forest affiliation
- High numbers of breeding & migratory birds (when flooded)

The high productivity sustains a range of traditional activities

Recession agriculture	Forest use woody & non-woody	Fisheries	Livestock keeping
			
Pokomo	Pokomo Wataa	Luo, Pokomo, Orma, Wataa	Orma, Wardei, Somali

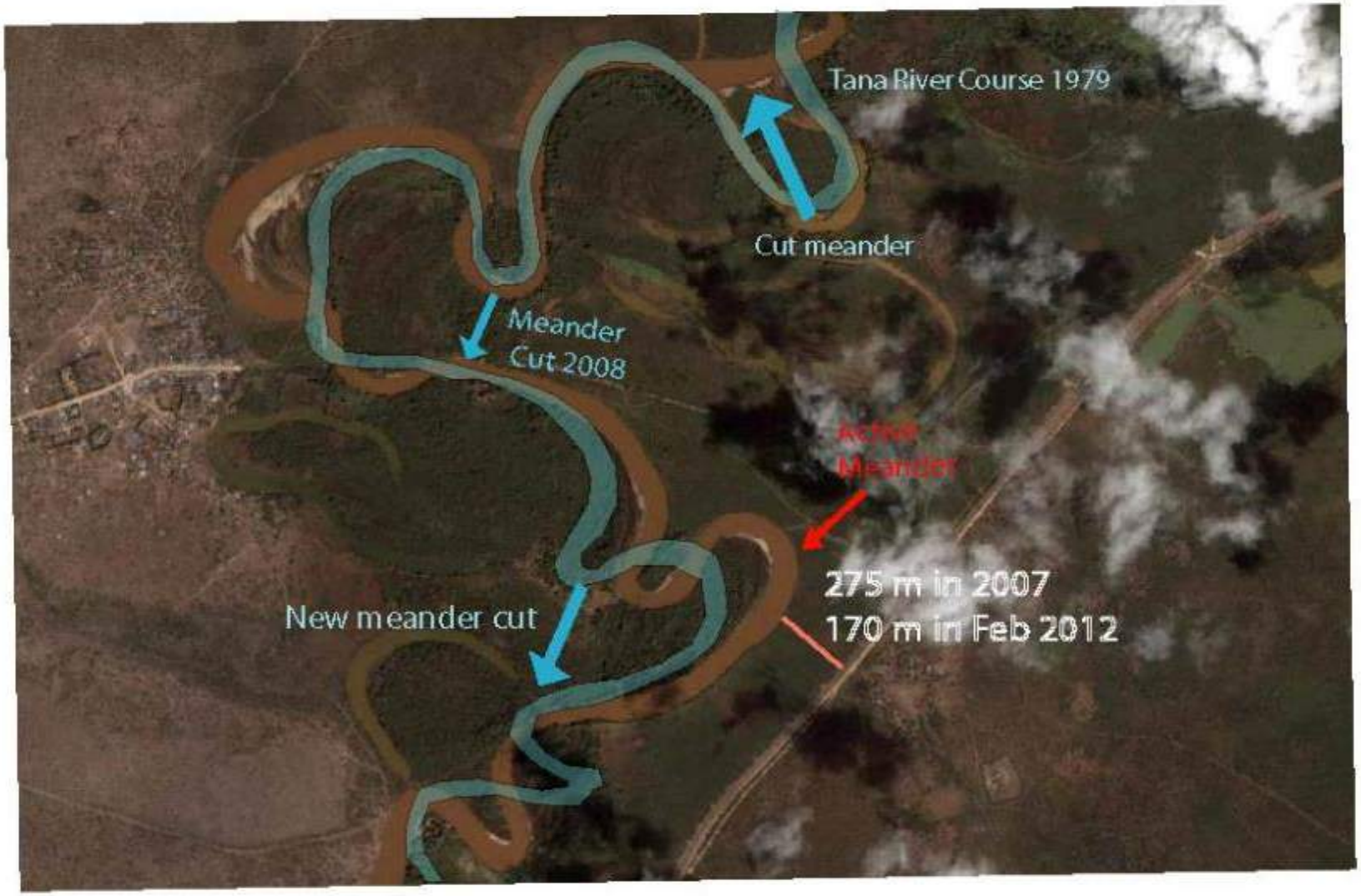
Flood-dependent ecosystems

THREATS

Onkolde Forest = Oxystigma msoo (EN) dying Red Colobus in trouble

Coastal Erosion

Messing with the River




The Ocean water
intrusion

Biodiversity Management Programme in the Horn of Africa

Land Use Planning for Biodiversity Management in Tana Kipini pilot site

Overview

identify the key ecological attributes and identify land and sea use priorities and opportunities.

- ICRAF is one of the BMP Implementing Partners and is managing one of the three projects financed through the IGAD Biodiversity Management Programme in the Horn of Africa
- Cross-border area of North Eastern Kenya and Southern Somalia in an area extending from the Tana River in Kenya to the Laga Badana area in Somalia

Purpose

develop and implement holistic and integrated planning for the land or seascapes and an implementation strategy

- support Lamu County to mainstream biodiversity planning and management in its ongoing plans of developing a spatial plan
- enhance capacity of key stakeholders to produce NS Implement partitory lands planning and

Deliverables

- 200 lead community members mobilised to participate in project
- Technical Land Use planning committee established and four planning meetings conducted
- PLUP strategy developed and implemented
- LUP within County supported with equipment and training
- LUP in County technically supported for participatory and biodiversity inclusion
- Capacity of communities and stakeholders enhanced for sustainability of activities

Historical context of land rights

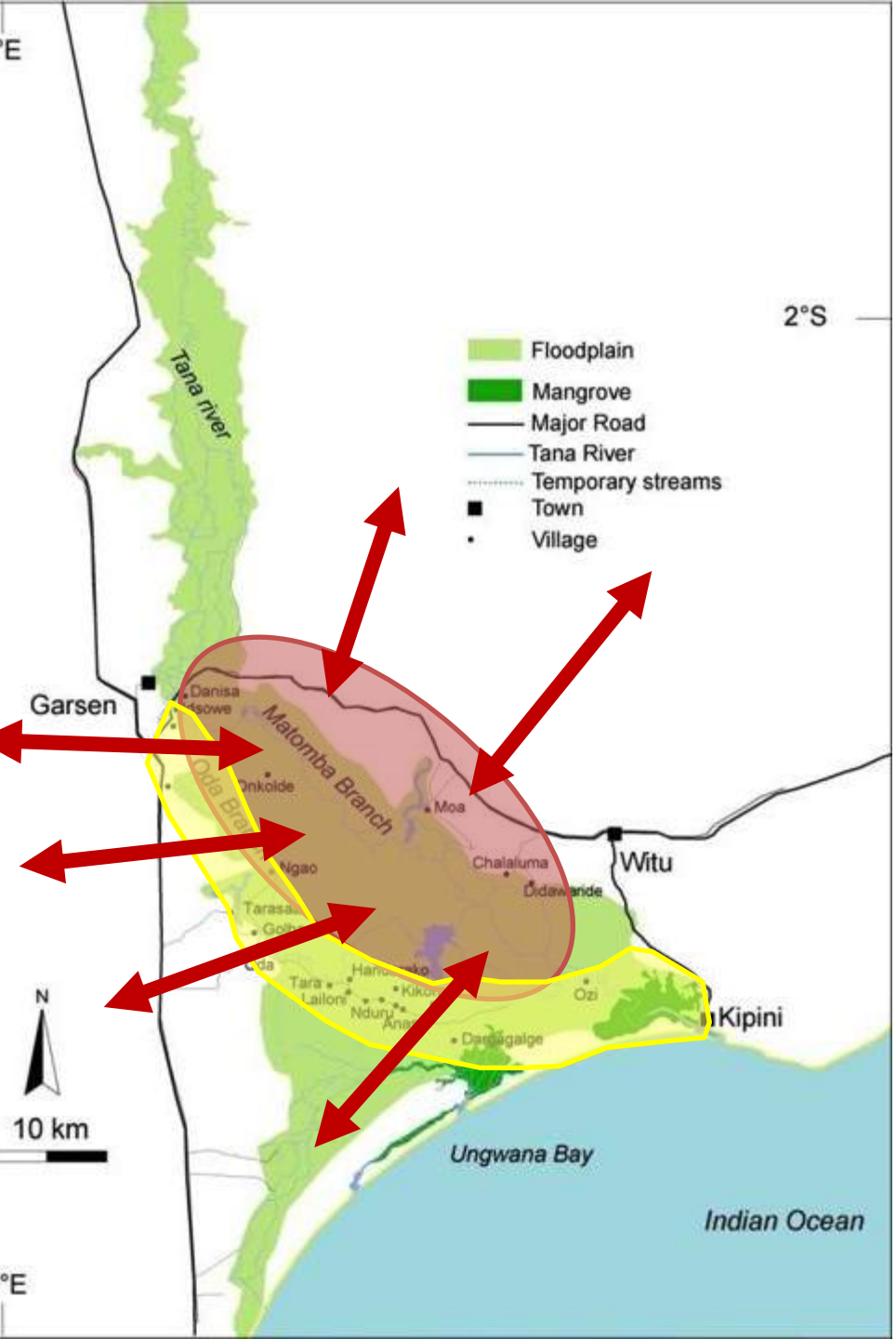
- For centuries, customary rights of Wataa, Pokomo and Orma
- At Colonial Times – Crown Land
- At Independence, central floodplain became 'Government Land', not 'Trustland' (in contrast to other parts of Northern Kenya where 'Crownland' became 'Trustland')
- In the 70s, creation of collective ranches on the terraces - Model promoted by the World Bank.

Most of ranches failed but livestock production continued informally , with customary custodians still having access to the land.

Issues of Land policy: coast region

- Land historical injustices to local communities
- Lack of regulation on the rights of land owners and tenants
- Slow land adjudication process
- Lack of public access to beaches and fishing
- Lack of rationalization of salt mining with land uses
- Inadequate conservation measures on critical ecosystems
- Threats of heritage sites by current land use

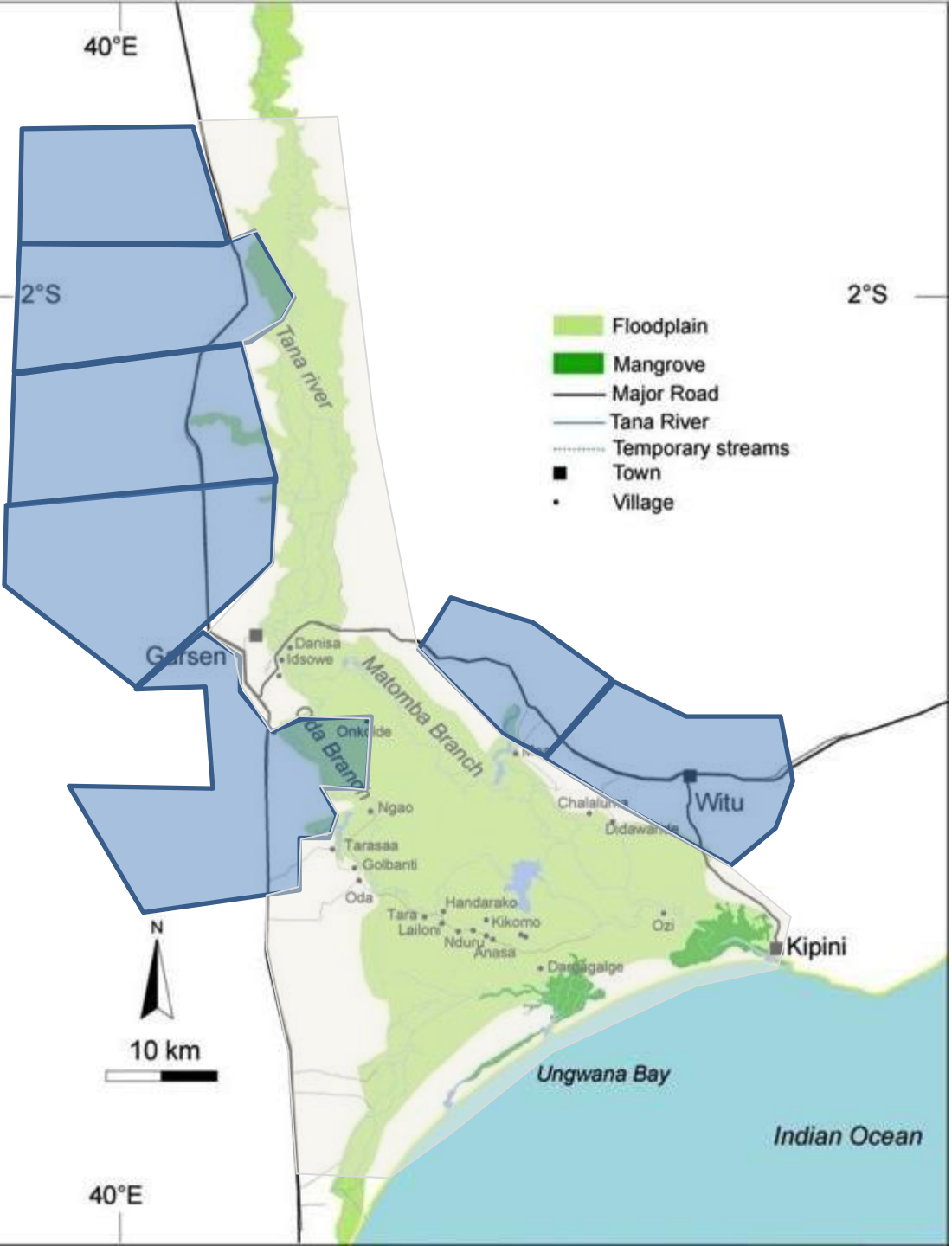
Customary rights of Orma and Pokomo



- Centuries old « Malka » agreements on the sharing of the floodplain and passage of livestock (dry season grazing)

Oda branch (West) Pokomo
Matomba branch (East) Orma

- Solidarity in periods of drought, conflicts resolved by council of elders



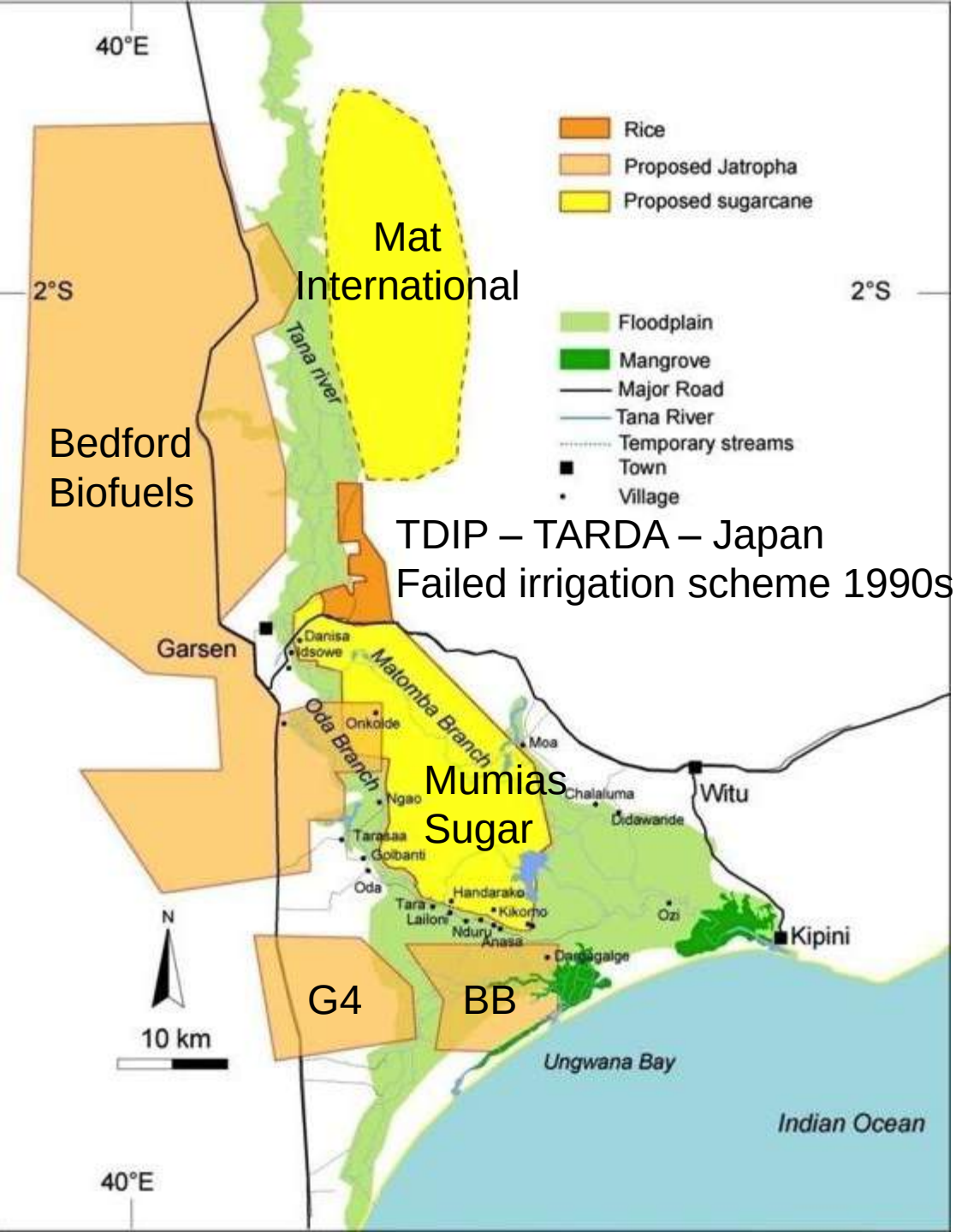
Official Land Status

- Independence :
  delta = government land
  + small trust land (council)

contrast with most of semi-arid Kenya: trust land

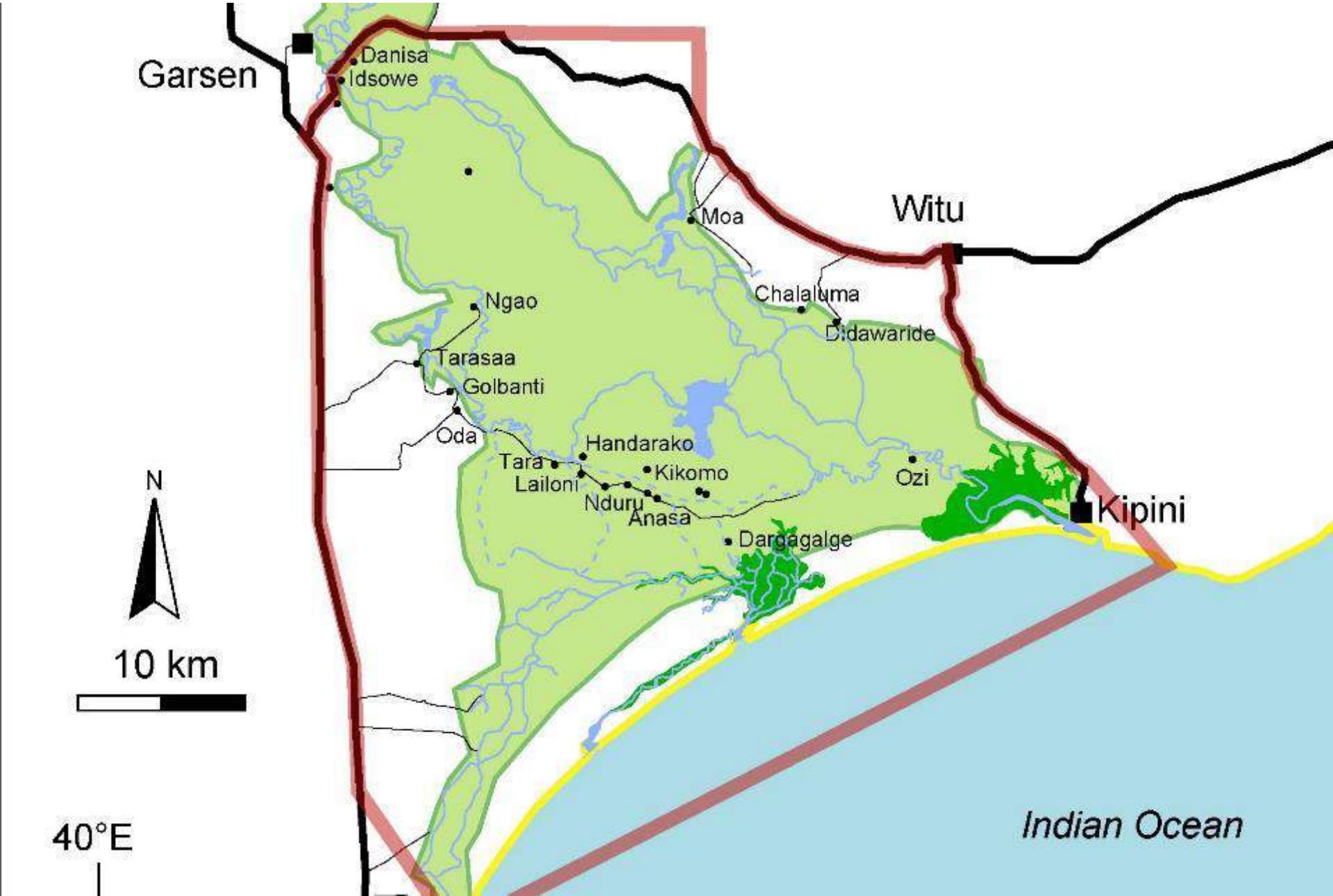
- 1970s creation of ranches : World Bank take out development loans with land as collateral (failed)
- Pastoral territory cut into blocks not adapted to mobile livestock keeping
- Concentration of power : committee members

Boom of large-scale biofuel projects since 2008



- Indebted ranches leased for 45 years to private companies, minimal fee unless highly successful and only after lag period
- Government land taken by TARDA who have only failed irrigation schemes to show for

Ramsar listing September 2012



Land Use Planning for Biodiversity Management in Tana Kipini pilot site

Land use types:

- Lamu Port, Southern Sudan-Ethiopia Transport (LAPPAET) Corridor Project
- Agriculture – largescale and subsistence
- pastoralism
- forestry
- wildlife conservation
- tourism etc

How to involve AND empower the local communities?

Co-management of natural resources with the local communities

Following a few key principles of co-management :

- Develop trust
- Take into account the diversity of interests within the communities
- Initiate a flexible interative negotiation process (involves compromises, re-elaboration, consensus building)
- Build on customary and local organisations

What is a Dialogue?

An exchange of ideas or opinions with a view to reaching an amicable agreement or settlement. It is necessary to allow continuous information sharing and feedback throughout

KENWEB has provided for Tana Delta opinion sharing through:

- stakeholder meetings during field work involving special "baraza" or group meetings
- Informal fun and games activities such as the World Wetlands Day celebrations
- Workshop format bringing together a more diverse group

The Tana Dialogues

World Wetlands Day Celebration – Moa Village (2-Feb-2012)

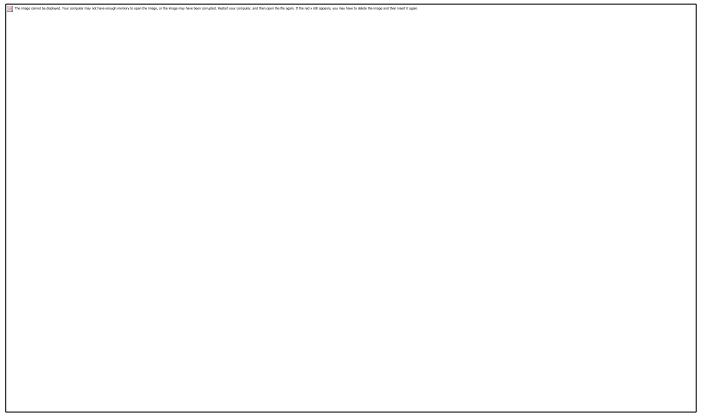


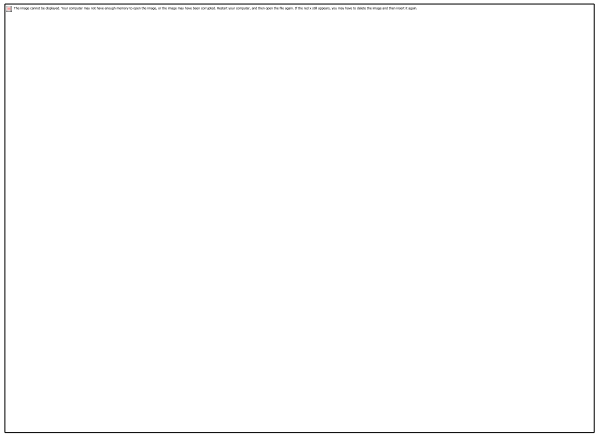



Children's Activities (artwork, drama), Special lectures, Interactive games (boat races, tag of war) ……..

The Tana Dialogues

Water, Land and People: Vision for Peace (November 2012)





Local communities: represented by village elders, Community Based Organizations, Beach management Units

Diplomatic missions – French Embassy

Researchers: KENWEB, NMK, KWS

Government Ministries and Agencies: Environment, Water, Lands, Wildlife, Forestry

International and National NGOs: Wetlands International, UNEP, UNDP, Nature Kenya, EAWLS

Role of NGOs and government agencies

- NGOs need to understand the needs of communities for sustainable development and ensure that projects are in themselves considering the role of communities;
- Ensure that funding is not the purpose of project implementation and avoid raising undue expectations of communities for funding
- Diplomatic missions have an important role in monitoring funding and having independent views on project EIAs; and that communities are onboard through a free prior and informed participatory process
- Governments and government agencies need to foster stakeholder involvement in a manner that ensures a true bottom-up approach.

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Laikipia Wildlife Forum

KENWEB

Water Conservation Strategy for Laikipia County

2014 – 2018

Ewaso Ng’iro catchment (multiple users: Agriculture, urban, pastoralism, wildlife

Vision

"Sustainable water resource management, planning and usage for benefits of Northern Ewaso Ng'iro inhabitants and environment"

Mission

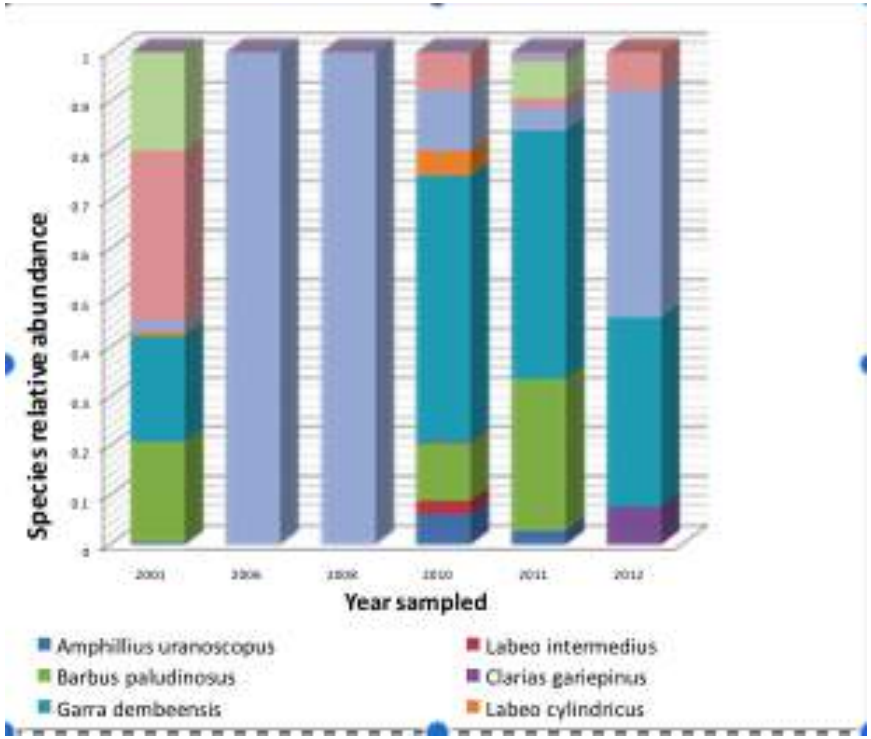
The strategic mission of the Laikipia Water Conservation Strategy is that: "Water resources are used and managed to ensure sustainable social and economic growth and maintenance of water-dependent environments"

Strategic Objectives

- Efficient Water Use and Allocation
- Environmental Sustainability
- Water Resource Management and Governance

Formation of Water Resource User Associations (WRUAs)

- Conflicts between upstream and downstream users of water in the ENNCA became more violent in the mid 2000.
- WRMA begun to organize upstream, mid-stream and downstream users into user groups to agree on water allocation
- During the years that followed water allocation for the environment also improved thus signs of recovery of ecosystems.
- However, this is not consistent and has in some areas continued to lead to degradation



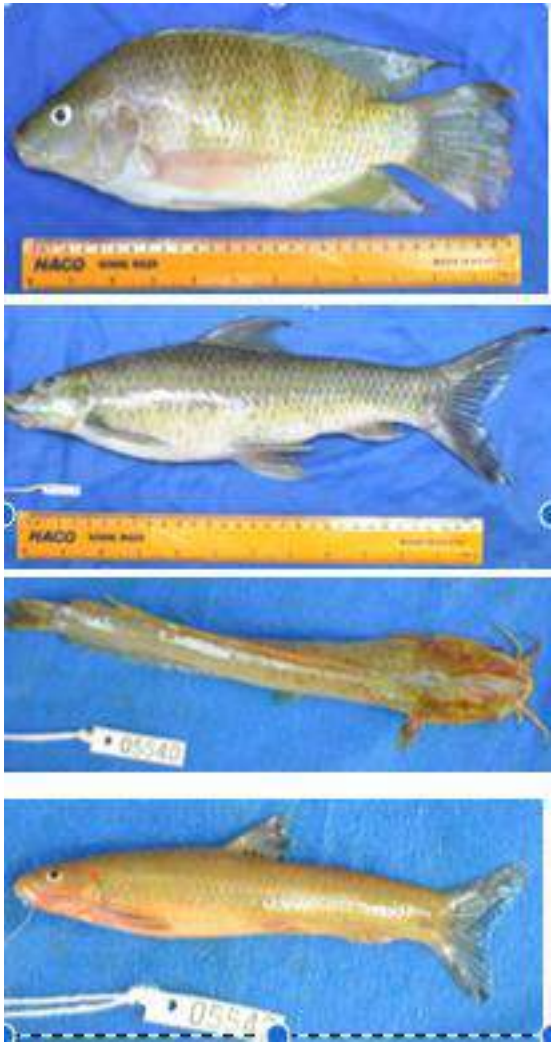


Fig 4. Clawless upper limbs of *Aonyx capensis*

Fig 5: Freshwater crab (*Potamonoutes neumanni*)

Fig 6: Louisiana Crayfish (*Procarambus clarkii*)

Laikipia Water Conservation Strategy

Strategic approach to managing public water supplies and to plan in the short, medium and long term.

- sets out how demand and supply of water resources should be managed: managing abstraction, flood risk, water quality;
- sets out actions to promote responsibility among water users, abstractors and water companies in efficient use of water while considering the environment, and secures that users do not compromise the quality and quantity of water resources.
- consider the needs of “people” and “the environment” and thus needs to underscore means of securing water supply while safeguarding the environment.