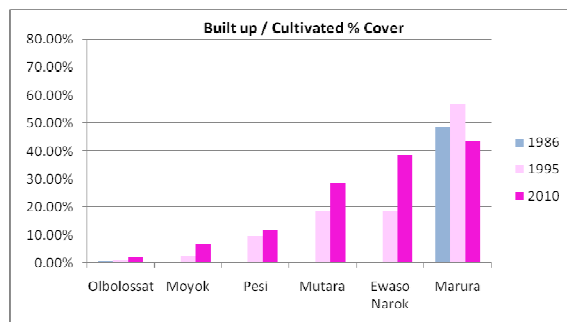


The Upper Ewaso Ngiro basin wetlands serve as important ecological refugia when the rest of the region is too dry. This is a critical ecological role played by these wetlands.

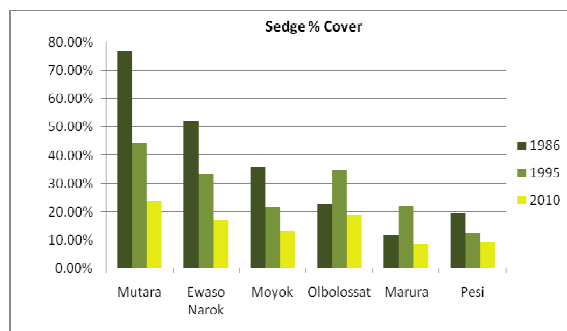
IMPACTS

The impact of several years of farming in the wetland is visible in the dramatic change in the land cover with all the wetlands having recorded at least 50% increase in built up / cultivated areas between 1986 and 2010 with the exception of Ol Bolossat, which has remarkably recovered from 1990s encroachment.



Land Cover Changes - Built up/Cultivated Coverage

Increase in human activities is confirmed by decrease in sedges vegetation, which represent natural wetland ecosystem.



Land Cover Changes – Sedges Coverage

Some of the invisible values or benefits of wetlands ecosystems is support of tourism industries and species survival downstream (Buffalo Springs, Samburu and Shaba National Reserves and Ranches), a service that is gradually being eroded by draining.

WETLANDS MANAGEMENT

Most wetlands lack management plan systems apart from Lake Ol Bolossat which has an approved management plan. In addition Water users association are almost absent with the exception of Marura area and Pesi. In all the other wetlands they have been a non-starter but the farming community have a stronger desire for some effective water management system. At the same time, they would like to continue living in the wetland where farming is conducive because of availability of water. A holistic government intervention in form of participatory planning on wetland utilisation and conservation is required.

Considering that more than 50% of the wetland has been converted into farming area, three management scenarios are proposed;

- No intervention at all and the status continues, which will gradually transform wetland into farmland and grassland
- Total exclusion of people from the wetlands, a momentous task and unpopular decision considering that the adjacent area is too dry for any viable farming activities
- Coordinated intervention of wetland restoration and management as joint venture that will allow multiple sustainable utilisation

Possible Interventions

- Co-ordinated management of wetlands
- Empowerment of WRUAs
- Use of canal water
- Rehabilitation of shallow water reservoirs for storage
- Rain water harvesting
- Provision of extension service
- Improved irrigation techniques (Drip)
- Improved farming techniques (Green house, Conservation Agriculture)
- Farming on the dry lands around the wetlands
- Introduction of better alternative land use practices



Improved farming techniques, Water harvesting and Storage

Contact Us:

CETRAD, Buttson's Complex off hospital Road,
P.O Box 144 – 10400 NANYUKI.
Tel +254 62 31328, +254 725 348449,
Fax: +254 062 31323 E-mail: Cetrad@cetrad.org



Ministry of Water
and Irrigation
KENYA

CETRAD
Centre for Training and Integrated Research in ASAL Development

P.O. Box 144 - Nanyuki, Kenya
Tel: +254 062 31 328
cetrad@cetrad.org



Centre for Development
and Environment
Institute of Geography
University of Berne
SWITZERLAND

MAPPING AND ASSESSING WETLANDS UTILIZATION IN THE UPPER EWASO NGIRO BASIN FOR “SUSTAINABLE UTILISATION OF WETLANDS FOR A HEALTHIER ECOSYSTEM AND IMPROVED LIVELIHOODS”



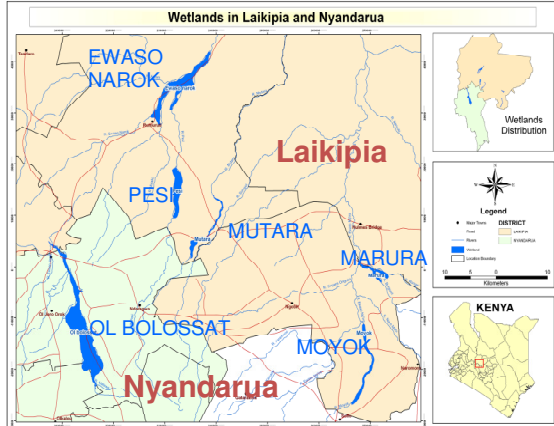
Buttson's Complex
Off Hospital Road
2nd Floor, Left Wing
P.O. Box: 144,
NANYUKI – Kenya
Tel: +254 062 31328, +254 725 348449
Fax: +254 062 31323
E-mail: Cetrad@cetrad.org
Website: www.cetrad.org

CETRAD

CETRAD is a bilateral institution between the government of Kenya and Switzerland, under the Ministry of Water and Irrigation. CETRAD's mandate is to assess and evaluate the potential and the utilisation of resources in the ASAL's, including the interaction and relations between ASAL and the high potential areas; and the economic core regions. This is aimed at promoting better use and management of natural resources for environmental protection and improved livelihoods in the ASAL's.

SETTING

Upper Ewaso Ngiro Basin (UENB) stretches from a semi-humid area at the foot of Aberdare ranges and Mt Kenya through the arid regions of Laikipia County to the more arid Samburu and Isiolo Counties. The nature of the physiographic features that are characterised by plateau formation has encouraged wetland formation along the Ewaso Ngiro river artery.



Wetlands in Laikipia and Nyandarua Counties

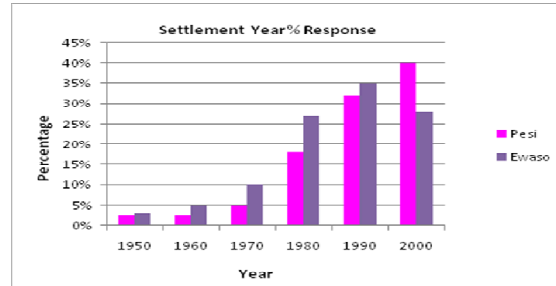
The upper most wetland is the Ol Bolossat which forms the headwaters of all important Ewaso Ngiro river, which receives water from rivers draining from both Mt Kenya and Aberdare ranges within the basin.

Historically, this basin has been used by nomadic pastoralist up to the early part of the 20th century, when the area was occupied by white colonial farmers and later after independence was subdivided into small scale farms.

DEMOGRAPHIC TRENDS

Although wetlands in the basin were not initially allocated as farming/settlement areas, all the wetlands have been parcelled out with the exception of Ol Bolossat. For example, land allocation in Ewaso Narok has been undertaken by the provincial administration, while in Marura, settlement was done by central government in the early 1970's and titles have been issued.

Similarly in Pesi, Mutara and Moyok, the people alleged that land buying companies allocated land in the wetland and some people have titles.



Settlement trends in Pesi and Ewaso Narok

CROP FARMING & LIVESTOCK KEEPING

Currently the wetlands form important livelihood support system mainly to the small scale farming communities. Farming is mainly geared towards meeting a combination of domestic food and income generation through horticultural crops, the later a recent development.



Cultivated areas and Livestock grazing

Wetland areas also form important grazing areas for both the local community and outsiders especially from the arid northern region who come to the south for pasture in the dry months. The dry months are often period of water related conflicts between farmers-farmers and farmers-pastoralist grouping.

ECOLOGICAL CHANGES

Soil & Water

The ecosystems indicated minimal change in soil fertility (pH 5.8 – 7.7; CEC 26 – 30 Cmol/kg) and water quality (pH 6.8 – 8.4); which can be associated with high dynamism in terms of water flow from the humid Aberdare and Mt Kenya ecosystems. During the wet season these wetland are heavily flooded and human activities are totally curtailed resuming again in dry season, which allow ecosystem self recovery.



Pesi Wetland

Flora and Fauna

Ewaso Ngiro wetlands are composed of diverse vegetation cover where natural ecosystem with low level of disturbance and high wetness are characterised by *Cyperus. Dives*, *C. exaltatus* and *C. Papyrus*. Disturbed ecosystem species include *Aeschynomene schimperi*, *Sphaeranthus spp* and *Polygonum spp*.



Swamp Vegetation (Birds and Hippos (Inset))

Several birds species have been recorded in these wetlands which include the Crowned Cranes, Sacred Ibis, Grey heron and night heron.

They are also important wintering grounds for birds like little stint, marsh sand piper, little grebe, pied king fisher and common snipe.