Land Use Policies and Natural Resource Management in Kenya:

The Case of Nairobi River Basin

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Summary

- Nairobi river basin complex
- Pollution of the river.
- Multiple land uses along the river
- Role of land use policies
- Lack of a solution through consensus
- Recommended best-compromise land use policy options

Introduction

- The role of land in Kenya- Economic, Socio-cultural and Political development

- Importance of land
  - Home for natural capital based sectors of the economy (42% of GDP)
  - Environment: provides ecosystem services vital for quality life

- Need for sound management of natural capital
Introduction cont’…. 

- Natural resource degradation in Kenya
  Challenges include:
  - high population growth rate (to reach 52.7M by 2025)
  - undervaluation of environmental goods and services
  - under funding of the natural resource sector
  - weak enforcement capacity
  - lack of land use policies

- Enactment of the National Land Policy
  (Sessional Paper No. 3, 2009)
Nairobi River system (Motoine/Ngong River, Nairobi River and Mathare) has its source at the Ondiri swamp in Kikuyu township.

The swamp is a source of water for livestock and domestic use.

**Land uses along the Nairobi River Basin**
- Natural Forest- Catchment areas
- Agricultural
- Residential
- Commercial
- Industrial
Natural Forest- Catchment areas

- These are either wetlands (e.g. Ondiri Swamp) or forests (e.g. Dagoretti forest)
- However, the catchment areas are not maintained in a pristine state.

Agricultural Uses

- Agricultural activities along the river basins have led to nutrient loading, soil erosion, sedimentation and siltation of rivers.
- Reduced vegetation cover has led to loss of habitat for many animal species
- Water abstraction for irrigation has affected the water table reducing water flow in rivers.
There is a shift from subsistence farming into residential properties.

Instances of raw sewage discharge from residential properties into rivers is turning them into open sewers. The situation is more pronounced in informal settlements.

Intense commercial activities along the river basins are characterised by high levels of pollution from solid and liquid waste.
Some industrial establishments discharge their waste waters directly into the rivers
Accumulation of non bio-degradable waste overloads the system hence reducing its self-purification capacity

Stakeholders of Nairobi River Basin

State Agencies are the major stakeholders, they include:
- Ministry of Environment and Natural Resources (MENR)
- National Environmental Management Authority (NEMA)
- Water Resources Management Authority (WRMA)
- Athi Water Services Board, City Council of Nairobi, Nairobi Water and Sewerage Company and the various local governments
Stakeholders cont’……

- Small subsistence farmers
- Big commercial farmers
- Private property owners
- Public institutions owning land beside the river
- Small scale and large scale business owners
- Environmental conservation groups
- International environmental groups
- The wider public among others

METHODOLOGY

- The use of multi-criteria decision analysis (MCDA) methodologies is currently in common use to analyse environment related matters
- The method facilitates collaborative decision making for public goods by allowing stakeholders to compare alternatives based on their preferences for attributes rather than the traditional top-down approach to management.
- It has been used to model the investment policy of Lisbon metropolitan region, solid waste planning, locating a waste treatment facility in Finland and resolution of a water allocation problem in Spree River basin in Germany.
Data elicitation

- Data and information on the past trends in human population growth within the basin, changes in vegetation cover, changes in land uses, were used to carry out trend analysis
- Primary data was collected by the use of semi-structured questionnaires from different stakeholders
- The technique of multi attribute evaluation was applied to analyse the data collected

Study findings

- The study interviewed a total of 141 respondents within the basin distributed among three groups based on land use; farmers (53.2%), commercial users (29.8%) and residential users (17%)
- Most respondents indicated that the river systems was important for them as shown by the figure 1 below.
- Across all the different management approaches, regulated use was the most preferred type of river management as shown in figure 2 below.
Fig 1. Respondents ranking of the importance of the river

Source: Field study, 2009

Fig 2. Respondents ranking of the preferred management approach

Source: Field study, 2009
Conclusions
The study results strongly supports
- Regulated use of the river basin
- Adoption of a regulated system of management by the policy makers and stakeholders
- There is need to set up an effective regulated use system
- There is need for clear land use policies developed through multiple stake holder participation
- Land use policies and plans when well implemented result in sustainable natural resource management
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