



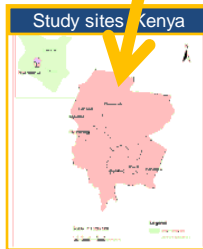
Detection of the Extent, Distribution, and Use of Small Wetlands of East Africa by Remote Sensing



Background

Small wetlands in East Africa are estimated to cover some 15-45 million hectares. They are viewed as potentially productive sites for meeting the growing demand for food crop production. To date, their area extent and distribution, and their share under agricultural land use are largely unknown. Mapping of these wet-lands requires high spatial resolution data that are mostly unavailable for the small wetlands of East Africa. Our objectives were:

- Assess wetland distribution over space
- Map and classify wetlands by type, size and land use
- Determine historic land use changes
- Identify drivers of changes

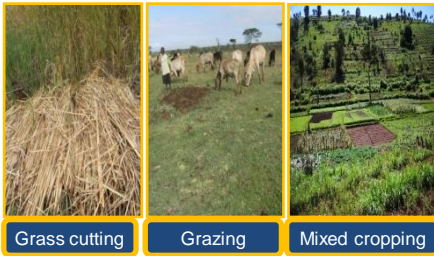


Study area

The study took place in wetlands of <500 ha in four preselected 16 km² areas. Factors for selection of the sites were diversity of wetlands (Floodplains vs. inland valleys), use diversity (unused, grazing, cropping), as well as gradients of altitude (highland vs. lowland), of rainfall (humid vs. semi-arid) and demography (high vs. low population)

- Laikipia flood plains, natural papyrus swamp with intensive agriculture in the fringe areas.
- Mt. Kenya highlands, inland valley intensively cultivated without drainage (*Colocasia esculenta*) or after drainage (*Zea mais*, vegetables).
- Usambara highlands inland valley intensively cultivated after valley drainage.
- Pangani plains flood plain extensive lowland rice production.

Major wetland uses



Use of different spatial data sets enhance wetlands detection.

Combination of landsat and aerial photos provides maps suited for land use classification of small wetlands.

The maps contribute to a decision support tool for assessing the agricultural potential of wetlands

Wetlands classification

