Overview of the status of soil resource in Uganda, and the needs and priorities for its sustainable management

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Overview

- Location : Uganda lies astride the Equator, between latitudes 4^{o} 12´ N and 1^{o} 29´ S and longitudes 29^{o} 34´ W, and 35^{o} 0´ E.

- Size: Total land area 241, 548 km^2 of which about 15% is covered by water bodies

- Population : About 32 Million People

- Population Growth: 3.2 % per annum

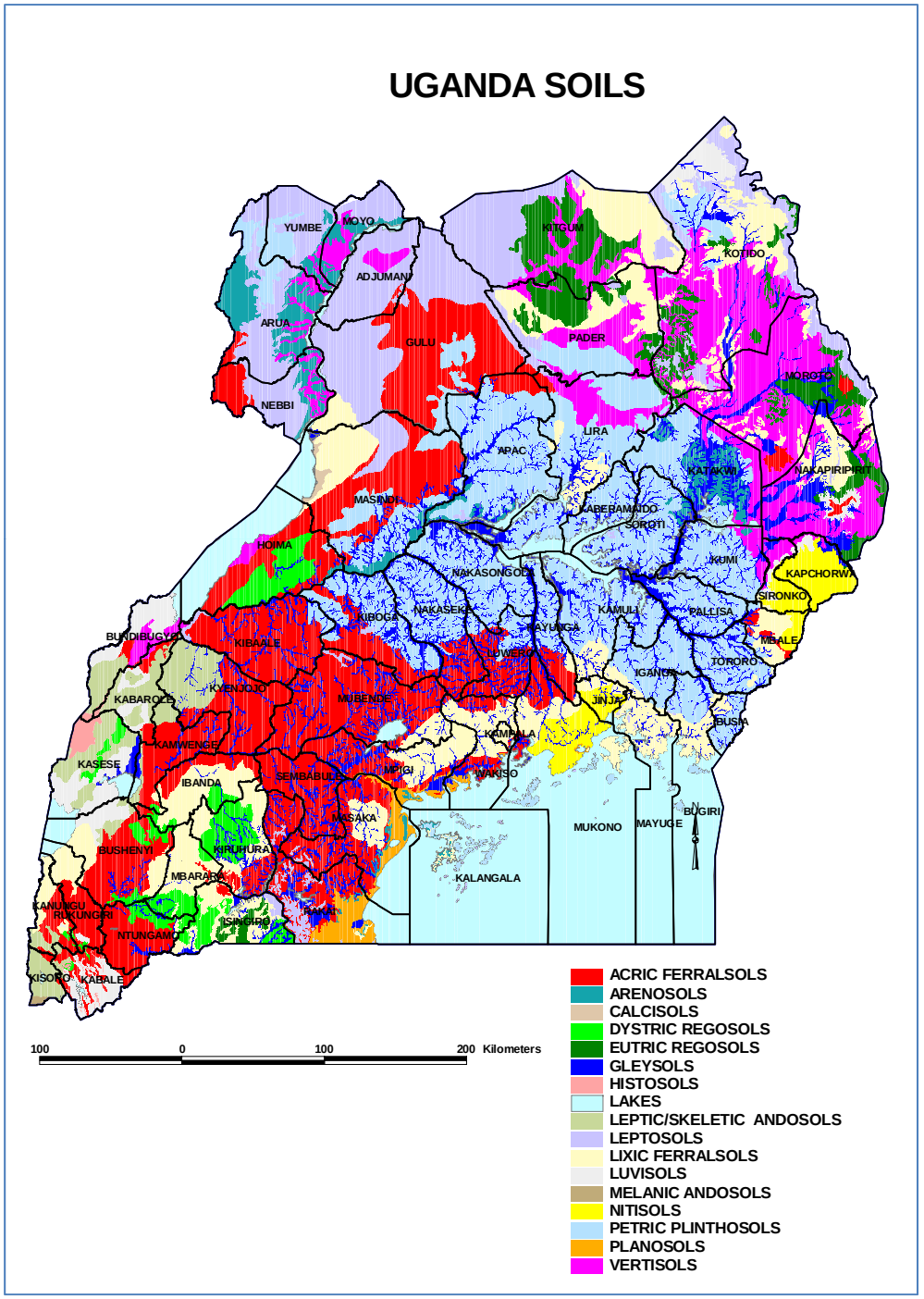
Climate and Topography

- Climate
  - Temperature range: 15^{o} - 30^{o} C.
  - Annual Rainfall range: 750 to 1500 mm

- Topography
  - Mainly, lying between 1000 - 2500 metres above sea level.

The soil resources of Uganda

Fig. 2: Soil map of Uganda with District boundaries overlaid



Inherent productivity rating of Uganda soils

- High - 8%
- Medium – 14%
- Fair - 43%
- Low – 30%
- Negligible - 5%

-Varying productivity depending on place
- Research indicates declining soil fertility due to nutrient mining and little or no replenishment of nutrients

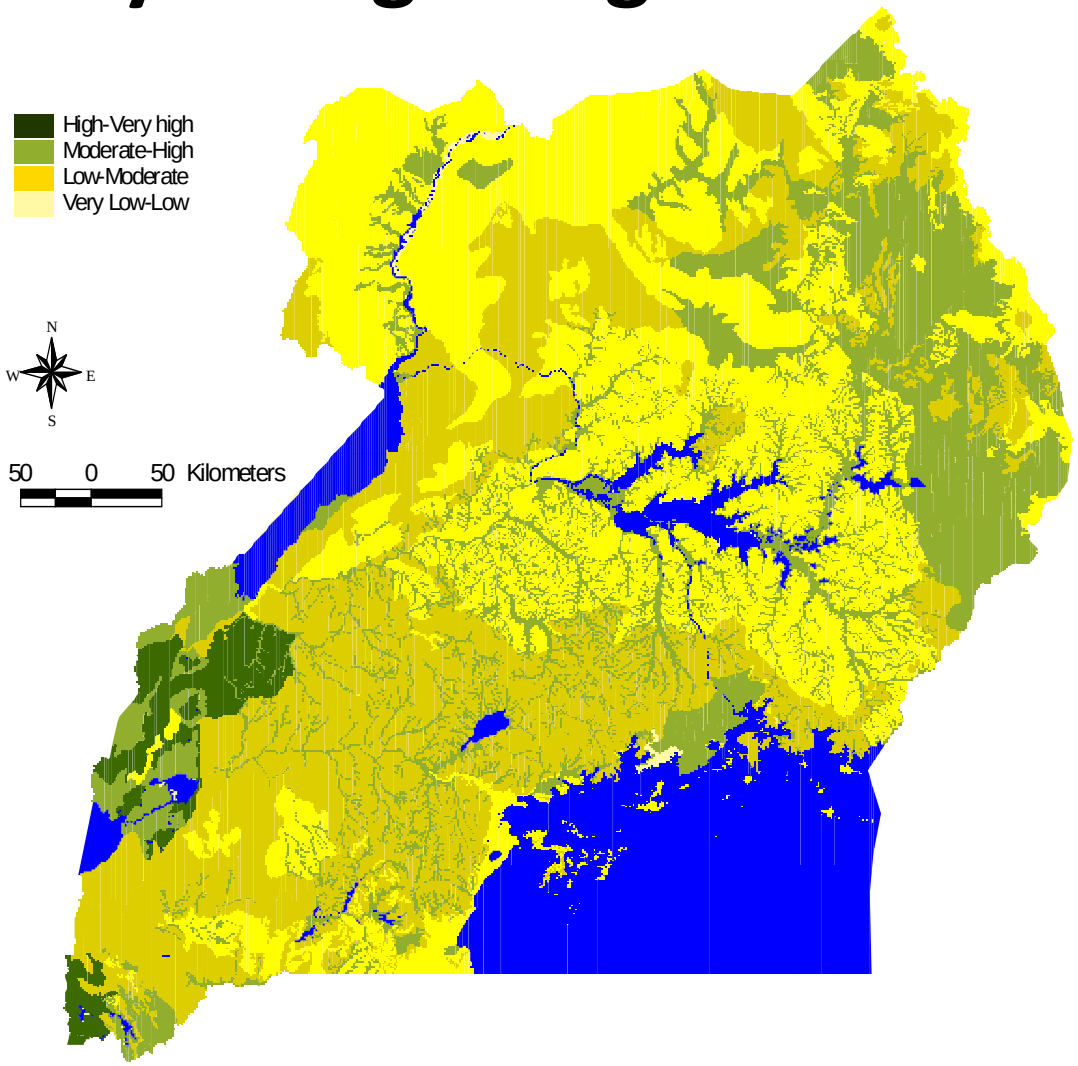


Fig. 3: Inherent fertility of Uganda soils (based on grading in the soil memoirs, 1960s)

Updating the soils inventory

- Current map and data (hard copy) developed in the 1960 and need updating
- To-date, 4 sheets out of 17 have been updated and digitised for easier use
- Efforts to convert hard copy soil memoirs into digital format are on-going
- Development of the soils database is underway to integrate newly generated analytical data into the existing soils data.

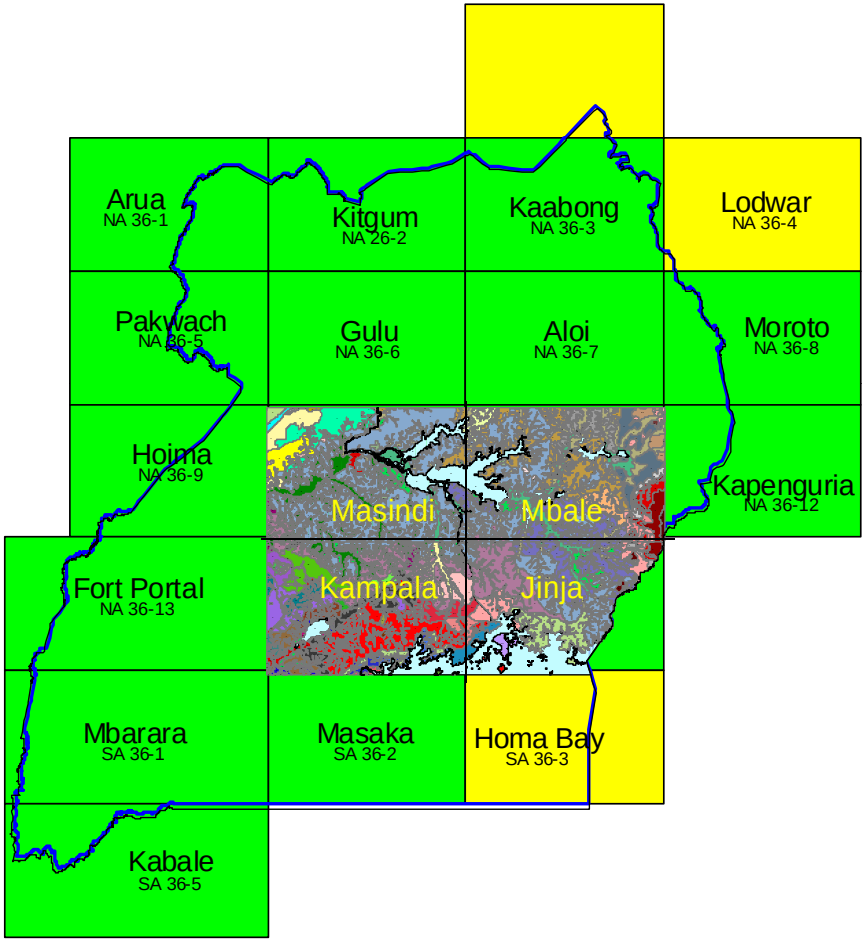


Fig. 4: Uganda map showing the four soil map sheets that were updated

The soil testing laboratory

- A running lab. for research and the general public
- Analyses mainly soil & plant tissue

Fig. 5: The Soils Laboratory and office block at the National Agric. Res. Labs, Kawanda

- Over 12,000 samples analysed in 2012
- Mostly research samples analysed

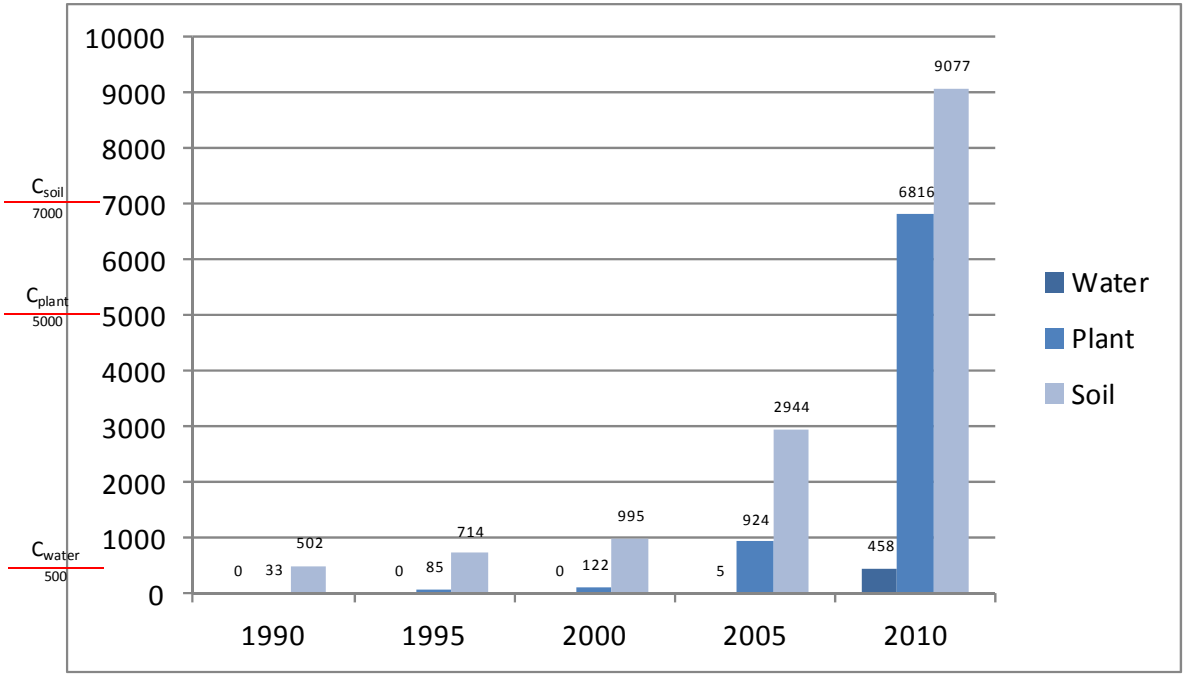


Fig. 6: Trends in the number of samples analysed at NARL over years

Challenges facing the soil resource in general

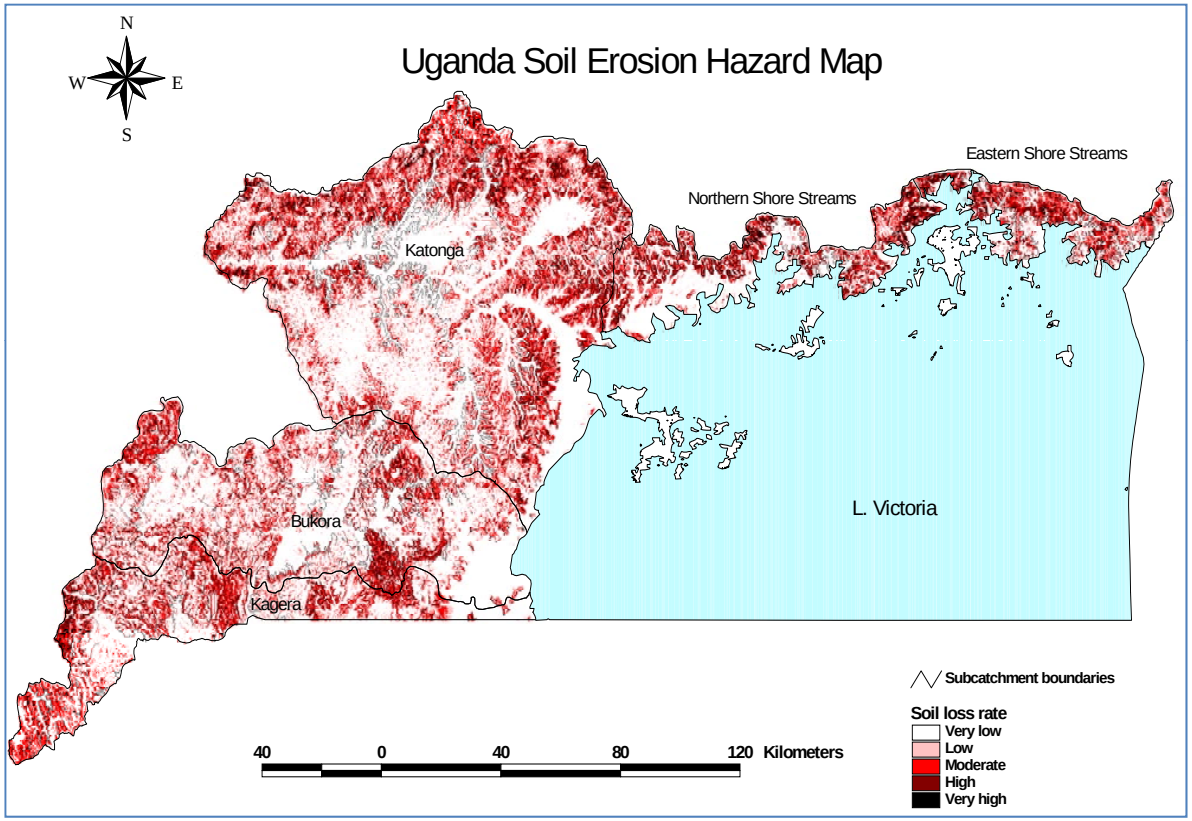


Fig. 7: Erosion hot spots in the Lake Victoria catchment

Challenges facing the soil resource in general

- Land degradation (soil erosion esp. in hilly and mountainous areas, deforestation, soil fertility decline, …)
- Inadequate knowledge on proper soil/land use practices
- Poor land management practices leading to unsustainable use
- Population pressure leading to continuous cultivation
- Inability of smallholder farmers to invest in sustainable land management practices (e.g. very low fertiliser use)

Challenges facing the soil resource (cont'd)

- Lack of enforcement of Environment and Natural Resource (ENR) Management policies and regulations
- Poor waste disposal
- Lack of an updated soils inventory/map
- Soil survey to update the soils database very expensive!
- Soil analysis cost rather high for farmers (US $ 11.5 for a routine test: pH, OM, N, P, K, Ca, Mg, texture)

Current efforts to address soil management challenges

- Generating and promoting ISFM interventions (SLM, CA, linking ISFM to profitable enterprises, etc.)
- Multi-institutional/stakeholder collaborative projects
- Updating fertiliser recommendations for major crops
- Updating the soils information to meet requirements

Current efforts to address soil management challenges (cont'd)

- Public-private partnerships in information dissemination
- Providing soil testing service to farmers and private sector
- Policy interventions (e.g. developing a fertiliser strategy, govt support to fertiliser use through NAADS)
- A number of projects by development partners

Needs and priorities for sustainable soil management

- Promote sustainable land/soil management
  - Sensitise grassroot communities on sustainable land management
  - Innovative ways of disseminating soil management information
- Improve information management and dissemination systems
- Improved networking and information/data sharing among institutions/departments

Needs and priorities for sustainable soil management (cont'd)

- Increased support to soils research
- Soils inventory update / soil survey and land use planning
- Policy intervention (e.g. enforcement of ENR policies and legislation, formulate a land use policy, increase budgetary support to agriculture and ENR programs)