Status of soil resources in Botswana and the needs and priorities for its sustainable management

by

Kabelo Mate

Department of Agricultural Research
Presentation Outline

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- Soil health and land husbandry
- Thank you
Introduction

- Botswana is a land locked country covering an area of 582,000 square kilometers.
- Botswana’s climate is semi-arid. Rainfall is low, unreliable, unevenly distributed and highly variable from year to year.
- Drought is a recurrent phenomenon, most rivers are seasonal hence water is a scarce resource.
Introduction Contn.

- Botswana’s population is approximately 2 million people.
- The population is concentrated in the eastern part of the country where arable farming is possible on account of better and more favorable climatic and soil conditions.
- Agriculture still provides a livelihood for more than 80% of the population but supplies only 50% of food needs and accounts for only 3% of GDP.
Soil resource status

- Soil variations create geographical differences in plant and animal life due to climate
- About two thirds of the country is covered by sandy soils which are infertile. These are the red and grey desert soils on the Kalahari sands.
Soil resource status cont.

- The eastern areas have hills and drainage depressions which feed the Limpopo river.
- The soils are mainly sandy loams to sandy clay loams, with shallow skeletal soils where heavy, sporadic rainfall washes newly formed soil materials into low lying areas and down drainage lines. The soils are thus mainly alluvial and/or colluvial.
Soil resource status cont.

- The west is covered almost entirely by deep sands forming the Kalahari Desert which accounts for about two-thirds of Botswana and comprises sandy soils to 120m depth.
- The area supports manly scrub patches of short, close-canopy woodland, scattered shrubs and grassland and there are virtually no perennial open surface water bodies.
Soil resource status cont.

- Water is obtained by drilling boreholes to a depth of around 200m, where it is found in fossil, underground tanks.
- In some areas in the extreme west boreholes go as deep as 500m
Soil resource status cont.

- The soils of the Okavango Delta and surrounding areas are predominantly silty sands with some organic/humic content. As the rivers that flow out of the Okavango Delta disperse into the Makgadikgadi Pans areas, the soils become fine sands with high sodicity on the seasonally flooded flats and fine silt sands on the dry ancient lacustrine shoreline areas.
Soil resource status cont.

- Various types of vegetation cover much of the country. These include grassland, natural woodland, forestland, Savannah types, bush land, aquatic (wetlands) and man-made plantations.

- Vegetation resources play an important role in livestock farming and wildlife industries by their contribution to the national economy and well being of the citizens.
Fig. 1. Soil map of Botswana
Soil health and land husbandry

• The ministry of Agriculture has a division of land utilisation which is large and diverse comprising of five sections responsible for land resources management.
• These are soil survey and mapping, land husbandry, Agricultural Land use planning, Cartography, Geographical Information systems (GIS) and Remote Sensing sections.
It employs a corresponding broad range of professionals and specialists such as Agricultural engineers, soil surveyors, Land use planners, GIS and Remote Sensing specialists, cartographers and conservation specialists.

The divisions core business is to promote sustainable land productivity through promotion of good land husbandy practices, generation of land resources baseline data required for sustainable land resources management, development of surface and sub-surface...
Water resources primarily for livestock watering and irrigation.
Thank you