Presentation on national agriculture resilience initiatives

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Prevailing Situation

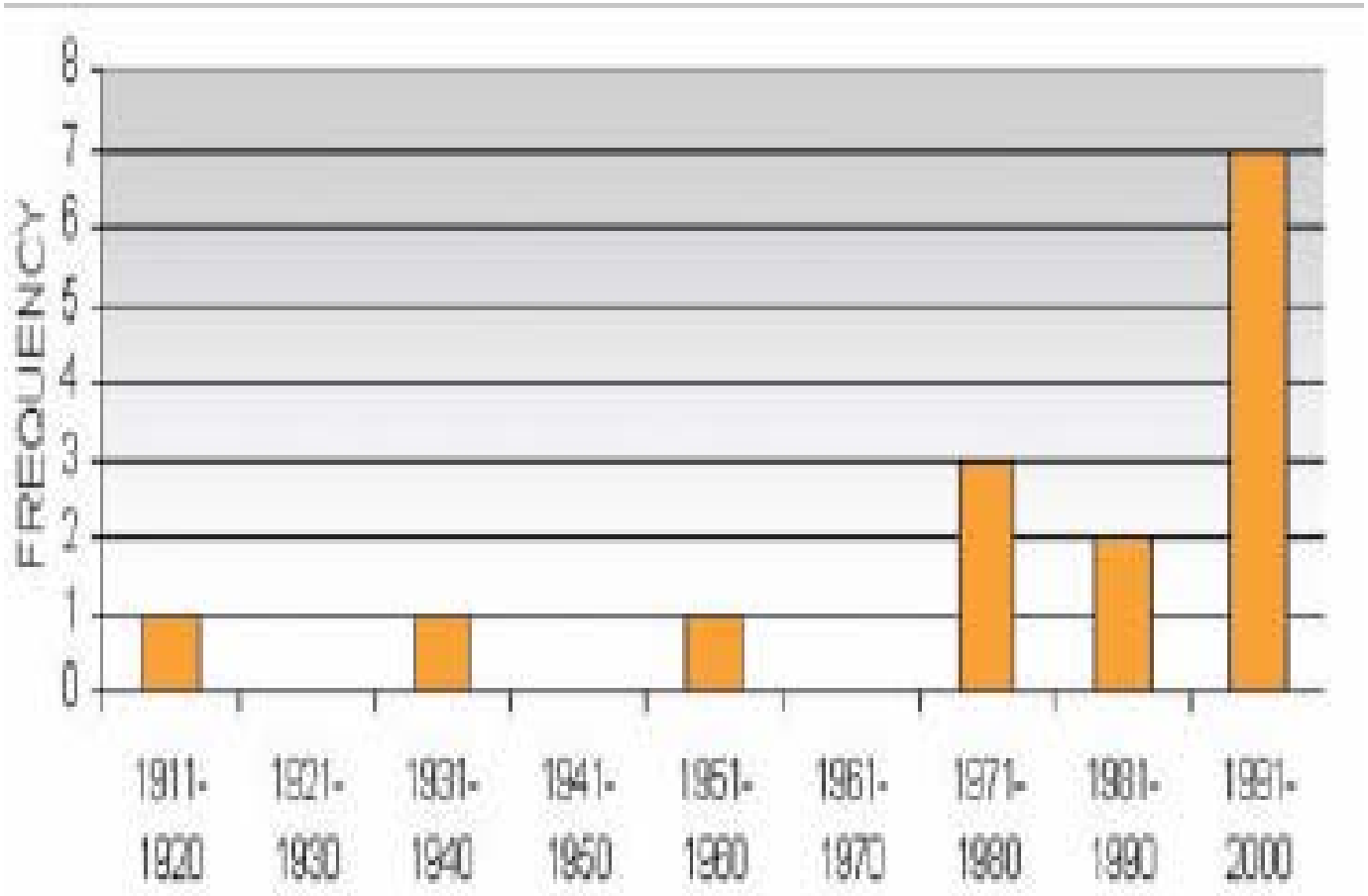
- Growing populations and high demand for food
- Declining areas of land for expansion of Agriculture.
- Deforestation and encroachment of forest reserves and hillsides.
- Low productivity on staple crops.
- Soil nutrient depletion, erosion, compaction, degradation.
- Overgrazed rangelands and expansion of arable farming into marginal areas.
- Evidence of climate change?

Cultivation on marginal lands

The steep slopes in Mbale

Cultivation on river banks

IMPACTS OF CLIMATE CHANGE (Frequency of Drought in Uganda)



IMPACTS OF CLIMATE CHANGE ON THE AGRICULTURE SECTOR

- Increased land degradation due to increased extreme weather events such as droughts and floods, aggravated by poor land-use practices.
- Crop failure or significantly reduced crop production in some years due to increased drought incidences associated with increased climate variability and change.
- Increased hunger and famine due to reduced agricultural productivity.
- Increased pest infestations and other weather related plant pathogens.
- Higher order impacts like increased costs of production, lower profitability, a decrease in food security and therefore a need for more food imports.

Development Strategy and Investment Plan (DSIP) Identified Constraints

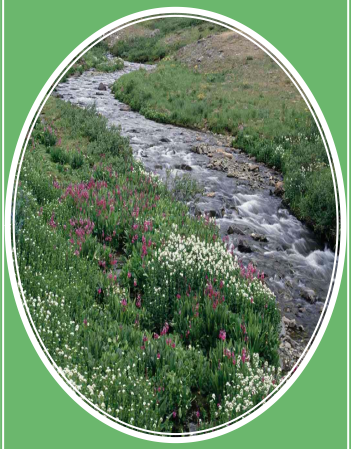
- low productivity levels;
- declining soil fertility & limited application of productivity-enhancing inputs;
- high losses due to pests, vectors and diseases;
- inadequate infrastructure for storage, handling and marketing;
- very limited public investment in agriculture;
- inadequate institutional coordination and linkages

SLM

- SLM is the key entry point for improving land resource resilience and productivity within the context of the potentially devastating effects of climate change in Sub-Saharan Africa, bridging the needs of agriculture and environment, with the twin objectives of:
  - ✓ Maintaining long term productivity and ecosystem functions (land, water, biodiversity); and
  - Increasing productivity (quality, quantity and diversity) of goods and services (including safe and healthy food

MAAIF SIP

MTIC SIP



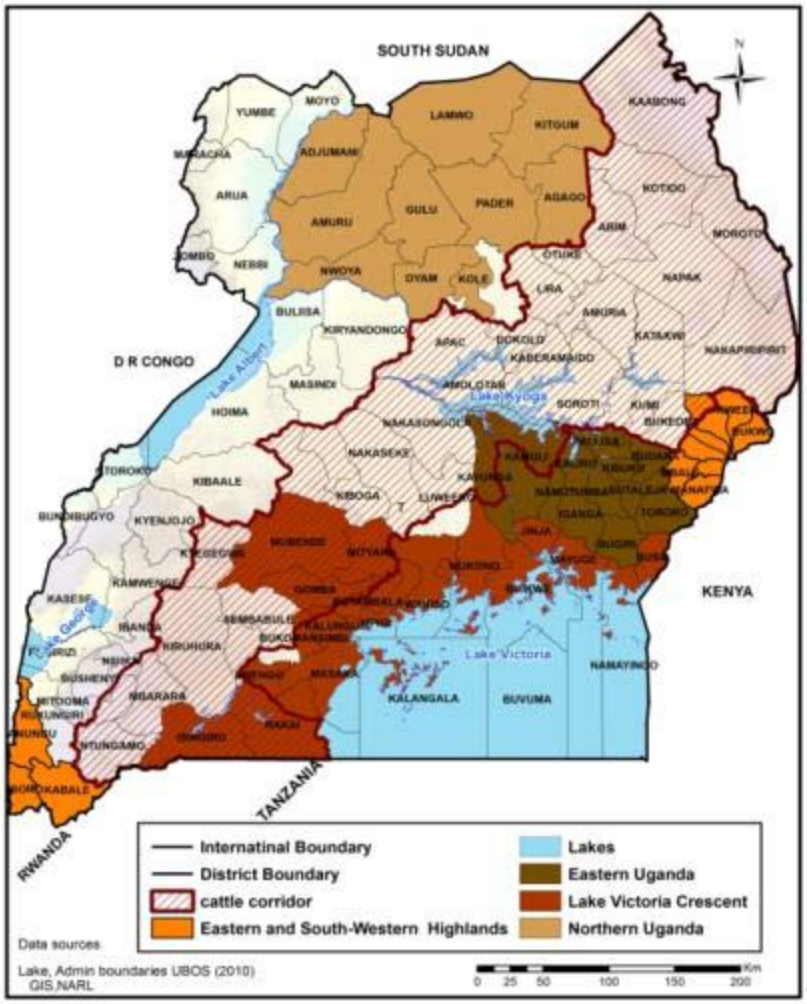
MWE SIP

MEMD SIP

MLHUD SIP

SLM Investment Framework is a tool to allow National SLM Committees to coordinate SLM activities as a portfolio.

Map of Uganda showing land degradation hotspots



Climate Change Policy and Action Plan

- **Strategic interventions under adaptation include the following:**
  - To promote and encourage highly adaptive and productive crop varieties and cultivars in drought-prone, flood-prone and rain-fed crop farming systems.
  - Promote and encourage highly adaptive and productive livestock breeds.
  - Promote and encourage conservation agriculture and ecologically compatible cropping systems to increase resilience to the impacts of climate change.
  - Promote sustainable management of rangelands and pastures through integrated rangeland management.

Climate Change Policy and Action Plan

- Support community-based adaptation strategies through expanded extension services and improved systems for conveying timely climate information to rural populations for enhanced climate resilience of agricultural systems .
- Develop innovative insurance schemes (low-premium micro-insurance policies) and low-interest credit facilities to insure farmers against crop failure and livestock loss due to droughts, pests, floods and other weather-related events.
- Promote irrigated agriculture by encouraging irrigation systems that use water sustainably.
- Promote and encourage agricultural diversification, and improved post-harvest handling, storage and value addition in order to mitigate rising climate related losses and to improve food security and household incomes.

Agric Sector Climate Change Initiatives

- USAID/ MAAIF Support to CC Taskforce
- UNDP/ MAAIFSLM projects Integrating CSA
- COMESA/ UNDP/FAO/ MAAIF Enhancing Adoption of CSA project
- World Bank /ATAAS SLM Initiative supporting NARO and NAADS
- Rural Enterprise Development Services (REDS)
- Cooperative League of the United States of America (CLUSA)
- Uganda Faith Based Network for Environmental Action (UFNEA)

MAAIF Climate Change Taskforce

- Agricultural Sector Climate Change Vulnerability Assessment
- MAAIF climate change task force
- MAAIF Climate Change Strategic Action Plan
- Mainstreaming Agric Sector Climate Change issues into the Revised DISP and NDP

Climate smart agriculture

Key pillars of CSA include:

(i) improving agricultural productivity and food security

(ii) improving resilience of agricultural systems and communities to climate change impacts

(iii) enhancing agricultural sector contribution to Climate Change Mitigation

Multi Stakeholder Climate Smart Agriculture Task Force

- Development of CSA investment Framework
- Development of Conservation Agriculture Training Kit
- Development guidelines for CA field trials and demonstrations.
- Capacity Building for Farmer field school approach in CSA.
- Taskforce Monitoring of CSA initiatives
- Coordination, lession learning and information sharing with other CSA Initiatives.

Piloting CSA practices in five districts

- 2 year program ending Dec 2015
- Train 600 Extension workers, Farmer Field School Facilitators, lead Farmers and school teachers
- 25,000 hectares under CSA practices in 5 districts.
- 50,000 agro-forestry trees established in 5 districts.
- 30 school integrating CSA practices.
- Focus in 5 districts in Eastern Uganda

- 3 and 1/2 year program ending June 2015
- Focus crops: maize, pulses and soybeans
- Full value chain approach from producer to buyer
- Focus in 13 districts in northern Uganda

Uganda Faith Network on Environmental Action (Farming Gods Way)

The Fundamental Principles of CA

- ✓ Minimise tillage (soil disturbance) to the extent possible
- ✓ Maximise soil cover to the extent possible
- ✓ Rotate cereals with legumes to the extent possible
- ✓ Integrate legume trees

Secondary Principles

- ✓ For all farmers establish permanent planting zones
- ✓ Use herbicides to control weeds instead of hoes or cultivators

CA Practices

1) Hoe Minimum Tillage -Planting Basins

The Conservation Farming ripper, along with a specially designed yoke and skye can be used by oxen to accurately mark the distance between the Conservation Farming rip lines. The ripper attachment is manufactured locally and fits on local beams.

Conservation Yoke and Skye

Making Conservation Farming rip lines using an ox-drawn plough

2) Ripping – ADP and Mechanized

4) Crop Residue & Rotation

Adaptation/ mitigation needs and the available technologies

Adaptation/ mitigation need	Available technologies (varieties/ types/ practice)
Early maturing and drought tolerant crop varieties and livestock breeds	**Sorghum**: Improved varieties – Sekedo; Local varieties – *Tinyitinyi; Akirikir; Naterekune; Tinyang; Ekabir, Loyokou*
	Legumes: Green grams; cow peas; K131(bean); Tepari beans; pigeon peas
	Livestock: Zebu cattle; goats; sheep; camels; donkeys; turkeys; chickens; ducks
Mixed crop-livestock farming systems	Cows and sorghum, cassava, millet, cowpeas, beans, Katumani, green gram, pearl millet, bulrush millet
Mixed cropping/ intercropping	Cereals/ legumes: Maize, K131, Tepari beans, cow peas
Crop diversification	Cereals: Maize; upland rice

Adaptation/ mitigation needs and the available technologies

Adaptation/ mitigation need	Available technologies (varieties/ types/ practice)
Shifting/ adjusting planting and harvesting dates	Early/ dry planting, relay cropping
Soil and water conservation – general	Live/ grass contour bunds/ ridges; stone lines; contour cropping; diversion channels; trenches [reducing the speed of runoff over the land can encourage moisture storage and permit better pasture and crop growth during the dry periods between rainfall events]
	Terraces: Bench terraces; *Fanya juu* terraces – catchment approach
Conservation agriculture	Minimum soil disturbance/ tillage; judicious crop rotations; cover crops; permanent planting basins

Adaptation/ mitigation needs and the available technologies

Adaptation/ mitigation need	Available technologies (varieties/ types/ practice)
Agro forestry	Multipurpose trees, tree nurseries, transplanting, grafting
Water harvesting/ Small scale irrigation	Ponds, valley tanks and dams
	Vegetable production through backyard irrigation
Sustainable utilization of swamps	Paddy rice, crafts-making, utilization of medicinal plants, etc
Integrated nutrient management (INM)	Inorganic & organic fertilizers; BNF; agro-forestry
Animal health	Hay making, pasture management , migratory routes
Post harvest handling	Maize & groundnut shellers; cassava & potatoes chippers; drying pads; treatment with ash/ diatomaceous earth; silos; granaries

Adaptation/ mitigation needs and the available technologies

Adaptation/ mitigation need	Available technologies (varieties/ types/ practice)
Alternative livelihoods	Production and marketing of SLM friendly products: Aloe Vera; Gum Arabic; Shea nut butter; apiary
Sustainable use of under-utilized and non-traditional food stuffs	Wild yams (e.g. *omwodu*) and fruits (e.g. coconut – *tugo*)
Kitchen gardening	Vegetables (wide range: *Edowol, Lobolia*) – nutritional

Thank You