



Climate Smart Agriculture



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Climate Change and agriculture

It is unequivocal that climate is changing and principally as a result of burning fossil fuels and agricultural related land use practices, this contributes to the increase in green house gas emissions and global warming which continues to rise currently.

Poor farming methods such as continuous cultivation, deforestation, over grazing contribute to water depletion soil exhaustion agro- chemical pollution and global climate change.

Change in rainfall patterns, rising sea levels and more unpredictable occurrences of natural hazards such as temporal distribution of rainfall, floods, droughts is on an increase

Natural Disasters and Climate change

- Every year natural disasters sometimes, caused by increase in frequency and intensity of rainfall and temperatures such as floods, mud and land slides, droughts and fires, desert locusts, **COVID-19??** challenge agricultural production which highly relies on weather, climate and water availability to thrive, and is easily impacted by natural events and disasters.

Climate change, Natural disasters and other emerging issues

- Climate change has led to an increase and unpredictable occurrences of natural hazards such as,
- floods,
- mudslides
- Landslide
- Drought
- Wildfires
- And emergency of new pests and diseases
- New socially impacting issues especially the **novel COVID-19??**

Impacts of natural calamities to Agriculture

- In areas with a high latitude, frequency and intensity of rainfall is increasing , leading to increased river run off, increased flooding, leaching of soil nutrients and soil erosion. hence more land is becoming un cultivatable, less fertile and less productivity, total crop destruction,
- In extreme weather related disasters such as mud, land slides displacement of smallholder farmers occurs, these disasters destroy homes and habitats hence increase in food and income insecurity
- Increased droughts are lowering yields, causing crop damage and in some cases total crop failure, major livestock losses and increased incidences of wildfires and their impacts on biodiversity.
- Increased droughts are leading to a reduction in agric areas of production.

Impacts of natural calamities to Agriculture

- Increased temperatures have led to an emergency of new pests and diseases, Invasive weeds, contribute to reduction of the quantity and quality of crops and livestock produced.
- There is an increased need to use pesticides, fungicides, herbicides and acaricides. This increases the cost of farm production and hence impacts on income security.
- Increased use of pesticides and herbicides has a negative impact on the environment most especially.

Extension Capacity gaps and challenges

- Lack of adequate logistical support for, farmer sensitization, implementation of technologies and monitoring , evaluation and data collection.
- Lack of enough extension workers with adequate knowledge on climate risks, and conservation skills
- Lack of commitment of farmers to adopt “Climate Smart” technologies
- Promotion of contradictory technologies.
- Lack of adequate CSA Infrastructure e.g water storage.
- Inability to provide accurate seasonal cropping patterns for crop cultivation

Extension Capacity gaps and challenges

- Lack of coordination between providers
- Lack of knowledge to address the new challenges and technology demands
Emerging issues like COVID-19 that has affected the mode of operation (new normal)
- Poor governance
- Reluctance of people to change.
- Perception that CSA is expensive
- Incompatibility of technologies to local context
- Lack of knowledge of farmers on farm management e.g timely planting, weeding, pests and disease control, lack of knowledge on nutrient deficiency etc

Adaptive innovations and mechanisms.

- In order to reduce the impacts of climate change on agriculture and food systems agriculture has to become “Climate Smart”.
- Therefore climate smart agriculture is defined as “agriculture that sustainably increases productivity, enhances resilience (adaptation), reduces Green House Gases where possible and achieves national food security and development goals.(FAO 2013a).
- For agriculture to be climate smart it has to increase, adaptability, resilience and mitigation of smallholder farmers to climate change risks and disasters

Climate Smart Agriculture

- In order to achieve those objectives the extension system needs to;
- Improve access to CSA technologies and practices through,
- establishment of demonstration sites,
- encouraging farmer to farmer visits,
- arranging field trips,
- field days,
- Capitalising on the lead farmer approach
- Provision of inputs and markets information and assistance with income diversification
- Organising small holder farmers for collective action.
- Encouraging community based approaches to resource management

Climate Smart Agriculture technologies in Uganda

- These include,
- Agronomic technologies(CA, appropriate cropping patterns, organic and inorganic fertilisers etc)
- Vegetative measures (agroforestry and forestry practices, pastures and rangeland management)
- Structural measures(Contour bands, Terraces other soil and water conservation measures





Conclusions

- An inclusive approach to CSA is needed , one that empowers women and generally reflects on all genders and deliberately aims to involve the rural youth. An innovation system should be taken that not only encompasses introduction of new technologies but also advocates for behavioral change of CSA stakeholders