



CAADP - XP4 INCEPTION MEETING

BOTSWANA PRESENTATION

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PRESENTATION LAYOUT

- ▶ Introduction
- ▶ Impact(livestock & crops)
- ▶ Adaptation(livestock & crops)
- ▶ Mitigation (livestock & crops)
- ▶ Conclusion

INTRODUCTION

SITUATION:

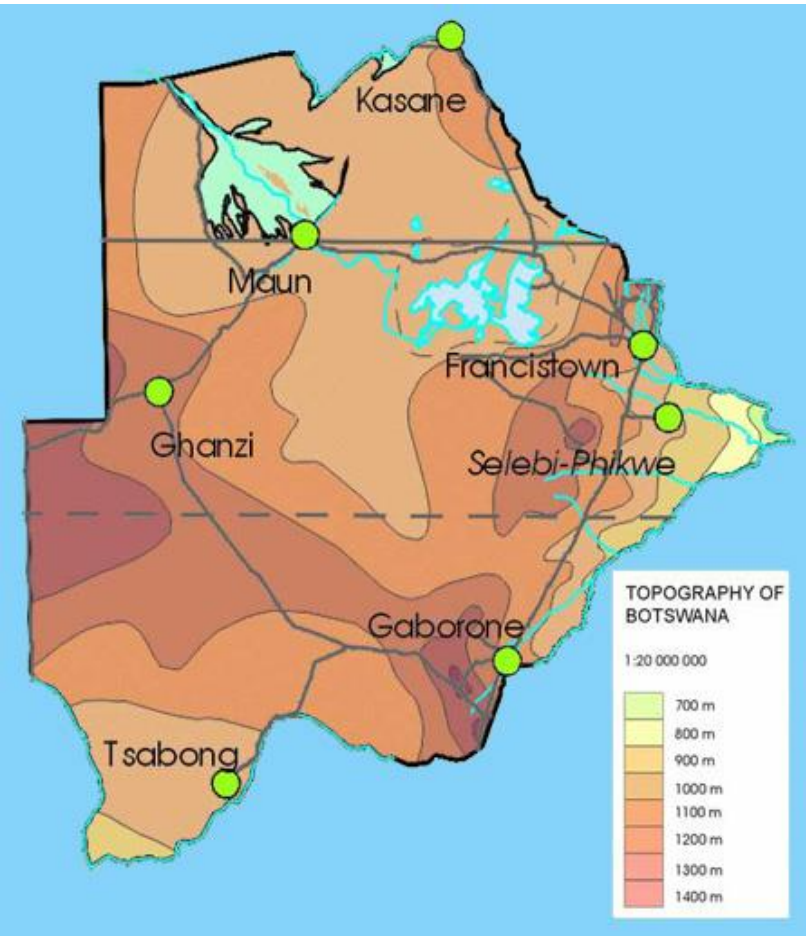
Botswana's total land area is 572,000 km² with 70% covered by rangelands. These rangelands are dominated by communal livestock production (80%). Only 7% of the country's land is suitable for crop production

CLIMATE:

Botswana's climate is semi-arid. It is hot and dry for much of the year with the rainy season running through the summer months.

RAINFALL:

The rainy season is in the summer, with October and April being transitional months. January and February are generally regarded as the peak months. The mean annual rainfall varies from a maximum of over 650mm in the extreme northeast area of the Chobe District to a minimum of less than 250mm in the extreme southwest part of Kgalagadi District. Most of the rainfall occurs during the summer months while the winter period accounts for less than 10 percent of the annual rainfall.



INTRODUCTION

- ❑ Agriculture sector contributes to the livelihoods Botswana particularly in rural areas,
- ❑ Productivity is low due to several factors such as:
 - Drought which is caused by Low and highly variable rainfalls
 - Increasing temperature trends
 - Frequent Outbreak of Pest and diseases
 - Degraded Ecosystems

INTRODUCTION

- Climate change impacts negatively on the agricultural productivity
- Botswana is one of the countries that are going to be hard hit by CC temperatures more than low ones.
- Increase in soil temperature is likely to reduce soil moisture and water holding capacity (due to excessive evaporation and reduced cation exchange capacity).
- Increase atmospheric and soil temp in particular
 - Reduce activity of micro-organisms.
 - Increase in Pest & Diseases incidence in general and soil borne ones in particular
- **As result; Crop growth and water use efficiency will be affected negatively.**

ADAPTATION STRATEGY FOR LIVESTOCK PRODUCERS

Ecosystem based adaptation

- Rangeland in excellent condition (healthy) will be more resilient to climate change and sustain livestock production
- Degradation of rangeland ecosystem increases vulnerability of pastoral communities to climate change.
- Degraded ecosystems therefore need to be rehabilitated
- **Recommended livestock ratio per unit area very important**



ADAPTATION STRATEGY FOR LIVESTOCK PRODUCERS CONT'D

Use of Environmentally Adapted Breeds

- Local breeds are more adapted to local environment than exotic breeds
- Can walk longer distance in search of grazing resource
- Are tolerant to heat stress
- Are resistant to internal and external parasites



Fodder production

- Fodder production could buffer the impact of climate change by ensuring that animal feed is readily available to supplement livestock during drought period



ADAPTATION STRATEGY FOR CROP PRODUCERS

- Conservation Agriculture (Zero tillage, Deep ripping, Minimum till)
- Use of local adaptable varieties (Drought tolerant, Early maturing).
- Timing of Fertilizer Applications (Fertilizer applications informed by weather forecast)
- Timely weeding

NAMES OF NEWLY RELEASED VARIETIES OF SORGHUM, MAIZE AND COWPEA

The newly released varieties of sorghum, maize and cowpea are named as follows:

1. Sorghum

- ▶ BSH2
- ▶ BWS 5028
- ▶ BWS 5050

1. Maize

- ▶ BWM 401
- ▶ BWM 309
- ▶ BWM 523
- ▶ BMH 0623

1. Cowpea

- ▶ BWC 635



CLIMATE SMART AGRICULTURE POLICIES AND PROGRAMMES-THAT SUPPORT IMPLEMENTATION

- ❑ Climate Smart Agriculture 2015-2025 program
- ❑ Climate Smart Agriculture Policy drafted
- ❑ National Drought Management Strategy
- ❑ Development of National Adaptation Plan ongoing
- ❑ ISPAAD program being implemented to assist crop farmers
- ❑ LIMID program being implemented to assist livestock farmers

CLIMATE CHANGE ADAPTATION STRATEGIES CONTIN...

- Bio-Chobe Project sponsored by UNDP
- Integrating Indigenous Practices for CSA into Crop and Livestock Production Systems of Botswana sponsored by Rome, FAO
- Building Climate Resilience of Agricultural Systems in Botswana submitted to GCF for funding
- ASSAP

STRATEGIES FOR FOOD SECURITY

In order for Botswana to increase production and improve food security in the midst of climate change, adoption of Conservation Agriculture is one alternative intervention to be considered.

Vision: To attain food security and increase income at both household and national level

Goal: To increase crop production through sustainable use of the environment

OBJECTIVES

The overall objectives of the CA strategy are as follows:

- To increase average crop yields from 200kg/ha to 1000kg/ha
- To reduce production costs and maximize returns
- To conserve and enhance biodiversity
- To enhance good crop production practices

STRATEGIC ISSUES FOR INTERVENTION

1. CREATING AN ENABLING ENVIRONMENT FOR CA ADOPTION

CA adoption has been very low due to lack of resources for both the staff and farmers, it is therefore important that extension service be supported fully to improve the effectiveness of services provided.

Recommendations

- Training extension staff as trainers of trainers
- Promote extension approach
- Improve access to credit to both farmers and suppliers
- CA aspects included in ISPAAD guidelines
- Introduce CA subsidies and schemes

STRATEGIC ISSUES CONTINUES

2. MAINSTREAMING CA IN GOVERNMENT AGRICULTURE DEVELOPMENT, EDUCATION AND EXTENSION SERVICES

It is imported that extension approach to be used to roll out CA be clearly defined and followed as this will speed up adoption rate.

Recommendations

- Encourage MoESD to include CA in school curriculum
- Meeting with curriculum development staff
- Develop unit standard on CA (BQA)
- Conduct demonstrations at RTC and at farmer's fields

STRATEGIC ISSUES CONT

3. KNOWLEDGE MANAGEMENT AND INFORMATION MANAGEMENT

To increase the adoption rate of CA it is crucial that all stakeholders understand CA concepts and able to share experiences on how best to practice CA. Information materials on CA are to be available and accessible for extension officers and farmers

Recommendations.

- Documentation of lesson learned.
- Avail ICT support to extension staff
- Develop promotional materials on CA
- Develop television documentaries on CA and radio interviews
- Develop information management system

STRATEGIC ISSUES CONT

4. CA CAPACITY BUILDING.

Understanding of CA is still a challenge, therefore capacity building will enhance more knowledge and technical skills to both the farmers and staff.

Recommendations

- Undertake benchmarking tours on CA and short courses
- Conduct training on CA for staff and relevant stakeholders
- Develop guidelines on CA demonstration
- Resuscitate appropriate extension applications
- Enhance good CA practice culture

STRATEGIC ISSUES CONT

5. RESEARCH AND DEVELOPMENT ASPECT OF CA

There is little evidence on CA research documentation as a package in Botswana, it is advisable to conduct research and development on CA.

Recommendations

- Identify previous and current research work done
- Continue with research and development for climate change intervention.

STRATEGIC ISSUES CONT

6 IMPLEMENTATION AND MONITORING OF CA STRATEGY IMPLEMENTATION.

To effectively and efficiently monitor the processes and implementation of the conservation agriculture it is critical that the pathway for execution of CA is defined clearly.

Recommendations

- Carryout baseline study (data)
- Monitor CA implementation

ripping



2.2 principle of permanent soil cover



Operational factors

- The following are important for the success of conservation agriculture system
- Preparing the land in good time before rains start
- Planting soon after an effective rainfall event
- Weeding at appropriate times and intervals
- Doing effective pest and diseases control before either spread too widely



Benefits of conservation agriculture

- Improves yields; enables farmers to prevent hardpans from forming, protects the soil, increases soil moisture and restores soil fertility
- Reduces production costs; helps these farmers cut cost(labor, fertilizers) increasing their yields
- Overcomes shortages of labor and farm power; enables venerable people to grow more food a chance to improve their lives

Challenges that face conservation agriculture

- Change of mindsets; farmers must drop their traditional practice of preparing the land with plough. The switch also encourages to see their farms as a business rather than merely a way to feed their families
- Limited crop residues; keeping the soil covered is important in agriculture. But it can be difficult. Farmers have many uses for crop residues as fodder, fencing, roofing and fuel. livestock keepers let their animals graze on stubble, in drier areas ,it is impossible to grow a cover crop in the dry season ,and crop residues are very vital sources of animal feed



Key Intervention Areas

- **Agricultural Mechanization:** Involves the promotion of use of farm machinery to increase production and productivity
- **Improved Rain fed agricultural practices:** Involves the promotion of use of Conservation Agricultural Techniques as a means of improving Agricultural productivity
- **Pilot scheme for small holder waste water irrigation:** involves the promotion of use of waste water in irrigation at Palapye
- **Improved delivery of extension services:** involves enhancing the capacity of extension service providers to improve the effectiveness of extension services
- **Improve access to input and output markets:** involves establishment of Agricultural Service centers
- **Strengthening institutional capacity :** involves strengthening of institutional capacity for monitoring and evaluation of interventions within the agricultural sector.

Update on Agreed Actions

Agreed action	Responsibility	Agreed date	Status update
Agree on a scheme operation and management governance and plot development and financing model for the pilot Palapye Irrigation Scheme.	Director CP, Project manager, farmers		Done – <ul style="list-style-type: none"> • Farmers have been supported to develop business plans, • management of the scheme will be by farmers • farmers have been organised under a cooperative arrangement
Finalise mechanisation strategy	Director DCP		Not done. Funds not available .
Provide all required contract documents to accepted standard, and handover site to contractor	Project Manager		Partially done
Organise training of MoADFS engineers	Director DCP, Project manager		Not done. Specialised training on contract management planned for next FY
Set –up water quality monitoring system for the scheme	University of Botswana, MOADFS and ASSP		Not completed. Collection of baseline water quality data ongoing.

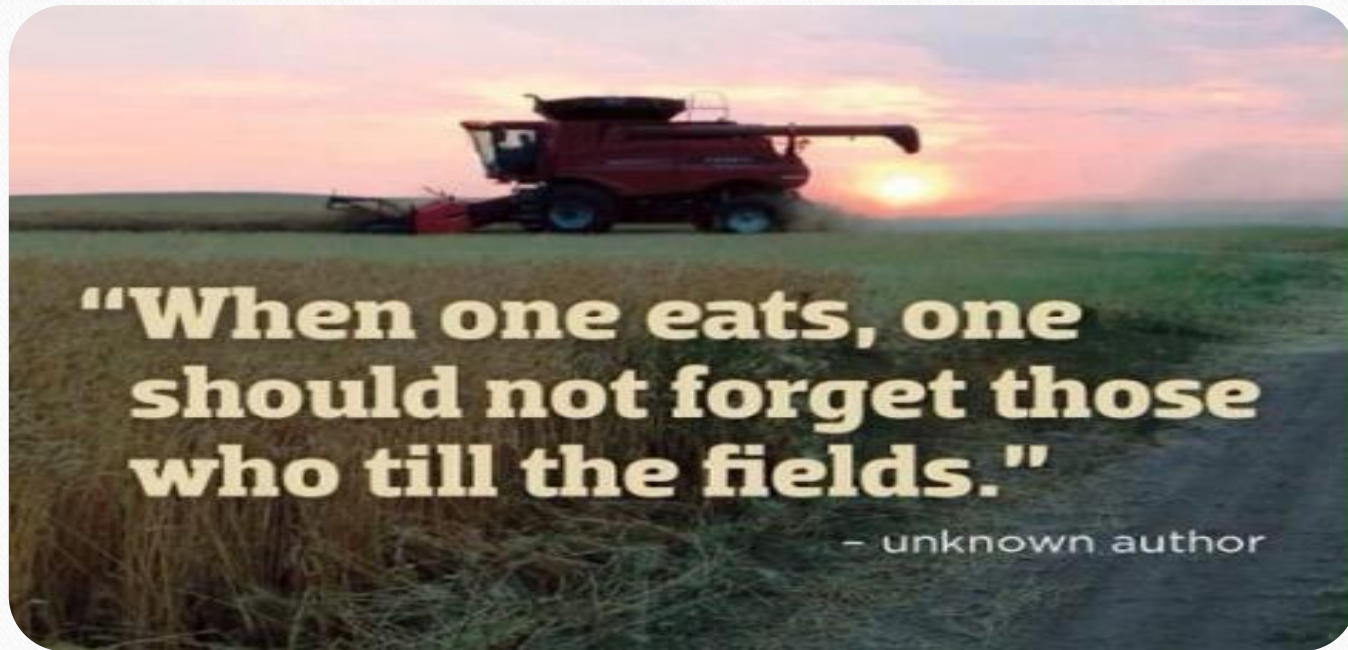
Update on Agreed Actions

Agreed action	Responsibility	Agreed date	Status update
Award contracts for feasibility and design studies of new schemes	Project Manager		Not done. Funds not available
Upscale Training of Trainers (ToTs) activities for CA training Plan	Project Manager		Done
course on GIS applications for agriculture was to be implemented by the Botswana College of Agriculture	Knowledge Management Officer		Not done. No funds to procure GIS equipment
Undertake stakeholder consultations for the Institutional Strengthening Strategy and expedite its implementation	Knowledge Management Officer		Not done

CONCLUSION

- Climate change is here to stay
- Use existing technologies to adapt climate Change (though not adequate).
- Need for better understand - process of down-scaling of Global projections

Thought of the day



**"When one eats, one
should not forget those
who till the fields."**

– unknown author

– unknown author

THANK YOU