Climate Change Adaptation Policies for the Sugar Cane Sector

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LAYOUT OF PRESENTATION

Why?

Predicted Climate Change

Impacts

Adaptation measures

Status of Policies

The future
WHY POLICIES

• Climate Change is factual and will stay for the long-term

• Adaptation is also a long-term process

• Policies are usually in line with National Plans and Strategies

• Development and implementation of policies is a lengthy and time consuming process

• Policies need to be monitored to suit National and International context
PREDICTED CLIMATE CHANGE

- Increased Minimum Temperature (2.54 to 4.48 oC by 2100)
- Increased Maximum Temperature (1.61 to 2.85 oC by 2100)
- Changes in Temperature Amplitude
- Changes in Rainfall regime (amount -18 to – 26% and pattern)
- Solar radiation unknown (follow rainfall regime)
- Sea Level Rise (+ 32 to 49 cm on average)
IMPACTS

MINIMUM TEMPERATURE

• Positive during growth phases if soil moisture not limiting and substrates available;
• Detrimental to ripening as it favours growth at the expense of sucrose accumulation.

MAXIMUM TEMPERATURE

• Positive during growth phases if soil moisture not limiting;
• Positive to ripening as it favours photosynthesis and provides more sucrose for accumulation;
• Prevents flowering, thus affecting the variety improvement programme.
IMPACTS

TEMPERATURE AMPLITUDE

• Will vary according to rate of day and night increases;
• Lower amplitude, stemming from higher increase in minimum, will affect sucrose accumulation and ripening negatively.

RAINFALL

• Variable according to geographical sector and amount received during different periods of the crop cycle;
• Positive if higher rainfall during growth phases;
• Positive to ripening if lower rainfall received during this phase.
CAUSES OF VULNERABILITY

• An indepth vulnerability study was conducted using the modeling approach:
  
  - Reduction in cane productivity as a result of lower annual rainfall and a different distribution;
  
  - lower sucrose content due to poorer ripening conditions in terms of lower temperature amplitude and wetter conditions;
  
  - Sugar yield depression as net effect.
ADAPTATION MEASURES

**Sugarcane sector**

- Provision of irrigation to cater for higher evapotranspiration
- Develop more adapted cultivars for exploitation
- Change cropping system to accommodate climate change

**National level**

- Change from sugarcane to other crops
- Review land occupancy by sugarcane within development
PRESENT STATUS

Sugarcane sector

• Extension of irrigation schemes not implemented

• Midlands dam commissioned but additional water still a problem to service irrigation

• Selection for specific adaptation under way, but difficult within present undefined set-up

• Insufficient funds to run the optimal crop improvement programme

• Harvest season lengthened as a result of centralization, but not suitable to adapt to climate change
PRESENT STATUS

National level

• A few other crops are in the pipeline but none on an extensive basis

• Each year more than 1000 ha of sugarcane land is being lost to uses other than agriculture

• A well defined land occupancy at National level still to be developed

• The land occupation map of Mauritius has been produced for the Ministry of Housing and Lands
THE FUTURE

• AAP is attempting at mainstreaming adaptation in National Policies

• The exercise may be out of dimension of this project

• A top-down approach is being adopted ???

• The Bottom-Up approach may prove beneficial

• Hopes are for an urgent holistic approach
THANK YOU
FOR
YOUR ATTENTION