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