

15th Triennial ISTRC Symposium

Session XII - Adaptation of root and tuber crop system and mitigation of climate change

Friday, 6 November 2009
Summary

Moderators: M.D. Akorado and R. Quiroz

This session directly addressed the central topic of the Symposium. The invited lecturers gave the audience a down-to-earth introduction to the current knowledge on climate change, projected effects on crop suitability and diseases to 2020 and 2050, and the possible impacts of adaptation strategies (specific for cassava).

Modeling tools have been used for suitability analysis of crops; nonetheless, there is need for more robust tropical root crop models to reduce the uncertainties of predictions.

Although climate change is imminent, the short term challenge is climate variability. The impact of this variability is not only on crop productivity, but also on other livelihood strategies. One of the presentations highlighted the risk faced by Asian Pacific islands in the event of sea level rise.

Innovative approaches are a must under the challenges posed by climate variability and change. Some examples were shared in the presentations:

1. Using remotely sensed data stands out as a cost-effective alternative to maintain updated tropical root crops statistics, and there is potential for using these tools for yield forecasting under changing environmental conditions.
2. Intensification of cereal-based systems can increase the land productivity, and countries like China are promoting sustainable intensification. It was shown that around 4% of potato production in China can be produced by intensifying rice producing areas. Environmental footprints of these types of decisions need to be evaluated.
3. Decision support systems to ex-ante assess the benefits of introducing new technologies into a production system will be required. An example was given for the introduction of dual-purpose sweet potato and a heat tolerant maize variety in contrasting sites in Kenya.
4. The importance of producing more food while building adaptive capacity to climate variability and reducing the emissions of GHG was stressed. Agricultural soils can be marketed as carbon sinks and therefore be eligible for payment for environmental services, but new methods to quantify carbon stocks and the level of carbon recalcitrance are needed and were addressed.

It can be concluded that although the challenge is huge, good science can generate alternatives to build adaptive capacity in tropical roots cropping systems.