Analysis of Agrometeorology Data for Improved Production

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Context

- Jamaica Climate predictions
  - variably precipitation *(wetter dry periods and drier wet periods)*
  - higher temperatures
  - sea level rise

- Potential Impact
  - crop and livestock production
  - food security
  - economic growth
Needs

- Transfer of know-how and access to agrometeorological information to farmers for improved decision making
- Extending and enhancing the capacity of the extension service to deliver agrometeorological services
- Development and implementation of a climate services delivery framework for the agricultural sector
Challenges of the Extension Service

- Absence of a system to facilitate the delivery of agrometeorological information to end users.
- Inability of extension personnel to access the analyzed data from either the Meteorological Service of Jamaica (MSJ) or RADA Head Office.
- Lack of capacity at RADA parish level to analyze and interpret the data to support farmers’ decision making.
- Inability to use climatological/meteorological information to forecast and plan for prevention and management of pest outbreaks and crop forecasting.
- Lack of appropriate biological data to support a sound disease, pest and crop production forecasting system.
Capacity Building Support

Extension agents were trained in:

- Trouble shooting and maintenance of the automatic weather stations
- World Meteorological Organization procedures in maintaining data integrity
- Analysis, interpretation and packaging of climatological data for Agrometeorology advisories to support farmers decision making
Training
Weather Data Analysis and Product Development Using Instat +

- Instat+ is a general statistical software package.
- Simple to be used in handling statistical data.
- Instat+ includes many special facilities for the processing of climatic data. These facilities have formed the basis of numerous agroclimatology training courses in many countries that have structured agrometeorological service delivery program.
- Extension agents were introduced to the analysis of local long-term climatic data using Instat+, and the interpretation of products.
Graph 1: Daily Rainfall (mm) Summaries for Worthv Park 2011
Daily Rainfall Summaries

- The above graph indicates daily rainfall summaries for Worthy Park Estate in 2011.

- It was observed that maximum rainfall was seen in June and with a continuous wet spell of May to October, while two dry spells of Jan to April and Nov to Dec during 2011 were observed.

- Analysis such as these can assist extension personnel to forecast crop performance and productivity indicators.
Graph 2: Events - Spells

Consecutive Rain free days

Day
Events - Spells

The graph above looks at events (dry) spell lengths which is measured as the number of consecutive rain free days.

As seen the more intense periods had rain free days of up to 12-14 days. Note the period above (graph 1) indicated as having more precipitation are shown here as the period with the least consecutive rain free days.
Next Steps

- The use of Instat+ or other similar software that generate analyzed weather data become a part of RADA operational activities.

- Up scaling of analytical usage of Instat software such as soil water balance and forecasting productivity.

- Climate service delivery should become a more integral component of RADA.
Next Steps

- More extension personnel should be trained in Agrometeorology

- RADA should work with other related agencies to test various modalities of disseminating Agrometeorology advisories to end users.
Questions and Answers