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I. INTRODUCTION

The Farmers' Forum, coordinated by the Caribbean Agrometeorological Initiative, was held at the Barbados Yacht Club on November 10th, 2011.

The purpose of the forum was to help farmers become more self-reliant in dealing with weather and climate issues that affect agricultural production on their farms. The overall goal of the farmers' forums is to secure farmer self reliance, through helping them to be better informed about effective weather and climate risk management by sustainable use of natural resources for agricultural production.

(Link to generic agenda)

II. REPRESENTATION

The meeting was attended by farmers, agricultural officers, meteorological personnel and two representatives of the CAMI project.

(See full list of attendees at **Annex 1**).

III. WELCOME

Sonia Nurse (Acting Director, Barbados Meteorological Service)

Ms. Nurse welcomed participants to the forum and made special mention of the achievements of Mr. Trotman (CAMI Project Coordinator), which have distinguished him in making these forums a reality. Mention was also made of Dr. Cyril Roberts of CARDI as this institution continues to do valuable research in agriculture. Ms. Nurse said that the objective of the workshop was to sensitize farmers of products of the CAMI project.

Ms. Nurse also noted that farmers must benefit and that they must be able to say CAMI helped them secure their future. She suggested that meteorology must play its part, and that they must work together with farmers, etc to secure food supply within the region.

She also praised the Tripartite committee initiative – where products and information are developed as necessary.

Remarks – Zissimos Vergos (Counselor, Head of Social Development Section, Delegation of the European Union to Barbados and the Eastern Caribbean)

Mr. Vergos expressed gratitude in being at the Barbados Farmer's Forum. He emphasized that the Caribbean is among the ten (10) most risk prone regions of the world.

Weather/Climate and Agriculture - Mr. Ralph Farnum, the Chief Agriculture Officer (ag)

Mr. Farnum admitted that he was happy that the CIMH has undertaken this initiative, since pest and disease information and rainfall information is necessary for determining when and what to plant. It is also necessary to determine what to produce to feed our people and provide sustainable living for our farmers.

He advised that questions needed to be asked, and direction sought so farmers can go out and improve crops being produced.

Mr. Trotman went on to answer these questions by noting that a regional bulletin was developed to lead the way for national institutions. He discussed what is contained in the bulletin and plans to prepare a precipitation outlook monthly in 2012. He also threw out a challenge to the local met service to produce their own bulletin.

Mr. Trotman also discussed extremes in climate and the concern for farmers, and emphasized why this information was so important.

He noted that NHMS were set up for aviation purposes. Right now however, the focus is on climate change, since aviation facilitation is not the only consideration any more, but importance lies in the tourist industry, food industry, hurricanes and water supply.

Information would be better maintained electronically. The Barbados Met Service pointed out that they have a website and noted that the requested information will be made available from 2012.

IV. PRESENTATIONS

Weather and Climate of Barbados – Sonia Nurse, Acting Director, Barbados Meteorological Service

Weather systems affecting Barbados include; the Bermuda/Azores High, The Inter-Tropical Convergent Zone (ITCZ), Tropical Waves, Storms/Hurricanes and Upper level troughs/lows. Apart from these systems flooding and flash flooding, drought often driven by El Nino/La Nina phases, can impact a farmer.

Ms. Nurse stated that drought is a normal recurring climate in most parts of the world and can be as a result of human activity as well as normal climatic conditions. The challenge for their Meteorological Service is forecasting the occurrences of extreme conditions.

The CAMI PROJECT - Lisa Kirton-Reed – Technical Officer (CIMH)

The Caribbean Agrometeorological Initiative project (CAMI) is funded by the European Union's ACP Science and Technology programme, in partnership with CIMH, WMO, CARDI and ten meteorological services.

The main objective of the project is to increase and sustain agricultural productivity at the farm level in the Caribbean region, through improved applications of weather and climate information, using an integrated and coordinated approach.

Some of the activities of the three year project, apart from the stakeholder meetings and training in rainfall analysis workshops, include some data rescuing, which started in the first year, along with rainy season prediction, with the use of long term climatic data. In the second year, training which was geared towards the production of user- friendly weather and climate information newsletters for the farming community, has been completed, as well as weather and climate related Pests and Disease modelling. For the final year of the project, some crop simulation models for yield estimation will be used and some emphasis on crop water loss and irrigation requirements and scheduling will be looked into, in time for the second round of farmer's forum meetings and final stakeholder conference.

Public Weather Forecast and the Terms Used: An Explanation – Clairmonte Williams, Acting Deputy Director, Barbados Meteorological Service

Mr. Williams clarified the terminologies used in their weather forecasts with respect to:

- Time and issue of forecasts
- Sky conditions
- Precipitation – giving a clear distinction between showers and rain

- Wind descriptors

The public weather forecast is accessible on their website (<http://www.barbadosweather.org>) and persons can also register online to receive free forecast updates to their mobile phones.

Seasonal Forecasts – Adrian Trotman, CAMI Project Coordinator

Mr. Trotman gave an overview of the seasonal outlooks with respect to rainfall produced by CIMH, with some contributions from regional Meteorological Services. The precipitation outlook is issued in the form of a map of tercile probabilities showing regions having homogeneous forecast probabilities for below, near, and above normal precipitation. The terciles separate the possible outcomes into three categories (terciles) based on the historical precipitation record. The probabilities add up to 100.

Extreme Rainfall – droughts and floods – Adrian Trotman, CAMI Project Coordinator

In his presentation Mr Trotman noted that increased rainfall totals have been occurring since May 2011. This increase had already been predicted by CIMH in the Precipitation Outlook. Prior to the 2009-2010 drought period it was forecasted below normal rainfall for the Caribbean region and subsequently above normal rainfall was predicted for the latter part of 2010.

Climate Trends and Climate Change – Shontelle Stoute, Technical Assistant, CAMI Project

Mrs. Stoute in her presentation highlighted what has been forecasted for temperature and rainfall by climate models before looking at what trends were indicating for Barbados.

Global climate models have predicted an increase in temperature from 0.5 to 4.2 °C by the beginning of the 21st century with an increase in the number of days maximum temperature exceeds 30 °C. However, models are predicting a decrease in rainfall totals and hence a decrease in the amount of available water. Apart from the projected decrease in rainfall totals there is the prediction of an increase in intense rainfall events.

With a closer look at the Caribbean, models have also projected an increase in temperature and a decrease rainfall totals during certain times of the year.

These predictions were then compared with current temperature and rainfall trends. Results of analyses show that temperatures are on the increase. Analysis of extremes shows that the occasions of cool night time temperatures are decreasing and the occasions of very warm day time temperatures are increasing. On the other hand there are no clear cut trends with respect to rainfall. However, some decreases and increases in rainfall totals were observed on month to month analysis.

Rainfall Measuring Demonstration –Melvin Hall, Technical Officer II, CIMH

Mr. Hall demonstrated the proper placement and use of the rain gauge to obtain accurate readings. The rain gauge should be placed at least 30 cm above the ground, a height as low as possible, but high enough to prevent splashing from the ground. It should be exposed with its mouth horizontal over level ground and surrounding objects such as trees and other obstructions should be no closer to the gauge than a distance equal to twice their height above its orifice. He further explained that the site should also be sheltered from the winds so as to minimize the effects on the instrument and that the surroundings should be modified so that the air flow across the mouth of the gauge is horizontal. Mr Hall then went on to demonstrate the correct way to measure the rainfall using a measuring cylinder, explaining that the reading for the water level should be read from the bottom of the meniscus.

V. OPEN DISCUSSION – CIMH

Participants viewed three short videos from WMO involving:

1. How agricultural information was disseminated via text messaging,
2. Use of weather data and meteorological stations for crop insurance
3. Use of meteorological data and the improved relationship between farmer and meteorologist to promote increased productivity at the farm level

Farmer's Working Groups

In an effort to obtain information on the type of information communicated to and requested by the farming community as well as the means of communication and any improvements, several questions were asked. Below are the combined results from the groups.

1. What information does the Meteorological Service in your country currently/normally provide?

- a. Weather forecasts (radio, television and newspaper, website)
 - b. Aviation information
2. What are the key crops in your country?
- a. Sugar cane
 - b. Tomatoes
 - c. Cucumbers
 - d. Lettuce
 - e. Watermelon
 - f. Yams
 - g. Sweet potatoes
 - h. Peppers
 - i. Okras
 - j. Beans
 - k. Cassava
3. What do you see as frequent /costly impacts related to weather and climate that we have within our farming system?
- a. High rainfall/flooding
 - b. Drought / dry spells
 - c. Soil erosion
 - d. Pests/diseases
 - e. Extreme temperatures – causes leaf dropping
- These all give rise to a loss in production.
4. Should the project focus on large or small scale farmers?
- a. The project should focus on both. They need to be educated on the use of the website for information. Information should also be disseminated to them.
5. What additional products would you like to see from your meteorological service?
- a. Radar

- b. Monthly bulletins
 - c. Explain meaning of weather terms on website
6. Which of (5) above do you think can be provided by your meteorological service?
- a. Information on how to use information already on website
7. Preferred means of communication
- a. Email
 - b. Call phones
 - c. Internet
 - d. Radio

Discussion/Recommendations

The question was asked whether forecasts could be broken down into climatic zones so that specific areas can be highlighted where precipitation is likely to occur. In response it was stated that such a forecast would be difficult due to the size of the country. However, in cases where wind speeds fall below 10 knots and there is sufficient moisture then a forecast could be made for a specific location as this situation would induce localised convection and rainfall particularly in central and western districts. It was also suggested that with a fully functioning radar and human resource capacity, areas of precipitation can be better identified.