Antigua Farmer's Forum Report

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I. INTRODUCTION

The second farmers' forum in Antigua took place in the conference room at the complex of the Ministry of Fisheries. A brief introduction was made by the Director of Antigua and Barbuda's Meteorological Service, Mr. Keithly Meade. In his opening address a brief introduction to the participants, comprising of farmers, agriculturalists, climatologists and Meteorologists was made informing the audience as to what the project CAMI is all about, as well as its duration.

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

The official welcoming address and opening declaration of the workshop was made by Antigua and Barbuda's Minister of Agriculture, Lands, Housing and the Environment Mr. Hilson Baptiste, MP. The Minister spoke about the problems currently being met in agricultural productivity, such as praedial larceny, which amounts to 35 percent of agricultural loss in Antigua and from a climatological perspective, which is the primary focus of the project, drought related incidences.

The issue of water catchment around the island arose and questions as to whose responsibility it is to ensure that it is being done adequately were raised. He noted that this is the main area of concern in keeping the cost of providing water at a minimum for the benefit of the farmers.

Apart from the catchment he spoke about the importance of the cleanliness of the ponds and dams which are being used for storage, as well as the ways in which the water can be stored for longer periods, by simply lining the dams with plastic.

Opening Remarks

A brief introduction was made by Mr. Adrian Trotman, Coordinator of the CAMI Project. In his opening remark, he stressed especially to the farmers, the importance of rainfall and also temperatures (despite their small variations), in agricultural production.

IV. PRESENTATIONS

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.

The first year of the three year project comprised of stakeholder meetings, training workshops in rainfall analysis, coupled with data rescue operations. Some analyses were also done for rainy season prediction, with the use of long term climatic data. In the second year, training which geared towards the production of user- friendly weather and climate information newsletters for the farming community, has been completed, as well as the development of a Pests and Disease forecasting system. In the final year of the project the focus was primarily on the utilisation of crop simulation models. Workshops were held in this regard and two models DSSAT and AquaCrop were used in the simulation of crop yields, irrigation amounts and requirement times for two selected crops.

Weather and Climate in Antigua - Dale Destin- Climatologist- Antigua and Barbuda Meteorological services

In Mr. Destin's presentation, focus was placed on the CAMI Agromet bulletin which is currently being produced in Antigua and Barbuda. He went on to show a display of some of the statistical data which is used to produce forecasts, outlooks and aid in the identification of the occurrence of rainfall events such as drought situations. Also mentioned was the production of a7 day forecasts, probabilities of rainfall events likely to occur over that period, and the Standardised Pecipitation Index.

Some radar imagery was also displayed, showing the weather conditions which prevail across Antigua. He also spoke about the likelihood of a long term (six months) forecast for Antigua, as well as annual weather and climate summaries.

Some questions were raised from the audience with regards to the reliability of the data used to make these general analyses, as well as a general concern about the simplification of the weather information for the benefit of the farmers.

Seasonal forecasts, Extremes and Agriculture - Adrian Trotman, Project Coordinator

Mr. Trotman started out by talking about CariCOF, the Caribbean Climate Outlook Forum Caribbean meteorologists and climatologists that are supported by Scientists from other International Centres. He moved on to mention Climate Predictability Tool (CPT) used by CariCOF scientists to assist in developing seasonal forecasts. CPT and other output from the Internal Centres present the seasonal forecasts as tercile probabilities, which give an indication as to whether or not conditions an area is likely to be wetter than normal, drier than normal or normal for those months forecasted.

He then spoke about the importance of Met service personnel to farmers, in terms of provision of the relevant rainfall information which is very important to crops, as different crops have different requirements, hence knowledge of an extreme forecasted event, whether a drought/dry spell, period of excessive rainfall or abnormal temperatures.

Attention was then drawn to the drought situation experienced across the majority of the region during 2009- 2010, which raised certain questions by the audience with respect to the availability of warnings to farmers in case of these unlikely events. Also mentioned was the fact that most farmers now possess cell phones, hence communication when it comes to receiving alerts for such severe weather events wouldn't be a problem.

Suggestions were also made to these farmers, encouraging them to adopt a more flexible cropping policy, by planting the type of crops according to the season; this is one way in which they can make adjustments for themselves, in times of extreme occurrences.

Climate change and Agriculture - Lisa Kirton-Reed Technical officer (CIMH)

At the beginning of the presentation, the term climate change was defined, highlighting the specific human activities which have over the years contributed to the rise in the content of the earth's greenhouse gases.

The focus was then turned towards projections for the future. In the case of temperatures, it has been observed that an overall increase in global temperatures have been taking place, and it has been projected that this is most likely to continue and there will be an increase in the number of very hot days experienced, i.e. days with temperatures exceeding 35 ^{o}C. Further, night time temperatures too are expected to rise, and expected to exceed a minimum of 25 ^{o}C with increasing frequency. It was also reported that the minimum temperatures are likely to increase at a much faster rate than the maximum temperatures. There is the suggestion that rainfall totals will decline by the end of the century and that the rainfall events will occur with greater intensity.

The next section of the presentation focussed on if current trends already suggest what the projections are suggesting. Increasing temperature trends have certainly been shown

to be already taking place at statistically significant levels, as well as increases in the number of warm nights. In the case of rainfall on the other hand, declining rainfall and increasing intensity were not generally supported statistically by the trends in historical data.

The next area of study which took place was that of Crop modeling, with respect to the generation of crop yields and irrigation amounts for two crops which were investigated, tomato and maize. With respect to the crop yields, a crop simulation model, DSSAT, was used to compare historical and future potential yields of the two crops. The 'future' data was based on the assumption that temperatures are likely to increase by approximately 2 ^{o}C in the future with a 25 percent reduction in rainfall amounts, relative to the historical data. What was observed is that higher yields are seen to be generated with use of the historical data, whereas with an increase in temperatures and a reduction in rainfall amounts, there was a decline in the amount of yields obtained.

Also a model called AquaCrop for simulating the irrigation requirements was used, and as expected, it was seen from the model that irrigation requirements are going to be greater in the future due to reduced rainfall and temperature increase. Hence for the future, farmers would have to put certain measures in place to deal with these changes.

V. OPEN DISCUSSION – CIMH

Information Dissemination and Identified gaps for the future

Problems are encountered with analyses in certain locations when there is missing information with stations having incomplete data sets, and other missing biological data, especially in the case with research for pests and disease and crop simulation modelling. There is also the concern that the density and number of meteorological stations are inadequate to cover farms, which are mostly rural and not located near to airports where the best meteorological datasets exist.

Some areas for future improvement have been identified with respect to agriculture in a changing climate, for example problems with extension officers being able to interpret weather and climate information correctly and to be able to provide advice for farmers. Hence training for these officers is one way to bridge the gap.

Another dap to be closed is the absence of a communication strategy for dissemination of weather and climate information. Even though such discussions have begun and recommendations presented, it was evident that the work must continue.

Other gaps include

- Dedicated agrometeorology staff in Met Services

- Formation of comittees or teams that would pursue national sustainability of the project – for which tripartite commitees were recommended but which ought to be seen as part of a national disaster risk reduction committee for agriculture.

Working Group Report

1. **Bulletin Awareness**
   Most persons not aware or had access to the CAMI Bulletin despite it being on the MET's website & distributed via social media, facebook, tweet, email, etc

Recommendations made:

- To distribute hard copies to farmers
  - Use agro marketers to distribute hard copies, e.g Use CMC as a collection point for hard copies
  - 3-7 day forecasts as well as 3-10 day hazardous outlook should be made more readily available
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2. **Things useful in the bulletin**

   - 5-10yr history of months (to possibly recommend the types of crop to be planted)
   - 3month outlook forecasts should also be put in hard copy for distribution
   - Farmers corner to be placed on MET's website
   - Have farmers look at the bulletin now and at an upcoming meeting, provide feedback on the bulletin.
   - Central source of what crops are being planted around the island at particular times
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3. Should extension officers be trained in agrometeorology ? **YES – general consensus, some**

4. **Utilizing cell phone alerts during bad weather:**
   Recommendation: Start approach with APUA PCS which is quasi government
   use text strips on ABS and local TV stations
   Possible Development of a Farmers Hotline
   Digicel web texts / resolving cell providers

5. **Cell App to provide alerts** – Negligible interest given the type of work undertaken by farmers.

6. **Farmers & MET Forums at beginning of Dry & Wet Season**

   Suitable timing should be adhered to based on the availability of farmers

7. **Radio/TV Programmes**

   There is a need for a weekly forums/ TV/ Radio programme

   Challenges of attaining appropriate TV slots suitable to the lifestyles of farmers

   Recommendation:

   - Possible extension of weather forecasts for "Farmers Corners":
   - Use of a Farmers Blog
   - Conduct a survey to determine how many farmers regularly access the internet
   - Negotiate first with state media (ABS) to have a regular slot that can then branch out to more popular media stations
   - Attain Media buy in and private sector sponsorship

Concerns:

Most farmers don't access the internet

Some farmers are secretive when recording data on crop cultivation

Sustained consistency in a Farmers' programme

Plans & Way Forward:

Ministry of Agriculture has plans to open a farmer's computer access centre

VI. CONCLUSION

The discussions between the farmers, Meteorological and Agricultural staff in the group sessions, proved to be quite useful, as all of the underlying concerns which are still posing a problem were raised. The plan from this point onward now is to address these issues, training the relevant personnel in the respective areas as necessary and making sure the communication gap between farmers, Extension officers and the Met service is narrowed.