



# St. Vincent and the Grenadines Farmer's Forum Report

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## **I. INTRODUCTION**

The second farmers' forum in St. Vincent and the Grenadines was held in the Methodist Church Building in the city. The forum began with a prayer and the singing of the National Anthem of St. Vincent and the Grenadines.

## **II. REPRESENTATION**

The participants predominantly comprised of farmers, extension officers and other agriculturists, and meteorologists from the St. Vincent Service and the Caribbean Institute for Meteorology and Hydrology.

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

## **III. WELCOME**

An official welcome was then extended to all participants by Mr. David Burgin, from the local meteorological service.

### **Opening Remarks**

A brief introduction was made by CAMI Project Coordinator Mr. Adrian Trotman, who gave some insight to the participants as to the objectives of the forum.

## **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 was 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 Impact on Black Sigatoka – Sylvester Vanloo, Ministry of Agriculture***

Mr. Vanloo's presentation started out by focusing on the general climatic conditions affecting banana production, conditions such as temperature, rainfall, floods, wind, radiation and other elements. With respect to temperature, it was mentioned that the crop requires an optimum temperature of 22° C for growth and flower initiation, however at different stages of development, other specific temperatures ranging from 25° C to 31° C are more suitable. In terms of rainfall, a 25mm amount is required for maximum sustainable growth.

Mr. Vanloo went on to note that the spread of the Black sigatoka disease is favoured by high rainfall, humidity and temperature, noting that temperatures affect the growth, development, metabolism and production of the plant. One important and unfortunate point to note is that the same conditions which favor plant growth also favor disease development.

Afterwards, Mr. Vanloo identified two types of spores of the black sigatoka disease, the Conidia, which are produced daily when dew is present, and the Ascospores, produced periodically when rain is present.

A display of a chart representing the Sigatoka Disease Integrated Management System, which is utilized by the agricultural office, as a means of monitoring weekly climatic elements of rainfall and evaporation, along with other detailed information such as the number of days between spray cycles, the last week the crop was sprayed, the next week spraying is due as well as information regarding fungicidal use, was shown.

A graph showing the aerial application of fungicides was also shown, giving the audience an idea as to the quantities required on a weekly basis. One point to note with regards to fungicidal application is that the impact of weather on black sigatoka determines the selection of fungicide used as well as the efficiency of ground and aerial application.

Mr. Vanloo emphasized that the aim is to keep the application as low as possible and the crops healthy, ensuring that the same leaves previously sprayed are not sprayed again.

Questions with regards to maintenance of the data providing equipment arose, as well as training for the staff using the equipment, namely the Automatic Weather Station.

### ***Seasonal Forecasts, Extremes and Agriculture - Adrian Trotman, Project Coordinator***

Mr. Trotman started out by talking about CariCOF, the Caribbean Climate Outlook Forum, which is the mechanism by which seasonal forecast information is produced. He then introduced the Climate Predictability Tool, which aids in producing the regional rainfall forecasts. This tool provides tercile probabilities, which give an indication as to whether or not conditions in the specified region are likely to be wetter than normal, drier than normal or normal for those months forecasted.

Mr. Trotman then spoke about the importance of Meteorological Services 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 upcoming extreme event, whether excessive rainfall or a deficit, is essential.

Attention was then drawn to the drought experienced throughout the Caribbean in 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 these alerts for severe weather events, would not be a problem. Suggestions were also made to these farmers, encouraging them to adopt a more flexible cropping policy, by simply 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.

The question raised to the participants was “would the farmers have done anything differently knowing this information?” This was to get the farmers and Extension Officers to think about alternative action in the light of a warning of unfavorable weather or climate. If there is nothing that can be done, then the information is useless. The audience did agree amongst themselves that with the forewarnings, there are often responses that can be made by farmers to reduce the risks to their livelihoods.

### ***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 changes, albeit on various time scales.

The focus was then turned towards anthropogenic climate change and what is predicted for the future. In the case of temperatures, it has been observed that an overall increase in global temperature has been taking place. More specifically, in the Caribbean, projections are for an increase in the number of very hot days experienced, i.e. days with maximum temperatures and minimum (night time) exceeding 35° and 25°C respectively. It was also noted that the minimum temperatures will increase at a much faster rate than the maximum temperatures. Research conducted in CAMI and the by other research groups have corroborated these projections with current trends. Mean, maximum and minimum temperatures at almost all stations, during all months have been shown, with statistical significance, to be already increasing.

In the case of rainfall on the other hand, a general tendency for drying by the end of the century has been projected, but with an increase in its intensity. However, current trends do not support these projections for the most part, particularly because the variability of rainfall is very great, and depending on the time of the year and the part of the region and country, trends may often oppose. Since temperature is changing, it is quite likely that in the future rainfall will also change, and likely in the direction projected.

The next part of the presentation focused on simulated yields of maize and tomato using the DSSAT software. The intention was to determine how present and future climate, based on the current and projected trends may influence the production of these two important crops. Data used for the future was to assume an increase in temperatures, from present, of 2°C and a decrease in rainfall of 25%.

Current trends suggest that the yields of these two crops should decline and the declines would be even greater in the future with the ‘projected’ changes in temperature and rainfall used.

Also the AquaCrop software, developed by the Food and Agricultural organization of the United Nations for simulating the irrigation requirements, was used. Results suggest that irrigation needs will increase for these two crops in the future – increased irrigation needs in an environment where available irrigation water is likely to decline. Hence for the future, farmers and government would have to put appropriate measures in place to deal with these circumstances.

### ***Weather and Climate of St. Vincent and the Grenadines – Joan McDonald, St. Vincent and the Grenadines Met Service***

Mrs. McDonald started by defining the term weather in terms of temperature, pressure and rainfall, then moving on to defining climate, ensuring that the difference between the two terms were highlighted, as they are often confused.

Mrs. McDonald indicated analysed trends in St. Vincent suggests slight increases in rainfall, with increasing intensities. She went further to indicate that in the year 2012, a total 2035.8mm of rainfall was recorded at E.T Joshua, over 194 rain days. However, it was noted that the period June to December had below-average rainfall. In terms of temperature analyses, increasing trends have been observed, which are consistent with the climatic models output.

Mrs. McDonald then presented a table of extreme values for weather data collected, for the elements of pressure, rainfall, temperatures and winds amongst others. She informed the participants that hourly weather data is available, as well as forecasts and also advisories as necessary. Also produced by the local met Service are rainfall reference reports and monthly bulletins containing summaries of different parameters and extremes, the rainfall outlook, weather projections for the month ahead and products produced by the Caribbean Institute for Meteorology and Hydrology.

An actual display of the bulletin showing the layout was distributed to all participants.

### ***Information Dissemination - Adrian Trotman, CAMI Project Coordinator***

Mr. Trotman spoke briefly about the weather situation throughout the region as a whole, as well as the problems which are encountered with analyses in certain locations when there is missing weather information, compounded by an inadequacy in the density of weather instruments. Another issue is that of unavailable (whether non-existing or inaccessible) biological data, which has hampered the CAMI work on pests and diseases modeling. Mr. Trotman also stressed the importance of the production of regional and national monthly bulletins and effectiveness of dissemination to the farming and wider agricultural community.

### ***Identified gaps for the future***

Some gaps have been identified that in the opinion of the Project Coordinator need to be addressed in order to respond to the changing climate. One of these is the reality that extension officers are unable to understand and interpret weather and climate information which limits their advice to the farming community. It was recommended that training for these officers be provided to bridge that gap.

Other areas to be considered for bridging include (i) lack of dedicated staff in agrometeorology at meteorological services, (ii) data collection and availability (both meteorological and biological), and with the appropriate density, (iii) the dissemination and communication of information to farmers.

## V. OPEN DISCUSSION – CIMH

### ***Group 1***

1. Have the regional or national CAMI Bulletins been available to you? How useful was it?

-No

2. What else would you like to see in the bulletin?

-Weather prediction for every three months instead of monthly

-Simplification of rainfall data especially for farmers

3. How do you propose to go about having alerts by cell phone for times of bad weather?

-

4. How about a cell APP that provides alerts?

-Yes

5. Would you like to have farmers' forum with your met service at the beginning of dry and wet/ hurricane seasons?

6. How about a radio/TV programme?

-Yes for farmers and extension officers as they would be able to plan activities more appropriately

7. Web access portal

-A preference for T.V programmes, discussions and presentations, e.g farmers forums

8. Anything else you think should be raised?

-A projection for each month in relation to what actually happened for each month

### ***Group 2***

1. Have the regional or national CAMI Bulletins been available to you? How useful was it?

-No

-It could be very useful in assisting farmers

2. What else would you like to see in the bulletin?

-Actual rainfall and temperature raw data

3. How do you propose to go about having alerts by cell phone for times of bad weather?

-



4. How about a cell APP that provides alerts?

-Provision of a cell phone allowance would be needed

5. Would you like to have farmers' forum with your met service at the beginning of dry and wet/ hurricane seasons?

- Exist already

6. How about a radio/TV programme?

-Yes

7. Web access portal

-To include the weather bulletin into the "farmers diary programme"

8. Anything else you think should be raised?

-The need for a forecast of the weather more than a bulletin which is historical information.

### ***Group 3***

1. Have the regional or national CAMI Bulletins been available to you? How useful was it?

-No

-Should be more readily available, a copy should be placed in the newspaper

2. What else would you like to see in the bulletin?

- Wind speed

-Soil moisture information

-Weekly forecast for station location

3. How do you propose to go about having alerts by cell phone for times of bad weather?

4. How about a cell APP that provides alerts?

- Yes work with the service providers to disseminate the information

5. Would you like to have farmers' forum with your met service at the beginning of dry and wet/ hurricane seasons?

-Yes

6. How about a radio/TV programme?

-Yes for interpretation of data

7. Web access portal

-For an extension of the weather report

8. Anything else you think should be raised?

- Weather express needed

## **VI. Conclusion**

The discussion 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.

It has been discovered that there is a lot of misinterpretation among the extension officers and especially farmers, with regards to understanding and interpreting the weather forecasts and other information. Certain mechanisms need to be put in place for training of these officers, as well as a need for periodic meetings between meteorologists and farmers (similar to the forum) held, so as to be able to help them to correctly interpret the any weather or climate information provided.