Working Group

Questionaire

1. **What information does the Meteorological Service in your country currently/normally provide?**
2. **What are the key crops in you country?**
3. **What do I see as frequent /costly impacts related to weather and climate that we have within our farming system?**
4. **Should the project focus on large or small scale farmers?**
5. **What additional products would you like to see from your meteorological service?**
6. **Which of 5 above do you think can be provided by your meteorological service?**

WORKING GROUP- BARBADOS

1. Met Office

- Rainfall from at least 2 stations in each parish (St. Andrew 7/8 in the parish).
- Evaporation/ Evapotranspiration – at airport (Penman-Montieth)
- Sunshine Hours
- No UV index , Heat
- Temperature (max and min), humidity, wind speed, wind direction, cloud cover, low and high tides.
- Forecasting- 3 times daily, 4 day forecast (updated every day/week).
- Prepare information for weather news at night.
- Major events- get requests from insurance companies for a client/claim.
- Forecasting for aviation.

2. Key Crops in Our Country

- Sugar cane
- Sweet potatoes
- Yams
- Tomatoes
- Onions
- Carrots
- Cucumbers
- Cabbage
- Lettuce
- Sweet Peppers

- Beans
- Cassava

3. Flash Flooding – Costly (not as frequent)

- Droughts (Dry Season)- Costly
- Cane Fires (in dry season) – Costly, Frequent
- Wind Damage (in early months of the year) – Frequent
- Pest and Disease (all year round e.g. powdery mildew in dry season, downy mildew in wet season).

4. Focus on both – large scale and small.

We have emerging small scale vegetable farmers (more devastating on small scale), and we are committed to growing sugar cane for several other uses.

5. Meteorological Products we would like to see – WISH LIST

- Newsletter/ Bulletin
- Evapotranspiration data for Irrigation Scheduling
- Education on how Agro- Meteorology can influence production and improve yields.
- UV index data
- Solar Radiation Data
- Forecasting for agriculture.
- Meteorological data for use in developing crop insurance plans or policies.
- Yearly climate projections based on past climate data and worldwide climate patterns.
- GIS and remote sensing

6. What Can Be Currently Provided by the Met Office?

- Meteorological data for use in developing crop insurance plans and policies.
- Evapotranspiration data for irrigation scheduling (if government or farmers are willing to provide a secure property).

BELIZE

Garvy Ramirez

Dennis Gouguez

Carlos Fuller

1. **Availability**

a. 3- Day weather outlook

b. Monthly rainfall

2. **Key Economic Crops**

a. Traditional : sugar, banana and citrus

b. Non-traditional: cereal crops, beans, peppers and vegetables

3. **Frequent impacts**

a. Rainfall (too much; too little)

b. Temperature – becoming more relevant for new production systems

c. Wind

4. **Project Focus**

Ministry of Agriculture and Fisheries mandate is service to small and medium farmers.

5. **Additional products**

a. Rain/dry season onset or cessation

b. Almanac- moon phases etc.

c. Day length information

d. Evaporation

WORKING GROUP REPORT – ST. VINCENT & THE GRENADINES

Question 1

Meteorology– What information does my service normally provide?

Answer

Daily forecasts in collaboration with the Barbados Meteorological Office. This includes tide information and weather forecasts are distributed to radio and television and other agencies.

Question 2

Agriculture- What are the key economic crops?

Answer

- Bananas
- Plantains
- Root crops (e.g. dasheen, eddoes and tannias)
- Vegetables – for local market
- Arrowroot
- Ginger

Question 3

Agriculture – What do I see as frequent /costly impacts related to weather and climate that we have within our farming system?

Answer

- Wind
- Drought and heavy rains
- Pests and Diseases
- Soil erosion and landslides
- Leaching of fertilizers

Question 4

Should the product focus and small scale farmers?

Answer

Small farmers – These represent over 95% of the total farming population with over 70% of their farms being less than 5 acres in size. This group has few resources to address their issues on their own. There is a greater social impact on the country when there is a stable small farmer community.

Question 5

Agriculture- What product would you like to see?

Answer

- Longer term weather forecasts – 3 days to 1 week
- Drought forecasts
- Rainfall intensity forecasts
- Information to help in obtaining risk information.
- Also needed – Greater collaboration and networking between meteorological services, agricultural, water and electricity, guiratini services, as well as farmers' organisation, and agricultural agencies both locally and regionally, and other entities which are involved in weather data collection.

Question 6

Meteorology – Are there any of these that you know you can currently provide but don't?

Answer

Yes, three day weather forecasts. Some of these could be done through regional networking.

WORKING GROUP SESSION – ST. LUCIA

1. Information provided by meteorological services.

Raw data:

- Temperature, Evaporation
- Relative Humidity
- Sunshine, Wind speed

Other:

- Climatological analyse
- Rainfall projection
- Summary
- Report

2. Economic crops
    - Bananas
    - Cocoa
    - Vegetables
    - Root crops
    - Citrus Fruits
3.
4. Impacts
    - Droughts
    - Floods
    - Tropical cyclones
    - Humidity diseases

5. Small scale agricultural farmers
6. Products/Services
    - Medium to long term forecast in agriculture
    - Integrated database for the Caribbean (Agro-met data)
    - Bulletin/ Newsletter
    - Estimate for agriculture
7. Products to start now
    - Forecast projections for agriculture

DOMINICA

- The meteorological service presently provides daily weather forecasts and information to aviation.
- Economic crops in order of importance.

1. Banana/ Plantain
2. Root crops (yams, sweet potatoes, dasheen, tannia)
3. Passion fruit, pineapple
4. Vegetable production
5. Peppers (hot, seasoning)

- Weather related impacts.

1. Pest and diseases
2. Irrigation Planning (droughts/floods)
3. Wind damage

- Focus should be on small scale farmers.
- Agricultural products needed.

1. Quarterly/ Weekly forecast

- Meteorology

1. Quarterly Forecast Online (CIMH)

JAMAICA

Answer 1

- Daily weather forecasts and outlooks for towns and cities e.g. severe weather warnings.
- Give synopsis 3-4 times per day (Outlook)
- Provision of monthly rainfall summary and drought analysis to specific clients, also available on the website.
- Provision of added information at clients request e.g. evapotranspiration, rainfall data etc.
- Offer technical assistance to agencies in siting zones for potential met stations.

Answer 2

- Sugar cane, banana, citrus, coffee, root tubers, ginger, condiments.

Answer 3

- Drought, bush fire, floods, hurricane, landslides.

Answer 4

Both, however delivery of the information may differ considering the majority who are small farmers may not be privy to technology of readily receiving the information and may require group meetings as opposed to accessing via email for example.

Answer 5

- Better pest and disease forecasting.
- Improvement of rainwater harvesting infrastructure.
- Improve livelihood of farmers.
- Increase yield and consistency in production.

Answer 6

Considering the available resources and workforce, not much more can be done at this point.

TRINIDAD & TOBAGO

1.

- Provide public weather forecast, includes rainfall, temperature, sunrise/sunset, sea conditions, wind.
- Specialised reports, either on requests or what is continuously produced i.e. monthly precipitation and seasonal forecast.
- Provide data for clients' usage.
- Bulletins

2.

- Tree crops – cocoa, assorted fruits, coffee, coconut, citrus, forestry (wood)
- Vegetable crops – pumpkin, peppers, lettuce, okra, bandenia for local and international consumption.
- Root crops- recently within 3 to 4 years, mainly local consumption, cassava, yam, dasheen, eddoes to replace dependency on cereals.

3.

Flooding – Primary lost of entire crop.

- Ministry provide extension officers to process flood damage reports
- Dry season incentive to persons who construct ponds impact on pest and diseases,
- Weather oriented:

Dry season – increase in insects; mites, thrips in vegetables.

Wet Season – bacteria and fungi increase

- splash borne disease

Wind - Airborne diseases, fungal pathogens

4. Small scale farmers in majority and tend to be greater affected.

Prefer to look at agricultural zones to ensure there is a capture of the microclimate of the agricultural community, so both large and small scales are looked at.

5. Weather information across all agricultural zones, rainfall, temperature, humidity, wind etc. Farmer perspective, what to expect over short term period. A weekly advisory with a day to day distribution for short term planning.

6. Tailor made precipitation forecast for agriculture. Increase in data availability to cover agricultural zones which would improve a precipitation forecast geared towards agriculture.

Antigua and Barbuda

Meteorological Information

1. Met services in Antigua cater to Aviation, Tourism, and Agriculture etc.

Agriculture

- Data bank reflects on a fair picture of climatology for many years over forty (40) years for rainfall.
- Hourly data collected including
- Temperature (daily Min and Max – mean and extremes can be determined.
- Rainfall data collected from 13 stations on island.
- Airport rain station is most keenly monitored on a daily basis (4 readings every 24 hours)
- Cloud cover.
- Relative humidity
- Rainfall estimates (using models)
- Rainfall forecast (every four days)
- Evaporation (as it pertains to transpiration and key economic crops).

ANTIGUA

Imports over $30 million of fresh vegetables and plants, annually. North America and Central America, Caribbean (medium term weather outlook for these countries.

Key crops

Onions, carrots, sweet pepper tomato, cabbage, pineapple, Sea Island cotton, mango

Frequent imports

Drought, floods hurricane, seasonal pests and diseases

All farmers (…….

Rainfall information (short and medium range forecast)

For land preparation, planting ……..

Module in the daily television presentation, to focus on agricultural weather report.

Forecast for ash fall from Montserrat.

Medium term weather outlook for north and Central America.

Ministry of Agriculture establish a focal point to indicate to the meteorological station the relevant needs for agri-weather reports on a regular basis.

WORKING GROUP - GRENADA

1. MET. What information does my Met service normally provide?

Early warning, Forecasting, Rainfall, Temperatures, Relative humidity, wind, Pressure,

Cloud Cover, limited capability to do Evapo-transpiration Analysis and presentation.

2. AGRIC: Key economic crops in my country.

Cocoa, Nutmeg, Bananas, Vegetables, Citrus, Food Crops.

3. AGRIC: What do I see as frequent/Costly impacts related to weather and climate that we have within our farming systems?

Damages/Lost of crops. Soil/Gully Erosion, Pest/Diseases, Financial Lost because of inability to harvest in areas where roads are not properly surfaced.

4. Agric: Focus.

Both. In many areas the farms are small but add up to one large farming Area/Community.

5. AGRIC: Products.

More detailed forecasting, early warning for dry or wet spells. Agricultural Weather Bulletin/Briefing on a weekly or monthly basis. Evapo-transpiration analysis/data.

6. Met. What can provide?

Limited Evapotranspiration info. Agric Weather Bulletins

WORKING GROUP GUYANA

(1) Information such climate (3 monthly rainfall outlook) and weather forecasts (12 hour, 1 to 7 days), data in weather and climate and water resources, low and high tide alerts, , etc. are disseminated via radio, television, through newspapers, bulletins and facsimile to various stakeholders.

(2) Key Economic Crops – Rice and Sugar

(3) Frequent/costly impacts –

a. Drought

b. Flood

c. Pest and Disease outbreaks

d. Saline Intrusion

e. Breach in Sea Defences

(4) Project should focus on all farmers

(5) Agro-Advisory Services

a. Short and Medium Term Forecast – 7 days

   i. Rainfall (intensity)

   ii. Temperature

   iii. Humidity

   iv. Wind Direction

b. Agro-advisory

   i. Crop specific

   ii. Livestock

c. Crop Status Projection

(6) Specifics information to Agriculture Meteorology is not done, due to

inadequate human resources skills in Agro Meteorology. This area in Hydro met needs that need to be strengthened and it my hoped that via CAMI project it can be done.