



**RA-IV WIGOS Implementation
Workshop (English),
1 - 3 December, Willemstad Curaçao**



**Guyana
Hydrometeorological Service**

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Outline of the presentation

1. Mission of the NMHS
 2. Historical Meteorological Disaster Event
 3. National Observing Issues or Needs
 4. Plans for the observing networks
 5. WIGOS Implementation Status
 6. Summary
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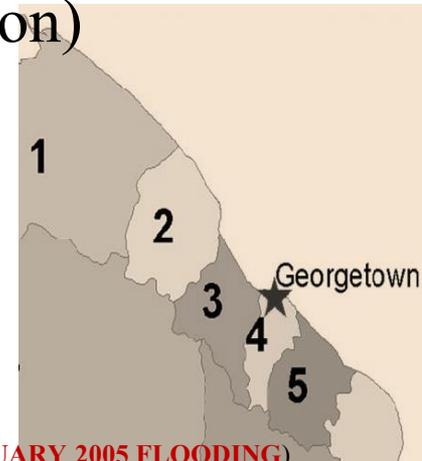
Mission of the NMHS

- *To observe, archive and understand Guyana's weather and climate and provide meteorological, hydrological and oceanographic services in support of Guyana's national needs and international obligations.*
 - Its responsibility is to monitor and evaluate the weather and water resources and to actively support the government in disaster risk management and aeronautical, water, agriculture, engineering and other agencies for socio-economic development.
 - It is the official provider of weather, water and climate information and related products and services for Guyana.
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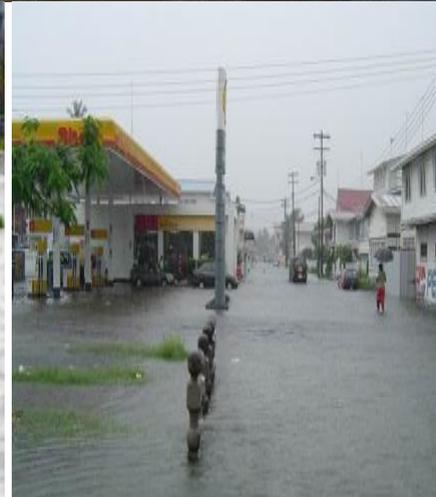
Major historical meteorological disaster event

- Guyana is not prone to many or frequent natural disasters, however its low-lying coast faces the imminent threat of flooding.
- On January 17, 2005, torrential rains caused severe flooding along the coastal regions which is the most densely populated area. The coastal stretch between the capital Georgetown and Mahaica (Regions 3-5) was particularly hit.
- Affected around 290,000 people (39% of total population) and represented a loss of 465.11 million USD
- The disaster claimed 34 lives -7 by drowning and 27 resulting from illnesses arising from the flood. (Leptospirosis disease)





Major Historical Meteorological Disaster Event



(Images for Guyana 2005 flood)



Hydrometeorological Monitoring Networks

- **Doppler Weather Radar (400 km Range)**
- 11 Hydrological Stations (Recording)
- 157 rainfall stations (Manual Gauges)
- 9 Synoptic Stations
- **58 Hydrometeorological Automatic Weather Stations**
- Numerical Weather Prediction Models (7-day Forecast)





Staff Observations and Competence

- All technical staff entering the Department are trained in observation and data collection/processing. However, there is a need for continuous training so that the NMHS staff can become WMO certified.
 - One of the biggest challenge facing NMHS is the high staff turn over rate.
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WIGOS Implementation Status

- National Observing networks consist of:
 - Rainfall
 - Climatic
 - Aeronautical
 - Synoptic
 - Automatic
 - Hydrological (Surface Water)
 - However, WMO Annual Global Monitoring report reflects that on the RTH and MTN all of the climat stations were **Silent**. This resulted from remoteness of stations which hindered easy accessibility to the data.
 - Existing database within the NMHS:
 - Clidata
 - Clicom
 - Hydata
 - NWIS
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Major needs and gaps in observing capabilities and access

- The Service provides basic weather forecasting (for the public and aviation), climate monitoring and archiving, water survey (surface water) and archiving, minimal marine services and has just begun a limited agrometeorological program.
 - The Service does not have:
 - *a research unit.*
 - *a flood or drought warning program.*
 - *a water quality or ground water monitoring program.*
 - The Service contracts its web services and, in reality little information is available on line.
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Major needs and gaps in observing capabilities and access

- *Guyana's Hydrometeorological Service benefits from the support of Regional and International organizations and resources.*
 - *There are existing needs for:*
 - *Training/qualified personnel in the relevant applied sciences at all levels to enhance both the quality and efficiency of the Department's deliverables.*
 - *to improve the density of monitoring stations across Guyana; this includes funding to purchase equipment for hydrometeorological monitoring both at surface and upper levels, and the provision of technical assistance*
 - *updating the current hydroclimatological database to make data easily accessible for both staff and stakeholder use.*
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Plans for the National Observing Networks

- *Ensure the availability of real and near-real time access to good quality data/products and associated metadata.*
 - *Expand on Automated Weather Observation Stations in remote locations.*
 - *Enhance/Maintain the current network.*
 - *Capacity building for NMHS staff to meet WMO Competency requirements.*
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WIGOS Implementation Status

- Is there an updated National WIGOS Implementation plan/strategy
 - *Work in progress*
 - NMHS training needs:
 - *Meteorology* - *Hydrology – Climatology*
 - *Forecasting* - *Radar Meteorology*
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WIGOS Implementation Status

- *WIGOS Implementation:*
 - *The Caribbean Meteorological Organisation (CMO) provides guidance to the NMHS of Guyana in the implementation of national components of WIGOS, which will ensure that the weather and climate observing system in Guyana produces adequate and the highest quality climate data.*
 - **Can partners discover and access NMHS data?**
 - *Very Limited Access*
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WIGOS Implementation Status

- Is there an operational Quality Management System for the National Observing system Network or specific component observing system?
 - *The NMHS does not have a QMS of its own, but rather follows procedures from WMO ANNEX III. However, the Service is currently working to implement the ICAO QMS (ISO 9001). It is anticipated that the QMS documentation and training will be completed in the next year.*
 - Are operational and/or maintenance processes for observing systems documented and their implementation monitored?
 - *Yes, metadata are kept for all observing systems following guidelines from WMO and the manufacturers of equipment. However, the completion of the QMS mentioned above would enhance and further refine the current system.*
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Summary

- *Weather and climate-related natural disasters during the last ten years in Guyana have underlined the urgency of a national initiative to strengthen the knowledge and resources that could help minimize the damages associated with these events.*
- *In order for this to happen, the NMHS must strengthen its institutional framework so as to deliver the full range of weather, water and climate services to foster sustainable development. It must also be noted that improvement of the Service's capability for accurately predicting localized extreme weather events, and to publicize hazards can avoid significant losses and costs to both life and property.*
- *Importantly, in this regard, any improvements in Guyana's weather and climate observing infrastructure must be carried out as part of the WMO Integrated Global Observing System (WIGOS).*



Thank You!

Any Question(s)?

A 3D cartoon illustration of a farmer with a beard, wearing a red shirt and blue overalls, holding a wooden staff and standing in a field of corn plants.