

**FOURTH INTERNATIONAL PORT
METEOROLOGICAL OFFICERS WORKSHOP
AND SUPPORT TO GLOBAL OCEAN
OBSERVATIONS USING SHIP LOGISTICS**

PMO-IV

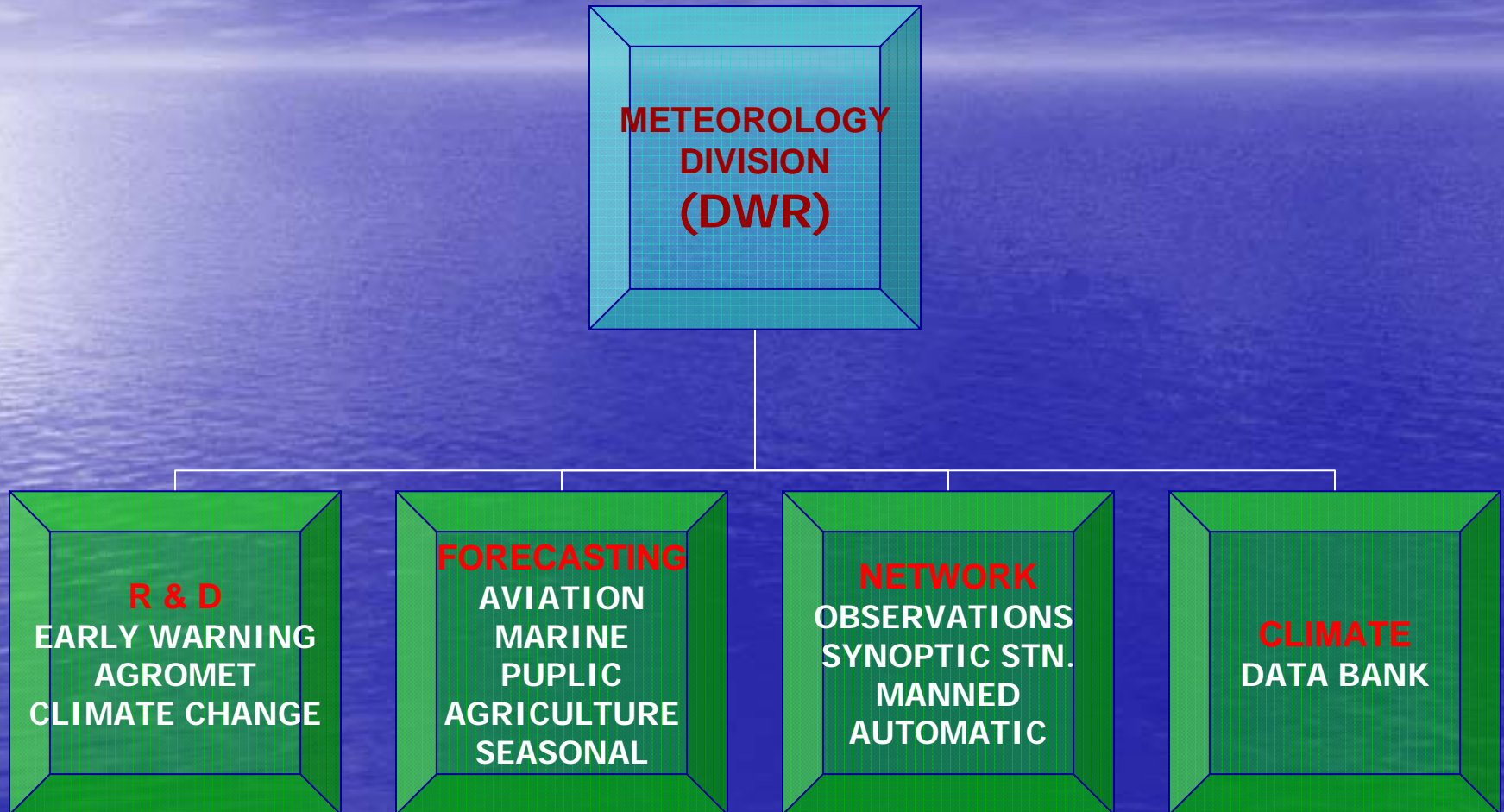
8-10 DEC 2010, ORLANDO, FLORIDA, USA

This presentation is generally for Africa Region I with contributions from David MWaruma (Kenya), Amane Hasan (Morocco), Mamadou Mangane (Senegal) and George Stafford (Gambia).

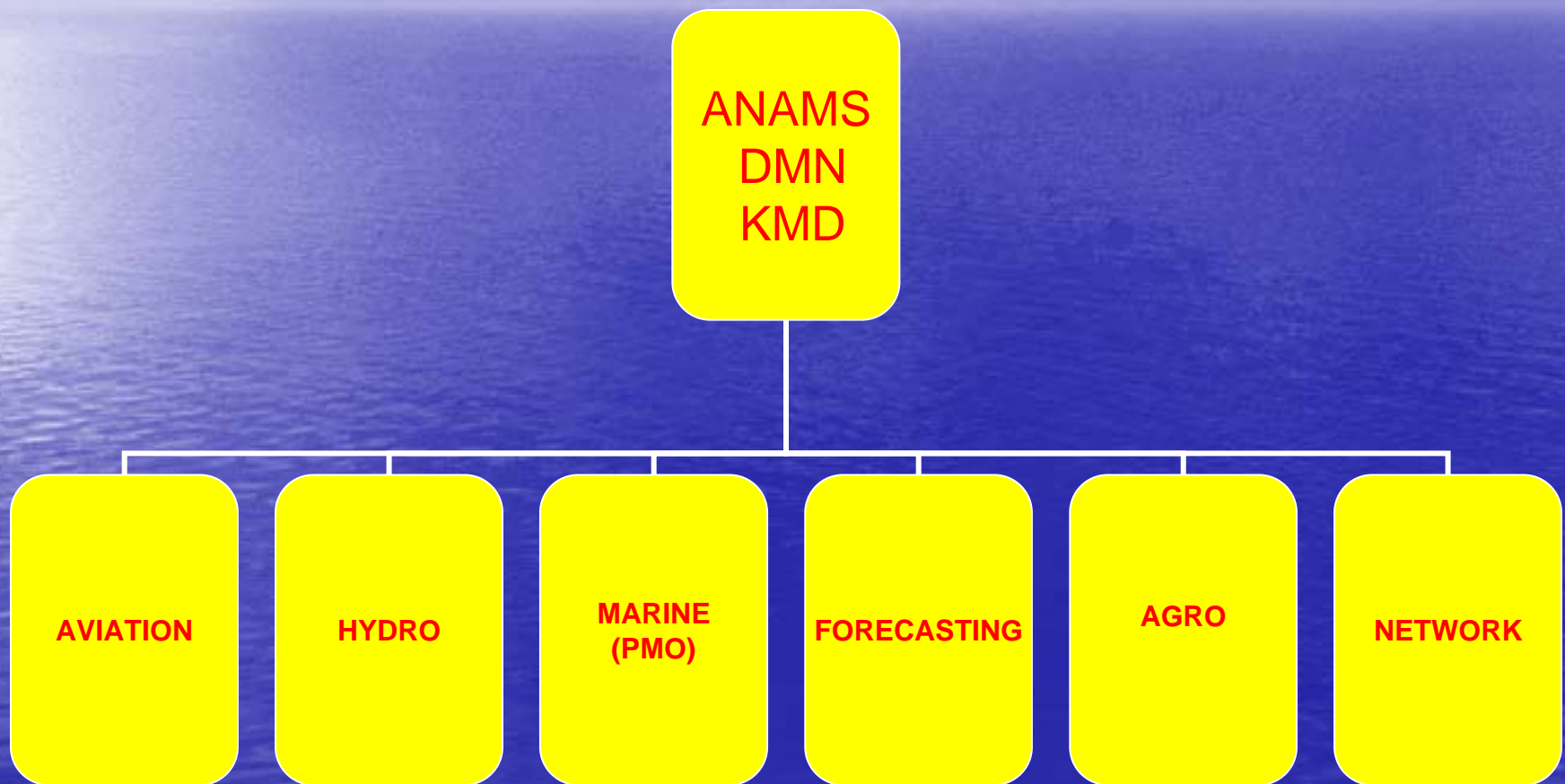
INTRODUCTION:-

- The **Department of Water Resources** is the National Meteorology Authority of The Gambia. It is made up of five technical divisions; Meteorology, Hydrology, Rural Water Supply, Water Quality Control, Communications and Data Analysis, and a Directorate/Administration with close collaboration existing between relevant agencies and institutions in areas of protection of the natural resources (fisheries etc), disaster prevention and protection of the environment geared towards sustainable development.
- Kenya Meteorological Department is an organization under the Ministry of Environment and Mineral Resources.
- In Senegal National Agency of Meteorology (ANAMS) is under the Ministry of Air Transport, Infrastructure, International Cooperation and Energy.
- National Department of Meteorology (DMN) is under the Ministry of Energy, Mines, Water and Environment

STRUCTURE:-



SIMILAR STRUCTURES IN OTHER AFRICAN NMHSs:-



METEOROLOGY SERVICE PROVISION:-

- Meteorological data, Weather warnings and advice for safe Aviation and Maritime Operations.
- Daily Weather Forecast for the general public through the National Radio and Television Services.
- Climatological data and information suitable for research purposes.
- Information and Data for use by planners, policy makers and the farming community through publication of Agrometeorological (Early Warning System for Food Security) bulletin every ten days in the month particularly during the rainy season.

CURRENT MARINE SERVICES:-

- Shipping & Fishing Forecasts Bulletins.
- Senegal, Morocco and Kenya issue Special Port Area Forecast.

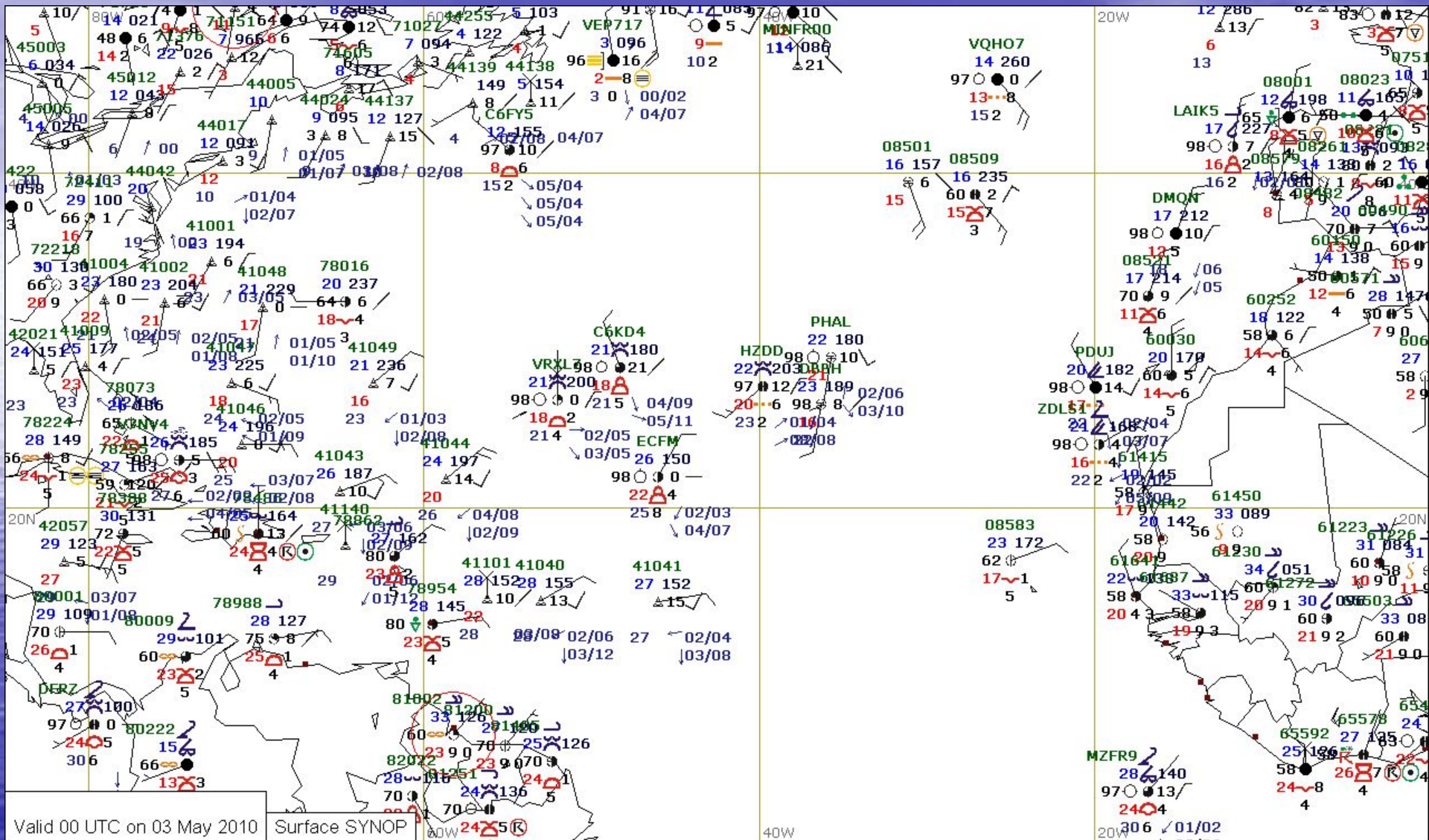
INSTRUMENTS/ EQUIPMENT:-

- Conventional Meteorological land Stations for WMO Standard data collection/practises (Synoptic/ Aviation/ Marine/ Agric/ Climatological and Research purposes).
- EUMETCast-Africa (MSG) PUMA reception services.
- Satellite Distribution System (SADIS-2G) reception services.
- AFTN / GTS & Internet Services .
- Few Automatic Weather Stations.
- Media Recording Studio for Public Weather broadcasting.

COLLABORATION WITH OTHER NATIONAL MARITIME AGENCIES/ INSTITUTIONS:-

- The Department of Fisheries.
- Ports Authority.
- The Navy.
- National Association of Fishermen.
- National Environment Agency.
- National Disaster Management Agency.
- Department of Parks and Wildlife Management.
- Fire Rescue and Ambulance Services.
- Representation of relevant NGOs and CBOs.

Surface Synoptic Report (Land & Sea) 20100503-00Z



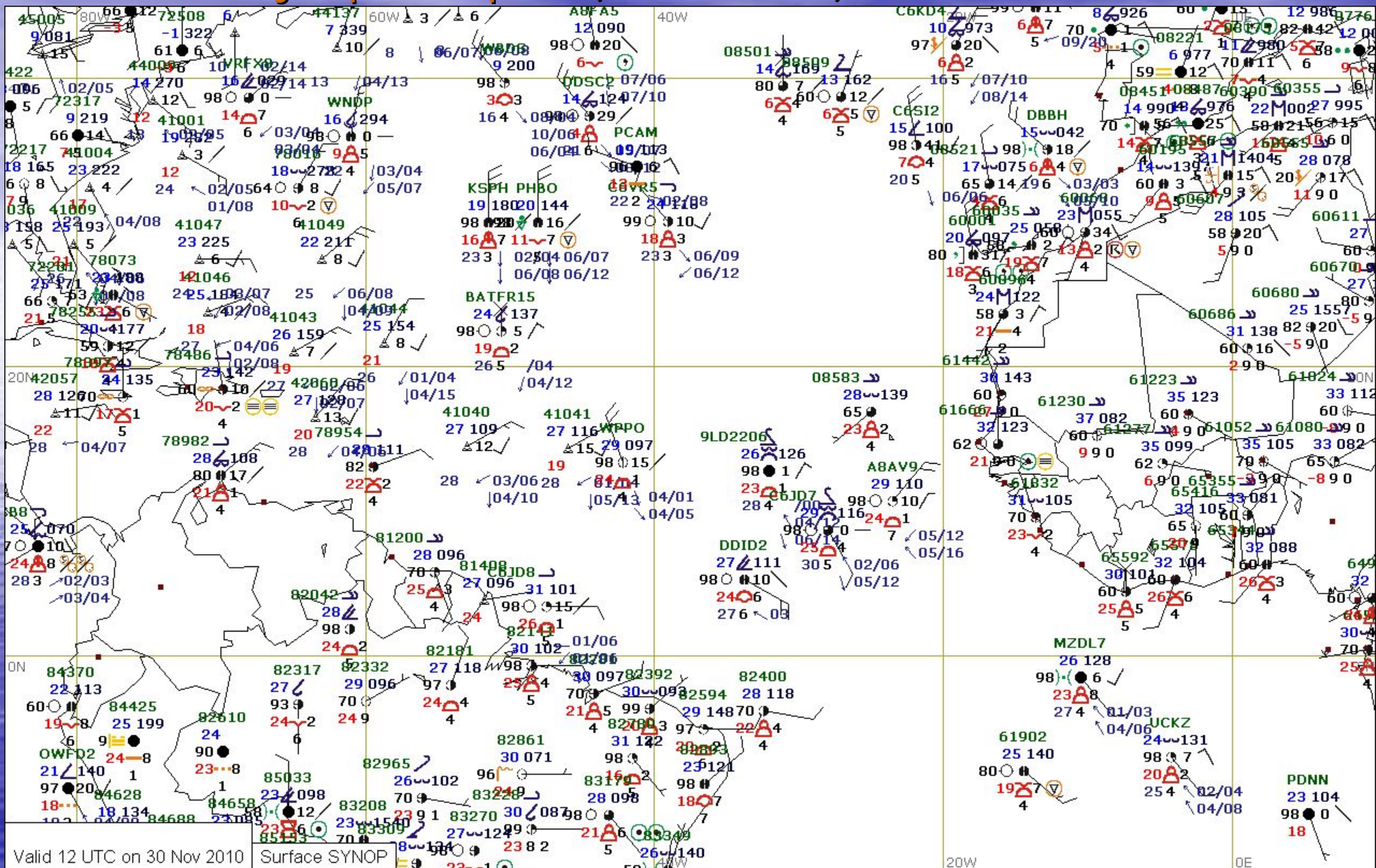
Valid 00 UTC on 03 May 2010

Surface SYNOP

George Njagga STAFFORD
(METEOROLOGIST-DWR)

16/12/2010

Surface Synoptic Report (Land & Sea) 20101130-12Z



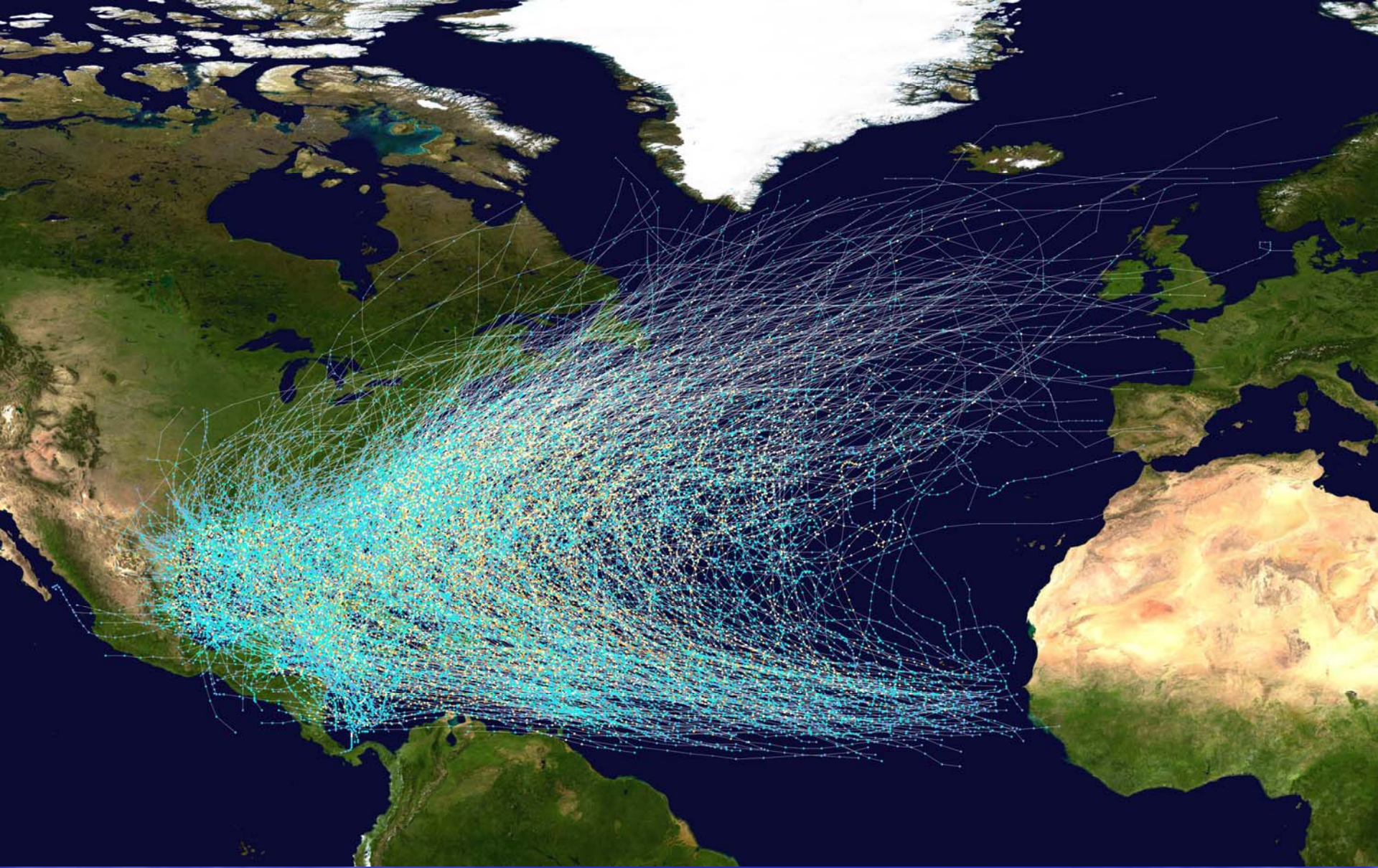
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Surface SYNOP

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16/12/2010

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NORTH ATLANTIC OCEAN HURRICANE TRACKS (1851 - 2005) Source: Wikimedia.org

16/12/2010

George Njagga STAFFORD
(METEOROLOGIST-DWR)

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GAPS ON MARINE OBSERVATIONS NETWORK (surface & upper-air):-

- From all diverse network of sources (observation platforms), most African Countries do not have real-time met - ocean observations that are necessary to improve Meteorological and Oceanographic services.
- Apart from few GLOSS Stations (Tide gauges) which provides real-time data on Sea level Observations courtesy of UNESCO - IOC/ NOAA/ ODINAFRICA ; much of Africa; lack the basic infrastructures, equipment and instruments for carrying out Met-Ocean Observations. Hence, the need for the recruitment of VOS.
- **No buoys within our Coastal waters.**
- **Few Coastal Synoptic Stations.**
- **No Soundings.**



CHALLENGES:-

- How to set-up or establish a Port Meteorological Office (PMO).
- Criteria use in the recruitment of Vessels; viz, different categories of Voluntary Observing Ships (VOS).
- Assistance for acquiring the necessary equipment and instruments including consumables; i.e. Conventional or Basic Met-Ocean Instruments.
- Procedures on the collection, processing, and transmission of Meteorological and Oceanographic (met-ocean) data obtain from the recruited Vessels to Global/ Regional Meteorological and Research Centres.
- Training of Crews/ Ship borne Observers on suitable measuring/ observing techniques and methods, as well as locally base Observers who would be involve in the assessments and corrections of logbooks; viz, examining, disseminating and exchange in the manner most suitable for WMO Standard data collection/ practises.
- Ship inspection procedures.
- Lack of Political will on the side of some of our Governments.

CONCLUSION:-

- Data and Information obtain from the Mobile Ship Stations (Fleets of VOS) will be transmitted to the GTS in real-time for data assimilation and data inputs to generate/ develop Global/ Regional Weather Prediction Models.
- These Observations will be essential for **Numerical Weather Prediction Model Evaluation/ Verification and Validation.**
- Accuracy and predictability of the future state of the Atmosphere and Ocean will be **enhanced** most especially in the preparation of Forecasts and Warnings for the purpose of aiding navigation and to alert the coastal population in advance of any imposing natural hazard.
- In a nutshell, Data and Information obtain will contribute immensely to the enrichment of Weather and Climate data for all Socio-economic development endeavours and sustainability.

RECOMMENDATIONS:-

- Urgent need for the training of Port Meteorological Officers especially on the services of observing paraphernalia, data Management; receiving and transmitting data for operational use, climatology and validation purpose.
- Exploitation of **military vessels** (Naval Coast Guards) as Selected Ships to conduct both measured (Auto) and manual (Conventional) observations during their daily routine patrols.
- Incorporating other observational methods and systems to complement VOS; such as, Tide gauges, Radar, AWS, the deployment of drifting buoys and profiling floats.
- Short term attachment and or Training for Instrument Technicians at WMO-IOC Regional Marine Instrument Centres (RMICs) in order to be able to perform the necessary installation and maintenance activities.

PROPOSED VOS DATA RECEPTION & TRANSMISSION:-

- Most Port Authorities do operate a VHF and HF Coastal Radio Station.
- Data and Information received from vessels (VOS) can be forwarded to the Central Forecast Office for onwards transmission through the GTS of WMO.
- Using the Naval folks as inspectors.



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**THANK YOU ALL FOR YOUR
KIND ATTENTION.**

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