



Background on the New Initiative for Provision of Meteorological Services for Improved Humanitarian Emergency Planning and Response

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I. WMO Global Operational Network

Through coordination of an operational network of its 188 Members' National Meteorological and Hydrological Services (NMHSs), 3 world meteorological centres, 40 Regional Specialized Meteorological Centres (RSMCs), 10 scientific and technical programmes, 30 regional meteorological training centres (operated by the NMHSs), WMO leverages capacities so that NMHSs can contribute to all components of disaster risk reduction. The WMO Operational Network includes (i) WMO Global Observing System (ii) WMO Global Telecommunication System and (iii) WMO Global Data-processing and Forecasting System (Figure 1).

(i) WMO Global Observing System (GOS)

The WMO Global Observing System (GOS) involves two subsystems, i) surface-based that is operated mainly by Member NMHSs and, ii) space-based that is operated by either national or international space agencies. Since 1963, the WMO GOS has enabled coordination of the observations and collection of weather, water and climate information from around the globe. Through this system, data are collected from 17 satellites, hundreds of ocean buoys, aircraft, ships and nearly 10 000 land-based stations and are exchanged and archived in near-real time. Everyday more than 50,000 weather reports and several thousand charts and digital products are disseminated among countries to provide services for society's benefit.

The WMO Global Observing System (GOS) is developing into the WMO Global Integrated Observing System (WIGOS), which will include various WMO observing systems such as the GOS, Global Atmospheric Watch (GAW), as well as cosponsored systems such as Global Climate Observing System (GCOS), and the Global Ocean Observing System (GOOS). WIGOS also contributes to realization of the Global Earth Observing System of Systems (GEOSS).

(ii) WMO's Global Telecommunication System (GTS) and WMO Information System (WIS)

WMO's Global Telecommunication System (GTS) is composed of a dedicated network of surface-based and satellite-based telecommunication links and centres operated by countries 24 hours a day, seven days a week all year round. It interconnects all National Meteorological and Hydrological Services (NMHS) for round-clock reliable and near-real-time collection and distribution of all meteorological and related data, forecasts and alerts. WMO GTS is the backbone system for global exchange of data and information in support of multi-hazard, multipurpose early warning systems, including all meteorological and related data; weather, water and climate analyses and forecasts; tsunami related information and warnings, and seismic parametric data. WMO is building on its GTS to achieve an overarching WMO Information System (WIS), enabling systematic access, retrieval, and dissemination and exchange of data and information of all WMO and related international Programmes. WIS will also be able to provide critical data to other national agencies and users dealing with many sectors including disaster risk management.

National Meteorological and Hydrological Services are through the GTS. This secured communication network enables real-time exchange of information, critical for forecasting and warning of hydrometeorological hazards.

(iii) WMO Global Data-processing and Forecasting System (GDPFS)

The WMO's Global Data-Processing and Forecasting System (GDPFS) represents the function of weather forecasting including the production of alerts and warnings of severe weather. It is a network of operational meteorological centres that produce numerical guidance, and forecasts and warnings, and is a part of a global early warning system for meteorological and environmental hazards.

The GDPFS centres produce routine weather and climate data products and analyses, forecasts, advisories, warnings and specialized products required by NMHSs and other Members' agencies for providing effective services for the protection of life and property, and the environment, increased safety of activities carried out on land, at sea and in the air, enhance the quality of life through sustainable development. Each of the GDPFS centres are at the core of the operational infrastructure of the NMHSs and operate 24 hours a day everyday in a continuous programme of data collection and exchange and data-processing, to assimilate data into objective analyses and numerical simulations, to produce numerical predictions of the future states of the atmosphere as well as data archiving, and, through further post-processing, produce additional routine and specialized outputs and products in a wide range of applications. The end results are forecasts and warnings that support a wide range of meteorological services.

The GDPFS is organised as a network of: i) 3 World Meteorological Centres (WMCs) and ii) 40 Regional Specialized Meteorological Centres (RSMCs), and iii) National Meteorological Centres. While the national centres are responsible for all forecasting and warning services within their respective territories, the world and regional centres, operated or supported by NMHSs carry out data forecasting functions at the global and regional levels. This coordinated system provides analysis, modelling, forecasting and other products and services to assist, guide, and support forecasting and early warnings of weather- and climate-related hazards of all NMHSs, and also to other relevant international organizations. WMO specifically ensures that capacities are implemented within the NMHSs of developing and least developed countries, for issuance of forecasts and warning of various hydro-meteorological hazards. Figure 1 depicts the location of the three World Meteorological Centres (WMCs), 40 Regional Specialized Meteorological Centres (RSMC).

II Opportunities for Linking the Humanitarian Agencies to GDPFS and NMHS

In response to the International Decade for Natural Disaster Reduction (IDNDR, 1990-1999), WMO through the Public Weather Services (PWS) Programme in 1995, facilitated the provision of meteorological assistance and information from the National Meteorological Centres and Regional Specialized Meteorological Centres (RSMC) serving that region that would enable the UN Department of Humanitarian Assistance (DHA), the predecessor of the United Nations Office for Coordination of Humanitarian Affairs (UN-OCHA) to provide the required assistance. The procedures for this assistance were established following wide consultations within the WMO community and with DHA. The terms of this initiative came to an end at the end of the IDNDR. Applications of the procedure to some cases, which were documented by PWS, are available for further evaluation and analysis of lessons learnt.

The recent humanitarian reform has led to opportunities for collaboration with the humanitarian agencies through facilitation of meteorological information available through the GDPFS and the National Meteorological and Hydrological Services (NMHSs) to support emergency contingency planning and response. Furthermore, the WMO Information System (WIS) provides new opportunities for improved data management and retrieval, from WMO's operational Network.

There have been a number of occasions of expressed interest from the humanitarian community both at the executive management and operational levels to re-establish linkages with the operational network of NMHSs and RSMCs. In this regard, there is need for better understanding of the humanitarian operational procedures and their requirements for meteorological information that could be available through the NMHSs and GDPFS.

III Establishment of WMO Task Team on “Meteorological Services for Improved Humanitarian Emergency Planning and Response”

Noting the need for an increased focus on meteorological services for improved humanitarian planning and response, in March 2009, WMO through its Commission for Basic Systems (CBS) decided to establish a Task Team to plan and work towards implementation of a project in this area with Terms of Reference as given below, and to report back to the Commission’s extraordinary session in 2010. The Task Team includes operational experts from the WMO Network and will be engaging experts from the Humanitarian agencies. The following Terms of Reference (TOR) were adopted for the Task Team on “Meteorological Services for Improved Humanitarian Emergency Planning and Response”.

The Team will:

- 1) Review and document the needs and requirements of the international humanitarian agencies for:
 - a) Meteorological services and information for operational procedures for contingency planning, coordination and response to potential disasters;
 - b) Dissemination mechanisms for exchange of meteorological services and information; and,
 - c) Training with regards to the effective utilization of meteorological services and information;
- 2) Review the institutional mechanisms and the documented procedures established through PWS in 1995 and their outcomes to enable the UN Department of Humanitarian Assistance (DHA), the predecessor of United Nations Office for Coordination of Humanitarian Affairs (UN-OCHA) to request meteorological assistance and information from the National Meteorological Centres and Regional Specialized Meteorological Centres (RSMC) serving that region;
- 3) In light of the needs and requirements of the humanitarian agencies, lessons learnt from the experiences from the PWS initiative in 1990s, new institutional and operational mechanisms resulted from the humanitarian reform, new technologies and other relevant issues, to develop an implementation plan to facilitate the provision of meteorological assistance and information to the international humanitarian agencies from NMHSs and GDPFS.

IV Goals of the Brainstorming Session with Humanitarian Partners (April 17, 2009)

WMO has organized a preliminary brainstorming meeting on April 17, 2009, with key international humanitarian agencies including UN-OCHA, WFP, WHO, UNHCR, UNICEF and IFRC. The goals of this brainstorming session are to:

- 1) Understand decision processes, and timing in emergency contingency planning and response of humanitarian agencies
- 2) Initiate discussions on the needs and requirements of humanitarian agencies for hydro-meteorological information (contents, timing, format, distribution mechanisms)
- 3) Discuss WMO’s initiative through establishment of the Task Team and nominations of humanitarian operational experts in this task team
- 4) Development of a preliminary report on the needs and requirements of the humanitarian agencies to be submitted to the task team for initiation of their work

Reference websites:

Global Data Processing and Forecasting System: <http://www.wmo.int/pages/prog/www/DPS/gdps.html>

Public Weather Services: http://www.wmo.int/pages/prog/amp/pwsp/index_en.html

WMO Information System: <http://www.wmo.int/pages/prog/www/WIS/>

Disaster Risk Reduction Programme: http://www.wmo.int/pages/prog/drr/index_en.html

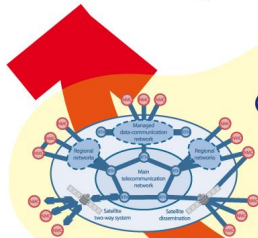
Figure 1: WMO Global Operational Network



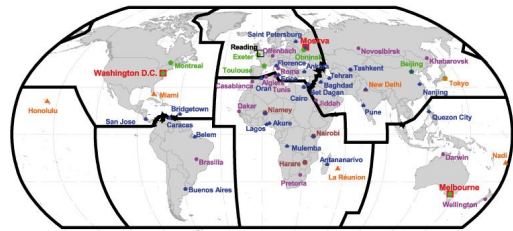
Meteorological, hydrological and climate observations

National Meteorological and Hydrological Services

Meteorological, hydrological and climate value-added products and warning advisories



Global Telecommunication System



- Regional Meteorological Training Centres
- Drought Monitoring Centres
- Medium Range Forecasting Centre
- ▲ Tropical Cyclone Forecasting Centres
- Environment Emergency Response Centres
- Regional Meteorological and Hydrological Specialised Centres
- World Meteorological Centres

Global Data Processing and Forecasting System