



WMO Global Operational Network in Support of Multi-Hazard Early Warning Systems

World Meteorological Organization
Weather • Climate • Water

Natural hazards do not need to lead to disasters

Observing and monitoring

The WMO Global Observing System (GOS) includes two sub-systems, a surface-based that is operated mainly by Member National Meteorological and Hydrological Services (NMHSs) and a space-based system that is operated by either national or international space agencies. Since 1963, the WMO GOS has enabled coordination of the observation and collection of weather, water and climate information from around the globe. Through this system, data are collected from 17 satellites, thousands of ocean buoys, aircraft, ships and nearly 100 land-based stations and an exchange of air and land is maintained. Everyday more than 50 000 weather reports and related observations and digital products are disseminated to users in order to provide services for society's benefit.



WMO Global Observing System (GOS)

Global Communication



Global Telecommunication System (GTS)

WMO's Global Telecommunication System (GTS) is comprised of a dedicated network of surface-based and satellite-based telecommunication links and centres operated by over 24 hours a day, seven days a week all year round. It interconnects all National Meteorological and Hydrological Services (NMHS) for real-time exchange 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, multi-agency early warning systems, including all meteorological and related data, weather, water and climate analyses and forecasts, hazard-related information and warnings and service products.

WMO is expanding its GTS to an overarching integrated WMO Information System (WIS), adding in systematic ocean, regional and atmospheric observations and exchange of information of all WMO and related international Programme. The WIS will also be able to provide related data to other related agencies and agencies dealing with many sectors in making disaster risk management.

WMO Information System (WIS)



Analysing and forecasting



Global Data Processing and Forecasting System (GDPS)

The WMO Global Data Processing and Forecasting System (GDPS) is organized as a network of 43 WMO Regional Meteorological Centres (RMC) and 10 Regional Operational Meteorological Centres (ROMC). Operated or supported by National Meteorological Services, these centres carry out data archiving, processing and forecasting functions at the global and regional levels, respectively. They coordinate systems provide analysis, forecasting and other products and services in support of forecasting and early warnings of weather and climate related hazards to all countries. WMO periodically conducts that operations are implemented within the National Meteorological and Hydrological Services of developing and least developed countries, for issuance of forecasts and warnings of various hydro-meteorological hazards.

Providing warnings and other services in support of disaster risk management

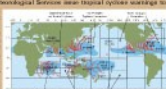
National Meteorological and Hydrological Services (NMHS)

National Meteorological and Hydrological Services (NMHS) are technical agencies operating 24 hours a day, seven days a week, all year round to provide government authorities, civil defence agencies, private sector users, media and the general public with data products, analysis, forecasts and warnings of various weather, water and climate-related hazards. These services constitute critical information needed for prevention, preparedness and response measures that can reduce the impacts of potential disasters.



An example: WMO Global Operational Tropical Cyclone Early Warning System

Tropical cyclone late notice as hurricanes, typhoons and cyclones are monitored and forecasted data globally through the WMO Global Tropical Cyclone Warning System. This system is built upon WMO's global operational network (GOS, GDPS and GTS) resulting observation, data exchange, regional forecasting and analysis for tropical cyclones. Through an designated Regional Specialized Meteorological Centre (RSMC), like Mexico, Manila, Nadi, New Delhi, Rabat, Santiago de los Caballeros and Valparaiso, reports are prepared and sent to all provided around the clock to the National Meteorological Service of all countries of risk, with lead times of at least 24 hours up to several days. At the national level, National Meteorological Services issue tropical cyclone watches as designated government authorities, media and public are added to risk in addition to operational operations. Through the WMO Regional Tropical Cyclone Coordination Meeting, all of the tropical cyclone watches are being coordinated and integrated into a single basin, and efforts are made to ensure forecasts are made to ensure forecasts are made to ensure disaster risk management and response planning.



Early warning systems should be an integral part of disaster risk reduction planning in all countries and should be considered as an investment.

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