The Dewetra platform initiative by the WMO Commission for Hydrology and Italian Department of Civil Protection.

A data sharing, multi-hazard forecasting and Early Warning System available for any WMO member.

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WHAT IS DEWETRA

Dewetra is a technological platform for real-time monitoring, prediction and prevention of weather-related risks. Developed by CIMA Research Foundation - International Centre for Environmental Monitoring - for the Italian Civil Protection Department, the system allows end users to build impact scenario of the forecasted event by crossing real-time information on hazard, exposure and vulnerability.

FROM FORECAST TO IMPACT-BASED WARNINGS

The Dewetra system enables the management and visualisation of real-time information and forecast, essential to the preparedness and monitoring phase, and integrates this information in dedicated tools for warning communication to the institutional system, as well as to the wider population, using standard protocols and multiple communication channels. The system can be tailored in full to the standard operating procedures used in countries.

FLOODS

Impact scenario

City of Genoa, Liguria Region, Italy. Flood map and forecasted inundation map related to the 90th percentile of discharge forecast are overlapped with a layer of population living in the area. The system returns the amount of people and dwellings in potentially inundated areas.

City of Genoa, Liguria Region, Italy. Fire propagation scenario: the spread probability and areas potentially affected.

City of Genoa, Liguria Region, Italy. Flood impact scenario: semi-automatic multi-hazard risk bulletin preparation. Based on the forecasted scenario, the user is guided through a semi-automated procedure for the generation of multi-hazard risk bulletins at municipality level. The bulletins are issued for present and next days by the Italian Civil Protection.

FOREST FIRE

City of Genoa, Liguria Region, Italy. Fire propagation scenario: fire spread probability bulletin issued for present and next days by the Bolivian Civil Defence.

City of Genoa, Liguria Region, Italy. Semi-automatic fire risk bulletin for each alert area is issued for present and next days by the Bolivian Civil Defence.

Impact-based Warning and Actions

City of Genoa, Liguria Region, Italy. Fire propagation scenario: fire spread probability bulletin issued for present and next days by the Bolivian Civil Defence.

City of Genoa, Liguria Region, Italy. Semi-automatic fire risk bulletin for each alert area is issued for present and next days by the Bolivian Civil Defence.

ECONOMIC IMPACT FORECASTING

The latest development of Dewetra includes the generation of economic impact forecasts to assist disaster managers in taking informed decision, under a cost-benefit perspective.

AVAILABLE FOR ANY WMO MEMBER

Thanks to the initiative of the 14th meeting of the Commission for Hydrology which lead to the agreement between Italian Civil Protection Department and the WMO signed in 24th March 2015, the Dewetra platform is made available for WMO members, upon their request. The software is released for risk management purposes, through an open-source license. The platform is currently installed in several countries where it serves as an impact-based multi-hazard Early Warning System at International, National or Province level. Currently the Dewetra platform is installed in several Caribbean countries, as well as Albania, Serbia, Croatia, Bolivia, Philippines, Ecuador, China and Lebanon, while Colombia and Fiji sent a request for its implementation.

CONTRIBUTING TO SENDAI FRAMEWORK TARGETS

The Dewetra platform is also a concrete contribution to the Sendai Framework global targets, with particular emphasis to Target F: “Substantially enhance international cooperation to developing countries through adequate and sustainable support to complement their national actions for implementation of this framework by 2030” and Target G “Substantially increase the availability of and access to multi-hazard early warning systems and disaster risk information and assessments to the people by 2030”.

References:
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3) UN General Assembly “Report of the open-ended intergovernmental expert working group on indicators and terminology relating to disaster risk reduction” (A/71/644)
4) UN General Assembly “Report of the open-ended intergovernmental expert working group on indicators and terminology relating to disaster risk reduction” (A/71/644)

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