

**ABSTRACT FINAL ID:** NH24A-04

**TITLE:** Group on Earth Observations (GEO) Global Drought Monitor Portal: Adding Capabilities for Forecasting Hydrological Extremes and Early Warning Networking (*Invited*)

**SESSION TYPE:** Oral

**SESSION TITLE:** NH24A. Building a Global Drought Early Warning System: Components, Process, Participants II

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**ABSTRACT BODY:** The Intergovernmental Panel on Climate Change (IPCC 2007) has suggested the hydrometeorological extremes of both drought and flooding may increase under climate change. Drought zones can grow over large tracts of continental area and are a global-scale phenomenon (Sheffield and Wood 2011). The Group on Earth Observations Global Drought Monitor Portal (GDMP) was established as a demonstration for the 5th Earth Observation Ministerial Summit in Beijing in 2010. The European Drought Observatory, the North American Drought Monitor, the Princeton University experimental African Drought Monitor, and the University College London experimental global drought monitor were made "interoperable" through installation of Open Geospatial Consortium (OGC) Web Mapping Services (WMS) on their respective servers, allowing maps of current drought conditions to be exchanged and assembled into maps of global drought coverage on the NIDIS portal. Partners from the Republic of Argentina, the Commonwealth of Australia, China, Jordan, Brazil, and Uruguay have also joined. The GEO Global Drought Monitoring, Forecasting, and Early Warning effort involves multiple parties and institutions, including the World Meteorological Organization, the World Climate Research Program Drought Interest Group, NASA, and others.

The GEO Secretariat held a launch workshop in Geneva on 4-6 May 2010 to initiate drafting the final GEO Work Plan, and, during this meeting, additional capabilities were added to the existing GDMP: 1) drought forecasting was added to drought "current conditions" monitoring, in a partnership with Joint Research Centre (and other partners) aiming at a combined platform for Hydrological Extremes (drought and flooding); 2) extending drought forecasts from the medium-range 15-day window to a 30-day window; this will be tested through pilot projects over Europe and Africa, as part of the Global Water Scarcity Information Service (GLOWASIS) and the Improved Drought Early Warning Forecasting for Africa (DEWFORA) to strengthen preparedness and adaptation; 3) setting up an Early Warning System network for drought (to be developed through World Meteorological Organization WMO); and 4) adding global remote sensing drought monitoring capabilities (soil moisture anomalies).

Flooding represents positive precipitation anomalies, whereas drought represents negative precipitation anomalies. The JRC combined Hydrologic Extremes platform will include multiple models and tools, such as; 1) JRC Global Flood Detection System and Global Flood Early Warning System; 2) the WMO Flash Flood Guidance system; 3) the Dartmouth Flood Observatory; 4) a suite of monitored and forecasted drought and water scarcity indicators through the various drought observatories accessible through the GEO Global Drought Monitor Portal.

The GEO Global Drought and Flooding systems represent the "applications-side" of water activities within the GEO Work Plan and are supported by the "Research and Development (R&D) side" of water activities within the new 2012-2015 GEO Work Plan.

**KEYWORDS:** [1812] HYDROLOGY / Drought, [4351] NATURAL HAZARDS / International organizations and natural disasters.

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**Previously Presented Material:**

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