



Global Disaster Alert and Coordination System

Global Disaster Alert and Coordination System (GDACS) Advisory Board meeting

Geneva, Switzerland, 5 Feb 2019

Summary Report and session outcomes at the HNPW 2019

The annual GDACS Advisory Group meeting was held on Tuesday, 5 February 2019 with the purpose to review latest developments in GDACS and to discuss challenges and improvements related to information exchange, alerting, analysis and decision making in the early phase after major sudden-onset disasters.

The GDACS chairmanship was handed over from Col. Artavazd Davtyan of the Ministry of Emergency Situations of the Republic of Armenia to Mr. Alessandro Annunziato from the European Commission Joint Research Centre. Armenia had acted as GDACS chair for five years since 2014, when it took over the Chairmanship from ECHO. In his opening statement, Col. Davtyan expressed his appreciation for the continuous progress that GDACS made since its creation in 2004, and that it had evolved into a critical element in international disaster alert and coordination. Col. Davtyan thanked the GDACS service providers EC/JRC, UNOSAT and OCHA and all stakeholders for their outstanding support and collaboration during the last five years.

Updates of GDACS activities and innovations

The GDACS Advisory Board meeting commenced with presentations and updates of GDACS services and activities in the last year:

Update about GDACS alerts and impact estimations ([download presentation](#))

GDACS is fostering the multi-hazard approach, whereby droughts have been included as new hazard. Flood forecasts and Forest fires will be integrated by 2020 thanks to the fruitful collaboration with Copernicus Emergency Management Service (EMS). Activities are ongoing to include in the alerts also information related to Technological hazards triggered by natural events (Natech) provided by the long-term initiative of the JRC Natech team and their network.

The tsunami alert calculation algorithm has been significantly improved to yield faster and more accurate results using real-time data (approx. 15 seconds instead of up to 45 minutes). The previously used alert model that was based on pre-calculated scenarios will continue as backup system in case of temporary unavailability of real-time data.

GDACS drought alerts methodology has been finalized in October 2018 resulting in GDACS drought alerts now being operational and issued based on the impact estimation from the Copernicus EMS Global Drought Observatory.





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Update about the GDACS coordination platform Virtual OSOCC:

The Virtual OSOCC is activated in more than 20 disasters every year. The platform is increasingly used in simulation exercises (more than 300 in 2018) to introduce and practice international alert and coordination procedures in disaster prone countries and among international responders. In addition to providing a platform for international coordination in sudden-onset disasters, the Virtual OSOCC becomes increasingly relevant in readiness and preparedness activities (including simulation exercises) that introduce a wide variety of existing and emerging procedures, tools and mechanisms to stakeholders in disaster prone countries, regional organisations, and among international responders.

Update of GDACS Satellite Mapping Coordination System ([SMCS weblink](#))

UNITAR-UNOSAT has constantly supported the overall coordination of satellite imagery analysis provided by different satellite mapping groups (e.g. UNOSAT, Copernicus Emergency Management Service, Space Charter) through the GDACS-Satellite Mapping Coordination System platform (SMCS), which allows GDACS stakeholders and the wider humanitarian community to determine at real time which satellite images are collected where and which entity is working on what type of analysis.

In 2018 GDACS-Satellite Mapping Coordination System platform (SMCS) has been activated and utilized in 14 major disaster events. The activation of the SMCS in the Sept 2018 Indonesia earthquake was used as case study to demonstrate the platform.

Presentation of the revised GDACS Website ([download presentation](#))

The new GDACS website was launched in 2018, providing a more user-friendly and intuitive interface (also on mobile devices, since 2019) and easier access to relevant information.

The new website provides easy access to relevant information, including:

- Daily updates on ongoing global events
- A standard set of information products required for decision making in the first disaster phase. This section will be further developed jointly with the Global Crisis Centre Network in the coming year. A dedicated joint session was organized at the HNPW 2019 on Thursday, 7 February ([download session summary](#))
- World map displaying current disaster alerts and impact estimations, including drought as a new hazard





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- New GDACS Meteo session for earthquakes and tropical cyclones to provide most significant weather information that may influence the response in the case that humanitarian support is mobilized.
- New method to estimate the possible impact of the tropical cyclones, using new data sources and classifications.

The presentation further included an analysis of the challenges experienced when calculating alert and impact estimation during the Palu earthquake and tsunami of Sept 2018, and the Krakatoa volcanic eruption of Dec 2018, which caused a tsunami with severe impact in Indonesia (*as a consequence and follow-up, JRC designed a new Early Warning System in collaboration with Indonesian authorities and installed 2 new fast detecting Tsunami devices around the Krakatoa volcano in 2019*).

Presentation by the JRC Global Drought Observatory ([download presentation](#))

JRC presented the methodology behind the recent GDACS drought alerts, which are operational since Oct 2018. GDACS alerts combine automated procedures with source information from authoritative institutions, media and scientific organisations.

The data supporting the GDACS class and score attribution is extracted from the Global Drought Observatory (GDO). The data, together with additional resources, are re-interpreted and adjusted to meet GDACS purposes.

The main indicator for the spatial delineation of a drought event from GDO is the Risk of Drought Impact in Agriculture (RDRI-Agri). It deals with agricultural drought and combines physical indicators of the drought hazard with exposure and vulnerability of a region/country, according to the well-known formula “Risk = Hazard x Exposure x Vulnerability”. Consequently, the RDRI indicator synthesizes the severity of a drought with the socio-economic conditions of the affected regions, inferring the magnitude of potential impacts from such event. All components of the “hazard part” of the indicator are dynamically changing over time and are therefore updated every ten days.

The severity of the alerts is impact-based, calibrated based on significant past global drought events that required international support from the humanitarian community.

Presentation by the World Meteorological Organization (WMO) ([download presentation](#))

WMO is in process of establishing a WMO Coordination Mechanism (WCM) to support United Nations (UN) and other humanitarian agencies by providing authoritative meteorological, climatological and hydrological information, products and expert advice before, in anticipation of, during, and after relevant disasters.





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JRC, OCHA and UNITAR/UNOSAT had participated in a respective WMO Consultation Workshop in December 2018. The outcomes of this Workshops were (i) an up-to-date collection of the UN and other humanitarian agencies' requirements for hydro-meteorological support, (ii) the principles guiding the establishment of a WCM for enhanced support to these agencies; and (iii) an outline of an implementation plan to meet these requirements and the launch of the WCM. [more information](#).

The initiative will build on (i) previous related experience of WMO working with humanitarian agencies, such as the 2015/16 UNHCR Winter Cell during the refugee crisis in Southeast Europe, IFRC's Forecast-based-Financing (FbF) Initiative, or through the Inter-Agency ENSO Standard Operating Procedures; (ii) existing mechanisms such as the WMO Global Data-Processing and Forecasting System (GDPFS), the WMO Information System (WIS), Commission for Basic Systems (CBS), Task Teams on the Provision of Operational Meteorological Assistance to Humanitarian Agencies and Emergency Response Activities, bilateral agreements with humanitarian agencies, and new mechanisms under development such as the WMO Global Multi-hazard Alert System (GMAS). [more information](#).

It is envisaged that WMO acts as Coordination Hub for its Member States/Territories "Group Services" (leveraging various data-processing, forecasting and alert services), and to second WMO experts on a temporary basis to the UN Operations and Crisis Centre (UNOCC) at the UN Secretariat in New York City.

Next activities include (i) a World Meteorological Centres (WMC) workshop from 26 to 29 March 2019 in Beijing, China, where the role of the GDPFS Centres (i.e. Regional Specialized Meteorological Centres (RSMCs) and World Meteorological Centres (WMCs) in the WCM will be discussed, (ii) further agreements with humanitarian agencies and drafting WMO-internal and inter-agency SOPs, and (iii) possibly the launch of pilots in late 2019.

GDACS participation in joint sessions at the HNPW 2019

At this year's HNPW 2019, GDACS participated actively in many sessions with other networks to foster collaboration and interoperability. These sessions included:

A joint session was co-organized by GDACS and the Global Crisis Centre Network (GCCN) on Thursday, 7 February, to discuss the compilation of a standard product catalogue in support of situational analysis and decision making among international responders in the first disaster phase. The session examined different information products that are critical to support decision-making in the first disaster phase and, depending on the scenario, should be made available "always and automatically" in a predictable timeframe and quality. ([download session summary](#))

An interactive session was co-organized by GDACS and various other networks on the "inter-network" day of the HNPW on Wednesday, 6 February. The session objective was to illustrate "International dynamics in the first disaster phase after sudden-onset disasters and throughout the humanitarian programme cycle in sudden-onset disasters, escalating emergencies, and protracted crises". The session took stock of problems and solutions in different emergency





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phases and concluded that while many tools and mechanisms have been developed and established by various actors, there is a lack of knowledge about their purpose and characteristics, and no clear understanding if and how they are relevant for other actors and mechanisms. ([download session summary](#))

GDACS engaged with the Airport Efficiency Task Force to explore the possibility to automatize the provision of close to real-time aviation and airport analysis in sudden-onset disaster in collaboration with the International Civil Aviation Organization (ICAO).

GDACS participated in a “Technical Meeting on Enhanced Collaboration between Hydro-meteorological Service Providers and Humanitarian Actors” (on Thu, 7 Feb) and a “Hydro-meteorological and Humanitarian Table Top Exercise” (on Fri, 8 Feb), coordinated by WMO and jointly organized with OCHA, IFRC, JRC, UK Met Office and ZAMG, on the provision of meteorological, hydrological and climate information products and services to United Nations and other humanitarian agencies. The aim of these events was to identify key improvements of the WCM concept and ideas for the design and running of “pilots” through which global, regional and national collaboration among National Meteorological and Hydrological Services (NMHSs) and humanitarian actors would be strengthened. [link to the report of both meetings](#)

GDACS set up an exhibition stand at the HNPW to raise awareness and disseminate its services, as part of the dissemination strategy ([download GDACS demo video](#))..



GDACS exhibition stand at the HNPW 2019





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Meeting outcomes and next steps:

The outcomes and follow-up activities for GDACS are not limited to discussions in the Advisory Group meeting but include also recommendations that were made in joint sessions and bilateral discussions that resulted from the interaction with other networks and partnerships during the HNPW.

GDACS website and GDACS App

Based on the results of the GDACS 2018 survey, the renewal process of the GDACS website has been finalized. The website is now also mobile responsive. A two-fold approach has been chosen to optimize information exchange among stakeholders

- Internally, to share the relevant information among the three GDACS service providers (JRC/alerts, OCHA/VirtualOSOCC, and UNOSAT/satellite mapping)
- Externally, to facilitate information sharing among the GDACS users.

In 2019 the GDACS App is planned to be developed, following repeated requests by users. A call for collaboration will be launched in mid-2019 by EC/JRC to join the process.

GDACS impact estimation of different disaster types

EC/JRC will organize a workshop on the Impact of Tropical Cyclones. This will contribute to improve the “impact estimation-based” alerts

GDACS is working closely with WMO to address the need for coordination and expert support during extreme weather events or to support relevant humanitarian crisis. The ongoing WMO GMAS initiative and the GAP in GDACS is envisaged to provide authoritative weather warnings.

GDACS contribution to GCCN standard information product catalogue

The GDACS Satellite Mapping Coordination System confirmed its role in collecting and harmonizing satellite derived analysis and information products from different satellite mapping groups (e.g. UNOSAT, Copernicus Emergency Management Service, Space Charter).

GDACS will coordinate with the Airport Efficiency Focus Task Force and the International Civil Aviation Organization to explore the possibility to include real-time airport information into GDACS impact estimations and into the respective section in Virtual OSOCC disaster discussions.





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Support to preparedness activities

It is envisaged to automate the request for GDACS alerts and impact estimations through the Virtual OSOCC to make these services available for awareness and practicing purposes in disaster response exercises and training events.

Upcoming meeting and workshops

Technical Workshop in Ispra, Italy on the Innovations to estimate the impact of Tropical Cyclones. The workshop is intended to bring together national and regional met and hydrological services, scientists and disaster managers (end 2019)

Technical workshop in Ispra, Italy for GDACS Service Providers EC/JRC, UNOSAT and OCHA (March or April 2019) to develop a Plan of Action for 2019 to implement recommendations made at the HNPW 2019.

