ARISTOTLE (All Risk Integrated System TOwards The hoListic Early-warning)- European Natural Hazard Scientific Partnership

Alberto Michelini1, Gavin Iley2, Öcal Necmioğlu3, Gerhard Wotawa4, Delia Arnold-Arias4, Giovanna Forlenza1, and the ARISTOTLE-ENHSP Team*

1Istituto Nazionale Geofisica e Vulcanologia, Roma, Italy
2Met Office, Fitzroy Road Exeter Devon EX1 3PB United Kingdom
3Kandilli Observatory and Earthquake Research Institute, Turkey
4Zentralanstalt für Meteorologie und Geodynamik, Vienna, Austria
*A full list of authors appears at the end of the abstract

Disaster risk managers need to react rapidly in case of catastrophic events, often trans-boundary, that can result in many casualties and threatening the lives of many others. This all has become of paramount importance given the growing exposure and vulnerability of people and societies.

In Europe, the revisited Union Civil Protection Mechanism (UCPM) is aimed at strengthening the international cooperation between the European Union (EU) and the Member States (MS) in the field of civil protection through the entire disaster risk management cycle. Under this framework, EU require scientific and evidence based-information to be able to take preparedness and response decisions in support to the MS. For such a purpose, the Emergency Response Coordination Centre (ERCC) has been established as the operational coordination hub for the EU's emergency management and operates in the Directorate-General for European Civil Protection and Humanitarian Aid Operations (DG ECHO).

The ARISTOTLE-ENHSP Consortium was awarded in 2016 the European Commission's DG ECHO two-year “Pilot project in the area of Early Warning System for natural disasters” and, in 2018, the ongoing “European Natural Hazard Scientific Partnership” (ENHSP) contracts. ARISTOTLE-ENHSP provides to ERCC a 24*7 operational service at pan-european and global level with the main aims of i.) filling the gap in knowledge that exists in the first 3 hours immediately after an event that has the potential to require a country to call on international help, ii.) providing longer term advice following an emergency and iii.) providing advice when a potential so-called ‘forecastable’ hazardous event is starting to form (e.g., severe weather and flooding events and when possible to volcanic events). This operational service is supported by and based upon the scientific and innovation underlying activities of the developmental aspect of ARISTOTLE-ENHSP.

ARISTOTLE-ENHSP (http://aristotle.ingv.it) is a multi-hazard partnership comprising 15 partner institutions (12 from EU Countries; 1 from non-EU countries and 2 European organizations) that combine operational and scientific expertise of a total of 6 inter-related hazard groups (Severe Weather, Floods, Volcanos, Earthquakes and earthquake-generated Tsunamis worldwide).
Exploiting the scalable approach of the ENHSP, in 2018 Forest Fires hazard has been added for the Pan-European domain. Each of these Hazard Groups brings together experts from the particular hazard domain to deliver a ‘collective multi-hazard analysis’ to the ERCC. During the “pilot project” (1-year), ARISTOTLE was activated 43 times with an almost even subdivision of events amongst meteo and geo hazards. A similar number of activations has occurred in the 1st year of the ongoing ARISTOTLE-ENHSP project. The presentation will illustrate the unique governance structure - modular and scalable in terms of hazards and partners -, the different modes of operation envisaged and the status and the solutions found by the project consortium to respond to the ERCC requirements.

**ARISTOTLE-ENHSP Team:** Ari-Juhani Punkka, Remy Bossu, Christel Prudhomme, Christophe Periard, Dragos Tataru, Fernando Carrilho, Linde Fredrik, Jorge Macías Sánchez, Jos Diepeveen, Lauro Rossi, Aline Kraai, Anssi Vahamaki, Celia Gouveia, Daniel Thiemert, Francesca Di Giuseppe, Isabel Trigo, Jean-Marie Carriere, John Rees, Jos Diepeveen