



Spatial contribution to enhance early warning solutions for adapting to climate risks

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The extreme climatic events are increasing worldwide and are becoming more and more recurrent. It is becoming urgent to take action to reduce them. The Mediterranean region is one of the most affected areas by the effects of climate change. The recent events in France, Spain, Greece, Turkey or even Libya reflect the violence of hydro-meteorological phenomena due in part to the rising sea temperatures. To limit the occurrence of such events, it is necessary to have some feedback. PREDICT uses post-event spatial imaging techniques such as rapid mapping to obtain geospatial data in just a few hours after the event. This permits to manage and document the consequences of such events.

Furthermore, PREDICT has been developing a program called COSPARIN (CONtribution du SPAtial à la gestion du Risque INondation) for few years now, with European Space Agency (ESA) and the National Centre of Spatial studies (CNES) approval. The main goal of this program is to better understand and monitor extreme events before, during and after their occurrence. This relies on an innovative method based on the use of the most recent satellite data available as well as algorithms and artificial intelligence to establish a global estimation of precipitations and an estimation of potential flooding areas.

To improve forecasting and deploy early warning systems, Europe has set up the HORIZON program which includes a new project called GOBEYOND (Geo and weather multi-hazard impact Based Early warning and response systems supporting rapid deployment of first responders in EU and beyond). The aim of this project is to improve existing tools and methods by designing two platforms of Multi Risk Impact-based Early Warning System (MR-IEWS) for Europe and Mediterranean area (North Africa included). This draws on all available data, including COSPARIN satellite data, to forecast hydro-meteorological risks (floods, storms, heatwaves) and geological risks (earthquakes, volcanic eruptions, tsunamis). Also, this aims to promote rapid and effective operational response by those in charge of safety and to move from simple hazard forecasting to risk forecasting by taking vulnerability into account.

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