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Drought and fire observatory and early warning system: The DISARM project

Vassiliki Kotroni (1), Hristomir Branzov (2), Costas Cartalis (3), Silas Michaelides (4), Filippos Tymvios (5), Theo Christoudias (4), Christo Georgiev (2), Christos Giannakopoulos (1), Ilian Gospodinov (2), Panos Hadjinicolaou (4), Anna Karali (1), Athanasios Karagiannidis (1), Kostas Lagouvardos (1), Thalia Mavrakou (3), Plamen Ninov (2), Katerina Papagiannaki (1), Yiannis Proestos (4), Anastasios Polydoros (3), and Julia Stoyanova (2)

(1) National Observatory of Athens, Institute of Environmental Research and Sustainable Development, Athens, Greece (kotroni@meteo.noa.gr), (2) National Institute of Meteorology and Hydrology – Bulgarian Academy of Sciences, Sofia, Bulgaria, (3) National and Kapodistrian University of Athens,: Panepistimiopolis, Build Phys -V, Athens, Greece, (4) The Cyprus Institute, 20, Kavafi Str., Aglantzia, Nicosia, Cyprus, (5) Department of Meteorology, L. Nikis 28, 1086, Nicosia, Cyprus

The DISARM Interreg Balkan-Med project, co-funded by the European Union and national funds of the participating countries, aims at developing, validating and demonstrating a set of services that employ state-of-the-art observational and modeling techniques to assist interested authorities in better preventing, addressing and finally mitigating the adverse impacts of droughts and wildland fires, with the latter being intensified due to climate change. In this context, the overall objective is to deliver an innovative, integrated observation and early warning system that will serve as a key tool for protecting the environment and, consequently, promoting sustainable development in the vulnerable region of southeast Mediterranean. The DISARM project is being realized through transnational collaboration between Bulgaria, Greece and Cyprus. To ensure that the project's expected main output is successfully reached, several intermediate products will be delivered: (i) Modeling system for the long- (monthly) and short-term (up to 5 days) prediction of drought and wildland fire risk. (ii) Rapid-response modeling system for the very short-term prediction of wildland fire behavior. (iii) Observation platform for near real-time monitoring of wildland fire activity (iv) Platform for the assessment of the future (decadal) drought and wildland fire risk, based on the analysis of climate change scenarios. (v) Desktop and mobile application incorporating both observational and model results.
The structure of the project, including users' needs as well as the methodologies to be deployed, will be presented in detail, along with several innovative tools and methods that have been developed such as the improvement of the satellite detection of fires near the coastal areas, the adaptation of thresholds for fire weather danger in the southern Mediterranean ecosystem and the development of an operational rapid-response system for the prediction of the wildland fire spread. The latter has been applied with success for the fire front spread forecast in Greece, and the deadly fire at Attiki on 23 July 2018.