



Università
Ca'Foscari
Venezia

PROJECT ACRONYM AND TITLE: EXPEDITE – EXPLoring opportunitiEs for developing a risk and resilience climate service based on big data and machine learning

FUNDING PROGRAMME: Horizon Europe

CALL: Marie Skłodowska-Curie Postdoctoral Fellowships

DESCRIPTORS: Climatology and climate change, environmental risk measurement, artificial intelligence, intelligent systems, multi agent systems, natural resources and environmental economics

HOST DEPARTMENT: Department of Environmental Sciences, Informatics and Statistics

SCIENTIFIC RESPONSIBLE: Andrea Critto

FELLOW: Marcello Sano

FINANCIAL DATA:

Project total costs	Overall funding assigned to UNIVE
€ 188.590,08	€ 188.590,08

ABSTRACT:

Despite the urgent need for adopting multi-hazard risk approaches and for the implementation of resilience-enhancing measures in the EU and at the global scale, several challenges for effective implementation of risk assessment and adaptation responses remain. In particular, the assessment of climate hazards, risk and Resilience is often based on static models which lose the appreciation of the temporal and spatial dynamics and complex feedback responses within the system. As a consequence, the information provided often fails to inform decision-makers and other end-users with the correct data to be actioned through timely responses to emerging risks. Barriers to development and implementation of novel approaches and models include the availability, cost and reliability of input datasets; the computational times and costs; the lack of consideration of the combined effect of multiple hazards; the spacial and temporal changes in the exposure of assets and services; and the complex adaptive responses of government, society and the environment to emerging risks. EXPEDITE aims at exploring new pathways to reduce and remove these barriers by exploring, testing and deploying machine learning and data science techniques and by developing and testing a climate service prototype, tailored to end-users. These may include institutional clients (such as Regions) the private sector or individual consumers. The research project, which will last 24 months, will be mainly conducted at CMCC@Ca'Foscari in Venice (Italy) under the supervision of Prof. Andrea Critto, with targeted secondments for advanced training in machine learning and data science at MALGA, University of Genoa and for climate service design and prototyping at GECOSistema srl, a specialised R&D consulting lab. A targeted dissemination and communication plan will allow EXPEDITE to share the research activities, outcomes and outputs with researchers, policymakers, the private sector and the general public.

Planned Start date**Planned End date**15th January 202314th January 2025**PARTNERSHIP:****1** Università Ca' Foscari Venezia

Venice (IT)

Coordinator