Call: [HORIZON-CL3-2021-DRS-01-03] — [Enhanced assessment of disaster risks, adaptive capabilities and scenario building based on available historical data and projections]

MEDiate

Multi-hazard and Resilient-informed system for Enhanced Local and Regional Disaster risk management

DRS02 - Improved Disaster Risk Management and Governance
HORIZON-CL3-2021-DRS-01-03: Enhanced assessment of disaster risks, adaptive capabilities and scenario building based on available historical data and projections

This project will develop a decision-support system (DSS) for disaster risk management by considering multiple interacting natural hazards and cascading impacts using a novel resilient-informed and service-oriented approach that accounts for forecasted modifications in the hazard (e.g., climate change), vulnerability/resilience (e.g., aging structures and populations) and exposure (e.g., population decrease/increase). The generic MEDiate DSS model is shown in Figure 1.

The primary deliverable from MEDiate will be a decision support framework in the form of service-orientated web tool and accompanying disaster risk management framework providing end users (e.g., local authorities, businesses and citizen groups) with the ability to build accurate scenarios to model the potential impact of their mitigation and adaptation risk management actions (and those of other end users). The scenarios, which can be customised to reflect local conditions and needs (e.g., demographics, deprivation, natural resources etc.), will be based on a combination of the historical record and future climate change projections to forecast the location and intensity of climate related disaster events and to predict their impacts, including cascading impacts, on the vulnerability of the local physical, economic and social systems (i.e., inherent vulnerability and resilience). The scenarios will allow end users to evaluate the potential impact of different risk management strategies to reduce vulnerability and enhance community resilience.

The project will consist of analysis of relevant data and co-development with testbed decision-makers of a DSS to enable more reliable resilience assessments, accounting for risk mitigation and adaptive capabilities, to be made, therefore reducing losses (e.g., human, financial, environmental) from future climate-related and geophysical disasters. The project will involve a multi-disciplinary team of geophysical and meteorological scientists, risk engineers, social scientists, information technologists and end-users, working together to ensure that the system is user-led and supported by appropriate technology.
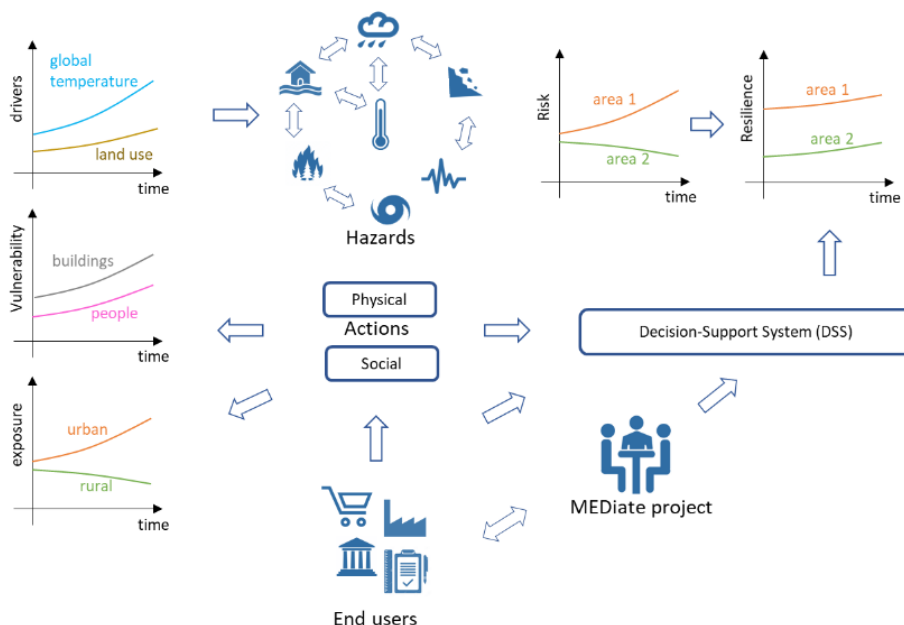

Figure 1 MEDiate DSS Concept Model

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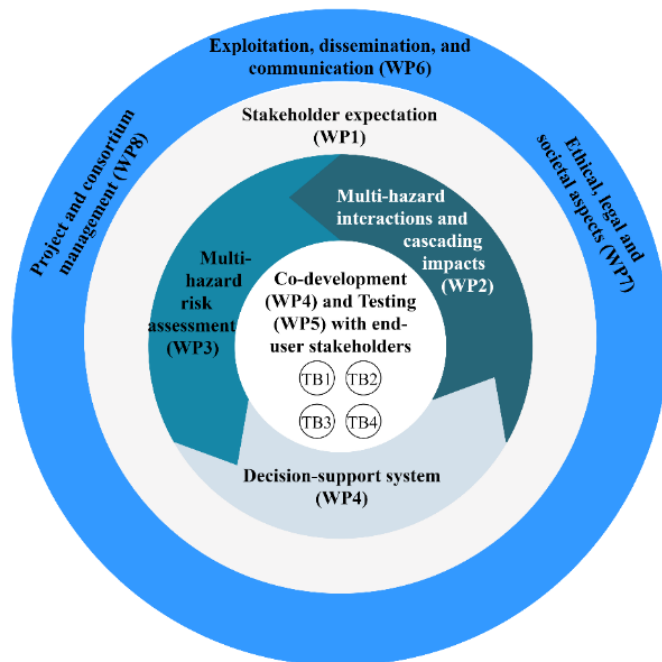

Figure 2 MEDiate work package structure and concept

Figure 3 Geographical representation and list of Testbeds of MEDiate