Climate forecast enabled knowledge services

CLARA sets to develop fourteen climate services building upon the Copernicus seasonal forecasts, and demonstrate their marketability and value.

FLOODMAGE

Climate modelling of flood risk

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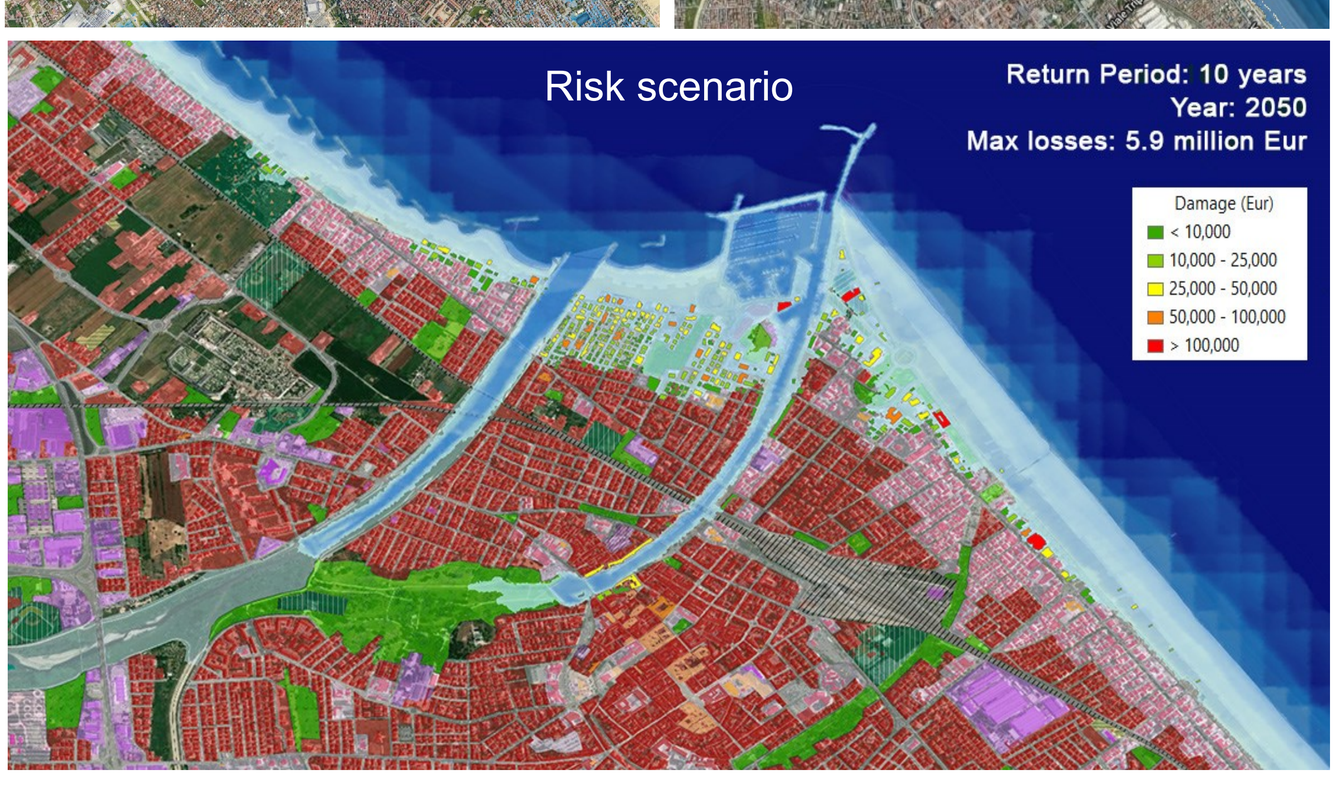
FLOODMAGE is a scalable and modular service able to estimate the potential economic losses triggered by flood events in relation to hazard probability scenarios. The service uses historical records, downscaled medium-range forecasts and long-term climate projections to draw a comprehensive outlook on how extreme events may affect urban settlements due to increased climate variability.

The service can respond to different needs depending on the user involved, including the public administration, river basin authorities, land reclamation boards, asset managers, and insurers.



Service Demonstrator in Rimini, Italy

The combined effect of climate change and socio-economic change is likely to dramatically increase the cost inflicted by floods in Europe (EEA).

A sound and evidence-based flood risk assessment means to support cost-effective disaster risk reduction and planning of climate adaptation strategies (UNDRR 2015-2030).

FLOODMAGE combines climatological, hydrological and economic analysis in a spatial-explicit framework.

- **Flood hazard modelling** builds upon statistical analysis of extreme events, downscaling of medium-range forecasts and advanced hydrodynamic/hydraulic tools to develop flood scenarios describing the key hazard features (extent, water depth, velocity and others) at high resolution.
- **Economic exposure** is described by a combination of socio-economic statistical indicators and stock values estimates, which are projected as maps by using building footprints and land cover as a proxy.
- **Economic losses** are estimated by using a damage model simulating the vulnerability of exposed categories in relation to their properties and the hazard features.

By simulating alternative hazard mitigation options scenarios, the service can also be employed to produce a cost-benefit analysis of climate adaptation strategies and better guide decision makers in the planning of their financial needs.

www.clara-project.eu
floodmage.eu
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