DESYCO: a GIS based Decision Support System to provide climate risk services for coastal managers and improve adaptation decision making

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Publications about DESYCO:

Peer Reviewed Journals:


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DESYCO: a GIS based Decision Support System to provide climate risk services for coastal managers and improve adaptation decision making
Torresan S., Rizzi J., Zabeo A., Critto A., Gallina V., Furlan E., Marcomini A.

AIMS:
Integrate different components:
- Geo-physical-environmental, and socio-economic characterization.
- Future climate scenarios.

In order to develop information about:
- Climate change impacts;
- Targets affected by climate change;
- Relative risk estimation of areas and targets at risk.

To provide valuable climate risk and adaptation services functional to the development of sustainable plans, programs and policies in coastal zones.

CLIMATE SCENARIOS:
- emission scenarios;
- timeframe scenario (long, short, medium);
- climate models (model chain).

IMPACTS:
- sea level rise inundation;
- storm surge flooding;
- coastal erosion;
- water quality and availability variations;
- increase of pollutant concentration;
- saltwater intrusion.

RECEPTORS:
- groundwater bodies and hydrological systems;
- shallow wells;
- agricultural areas;
- beaches and dunes;
- terrestrial and marine biological systems;
- wetlands and protected areas;
- urban areas;
- fisheries and aquaculture.

PHASES:
- Hazard Assessment;
- Susceptibility Assessment;
- Exposure Assessment;
- Relative risk Assessment;
- Damage Assessment.

REGIONAL RISK ASSESSMENT
Hazard maps

Represent the future conditions of hazard to climatic changes against which a system needs to adapt in order to keep its ecological or socio-economical functions.

Exposure maps

Represent the exposure to climate changes against which a system operates.

Susceptibility maps

Represent the spatial distribution of geo-physical and environmental susceptibility to climate change.

Relative risk maps

Provide the identification and ranking of areas and receptors at risk from climate change related impacts, according to the selected hazard scenario.

Damage maps

Provide a relative estimation and classification of the potential social, economic and environmental losses for the considered receptors.

CLIMATE RISK AND ADAPTATION SERVICES
Thanks

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website
http://www.cmcc.it/models/desyco

Session
Are our coastal zones well managed and resilient in the face of climate change?
Title: Climate risk and adaptation services in coastal zones: the case study of the North Adriatic coast.