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# Climate services for the assessment of climate change impacts and risks in coastal areas at the regional scale: the North Adriatic case study (Italy).

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At the international level, the interest for climate services is rising due to the social and economic benefits that different stakeholders can achieve to manage climate risks and take advantage of the opportunities associated with climate change impacts. However, there is a significant gap of tools aimed at providing information about risks and impacts induced by climate change and allowing non-expert stakeholders to use both climate-model and climate-impact data.
Within the CLIM-RUN project (FP7), the case study of the North Adriatic Sea is aimed at analysing the need of climate information and the effectiveness of climate services for the integrated assessment of climate change impacts in coastal zones of the North Adriatic Sea at the regional to local scale. A participative approach was developed and applied to identify relevant stakeholders which have a mandate for coastal zone management and to interact with them in order to elicit their climate information needs. Specifically, the participative approach was carried out by means of two local workshops and trough the administration of a questionnaire related to climate information and services.
The results of the process allowed identifying three major themes of interest for local stakeholders (i.e. hydro-climatic regime, coastal and marine environment, agriculture) and their preferences concerning key climate variables (e.g. extreme events, sea-level, wave height), mid-term temporal projections (i.e. for the next 30-40 years) and medium-high spatial resolution (i.e. from 1 to 50 km). Furthermore, the workshops highlighted stakeholder concern about several climate-related impacts (e.g. sea-level rise, storm surge, droughts) and vulnerable receptors (e.g. beaches, wetlands, agricultural areas) to be considered in vulnerability and risk assessment studies for the North Adriatic coastal zones. This information was used by climate and environmental risk experts in order to develop targeted climate information and services (e.g. climate projections and maps) for coastal stakeholders.
The final results include climate products developed by climate experts through the analysis of climate observations and scenarios (e.g. standard indices of extreme precipitations and droughts, consecutive days of heavy rain, mean sea level pressure) and risk-based maps supplied by environmental risk experts to facilitate the definition of adaptation strategies (e.g. sea-level rise/storm surge risk maps with the surface of receptor lost; drought risk maps with the percentage of suffering agricultural areas).
The preliminary climate products and the results of North Adriatic case study will be here presented and discussed.