Climate forecast enabled knowledge services

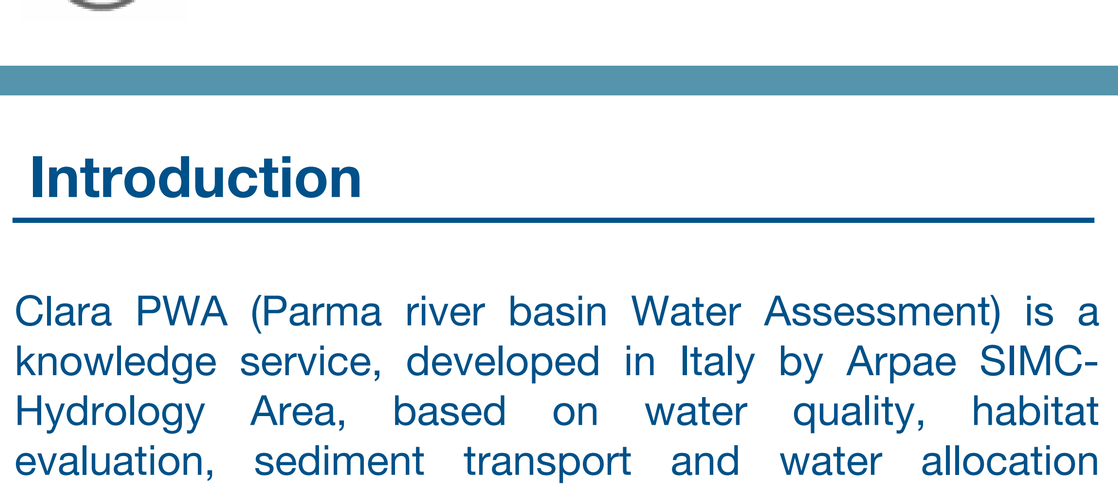
CLARA sets to develop fourteen climate services building upon the Copernicus seasonal forecasts, and demonstrate their marketability and value.

Clara-PWA: a knowledge service for water management

Introduction

Clara PWA (Parma river basin Water Assessment) is a knowledge service, developed in Italy by Arpae SIMC-Hydrology Area, based on water quality, habitat evaluation, sediment transport and water allocation models. PWA is able to compare different scenarios deriving from simulations driven by land, hydrologic, and climate information, forecasts and projection, useful for supporting water resources design, planning and management.

PWA service, based on a web accessible database, may be further integrated with different data and models, including meteorological and climate products such as those supplied by ECMWF and Copernicus.



Services included in PWA

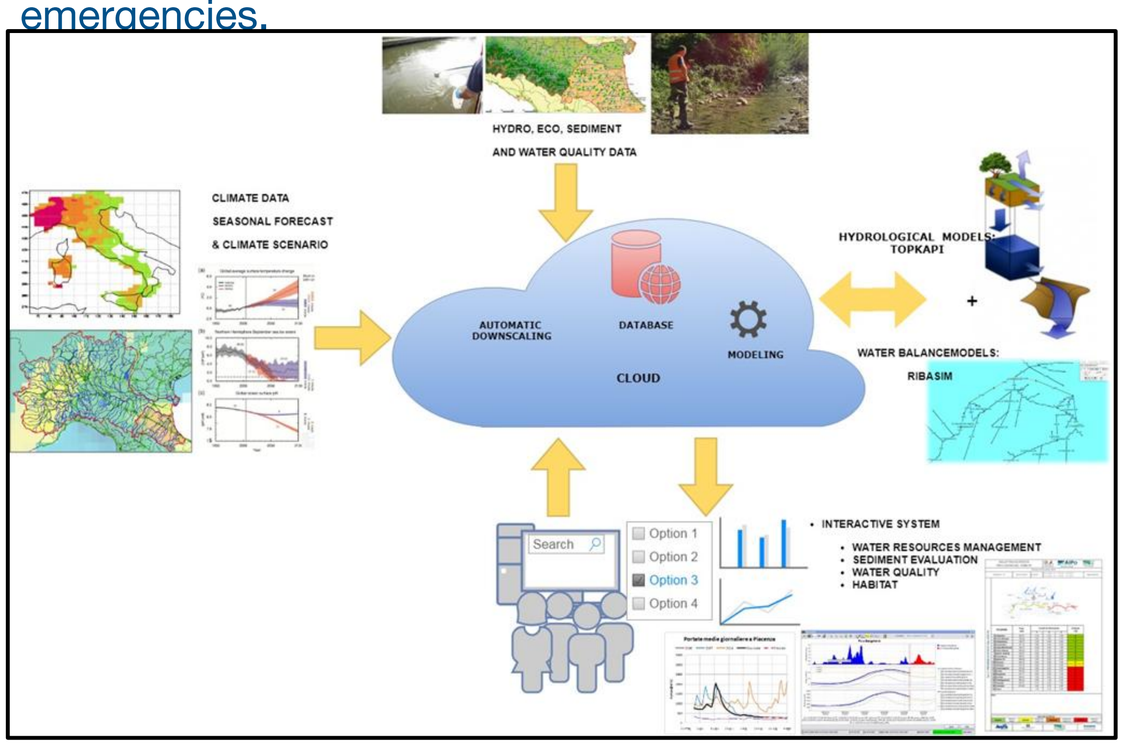
• Water quality: analysis of the nutrient evolution (Nitrogen and Phosphorus) in the Parma river basin using mathematical models, databases for point and diffuse sources, hydrological and water quality time series. This service is potentially useful for defining the influence of meteorological and climatic forcing on euthrophication scenarios at different spatial and temporal scales.

• Habitat: evaluation of meteorological and climate driven habitat suitability for the adult life stage of different fish species. The method considers only stream flow as discriminating factor and is based on the use of the river WUA curves (Weighted Usable Area).

• Sediment transport: evaluation of climatic pressure in wide scale sediment dynamics in gravelly water bodies. The estimation of sediment transport is a key issue for modeling the river behavior over different time scales.

• Water resources management: analysis of river discharge and water resources availability through an hydrological and water balance modeling chain, implemented in the operational Drought Early Warning System (DEWS) at the premises of Arpae-SIMC Hydrology Service.

DEWS works with different forecast lead times, supplying long term and seasonal hydrological forecasts as also hydrological projection driven by climate change scenarios, with potential application in water design, planning and management, including water scarcity emergencies.



Applications

PWA service, developed by experts of different sectors with attention to market opportunities and stakeholders needs, will be demonstrated through a multiservice platform, where an interactive system enables data discovery, data access and sharing of results according to international standards.

www.clara-project.eu

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