

AQUACLEW

CLIMATE FORECASTS HELP MANAGE WATER TODAY

PROJECT CODE: ERA-NET ERA4CS/PCI 2017-072

CALL: ERA-NET ERA4CS

PERIOD: 36 MONTHS

BUDGET: 2,131,038.62 €

PRINCIPAL INVESTIGATOR: MARÍA JOSÉ POLO GÓMEZ



The long-term effects of global climate change on Earth are prompting a focus on the actions today that will bring about the effects of tomorrow. Despite the uncertainty involved when the scenario in question is decades away, society is increasingly aware of the importance of forecasting future climate scenarios.

Along this line, Aquaclew (Advancing QUALity of CLimate services for European Water) is seeking innovative and integrative techniques to advance the quality and usability of climate scenarios by related sectors. Based on the meteorological data of Europe's Copernicus program, the type of high-quality information of interest to users is sought, so that future climate-related projections are useful.

The difference between a scenario and a forecast lies in the amount of time and uncertainty involved. While forecasts announce, based on available data, what is expected in the near future, scenarios suggest what the consequences would be if one or another situation were to occur. The greater the distance between them, and the greater the uncertainty, the lower is citizens' confidence in these scenarios.

Hence, the research group led by María José Polo, a Professor of Hydraulic Engineering, works with stakeholders in the Water and Energy sectors to learn what kind of information they need to be included in these types of scenarios. At the UCO two pilot pro-

jects are underway: one for the operation of reservoirs, and another for the generation of hydroelectric energy. Users are also engaged in the design of these types of climate scenarios in order to develop a product that will later be useful and easy to use, but also with the purpose of improving their trust in current climate services, and, despite the uncertainty, highlight their practicality.

Based on the scenarios generated by the data agencies, variables such as annual river flow, average number of days of rain per year, and vegetation's water stress, among others, can be determined. The models developed by Aquaclew scale the general data at the level of specific indicators that allow users to make decisions with greater confidence.

The AQUACLEW project works with users to generate high-quality information for climate services based on weather projections

Climate scenarios are based on CO₂ emissions, and consider the consequences of low, moderate and high emission levels. If in all scenarios the situation is negative, users

may consider whether, in the long term, it is wise to continue investing in this energy or water management model. This entails, then, an impact on decision-making at another level, more aimed at those people or departments dedicated to strategy or investments, who, with these data, can plot long-term strategies.

The relationship with the users is classified based on levels of experience, and an online questionnaire is utilised by which, through virtual meetings, it is determined what kind of information it would be valuable to add to the climate scenario, and how companies and public administrations would acquire it.

The sectors chosen to work with are Science (the lines of research that would benefit from having these services), Public Administration, Business, and Education; pupils studying Water Management.

The development of these climate scenarios from the point of view of interaction with the user improves their usability and market value, and also would expand the general public's knowledge, such that it would better understand the decisions of governments, and have the tools to demand the improved management of water

