



Game design for raising both awareness of future climate scenarios projections and skills for using climate services in water resource decision making processes

María José Polo, Rafael Pimentel, Pedro Torralbo, and María José Pérez-Palazón

University of Cordoba, Andalusian Institute for Earth System Research, Cordoba, Spain (mjpolo@uco.es)

Whereas short-term (10-15 days) weather and hydrological forecasts are already part of decision making processes at different levels in society, seasonal or decadal forecasts and future climate scenarios projections are not already involved in operational frameworks. Different reasons lie behind this fact, beyond the human perception of risks associated to the near-future being more relevant than those regarding far-future situations. On one hand, the uncertainty and, reversely, the skill of long-term forecasts and future projections are still low and far from those associated to short term forecasts in hydrology; on the other, most of the potential end-users of climate services that deal with long-term products lack of adequate knowledge to both understand key concepts involved in the climate projections and downscale these data sets to the local level, that is, the operational scale.

Despite these weaknesses, it must be recognized that for decades the population in most of the countries have had access to everyday training to understand what is behind a weather forecast: this section in the TV news has been evolving with technology, but all of us learnt concepts such as cyclonic fronts, low and high pressure areas, probability of occurrence of precipitation, snow baseline, and a large etcetera. Nowadays, from the lay citizen who travels or not during the weekend to the operation of irrigation networks, dams, hydropower facilities, or alert systems, these forecasts constitute one of the most used open service in the world for decision-making. This level of training has resulted in a larger perception of confidence in population, which indirectly shows the need for i) training the receptor to adequately value information and ii) facilitating frequent contact with such information if awareness of the usefulness of a given service, and its products, is to be achieved.

This work has been developed within the AQUACLEW project (www.aquaclew.eu) and shows the design of a game framework to co-develop climate services offering advanced information of future climate scenarios projections. The game was designed to both train potential end-users, and increase their valuing and awareness of the usefulness of such services, and acquire feedback on the products to be offered by the service. Concepts as models, skill, ensembles, end-members, uncertainty, scales, among others, were included in the game structure as part of the metadata associated to a given projected scenario. Gamers must make a decision on a selected situation in the future from a list by using some information that is successively provided in the game framework depending on their different chain of choices.

The results include the analysis of the behaviour of different focus groups (potential end-users) in the game regarding the final decisions made in different situations as they increase their training, together with their perception of two key issues in climate services development: the value of the service, and the cost that it is worth assuming to access the products in each potential operational context.