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Combining Knowledges and Co-Imagining the Use of Climate Services through Serious Gaming

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Climate services, encompassing information products such as weather forecasts and advisories, aim to support decision-making. However, the uptake of climate services remains limited despite advancements in data quality and quantity. Challenges to usability arise from inadequate recognition of local context, a lack of integration of local knowledge and insufficient actionable information for decision-making. Addressing these challenges requires approaches that emphasize the integration of diverse knowledge systems, beyond scientific knowledge, and foster continuous exchange between stakeholders. For climate services this means knowledge exchange and integration between climate service providers, purveyors, and end users.

In this research, we explore whether accessibility and perceived usability of climate information improve when local knowledge is integrated with scientific knowledge provided through seasonal forecasts, using serious gaming as a participatory tool. Our serious game, *Farm or Fallow*, simulates farming livelihoods based on insights from participatory research conducted in the Alazani River Basin, Georgia. The game is grounded in the climate service co-created to meet the needs of stakeholders in the Georgian Living Lab (as part of the I-CISK project) to ensure that the game is as realistic a representation as possible. This interactive framework enables users to engage with climate services that they have co-created while reflecting on their decision-making processes.

We present preliminary findings from gameplay sessions involving diverse climate service users, including stakeholders from the Georgian Living Lab. The study investigates how participants combine different knowledge systems during the playing of the game, and whether the experience enhances their ability to articulate the value of climate services from a user-centred perspective. These findings provide also insights into how serious gaming can be utilised as tool to enhance user capacities to understand, interpret and use weather and climate information, thereby encouraging uptake of climate services.