

Serious gaming as a tool for involving local stakeholders in risk management

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ABSTRACT

Serious games are designed to couple the entertainment medium with a serious aim, often related to some kind of educational purpose. Their ability to represent complex scenarios, providing a safe environment in which the players can explore various choices and strategies, together with their ability to engage the participants, make them effective tools in different fields. In particular, serious games can be beneficial for involving stakeholders in participatory decision-making processing, providing a tool for enhancing the discussion, facilitating the common understanding of the issue, and promoting the exchange of each other's views, innovative solutions and social learning. Examples of applications in natural hazards and disaster risk management exist. Here we present the case of APicitJeu, a role-playing game developed to stimulate the discussion about fire risk prevention strategies among local stakeholders of land management. The game is designed to be played by a group of minimum six players under the supervision of a facilitator and it uses the interface of an agent-based model as the game board. The model simulates the ecological dynamics of a hypothetical territory and shows the players the effects of their decisions about forest and pasture management over time, to help them visualize the results of human-environment interactions in a long-time perspective. The stakeholders are asked to exchange their real roles and to recreate the interactions that exist in reality, such as consultations and negotiations, within the protected environment of the game. APicitJeu has been tested in three game sessions organised in a north-western Italian alpine valley during spring 2022. The observation of the sessions confirmed the ability of the game to help the participants share their points of view, and identify and discuss the main local land management issues and strategies for fire prevention, sometimes leading to innovative proposals. Furthermore, the game sessions triggered a positive process among local actors, by raising awareness about the importance of a shared planning strategy. These results prove the value of serious gaming for engaging stakeholders in natural hazards risk management and encourage further research to extend the methodology to other kinds of risk and to address specific issues, such as risk communication and perception.

Keywords: serious gaming; stakeholders engagement