

Social simulation games as vehicles for improved learning about fisheries as socio-ecological complex adaptive systems. The case of the Green Grouper Game

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Abstract

This study focuses on using the Green Grouper Social Simulation Game to explore the complexity of fisheries management planning. The game casts players as managers attempting to solve a crisis in a simulated fishery. The game serves as a vehicle for learning about fisheries as a socio-ecological complex adaptive system (SECAS). The economic, environmental, and social sustainability dimensions are represented in the game, and have to be balanced in order to solve the crisis. The players are confronted with resistance from stakeholders that are not satisfied with the proposed plan. The absence of a “perfect solution” facilitates understanding of stakeholder behavior: 1. making visible the limits and possibilities of governance as a whole, and 2. highlighting the contribution of all parts of a SECAS in “producing” sustainability (institutional sustainability, i.e. how the management tools and stakeholders interact in making a plan that is both sustainable and possible to implement). Through post-game debriefing, the players reflect on the interaction between their proposed management measures and the behavior of the simulated stakeholders. The game is in use on bachelor/master courses, but the game’s reactivity ensures that it can also be played by managers and fisheries stakeholders as well. In this case, the reactions of the players to the push-back they receive on their solutions can give insight in how they understand other stakeholders in the fisheries SECAS. We intend to research this further in order to explore the use of social simulation as a novel addition to fisheries research.

Keywords: Fisheries management; game-based learning; social simulation; social simulation game; socio-ecological complex adaptive system; sustainability

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