

# GAMES AS TOOLS TO COMMUNICATE OCEAN SUSTAINABILITY

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## 1 Background

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The perception of maritime subjects and issues are different between groups of people, and depends on the information available to either party. The communication of scientific results is thus crucial to increase literacy and allow informed decision-making. Communication could be interactive (e.g. games), or using easy to approach media, e.g. comics. In the past years, there is growing realization of the potential for games and game-like experiments as powerful tools for education, outreach, research, and in particular for issues related to maritime management. While focussing on games this workshop will explore new ways of science communication and how to engage with stakeholders as well as the general public. We will do this by looking at worked examples of games and comics, and by having fun with all participants in a game jam!

## 2 Games

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During the last few decades, the demand to play and experience video games has increased exponentially. With 91% of children ages 2 to 17 playing video games at home (NPD, 2011), there is growing realization of the potential for games and game-like experiments as powerful tools for education, outreach, and research in many fields of sciences. The issues related to the objectives and game design targeted towards education is quite similar to those useful when communicating with regulators, policy makers, or stakeholders. Participating in a role-playing game can foster the understanding of how different management regimes works, and may facilitate communication in situations where other ways of communication have failed. For example, in fisheries economics many games have been developed for the use in classrooms and some have even found the way to the public (Fish Banks, Ltd, Meadows *et al.* 2001), to teach principles and mechanisms, e.g. the common goods problem or game theory. Knapp and Murphy (2010) have successfully applied a simple low-tech game to investigate behavioural changes in student experiments. Role-playing games have been developed in the context of participatory management of land use, the use of marine resources (SimParc, Irving *et al.* 2008 or ReefGame, Cleland *et al.* 2012) and marine spatial planning (The Marine Spatial Planning Challenge 2050, Mayer *et al.*, 2014) and exhibit a strong tool for community based management approaches. Games can also be used to derive strong scientific results, either as a tool (Foldit, Cooper *et al.* 2010) or analysing the outcomes of many game sessions of the game (EcoTrade, Hartig *et al.* 2010).

In popular perception, games tend to be viewed as “fun”, while experiments tend to be viewed as “serious.” Actually, games and experiments can be the same thing: there is no reason that a fun game cannot also be a serious experiment, or vice versa. The more “fun” a game is the greater the potential to seriously engage participants in

thinking about the choices they are presented by the game (McGonigal 2012). The player implicitly learns in the system and exhibit behaviour, which reflects his or her personal experiences (Gee, 2005). Games afford intriguing possibilities to learn new and interesting topics, as well as engage with others in pursuit of both fun and a learning endeavour.

### 3 Draft Agenda

Time	Day 1	Day 2
14:00 -14:15	Introduction Tour around the table	Summary Day 1
14:30 – 15:00	Talk: Games in Science, Education and Outreach (Vicari)	Talk: The Great Transformation Comic (Leinfelder)
15:30 – 16:00	Health Break	Health Break
16:00 – 18:00	Presentations on worked examples	Game Jam

### 4 References

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