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► To cite this version:

Yann Boulestreau, Marion Casagrande, Mireille Navarrete. A serious game to foster transition to sustainable food systems regarding soil health management based on a provencal market gardening case study. organic world congress, Sep 2020, Rennes, France. pp.1442 - 1453. hal-04160614

HAL Id: hal-04160614

<https://hal.inrae.fr/hal-04160614>

Submitted on 12 Jul 2023

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OWC 2020 - Stakeholder Forum

Topic 1 - Inspire people to take action toward sustainability and best practices

OWC2020-STA-622

A SERIOUS-GAME TO FOSTER TRANSITION TO SUSTAINABLE FOOD SYSTEMS REGARDING SOIL HEALTH MANAGEMENT BASED ON A PROVENÇAL MARKET GARDENING CASE STUDY.

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Your are contributing for: An exchange session

Who will moderate and which are his/her/their skills?: Yann Boulestreau will be the main moderator. Animating participatory workshops since his studies, he designed the serious-game as part of its PhD. He was the main moderator of seven participatory workshop during its PhD, four of them involving the serious-game.

Moderator 2 (if applicable): Marion Casagrande, Yann Boulestreau PhD co-supervisor, will also be moderator. As part of her work in the French organic technical institute (ITAB), she has moderated numerous participatory workshops. She already moderated a workshop session with Yann Boulestreau, involving the serious-game.

How long will your session be?: 90 minutes

How many attendees would you ideally expect to have?: 20

Would you need specific equipment / room configuration?: We need a room where we can adapt tables and chairs configuration. It has to be large enough to welcome at least two groups of 10 persons that can play the game in parallel at more than two meters distance. We need at least one video projector and large notepad. It is better if the room is as little noisy as possible when several persons speaks at the same time so the two groups can play without disturbing each other.

Targeted audience: Farmers, Advisors, extension services (including transition support), Trade (incl. retailers) / fair trade, Consumers (and citizens), Teachers, trainers, Students, Researchers, Policy makers (including institutions, local authorities and territories), NGO representatives, Cook chiefs, restaurants and collective catering

Are you able to make an oral presentation in English?: Yes

Preferred language for oral presentation: English

Summary: We will present a serious-game that simulates the role food system plays in soil health management. When playing this game, the participants discover the mechanisms fostering unsustainable soil health management by organic (and non-organic) vegetable farmers. These mechanisms arise from the different stakeholders' behavior. Using a role-game, we make the participants act as one of the stakeholder. Then, we make them **live** in a short time how unsustainable soil health management can emerge and which strategies can be developed to overcome the mechanisms responsible for it. Those mechanisms and strategies are then discussed with all participants based on the game experience. Therefore, the game is a tool that can be used to inspire stakeholders and foster sustainable food system development, including guiding the growth of the organic sector. This participatory method fosters stakeholder engagement, interactions and inclusivity.

Background: This serious game was developed as part of Yann Boulestreau PhD: "From the field to the territory: which strategy to co-design for agroecological soil-borne pest and disease management in Provençal sheltered market gardening systems?". The game is based on the analysis of the processes impeding currently, or in a near future, sustainable soil health management in Provençal sheltered market gardening systems that are part of long value chain. It was used as part of a co-design workshop with local stakeholders: food production, downstream value chain actors, upstream value-chain and R&D actors. The goals of using this game were (i) to share the results of the former analysis and check its accuracy, (ii) to facilitate co-design of agroecological strategies to overcome the impediments, (iii) to foster

interaction between stakeholders. The game has also been used in two workshops, with a group of extension agents (goal i) and a group of students as part of a BSc degree in Agroecology.

Core messages and conclusions: The previous workshops (see Background) involving the game have shown that the serious-game facilitate interactions between different type of stakeholders (e.g. extension agents, head of a wholesaler company and market gardener). According to the stakeholders themselves, it succeeded in representing the main processes leading to unsustainable soil health management, and in facilitating interactions between the stakeholders. Therefore, it served as a good basis for discussing these processes and the way to overcome them, fostering co-learning and inspiring stakeholders. Making stakeholders play another role than their own, the game also fostered creativity with distancing stakeholders from their everyday reality and constraints. Meanwhile, post-game discussion sessions allow mobilizing their experience on the functioning of the market gardening food system to design agroecological solutions. However, few actors, especially farmers, did not fully accept playing the game. They saw it as too long and not serious enough, despite previous explanations on why and for what we use this method. Improvements have to be made on the way of involving those actors in serious game based workshop. Moreover, other projects should take into consideration that developing this type of serious game is highly time-consuming.

We think this type of role-game is a tool. Depending on the goal of the workshop it is part of, it can be used to check the accuracy of the impending processes analysis (sociotechnical analysis), train students or professionals on how food systems can lock-in or foster agroecological transition and facilitate the design of agroecological strategies to foster transition. Participants that are invited to participate can be very diverse and have to be chosen according to the workshop goals. We believe the serious game we developed exemplifies similar processes that in other productions (e.g. cereal production), related to other agronomical issues (e.g. weed management) or other contexts (e.g. market gardening in South-West France). It could also be adapted to other situations with less resource than needed for its first development.

In our session, we plan to propose sharing with participants some background information, make them experience few game turns, facilitate a discussion on their experience, give information from our previous experiences with the game and conclude with few perspectives. We expect that it will inspire people on new approaches to accompany food system actors toward sustainable agriculture.

Suggested readings and/or references to your work: Chave, M., 2016. MYMYX, un dispositif participatif de conception d'innovations agroécologiques pour valoriser les réseaux mycorhiziens.

Étienne, M., 2013. Companion modelling: A participatory approach to support sustainable development. Springer Science & Business Media.

Geels, F.W., 2002. Technological transitions as evolutionary reconfiguration processes: A multi-level perspective and a case-study. *Research Policy* 31 (8-9), 1257–1274.

Martin, G., Felten, B., Duru, M., 2011. Forage rummy: A game to support the participatory design of adapted livestock systems. *Environmental Modelling & Software* 26 (12), 1442–1453. 10.1016/j.envsoft.2011.08.013.

Meynard, J.-M., Charrier, F., Le Bail, M., Magrini, M.-B., Charlier, A., Messéan, A., 2018. Socio-technical lock-in hinders crop diversification in France. *Agron. Sustain. Dev.* 38 (5), 54.

Wicked games: using games to resolve environmental conflicts | Claude Garcia | TEDxZurich:

<https://www.youtube.com/watch?v=v362bMWL0Yw>

Image 1:



Image 2:



Disclosure of Interest: None Declared

Keywords: agroecology, Food system, market-gardening, participatory workshops, serious-game, Soil health