



SERIOUS GAME
Segae
AGRO ECOLOGY

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From the idea to the project

- Agroecology is considered a promising strategy to improve the economic, environmental and social performances of European agriculture (Godfray et al., 2010; Gliessman, 2014)
- Some skills are particularly useful in agroecology learning, such as a multidisciplinary and systemic approach of farming systems (Francis et al., 2011 ; Debruyne et al., 2017)
- Learning these skills is facilitated by an active pedagogy, based on problem solving and learning by trial and error (Lieblein et al., 2004)
- Serious games promote learning through interactive approaches that encourage experimentation. They also allow the rapid calculation of many indicators

➤ Segae

SEGAE project in numbers

- European Erasmus+ project “strategic partnership”, co-financed by the Agroecology Chair
- 3 years of work, 24 teacher-researchers, 6 universities and schools, 4 countries
- A free online game accompanied by educational materials and video tutorials
- One week of testing with 52 students from the 6 partner universities
- More than 900 students having used the game in class, over 5000 single users
- 3 teacher training webinars, 5 conferences over 700 teachers reached



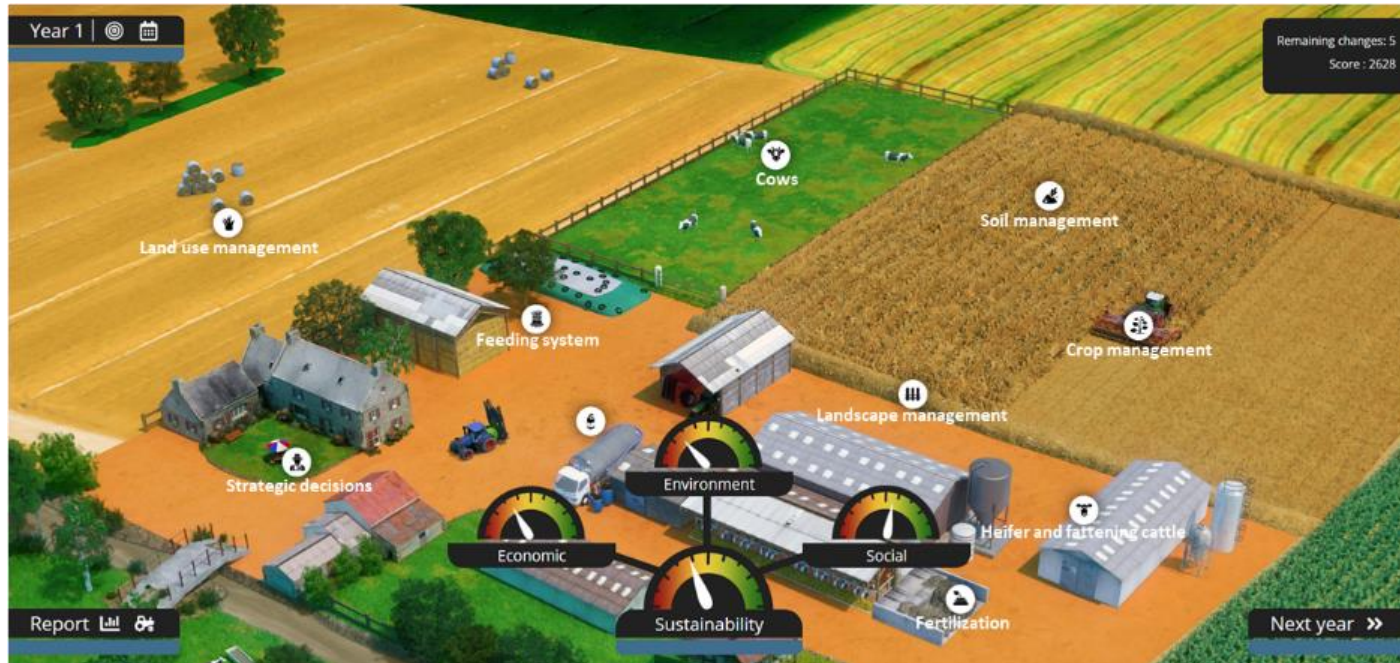
(Crédit: S. Couvreur, 2020)

Game objectives

- Targeted people : students in agronomy at Bachelor and Masters level, agricultural high school students, young agricultural advisors
- Pedagogical objectives
 1. Learn about different **agroecological practices** and their effects
 2. Evaluate the combined effects of multiple changes in practices at the production system level: **system approach**
 3. Study different scenarios to achieve a given objective: **transition management**

Game interface

- Simple and intuitive, suitable for everyone
- Gamification: personal profile, badges, high score table



An adaptable tool

- Accessible to different levels of knowledge: choice from a list of predefined practices (rations, rotations)
- Internationally accessible: game available online, free of charge and in 6 languages, with tutorials and educational documents
- 4 default farms (BE, FR, IT, PL), possibility to create your own farms
- Versatile educational tool: creation of custom scenarios, interface to follow live scores of a group of players
- Source code in Javascript, free license, soon a community of users and developers?

Video tutorials to help you start

The image shows a YouTube channel page for 'Segae'. At the top, there is a search bar with the text 'Rechercher' and a magnifying glass icon. To the right of the search bar are icons for video, grid, notifications, and a profile picture. Below the search bar is a large banner image of a farm simulation game with several circular icons overlaid on it. The channel name 'Segae' is displayed with a logo and '11 abonnés'. There are two blue buttons: 'PERSONNALISER LA CHAÎNE' and 'GÉRER LES VIDÉOS'. Below the channel name are navigation tabs: ACCUEIL, VIDÉOS, PLAYLISTS, CHAÎNES, DISCUSSION, and À PROPOS. A search icon and a right arrow are also present. The main content area is titled 'Vidéos mises en ligne' and 'TOUT REGARDER'. There are five video thumbnails with their titles and view counts:

- 5. Tutorial - Simple scenario: Aucune vue · il y a 3 heures · Sous-titres
- 4. Tutorial - Practices: Aucune vue · il y a 4 heures · Sous-titres
- 3. Tutorial - Game interface: 3 vues · il y a 8 heures · Sous-titres
- 2. Tutorial - Introduction to SEGAE: 2 vues · il y a 8 heures · Sous-titres
- 1. Tutorial - SEGAE project presentation: 9 vues · il y a 8 heures · Sous-titres

On the left side of the page, there is a navigation menu with the following items:

- Accueil
- Tendances
- Abonnements
- Bibliothèque
- Historique
- Vos vidéos
- À regarder plus tard
- Samoczek wideo
- Plus

Below the navigation menu, there is a section for 'ABONNEMENTS' with the following channels:

- AGROCAMPUS OUEST
- Università di Bolog...
- Uniwersytet Rolniczy ...
- Oniris Nantes

Online pedagogical resources

- A pedagogical space (Moodle) for teachers with a pedagogical guide, ready-to-use exercises, course slideshows on agroecology, 3 scientific articles published on the game

l'institut Agro e-agrocampus Mes outils web Mon Moodle Vous êtes connecté anonymement (Connexion)

SEGAE

Accueil / Cours / SEGAE

Vous visualisez actuellement ce cours comme Invité.

English Français Italiano Polskie Vlaams Español

https://tice.agrocampus-ouest.fr/course/view.php?id=664#section-2

English

February 2020 - Bologna Winter week

November 2020 - Online teacher training

slides template

SEGAE trailer

20-11 - Dumont and Godinot - Introduction

20-11 - Dumont - Crop model

20-11 - Couvreur - Animal model

20-11 - Ridier - Economic model

Exercise session handout crop

Exercise session handout livestock

20-11 - Bastian - Pedagogical offer

20-11 - Carof - Scenario configuration

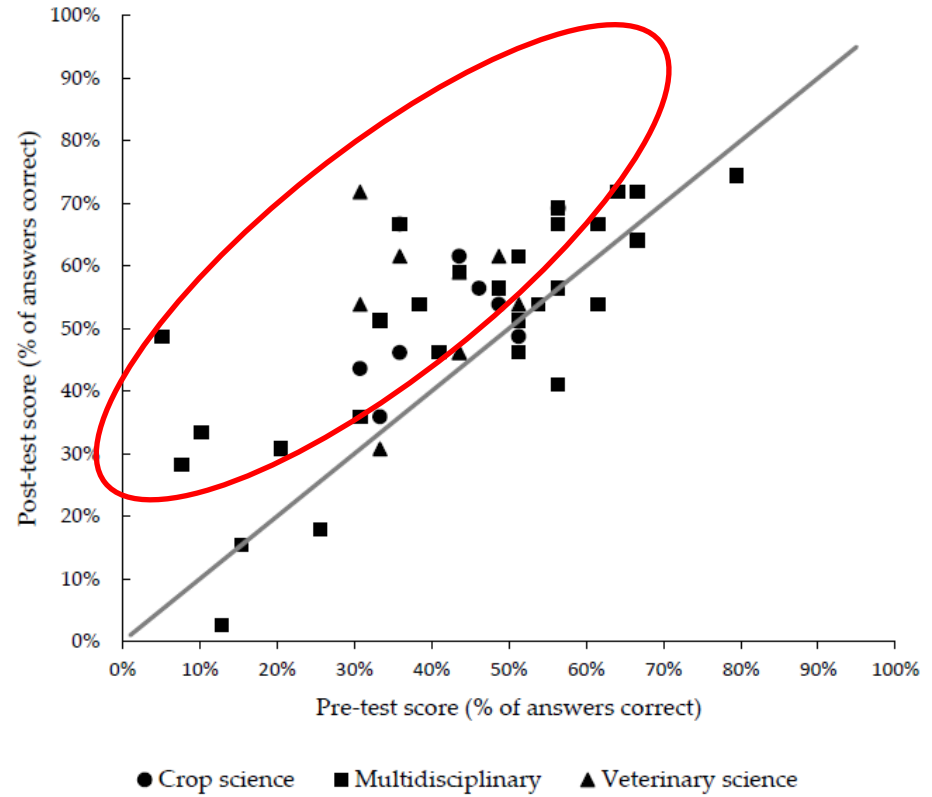
A custom scenario editor

- **THE FARM**
 - Choose your starting farm
 - Modify the parameters (UAA, number of animals, starting practices...)
 - Define the objectives to reach

- **THE CONTEXT**
 - Modify prices, attainable yield...
 - Create hazards to introduce randomness, increase the realism and complexity of the game

A game to learn

- Before/after test with 52 students
- 69% improved their score (+ 9 points, $p < 0.001$)
- Higher increase in players with the lowest starting score
- 86% of students enjoyed the game
- Individual game but interest of the team
- Importance of a discussion/debriefing



(Jouan et al, 2020)

Useful links

Project website: <https://segae.agrocampus-ouest.fr/>

Game: <rebrand.ly/segae>

Video Tutorials, game trailer, oral presentations of the game:

<https://www.youtube.com/channel/UckBBQUi94MONkfyZoTSxazQ/videos>

Pedagogical documents (including 3 published scientific articles):

<https://tice.agrocampus-ouest.fr/course/view.php?id=6644>

Game trailer: <https://www.youtube.com/watch?v=LSNwyTYmGR0>

Thank you for your attention

Do you have questions ?

