

Serious games and new technologies: innovative tools to interest students for grassland management?

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Hard to teach students / train or advice (young) farmers to grassland or grazing management

- ⇒ Grasslands are multifunctional objects
 - ⇒ But advisors, teachers, and students are more and more specialized in a discipline...

- ⇒ Grassland management methods are complex, create technical challenges (adaptability, anticipation...)
 - ⇒ But they are thought unsuited to reach the production objectives of intensive farms

- ⇒ Main supports => importance of grasslands for farms but also for society
 - ⇒ But a drawback : grasslands are thought to be developed/maintained in organic / mountainous farms, or worse related to environmentalists...

Reach students and young farmers to grassland management (grazing) means to :

- ⇒ Focus teaching on simple but very important key messages : grazing is a source of performance, competitiveness and cheap forage to feed ruminants
- ⇒ Teach the complexity of its management as a technical challenge (management of uncertainty, workforce organization,...)
- ⇒ Develop participatory and pluridisciplinary approaches

Serious Game
(Forage Rummy) to
teach forage
system
management

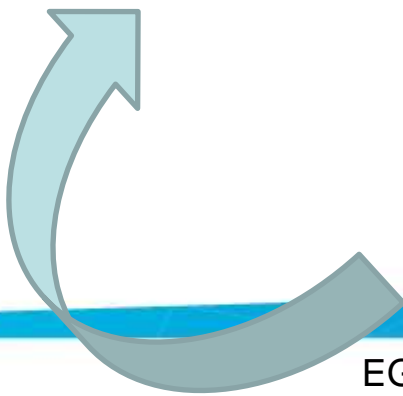
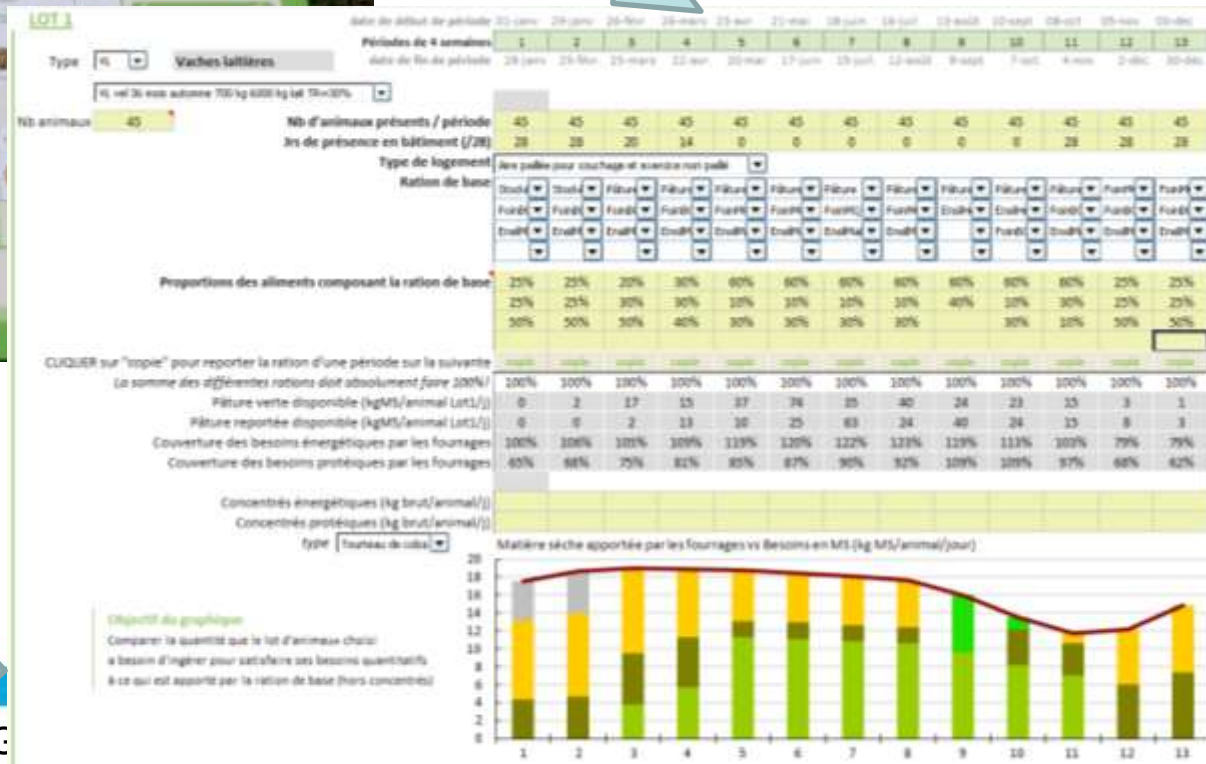
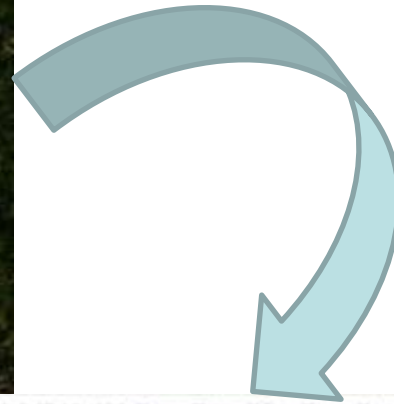
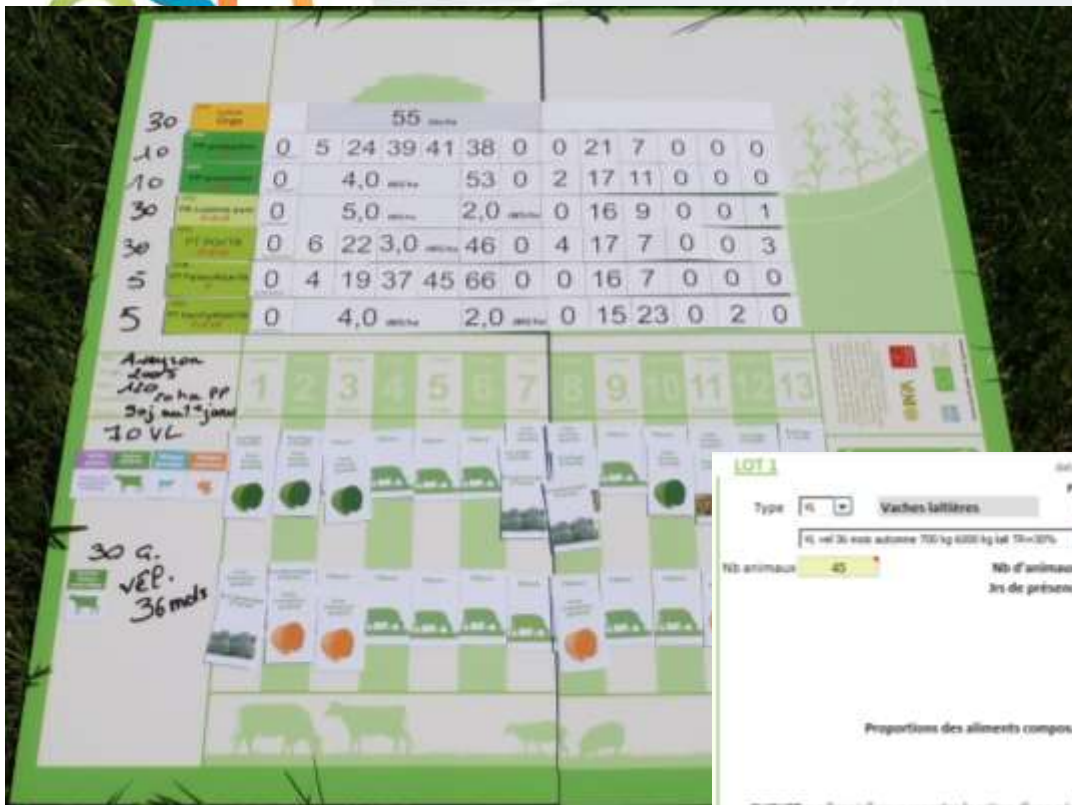
First game-based approach for forage system design

Farmers and farm advisors are the main players in livestock system design

Simulation models

Stimulation of discussion, analysis and learning about forage and livestock system management

Forage Rummy



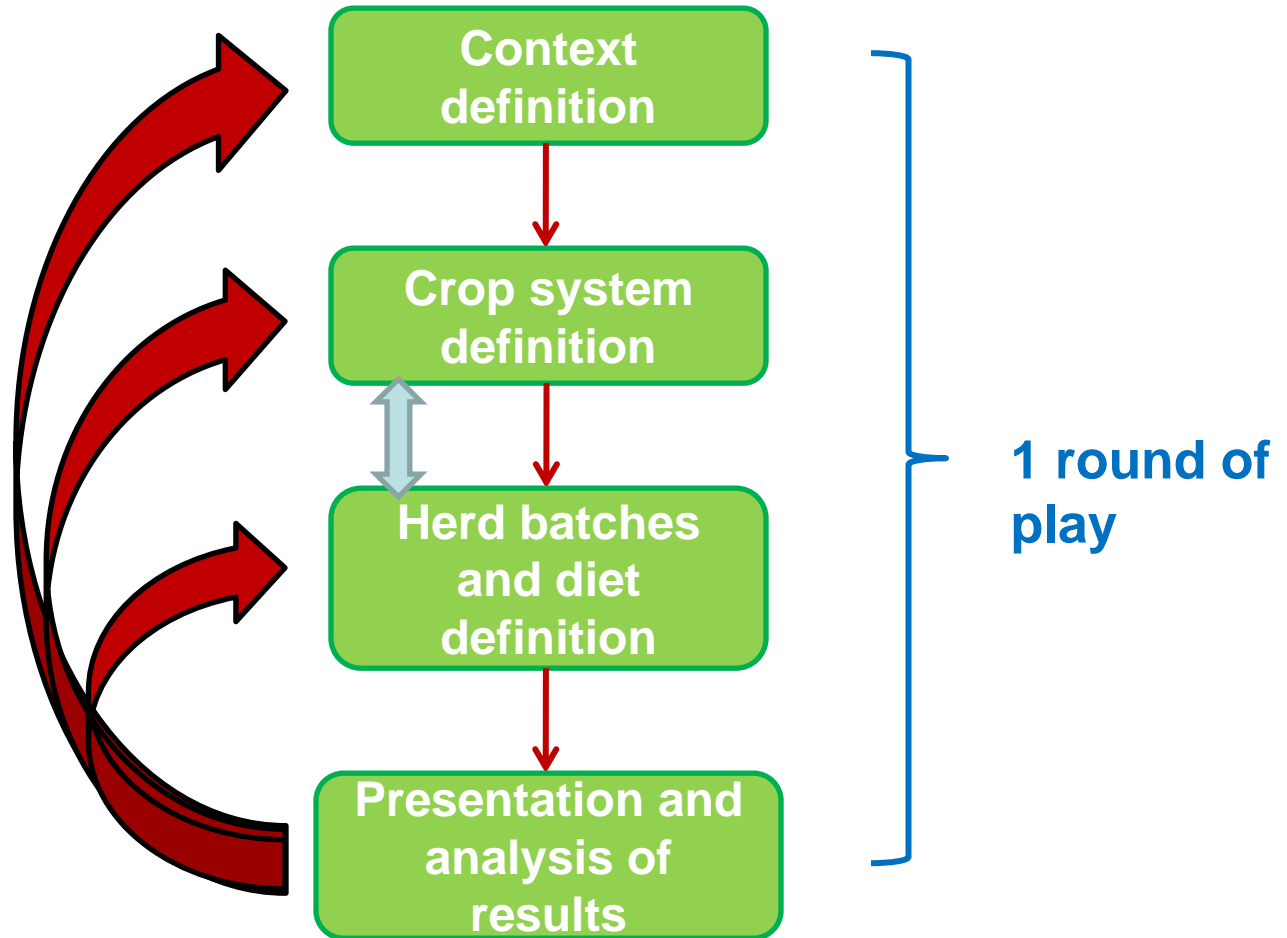
***We do it again
to :***

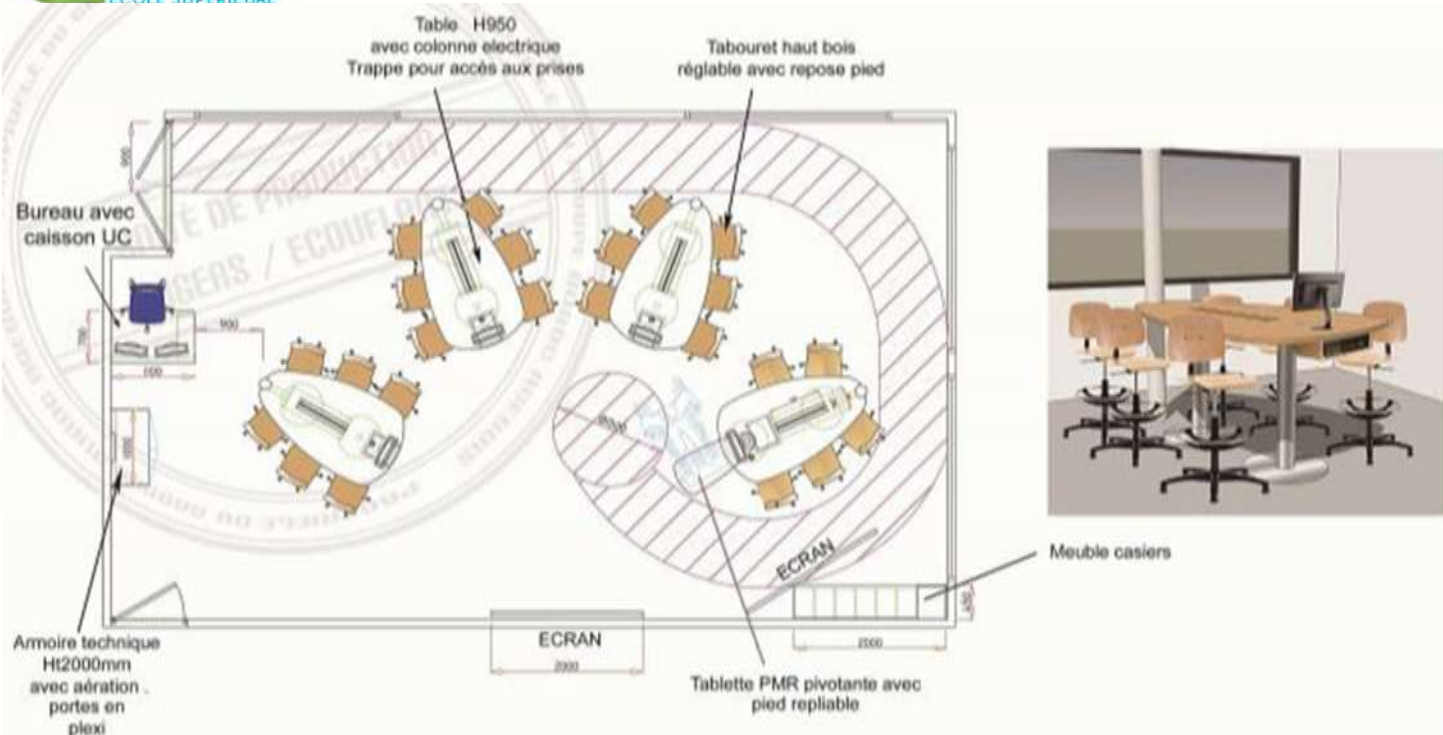
Improve the
system

Adapt it to a
simulation
(scenario)

Imagine new
management
methods

...





- 1/ Group works
- 2/ Teacher has a role of a facilitator,
- 3/ Possibility to share results between groups (on computer / table connected to an interactive projector)

Objectives:

To apprehend the complexity to manage a forage system

To understand the dynamic balance between the two main dimensions of a forage systems (cropping and livestock systems)

To build solutions to adapt different forage systems to climatic hazards

To enlarge the complexity to workforce, crop rotations, nutrition...

To build collective and pluridisciplinary strategies

Teachers:

A duo of teachers (agronomy & animal science) to facilitate the group works

Forage Rummy

Last year BSc students in agronomy, animal science and ecology

Group 1
N=5-6

Group 2
N=5-6

Group 3
N=5-6

Group 4
N=5-6

Lecture => Definition of a forage system / Management

Farm 1 – Intensive dairy farm
(high milk yield, maize silage
production, few grasslands)

Farm 2 – Grazing farm (Low
milk yield, grassland –
grazing)

Step 1 – Optimization of the forage system management a normal year

- Herd (diet, reproduction, size of batches, ...)
- Crops (areas, type of grassland, ...)

Step 2 – Solutions to anticipate and adapt the forage system
management to a drought

Step 3 – Share of the results => general discussion



Students' evaluation

About the lecture

This lecture shows the farmer's decision facing agronomical and zootechnical constraints

Possible to understand the connexions between agronomy, animal science and farmer motivations

About the two case studies

We learn about many strategies by comparing two opposite farms

We could go further and try to simulate a switch from a system to another

About the drought case study

We have to adjust and find practical solutions. By sharing with other groups, we discovered many other solutions

We are facing reality, we understand the complexity of forage system management

About the duo of teachers

Very good, each teacher give informations and we have to deal with them in our solutions

Their collusion is important, it's a requisite for this work

About the rummy and the interactive classroom

Mixing and crossing informations with an interactive game is very interesting

Original application of the lecture. We are quickly carried away by the game

To conclude

« We should spend more time and do holistic simulations : take into account the forage quality (realistic diet), economy, workforce... This serious game could be a common theme for our semester aiming at giving us knowledge and knowhow about farming systems. »