

Using serious game to built sociotechnical system: the case of breeding management for new traits of Resilience & Efficiency in small ruminant

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Resilience and efficiency traits impact on system performance and change farmers' selection choices: their use could also change the overall sociotechnical system

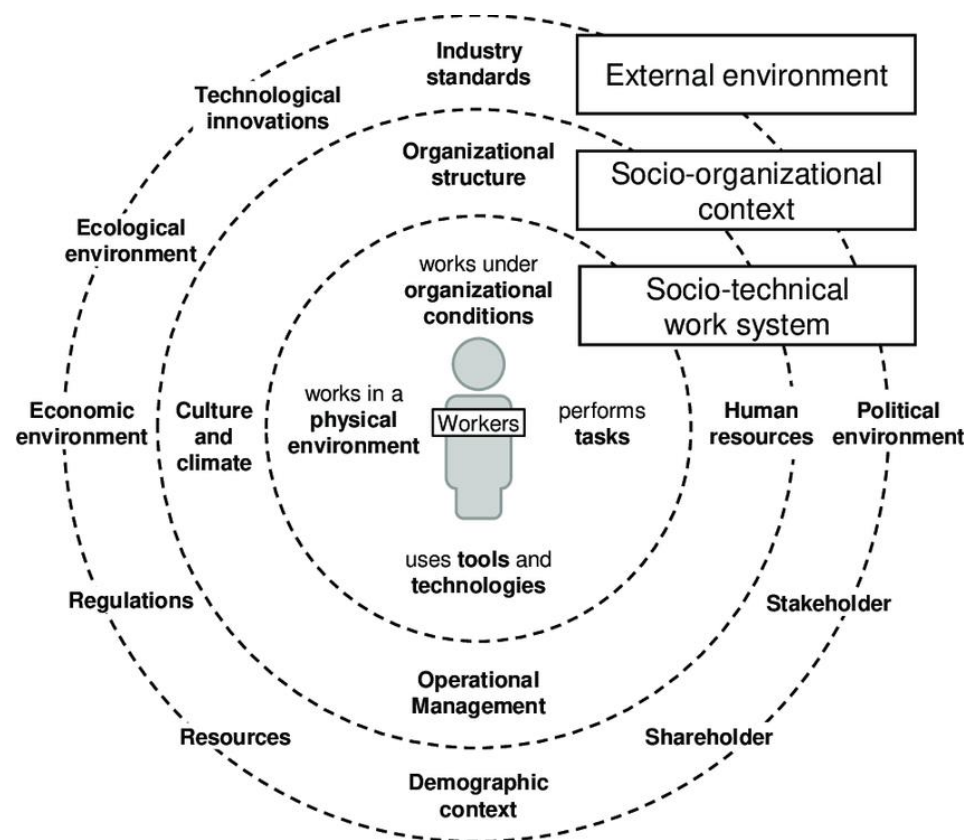
What is the socio-technical approach?



"Operative description of technical objects, that is to say, one that allows for a more complete formulation of the tests or experiments to which it would be useful to subject the device at such and such a moment in its development, and, linked to this first point, a finer identification of the types of spokespersons that it would be judicious to consult, test, mobilise or involve.(Akrich et al, 1991)"

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What is the socio-technical approach?



Why participatory approach?

Current challenges → a drastic change of Livestock farming Systems

But

The agroecological transition

complex process

undefined paths

To achieve such changes, it is necessary to involve farmers in co-designing innovations and encouraging their adoption

→ Participatory approach relevant to analyze SES/ STS



Why serious games?

Serious games = a powerful tool to

- encourage the redesign of livestock systems
- while promoting collective intelligence.
- if used together with farmers and other stakeholders

(Souchère et al., 2010; Speelman et al., 2014)



SERIOUS GAMES

- games designed and/or used for non-entertainment purposes
- embody **learning goals**

Deterding (2015)

Why LEGO MAQUETTES?

- Using Lego® serious game to rethink agricultural management processes
- Involving players from the agricultural and other sectors, at different levels
- Theory under this : constructivism
- Hand to brain link // crisis 1970s USA



Julie Ryschawy, Justine Faure, Fernanda G Moojen, Vincent Thénard. Serious game: a cutting-edge tool for stakeholders to redesign livestock systems towards agroecology. 72. Annual meeting of the european federation of animal science (EAAP), EAAP, Aug 2021, Davos, Switzerland. pp.464. ([hal-03377589](https://hal.archives-ouvertes.fr/hal-03377589))



Designing in successive steps



Building with a partners
and share together

Building alone and
share with the other



Building together and
share main features



Playing for two cases- studies

Meadow grazing



**Milk sheep
production**



Native grassland



**Meat sheep
production**

Which R&E traits for sociotechnical system?

Serious-games: original media designing agricultural innovation ?

What is the **contribution** of **stakeholder engagement**?



How to **mobilize** agronomic, sociotechnical, ... **models**?



Which are the “new” **role** of the **researchers**?



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