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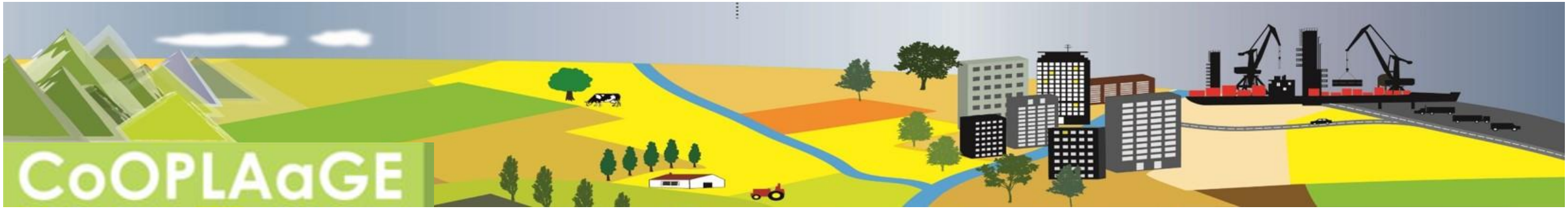

Exploring the complexity of socio-environmental management for transitions, through participatory modeling and games

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Thank’s to Roche, LUMA & Tour du Valat for inviting us here !

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Key Insights with CoOPLAaGE

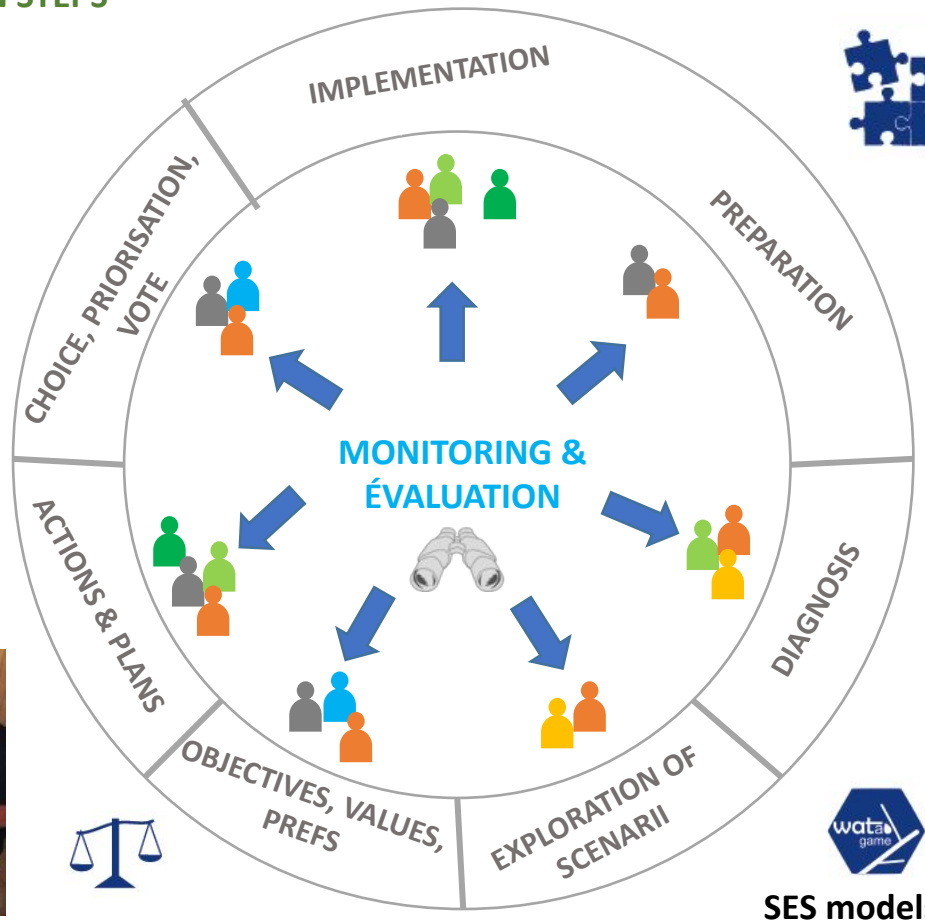
1. Socio-environmental systems are highly complex, with many entangled drivers, and resistanceS to change.
   a. Resilience has pros and cons. Do “we” want to change or not ?
2. Top-down management for adaptation has shown its limits through decades. Real, multi-level participation is an option to “co-change”.
3. Participatory simulation, aka role-playing games, are efficient to
   a. get them to explore and tackle complexity
   b. get participants to explore and challenge their own social & political constraints
   c. imagine new options (technical and social) and endorse them !
4. Participatory modeling trusts stakeholders’ (all) capacity to :
   a. elicit, share, structure knowledge about their environment and actions
   b. build actionable models that they can trust and use for change

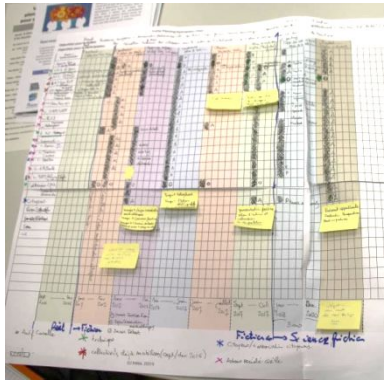
Background & design context for this workshop

- French public research unit (Montpellier), multi-disciplinary, specialized in water management & governance, working internationally
  - Focus on engineering participatory methods
- Supporting public action with governments, NGOs, CBOs, agencies
- A 25y action-research on complex systems management with / by / for their stakeholders, incl. citizens, through participatory modeling
- A focus on autonomous adaptation
- With robuts physical and digital methods
- An ethical perspective on action-research

Steps & tools in decision-for-change

7 DECISION STEPS





Participatory process planning

Strategic planning

Gouvernance diagnosis

Values ad distributive justice

SES models and simulation

© emeline.hassenforder@cirad.fr, 2019

mollenand@inrae.fr

CoOPLAdGE

wat a game

irstea

ae-tr

Comptes de l'Eau, Acteurs, Usages

du Valat

Less modeling experts, more autonomy

⇒ Wat-A-Game (WAG): A toolkit for (self) participatory modeling & gaming (cc IRSTEA-CIRAD, 2009 *http://watagame.info*)

→ « Let-them » (= all actors) model their own territory

→ Include their own roles, resources, activities, events

!!! Get a shared model (& playable) of their socio-environmental system

→ Use it to explore and test together possible change Actions & trajectories

> 180 cases worldwide

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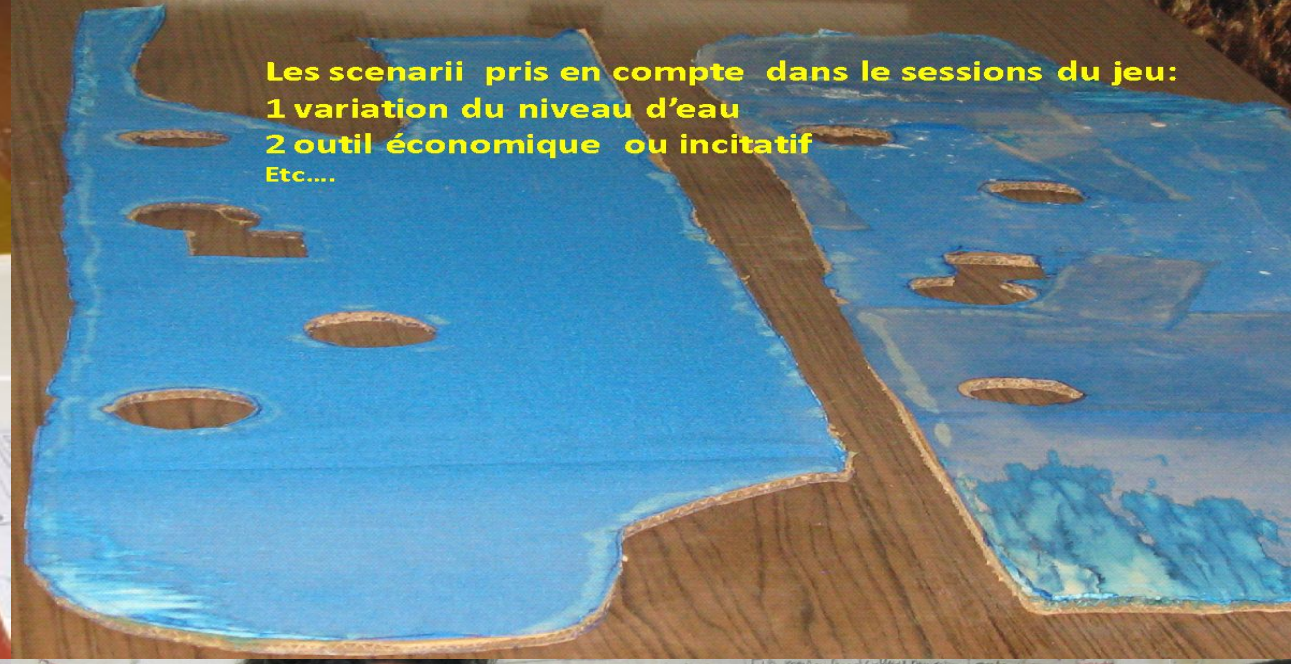


Mori Diallo, Mali, Wetlands International

Pêcheur
Elevage
Gestionnaire

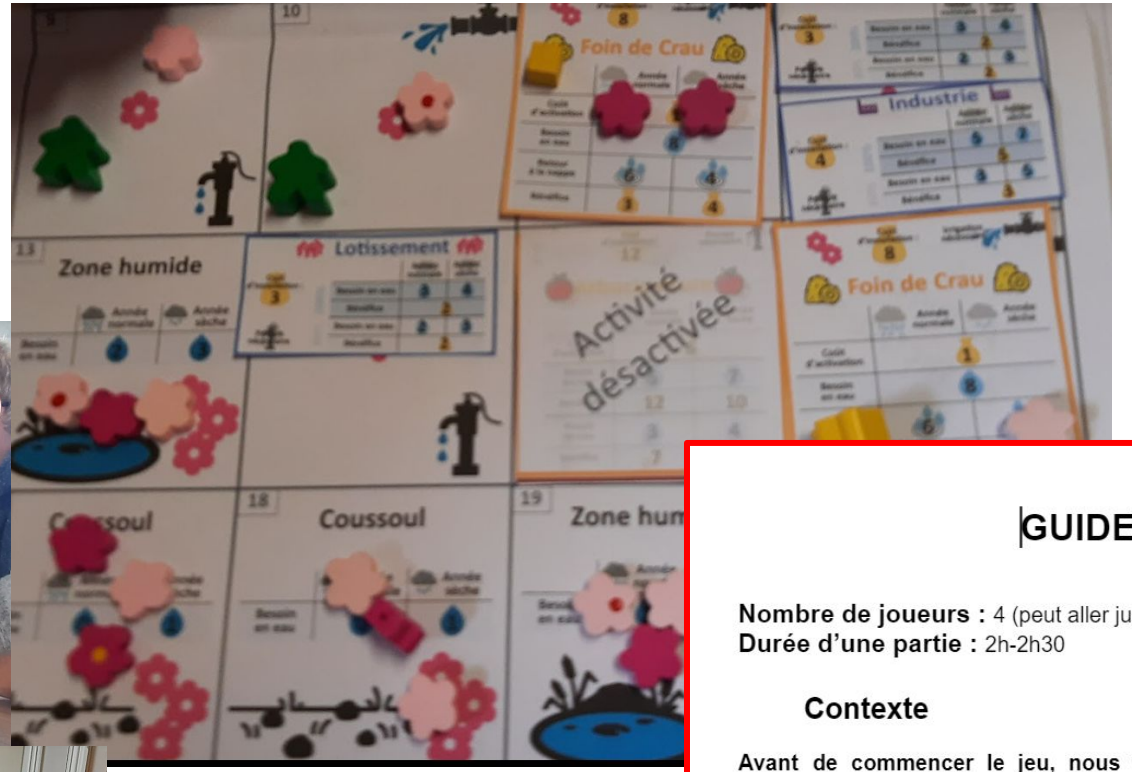
VOTE NRM

GAM

Pastoralist
Charcoal burning
Maize
Tea growing
Dairy farming
Banana growing
Forest and We
Pollut
-1
-1

Eau-Mi-Crau : Crau Aquifer management

Nearby Tour du Valat !



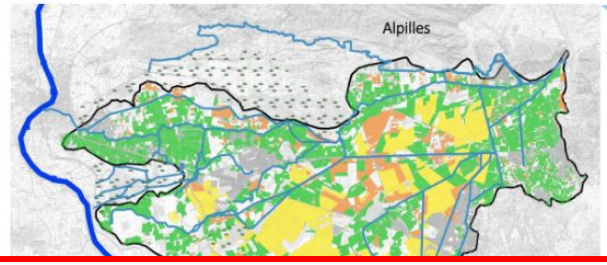
GUIDE DE JEU

Nombre de joueurs : 4 (peut aller jusqu'à 8 joueurs en formant des binômes)
Durée d'une partie : 2h-2h30

Contexte

Avant de commencer le jeu, nous vous conseillons de regarder la vidéo suivante : https://www.youtube.com/watch?v=QDPZkGLXhWk

Le territoire de la Crau
La plaine de la Crau, située à l'ouest du département des Bouches-du-Rhône est délimitée à l'ouest par le delta du Rhône et la Camargue, au nord par les Alpilles, au sud-est par l'étang de Berre et la mer Méditerranée. Ce triangle d'environ **550 km²** recouvre un vaste réservoir d'eau souterraine. Cette plaine est dépourvue de rivières mais une multitude de canaux d'irrigation sillonne le territoire.

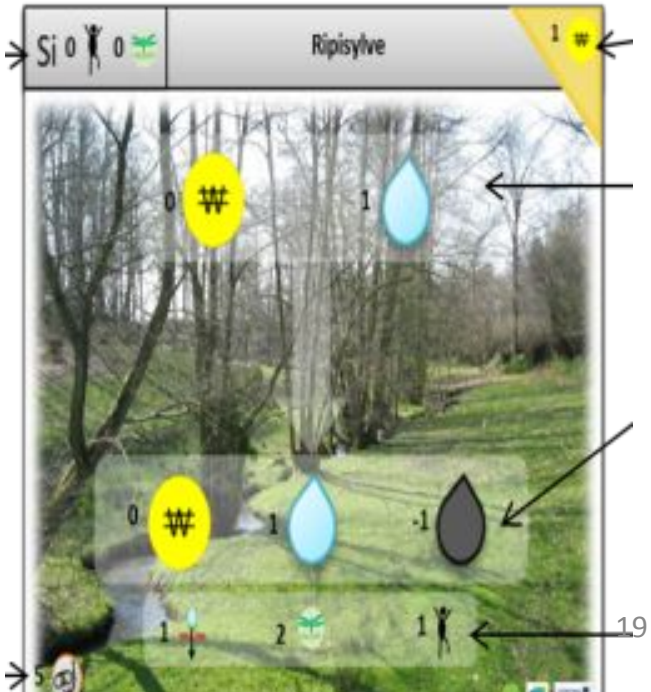


LittoWAG

A WAG-based game dedic

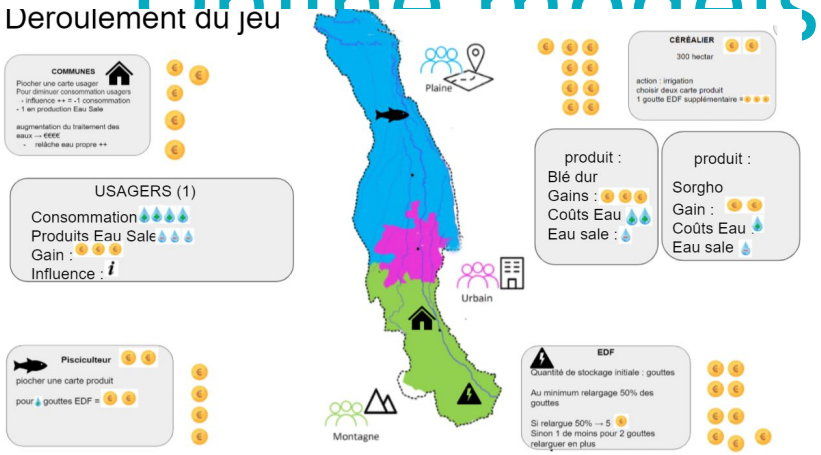
RÉPUBLIQUE FRANÇAISE
INRAE
eau
Tour du Valat

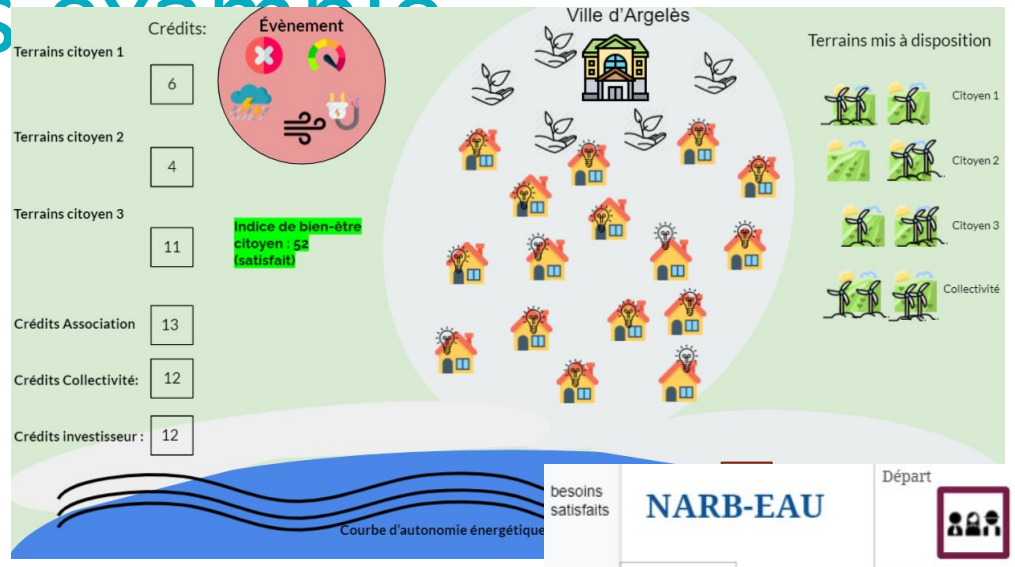
My River Kit
a WAG game for River Ecosystem Services, including landscape

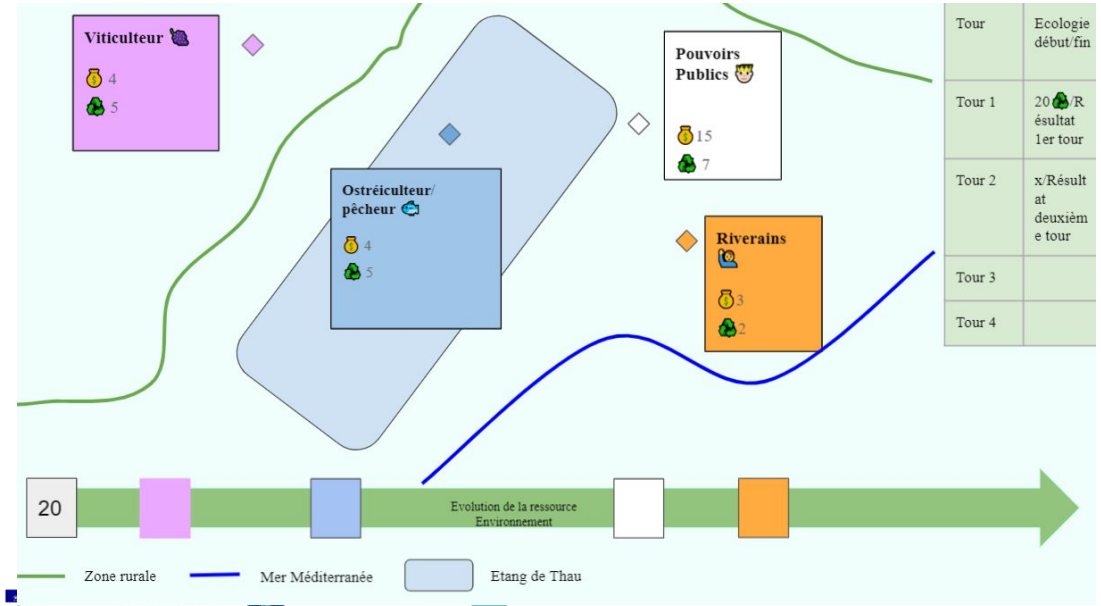


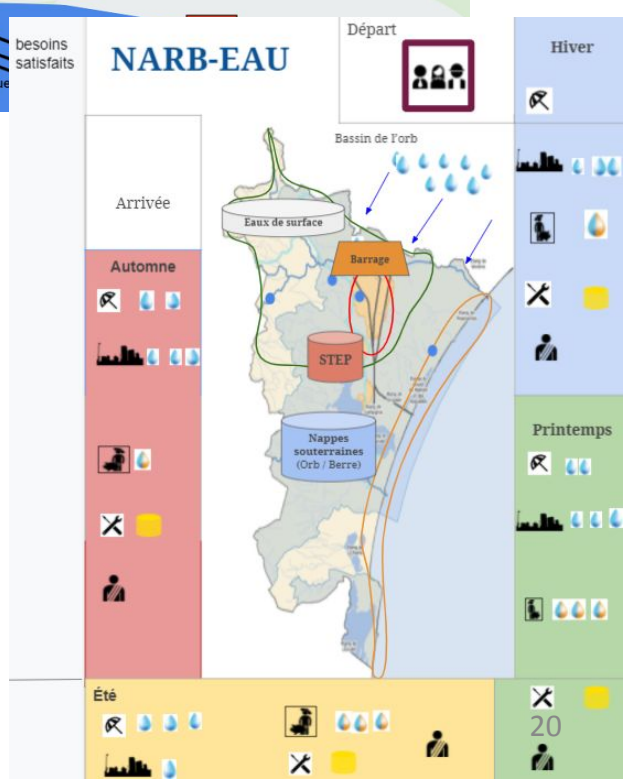
Online models / games example

Deroulement du jeu









anissim Sénégal + EPURE unit & ACTED (& Ths R Lombard-Latune)

of waste-water management strategies (Rufisque & Ranérou)

to supports CBOs (on WASTE-WAG)

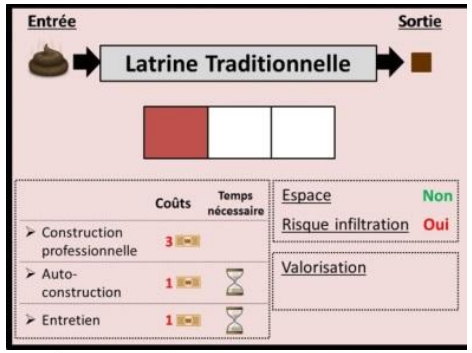
kshops, 533 persons

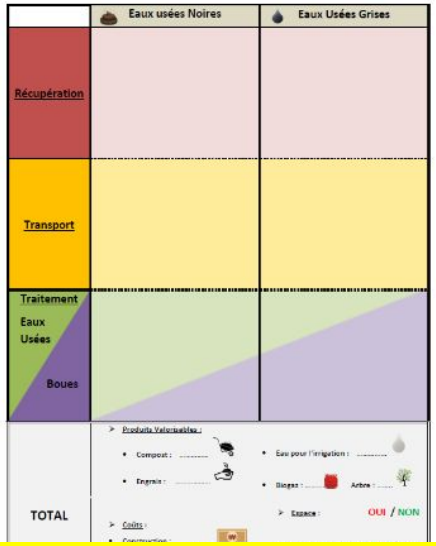
Source : R Lombard-Latune, Irstea EPURE

III- Instance of Results

Planning : building a sanitation system at local and communal level

Technical

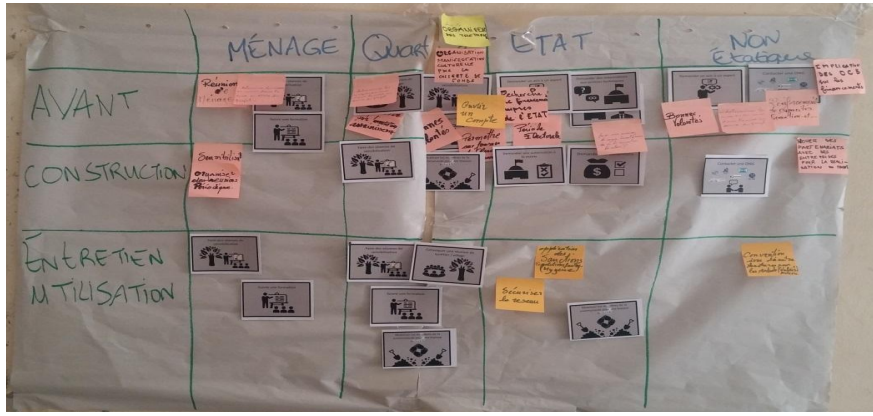




Other info on technologies :

- Costs : self construction, maintenance
- Land use needs
- Infiltration hazards
- Expertise (construction, exploitation)

Planning



Source : R Lombard-Latune, Irstea EPURE

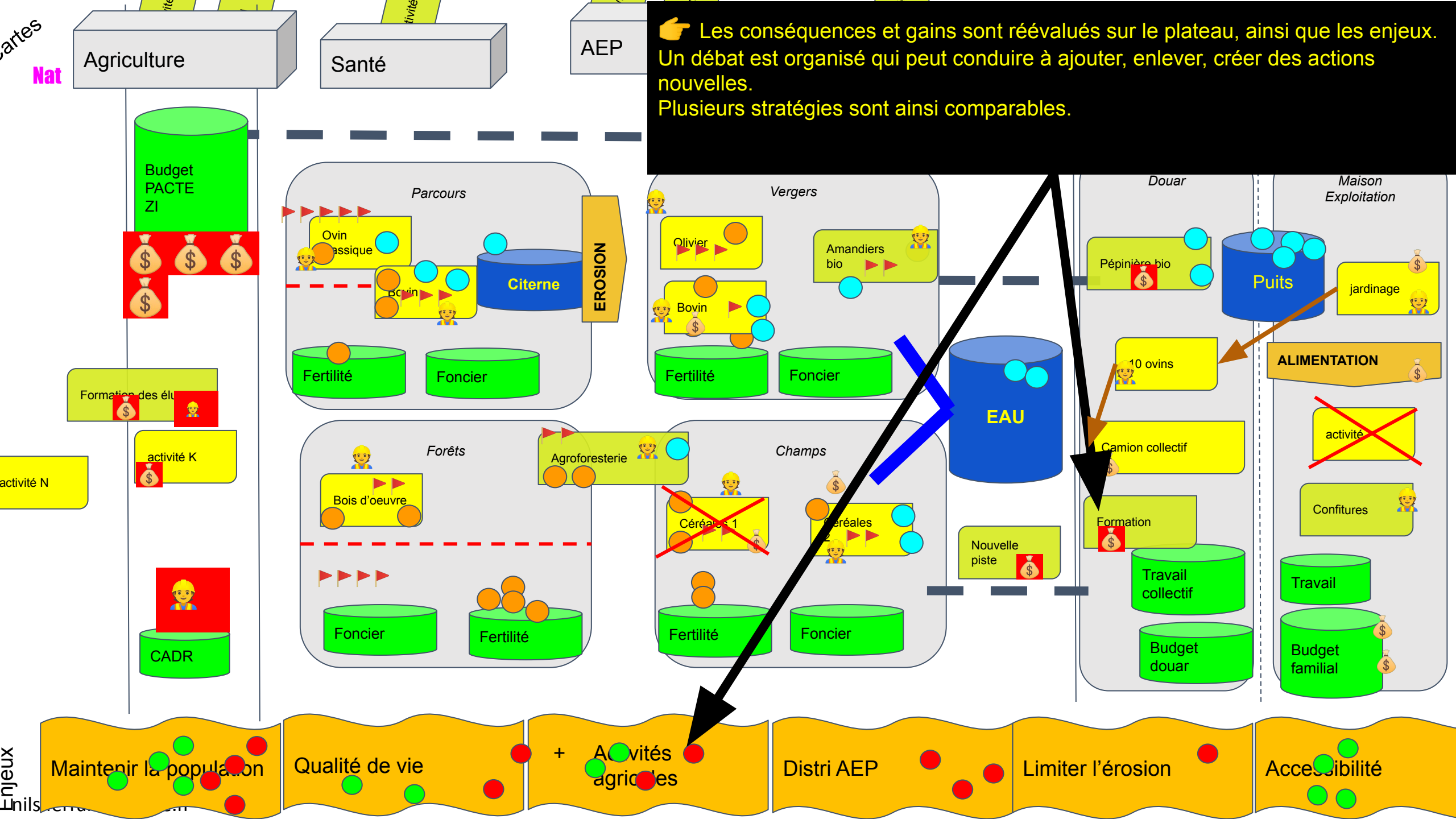
Uganda– 2013

27 communities strategies

+

3 meso-level strategies

Proposed regional INRM strategy



👉 Les conséquences et gains sont réévalués sur le plateau, ainsi que les enjeux.
Un débat est organisé qui peut conduire à ajouter, enlever, créer des actions nouvelles.
Plusieurs stratégies sont ainsi comparables.

today, for you :
LittoWAG
MyRiverKit → TransiTerr

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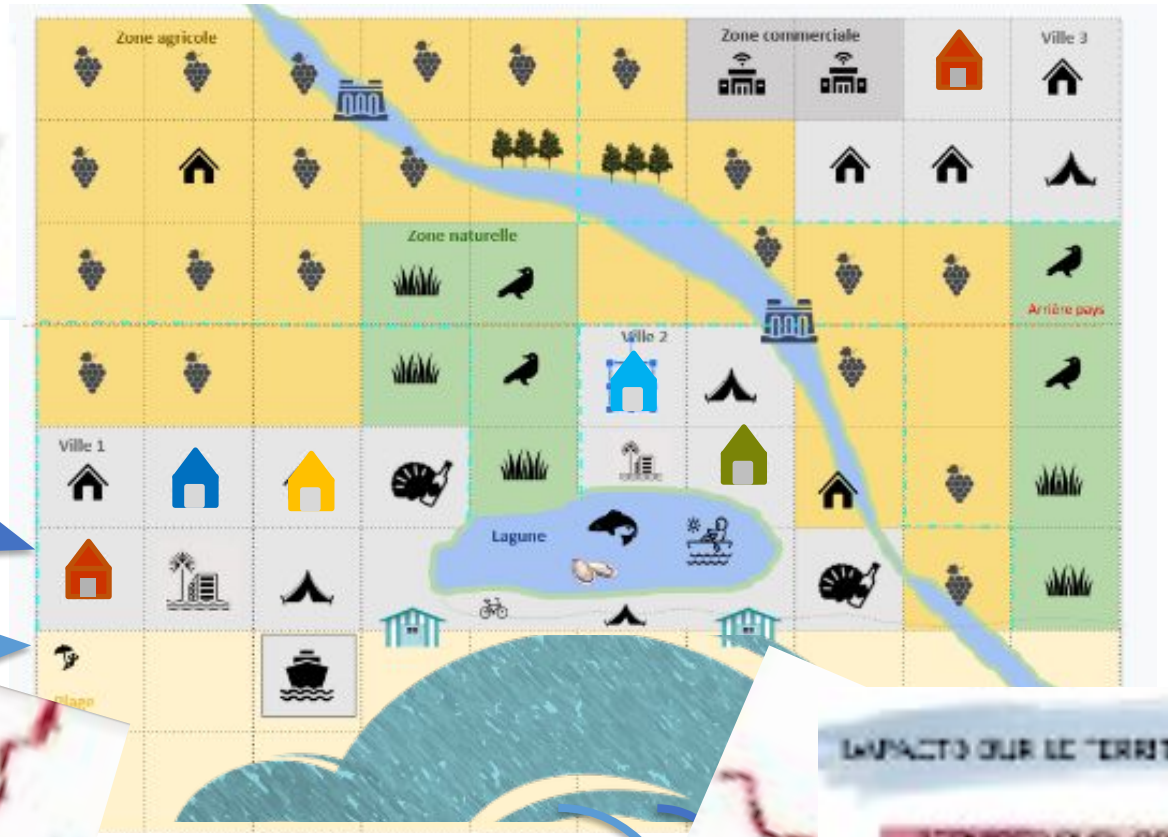
LITTOWAG : A game on coastal adaptation

+ Julie, MAriana, Elisa, Conference Room

5 habitants

Carte activités joueurs



- Erosion
- Submersion marine
- Inondation (étangs, rivières)
- Montée de la mer

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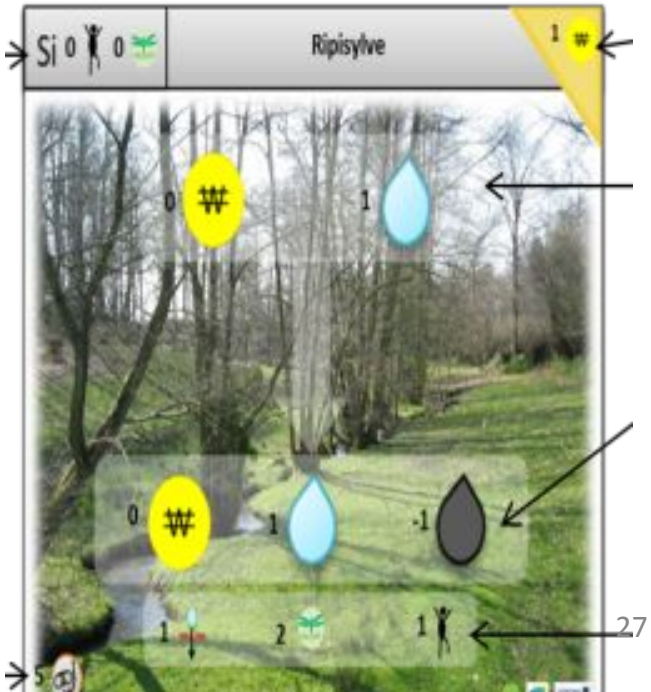
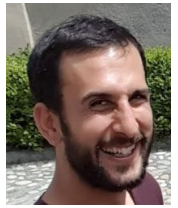
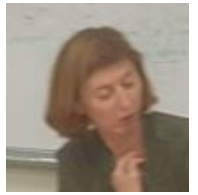
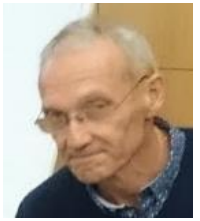
My River Kit (+ Nils, @Canteen)
a WAG game for River Ecosystem Services, including landscape

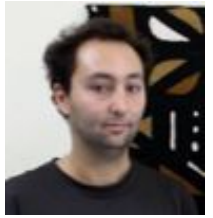
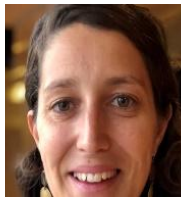


+TransiTerr : your own model

Thank you !



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