Engineering Participatory Decision Making in Transition

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RÉPUBLIQUE FRANÇAISE
Liberté
Égalité
Fraternité

INRAE

G-eau
Gestion de l'Eau, Acteurs, Usages

Inria

Equipe-projet
STEEP
Soutenabilité, Territoires, Environnement, Economie et Politique

Our approach

Decision-making steps	Citizen's perspective	Participatory tools	Ex. in Uganda (2012-2014)
PREPARE PARTICIPATION	*We will respect our own rules*	**PrePar** Preparing design of the decision process	
DIAGNOSIS	*We know what is happening around us*	**Rock** Observing the river **Smag** Establishing a territorial diagnosis	
SCENARIO EXPLORATION	*Now we understand the big picture*	**Wat-A-Game** Modeling & role-playing-games	
DEFINITION OF OBJECTIVES AND PREFERENCES	*We know what we want*	**Just-A-Grid** Discussing justice principles	
IDENTIFICATION OF ACTIONS AND PLANS	*We, too, have good proposals to make*	**Cooplan** Building action plans	
CHOICE, PRIORISATION AND VOTE	*In democracy, our voice count*		
IMPLEMENTATION	*Let's do it!*		
MONITORING AND EVALUATION	*Are we getting there?*	**Encore-Me** Evaluating impacts	

COOPLAGE

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Field applications

- France & Outre-Mer
  - **Agence de l'Eau Rhône Méditerranée Corse** : méthodologie pour des projets de participation citoyenne (PGRE, HydroMorphologie, PAPI) https://frama.link/RMCPart
  - **Drôme** (SMRD) : co-préparation citoyenne de la révision du SAGE en appui à la CLE
  - **Camargue, Thau, StBrieuc** : débat public électronique pour la GIZC
  - Région **Occitanie** : cadrage participatif citoyen de la participation en zone littorale
  - **Luberon** : dialogue sur la faisabilité sociale de la réutilisation des Eaux Usées Traitées
  - **Nouvelle-Calédonie** : planification territoriale et conception de la politique de l'eau
- Europe
  - **Bulgarie** : construction participative d'un plan de cogestion inondations sécheresses
  - **Slovénie, Suisse, Autriche, Italie** : participation sur services écosystémiques rivières
- Afrique, Amériques, Pacifique
  - **Ouganda, Ethiopie, Kenya, Afrique du Sud, Mozambique, Bénin, Mali, Niger, Costa-Rica** : modélisation participative, jeux de gestion, planification multi-niveaux, pour la gestion des ressources naturelles (eau, alimentation, sols, biodiversité, pollution, conflits...)
  - **Tunisie, Brésil** : (ré-)ingénierie de la gouvernance participative inter-niveaux
  - **Sénégal** : conception participative de stratégies alternatives d'assainissement
  - **Kiribatis** : modélisation participative pour aider à l'efficience du service public de l'eau

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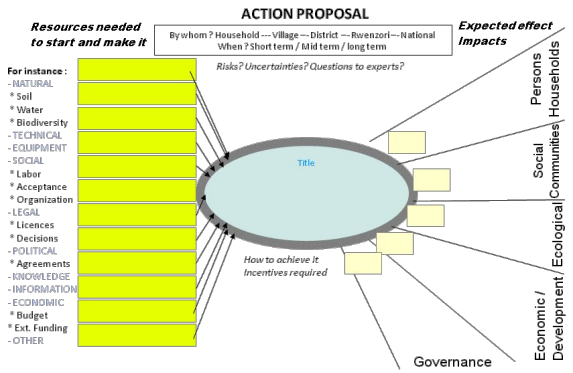
COOPLAN: confronting heterogenous actions and strategies at all levels

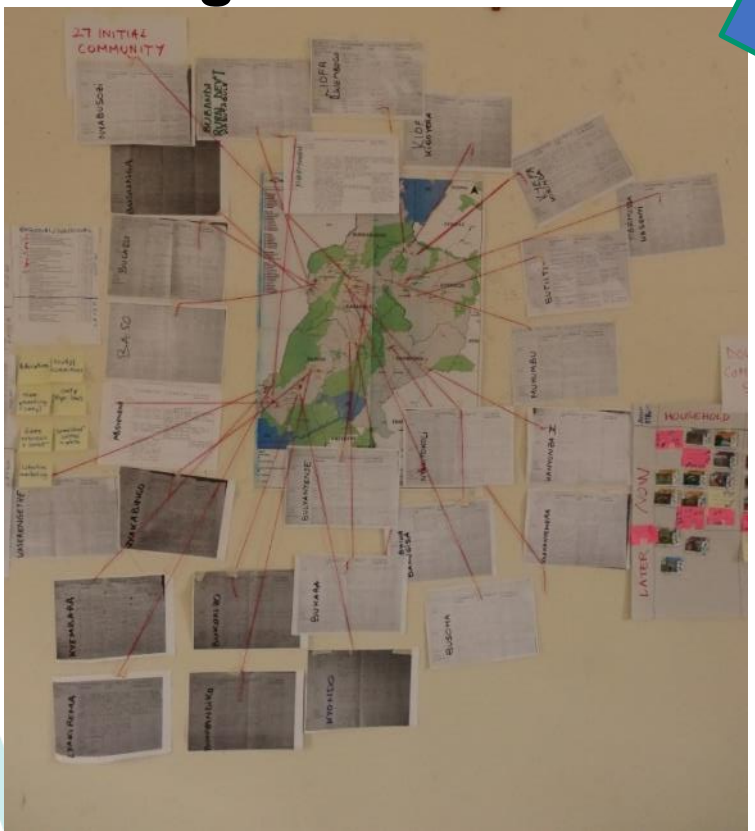


Uganda– 2013

27 communities strategies

+

3 meso-level strategies



Proposed regional INRM strategy

Final draft INRM strategy (soft version)

E = Energy
A = Agriculture
C = Conservation
P = Policy
W = Water
I = Infrastructure
L = livelihood
M = Market / Economic
H = Health
T = Tourism

Scale	category	Household
m+u	E	Energy saving stoves
i+m	E	Adopt energy saving technology at HH level (solar & biogas)
u+m+d+i	AC	Tree planting
u	A	Tree nursary beds
m	P	Education
m+d+u	A	Conservation methods of farming + organic farming / Better methods of agriculture
d	P W C	Control pollution of soil/water/air
d	P	Mutual Information sharing and documentation
m+d	PL	Family planning
m+d	A	Food crop / vegetable growing
m	A	fruit growing
m	W	Water harvesting
u+d	A	Piggery
m+d	A	Bee keeping
u	A	Community members to construct terraces
u	A	Coffe growing
m	A	Kitchen gardens
u+m	L	Sensitization on and proper disposal of non Biodegradable materials
d	A	Nursary beds
u	AC	Agroforestry
m	A	Eucalyptus growing
m	A	Tea growing
d	C W	Proper soil and water conservation
d+u	P	Family planning
u	W	Rain water harvesting for domestic use
u+d	E	Biogas
m	E	Energy saving stoves
u	EC	Authorised charcoal burning
d	L	Proper waste management
m	L	Ecosan toilets
d	H	Family medicine plant gardens

Scale	Category	Community
d	P	Information sharing and doc
m+d+u	P	Education
u+d	AC	Tree planting
i+m	AC	Tree nursary beds
u	P	Reporting environmental encroachers to relevant authorities
m + i	P	Establishment of Environmental committees
i+m+d	P	Community bye-laws on sustainable NRM (formulation & Enforcement)
u+d	P	Sensitization about NRM + extension of the game
u+m	PA	Demonstration centres and plots
d	A	Vegetable growing
u+m	MP	Collective marketing and establishing markets
u	A	Zero grazing
i	P	Proper land use planning
d	CP	Demarkation of wetlands
m	A	Making fish ponds
d	A	Fishing with authorized net
m+d	L	Sanitation
m	AH	Herbal medicine clinic and training centre block
d	W	Borehole
d	W	Pump
d	T	Promotion of tourism in the Rwenzori region
d+m	T	Camping site
d	LC	Non-polluting washing bay
d	C	Authorized sand mining
i	PC	Educate school children on envt
i	MP	Mobilise the community to initiate income generating activities
i	P	Use media to sensitize community
d	AC	Exposure visits
d	P	Feed back from forums & platforms
d	P	Making environmental reports
i	WP	Stringent laws on water usage
m	W	Building of small reservoirs
m	LC	Non-polluting washing bay
m	L	Ecosan toilets
d	A	Promotion of floriculture
d	A	Tea growing
u	A	Organic farming
u	T	Campsite
m	T	Tour guiding
u	A	Rear animal according to land capacity

Scale	Category	Regional / national
u+d+m	P	Enforcement of laws and policies
u	P	Put means of preventing animals destroying crops
i	P	Harmonise working relationship between gazetted areas and the community
m	P	A sense of ownership by policy makers about NRM
m+d+i	P	Environmental Monitoring, reports + independent body at regional level to look into environmental and natural resource mgt issues
d+i	P	Mass sensitization about NRM
m+d	P	education
i+m	P	Policies on family planning - population growth control
u	I	Construction of feeder roads
m	P	Protection of wild life
m	T	Promotion of tourism in Rwenzori region
d	TC	Non polluting hotels
u	M	Lowest price for agricultural products - no access to good prices
u	M	Value addition to maize and millet
d	H	Herbal medicine clinic & training centre block
u	H	Construction of health centres
m	P	Policies on non-Biodegradable materials
m	W	Bore hole
u+d	P	Environmental monitoring for the whole of Rwenzori region + Feed back from forums/ platforms
i	P	Translate available policies on NRM into local language
i	M	Subsidies for tree seedlings
i	P	Government should work with corporate bodies which cause pollution for contribution
u+i	I	Rural electrification
m	P	Sensitization on environmental conservation
m	C	Restoration of degraded river banks
u	M	Loaning farmers at a minimum percentage rate

Are on the final picture of the regional strategy (meaning the "action implementation sheets" have been made)

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E.N.C.O.R.E. : coupled dimensions of change for a target group

(Ferrand, le Bars, 2004)

- External: external (to the group) change in sustainability
  - *Environmental / Political / Economical*
- Normative: changing participants' values and preferences
- Cognitive: changing participants' representations and beliefs
- Operational: changing participants' practices and actions, within and outside the group and process
- Relational: changing participants' social relationships
- Equity: changing the social justice' regime (distribution of resources, equity) among participants and outside

A generic framework to observe and describe multi-dimensional change, but not to prescribe (non normative)

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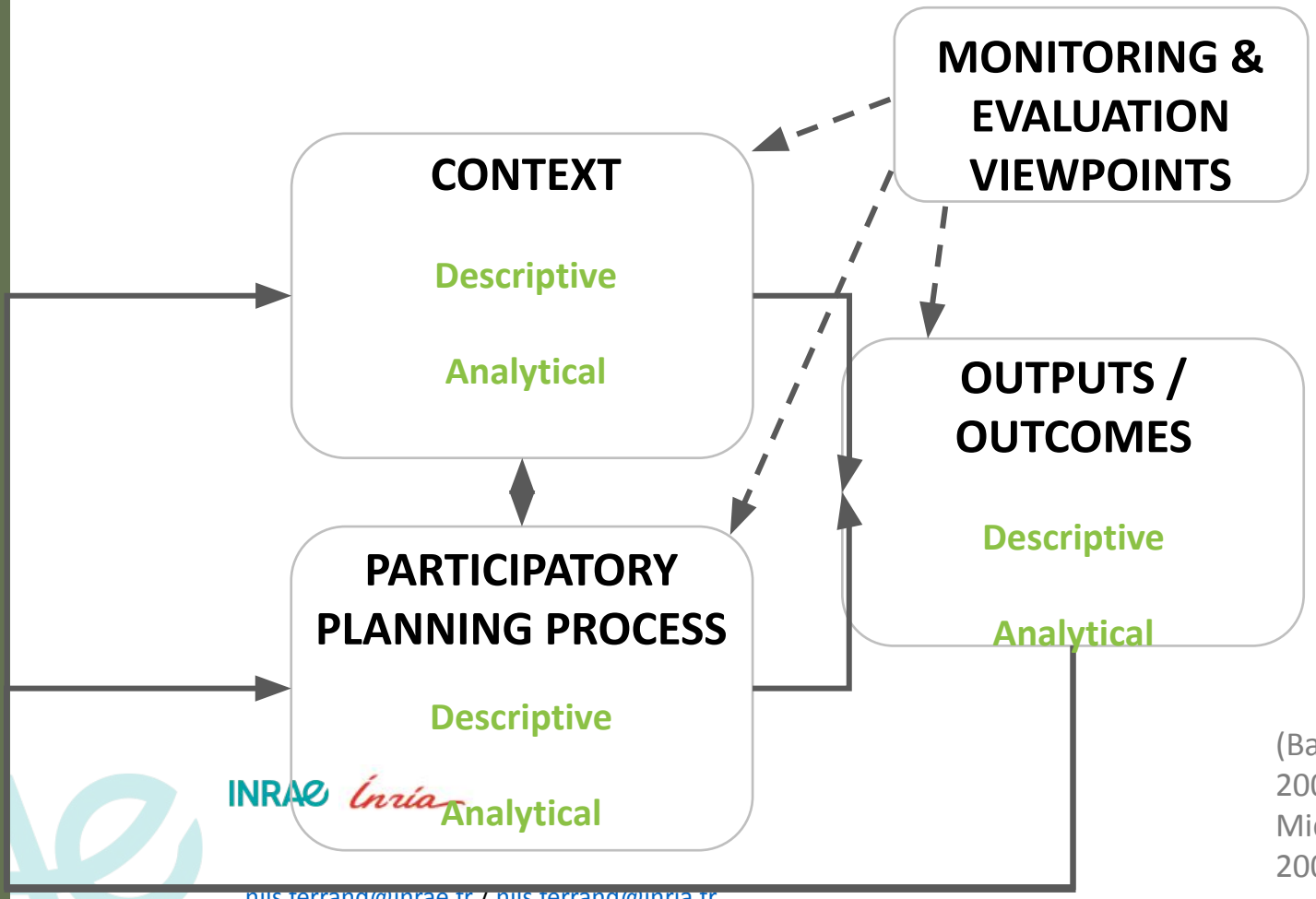
An overall approach of M&E (Hassenforder, 2015)



(Based on Ferrand & Daniell, 2006; Beierle & Cayford, 2002; Midgley et al., 2013; Ostrom, 2005; Sabatier, 1988)

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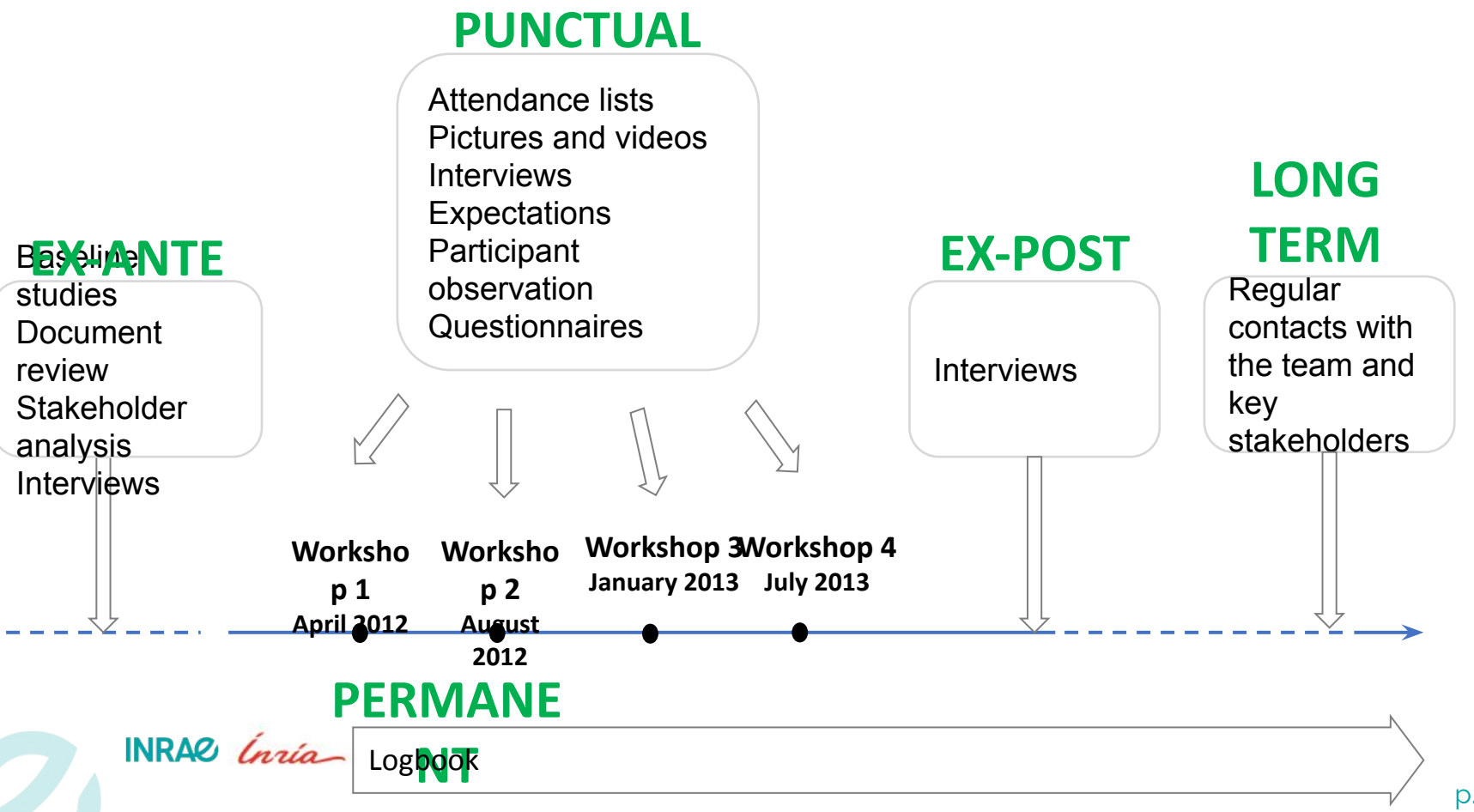
M&E methods



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A global M&E approach

Encore-Me
Evaluating impacts

PERMANENT (everyday)

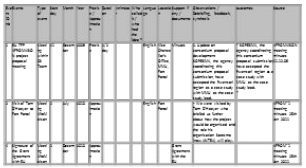
Logbook 1: Overall process

Tracking all stakeholders interventions, sessions, interactions, events, operational change, and other external or contextual factors

Events' file

3 forms/files:
-Events
-Participants
-Participants/Events

Events' form



Logbook 2: Local scale process

For entering all the M&E documents related to the local sessions

4 forms/files:
-Monitoring tables
-Rapporteur debriefing sheet
-Facilitator debriefing sheet
-Simple questionnaire

PUNCTUAL MESO & LOCAL scales

Pictures and videos

Attendance list

Monitoring tables

Monitoring table				
UP STREAM			Players in trouble	Activities played
Initial situation	17	0	0	
Round 1				
Round 2				
Round 3				
Round 4				

Expectations

Interviews

PUNCTUAL MESO scale

By researcher

Participant observation

By Facilitators

Thorough Questionnaires

PUNCTUAL LOCAL scale

Rapporteur debriefing sheet

By rapporteurs (local observers)

Participant observation

By Facilitators

Facilitator debriefing sheet

Simple Questionnaires

Pictures and videos of the documents

Transfer to researchers via logbook 2

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Today's workshop: a COOPLAN starter

⇒ Issue : manage limited resources and multiple stakes in a participatory planning process toward transition

⇒ process : COOPLAN method + ENCORE evaluation

⇒ structure of the workshop : groups 5-6 persons

⇒ Case study : a large and well-off city located in a tropical region, fully dependent from its surroundings (for water, food, energy, labor, wastes) ⇒ you have to design a transition plan

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Disclaimer !

This workshop simulates a participatory process held normally with any kind of stakeholders, including illiterate citizens (with support).

Don’t expect to engage in a complex quantitative modeling process.

It’s simple, robust and validated by field experience (on real case studies, not like here)

It’s not aimed at satisfying us, modellers, but the needs of participatory decision making.

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Reasoning participation on an (abstract) case

« *We live in a coastal tropical region called Tropipol, in the Comoa city .*

<u>Situation:</u>

- *City of Comoa*
  - *(500.000 px) + demographic growth (immigration)*
  - *high GDP but high unequality*
  - *fully dependent from its surroundings for water, food, energy, waste disposal*
  - *very high individual water, energy and (virtual) soil footprint*
  - *intense touristic activity in the city and near the coast,*
- *Outside it :*
  - *mixed agriculture with rice, irrigated, orchards and vegetables,*
  - *petrochemical (seaside) and food industry,*
  - *brackish laguna with RAMSAR bird area downstram*
  - *mountains & forests upstream in the natural park,*
  - *a large multi-purpose dam, hydroelectricity, tourism .*
  - *a shallow aquifer downstream between the city and the coast*

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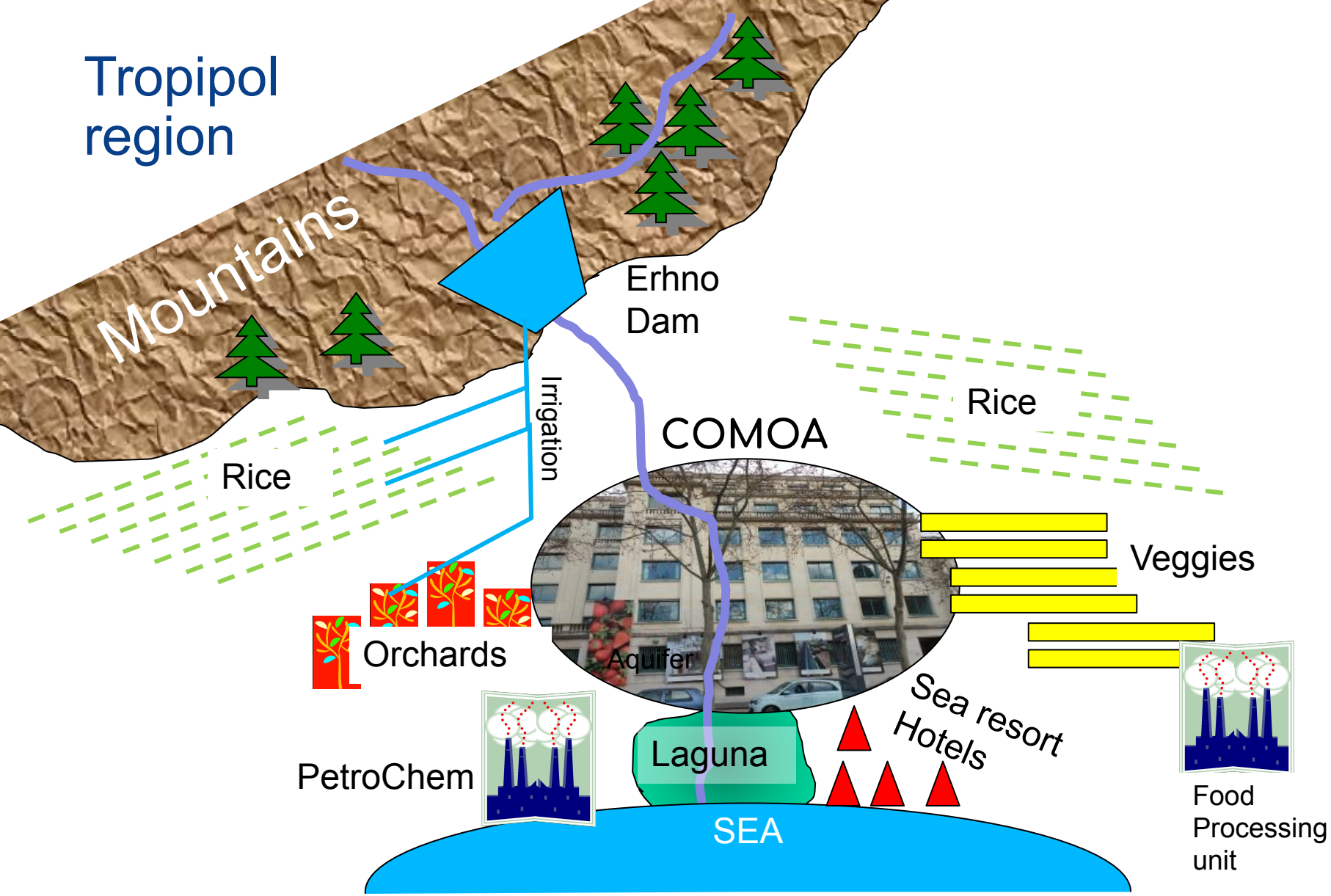
Tropipol region



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The challenges

- For the last 15 years, recharge of the dam and the river flow have clearly diminished.
- Meanwhile impact of floods in the lower suburbs of the city and downstream in the touristic area near the sea got worse.
- Overall carbon impact of the city is 5 time higher than rec. / IPCC
- Food provision chains extends very far, with high C cost
- The two factories play a key economic role, but the PetroChem plant is challenged after a pollution spillover in the river and the protected laguna.
- Inequalities rise in the city and outside, with very poor farmers' communities claiming for rebalance

➔ **A new development and transition plan has to be set**

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Phase 1 : choosing a role

DO you want to be (* mandatory role in the group)?

- The mayor of the city *?
- The elected leader of the whole region *?
- A representative of a citizens' NGO/CBO ?
- An Environmental NGO representative *?
- A business & real estate developer ?
- The chief of the farmers' union from outside *?
- A researcher in sustainability sciences ?

Please take the role and endorse what you consider to be the main traits, expectations and behaviors of this.

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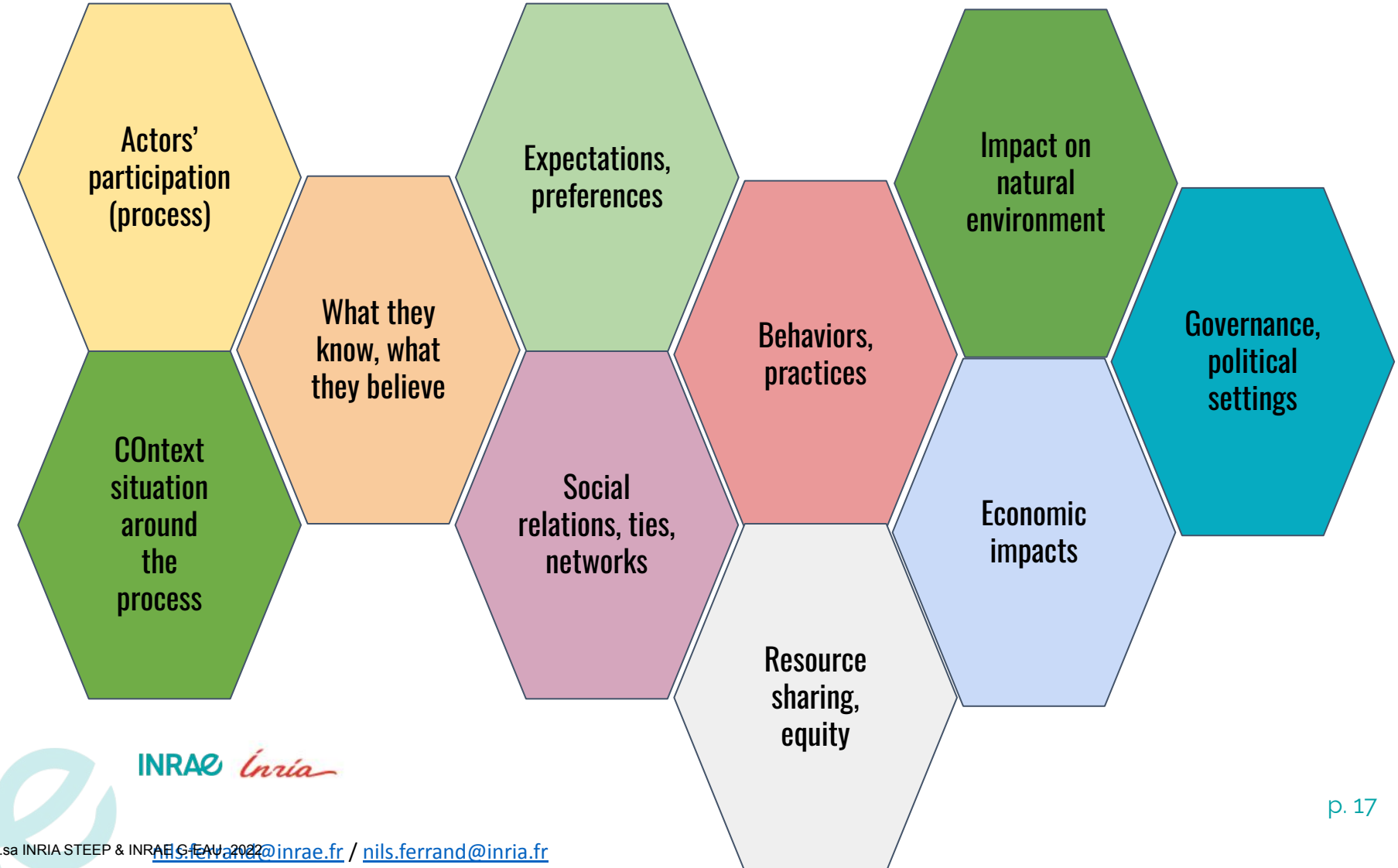
Changing what (the ENCORE+ framework with 10 dimensions) ?



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P2. Setting objectives

1. Based on your role, define individually (privately):
   a. your personal goals
   b. the goals you'll publicize for the city and the region
2. Share your public goals
3. Considering the ENCORE+ framework, discuss what your plan should aim at for the 10 dimensions
   a. You don't need to agree on it - dissensus welcome
4. Write your conclusions

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P3. Building your own action model

For your case study, as a group:

1. choose 3 or 4 critical resources (material or immaterial) which are at stake, and should be saved and shared (e.g. water, energy, labor, social willingness)
2. choose 2 or 3 common stakes or global targets (e.g. ecologic, economic, societal)
3. Copy and edit the online Cooplan editing spreadsheet

3 scales are imposed :

Individual (domestic, or in-business) / city / region

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Guidelines in COOPLAN editing sheet

Do not edit this file directly --> copy it in your drive and edit your own copy
replace all resource names "Ress#" by your own choice for your model
replace all impacts names "impact#" by your own choice for your model
change actors' names if required
resources and impacts categores are the same for the whole group --> use the same action strip format
fill one action strip by action proposal
to fill an action strip :

1. put the name
2. put a short description
3. select one spatial scale - erase others
4. select one time horizon (now, later) - erase others
5. fill the actors' role table by ticking the cells with a 'x'
6. choose the resources' needs, for each ressource, from none to maximum (+3) --> ERASE irrelevant values
7. choose the impacts levels for each action, impacts can be negative AND positive -->ERASE irrelevant values from cells
8. process next action

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P4. proposing actions' titles

Individually, based on your role:

- List a set of actions which you want to recommend for:
  - Your roles or others, at all scales
  - for now or later
  - here or elsewhere
  - for any domain or sector → it's open proposal
- Only drop on a title on paper for now
- propose no more than 6 actions per person

As a group:

- post and share your action proposals and cluster them
  - NO priorization, only organization

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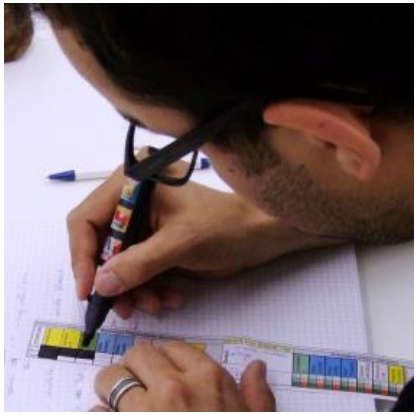
P5. Fill the action strip



Individually choose one action in the board

Online (preferred) on a shared file for your group (google spreadsheet), fill one action strip

cc INRAE, 2023	Needs, requirements				City		Impacts						When ?	Actors' role							
COOPLAN	Ress1	Ress2	ress3	Ress4	demo action 1		Impact1		Impact2		Impact3		Soon		City mayo	Reg Lead	Envir NGO	farmers	Citizens	Business	Scientist
Low	+	+		+	blah blah blah blah blah blah This is a demo action blah blah blah blah blah blah This is a demo action		+1	-1		-1	+1	-1		Initiator,	x						
Medium		++		++				-2		-2	+2			Active, maker		x				x	
High				+++						-3				Impacted				x	x		

cf. Guidelines in the folder

And repeat for the other actions not yet processed

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P6. Confrontation arena

Choose one mate and discuss your 2 action proposals, compare and adapt content.

Switch groups. Co-process all actions.

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P7. Building and assessing an integrated action plan

- As a group
  - For each space and time scale (3 x 2)
    - Select actions you want to implement
    - Stack the action strips
    - Online you can copy from one sheet to another

⇒ Assessment' dialogue

1. discuss by columns the resource needs
2. discuss the impacts in regards to goals
3. discuss the actors commitments

Assess feasibility and efficiency of the plan

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The challenge' game

For each resource and each scale, put a set of 20 virtual units and consider how you'd distribute them in the plan.

→ physical : use tokens
→ digital : use numbers

DO it for all resources and check feasibility

What happens if you reduce one resource by 50% ? which actions to you remove ?

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Conclusion

COmments and questions welcome.

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