Bypassing lock-ins preventing from innovation in cropping systems through co-construction: preliminary results of EXPLORE research project in Wallonia (Belgium)

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INTRODUCTION

This poster presents the co-construction methodology of the EXPLORE research projects driven by the WP1 research team (see Step 1 - Setting the scene). That methodology is adapted from Roorda et al (2014) transition management cycle. The initial proposition involve all stakeholders in three successive phases (orienting, agenda setting and activating) divided in seven steps. In the EXPLORE research project, we suggest :

1. To involve different stakeholders depending of the steps and phases of the transition management cycle
2. That the research team is in charge of the reflexivity in several phases and act as the main intermediary with the support of key stakeholders (i.e change agents)

Legend
*CPA : Conseils de politique alimentaire (*food policy councils*)
*GAA : Groupement d'agriculteurs en agroécologie (*groups of farmers in agroecology*)

ORIENTING

JUNE 2025 - MAY 2026

1

SETTING THE SCENE

1.1 Define EXPLORE research objectives
Design **agroecological cropping systems** based on integrated crop and livestock systems targeting **sustainable and healthy dietary regimes**

WP1 = Co-construction of innovative cropping systems and identify lock-ins and levers of their implementation (3 researchers)
WP2 = Modeling cropping systems, their yields and agroenvironmental performance taking into account climate change effects (2 researchers)
WP3 = Study agroecological levers effects on pest and weeds regulation (4 researchers)

1.2 Define interactions between research teams
Recurring meetings and research seminar
Interactions between WP in **territorial arenas** :
Step 4 - Envisioning = **Sustainable and healthy dietary regimes (WP1 + WP2)**
Step 6 - Engaging & anchoring = **Agroecological cropping systems (WP1+WP3)**
Implications of each WP in **regional arena** :
Step 7 - Acting = Evaluate cropping systems

1.3 Collaborate with other research teams
Research seminar with CRA-W (June 2024)
Exchange with SYTRA - UCL

2

EXPLORING

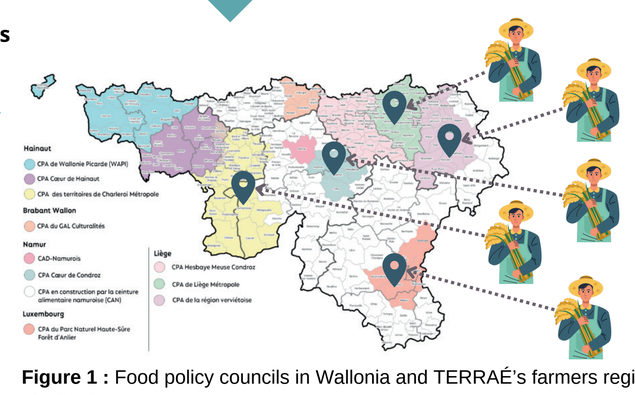


Figure 1 : Food policy councils in Wallonia and TERRAÉ's farmers regional distribution

2.1 Food and agriculture : at the crossroads of two institutional frames of reference
Sustainable food systems = ***Cellule Manger Demain***
Agroecology = ***Terraé***

2.2 Investigating networks involved in food systems transition in wallonia
Semi-directive interviews about coupled innovations with
- Food policy councils (CPA*) (Figure 1)
- Groups of farmers in agroecology (GAA*)

3

PROBLEM FRAMING

3.1 Sociotechnical lock-ins in food systems transition
Situations when a dominant technology prevent the development of alternative path (Baret et al, 2013)
LOCK-IN 1 : The use of crop protection products
LOCK-IN 2 : Specialization in major crops

3.2 Coupled innovations between food and agriculture
Innovations from two fields usually managed independantly (Meynard et al., 2017)

HYPOTHESIS : The design of coupled innovations between food and agriculture through actors arenas participate in the unlocking of food systems transition

ACTIVATING

MARCH 2024 – SEPTEMBER 2024

REFLECTING

AGENDA SETTING

OCTOBER 2024 - MAY 2025

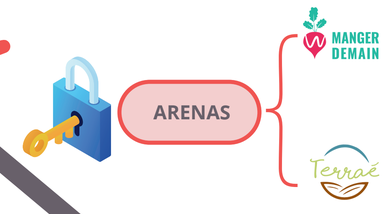
REGIONAL ARENA

PRELIMINARY RESEARCH

TERRITORIAL ARENAS

4

ENVISIONING



TERRITORIAL ARENA = MEETING 1
with farmers, agricultural consultants and canteen managers involved in the *Green Deal Cantines Durables* label (CPA)

4.1 Presenting WP2 scenario
The potential of Walloon agriculture to answer regional demand following TYFA dietary regime (Poux and Aubert, 2018 ; Table 1)

4.2 Selecting crops that could be locally produced to answer sustainable and healthy dietary regime

Table 1 : TYFA dietary regime (From Poux and Aubert, 2018)

Intake	Total	energetics	protein	carbohydrate	lipidic	sugar	fibre
	g/day	Kcal	g/day	g/day	g/day	g/day	g/day
Cereals	300	1047	32	197	9	6	21
Oleaginous	34	306	0	0	34	0	0
Fruits and vegetables	400	331	11	23	18	19	11
Potatoes	80	65	2	13	0	1	1
Sugar	23	92	0	23	0	23	0
Legumes	30	100	8	15	0	0	2
Meat	92	165	17	0	17	0	0
Fish caught	10	16	2	0	1	0	0
Dairy products	300	137	4	0	0	0	0
Eggs	10	14	1	0	0	0	0
Sweet beverages	204	79	1	16	0	16	1
Alcoholic beverages	14	101	0	20	0	20	0
Total with beverages		**2265**	**82**	**286**	**82**	**64**	**36**
Total without beverages		**2445**	**83**	**323**	**82**	**100**	**37**

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RECONNECTING

TERRITORIAL ARENA = MEETING 2
with farmers, agricultural consultants and intermediaries

5.1 Co-constructing actor networks models to stock, transform and distribute selected crops
Distinguishing :
- Creation of new value chains
- Improvement of existing value chains

Based on existing initiatives

Examples of intermediaries potentially involved in territorial arenas' second meeting :

6

ENGAGING & ANCHORING

TERRITORIAL ARENA = MEETING 3
with farmers, agricultural consultants

6.1 Presenting WP3 fields experiments
Link with the EcoFoodSystem research project (Bindelle et al., 2022)

6.2 Co-constructing cropping systems at the farm and territory level to answer sustainable and healthy dietary regime
Cropping systems aiming at diversification (Figure 2) and reduction of crop protection products use

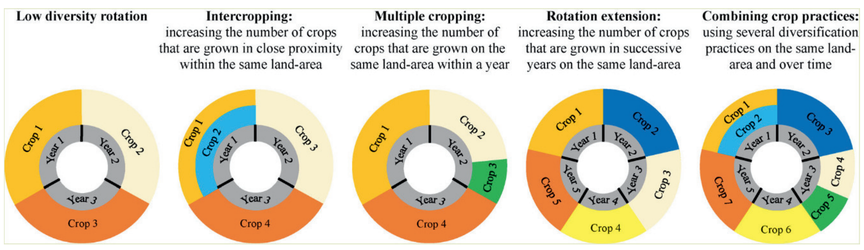

Figure 2 : From low diversity cropping systems to diversified cropping systems by means of intercropping, multiple cropping and/or extended rotations (From Messéan et al., 2021)

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ACTING

REGIONAL ARENA = MEETING 1
with agricultural consultants and institutional representatives

7.1 Evaluate territorial arena's cropping systems with WP2 and WP3 research teams
Agroenvironmental performances

7.2 Identify barriers and levers of territorial arenas' results implementation
Reflection at the regional scale

Examples of actors potentially involved in the regional arena :

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