LAMARTRA

Bridging decarbonization and labour market in sustainability transitions

Delivrable D.4.2.4 (1/2)

Exploratory foresight workshop: low-carbon and labor transitions in the agricultural sector.

Lead beneficiaries	ULiège, IWEPS
Authors	Lopez Bayon Gaizka, Frenay Sacha, Parotte Céline, Delvenne Pierre, Dodion Hélène, Calay Vincent
Contributors	Parotte Céline, Frenay Sacha, Lopez Bayon Gaizka, Delvaux Sarah, Calay Vincent, Delvenne Pierre.
Submission date	September 2023
Dissemination level	External
Keywords	Foresight workshop - scenarios

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

Abbreviations and acronyms

D: Deliverable
WP: Work Package

LAMARTRA Partners

Abbreviations	Name
CEDD	Center for Studies on Sustainable Development. Institute for Environmental Management and Land-use Planning (IGEAT). Université Libre de Bruxelles
HIVA	Research Institute for Work and Society. Katholieke Universiteit Leuven
IWEPS	Walloon Institute for Evaluation, Foresight and Statistics
SPIRAL	Spiral Research Center. Faculty of Law, Political Science and Criminology. Université de Liège
UCLouvain – CriDIS- TED	Work, Enterprise, Democracy (TED) unit. Center for Interdisciplinary Research, Democracy, Institutions, Subjectivity (CriDIS). Université Catholique de Louvain.

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

Executive summary

This deliverable D.4.2.4 (1/2) presents the summary results of the exploratory prospective workshop for the agricultural sector, held on April 25, 2023.

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

Table of Contents

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

Introduction

This deliverable D.4.2.4 reports on the exploratory workshop conducted as part of T.4.2. "Exploratory interviews and foresight workshops" of Work Package 4 (hereafter WP4) "Anticipating low-carbon/work pathways in selected salient sectors" for the agricultural sector in the Walloon Region and the Brussels-Capital Region, held on 25 April 2023, in French.

It builds on deliverable D.4.1.1 related to the internal research note on prospective studies on transitions and changes in the labor market and deliverable D4.1.2 related to the internal research note on grey literature on transitions and changes in the labor market. This report also draws on the exploratory interviews conducted as part of the exploratory interviews report D4.2.2, and deliverable D.4.2.3 on the creation of foresight workshops to bridge low-carbon and labor market transitions. In other words, this document builds on all previous research activities of Work Package 4.

The document briefly recalls some aspects of Methodological Note D.4.2.4 and the construction of the variables discussed during the workshop. It then presents the different phases of the workshop itself.

Part 2 of this deliverable will be written to present the process and results of Exploratory Workshop 2 of the construction sector, the second sector addressed by Work Package 4. The methodology used and the scenario approach will also be replicated in this second workshop, which will take place in late October/early

November 2023.

Methodology

The methodological note Deliverable D.4.2.3 "Building foresight workshop to bridge low-carbon and labor market transitions" explains in more detail the methodology and scenario method used to conduct this exploratory workshop, which will allow the elab oration of the possible and desirable scenarios to be discussed in the Hybrid Forum.

As a reminder, the aim of this WP4 is to identify, in a participatory way and with the different stakeholders, the possible and (un)desirable futures that ensure the common pursuit of the objectives of a low-carbon transition and a "fair" labor market, as well as the ways to achieve them. In the context of the LAMARTRA project, this prospective exercise is intended to be systemic, interdisciplinary and participatory, in order to cap ture a wide range of factors (economic, social, environmental, technological and polit ical) and points of view and expertise from different disciplines and heterogeneous stakeholders (Saritas & al., 2013).

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

To this end, the scenario workshop method was mobilized in this exploratory workshop phase.

Build an iterative diagnosis and (un)desired scenarios with key stakeholders in the sector

The scenario method provides an initial structuring of possibilities, aimed at plausibly prepare - and not predict - the evolution of important variables and levers over time (Moniz, 2006; Wilkinson, 2016). Indeed, a scenario not only states possible or (un)de sirable futures, but also highlights the path necessary for this possibility to emerge. Thus, a scenario describes the progressive evolution, through key stages, of a problem between two points in time: the initial state of the system and its "final" or "most ad vanced" state (Zwetkoff, 2012). Moreover, according to Wilkinson (2016), a foresight exercise involves dealing with "**testable and contestable hypotheses**" rather than (just) facts. He points out:

> "By paying attention to alternative stories of the future of work – stories that are already emerging in the present – it is possible to test and contest qualitative assumptions and to engage with strategic frames that would otherwise remain implicit and unchallenged. By working with narratives and numbers and iterating between stories, qualitative systems thinking and quantitative systems modelling, it is possible to develop a more flexi ble, shared and systemic understanding of the fundamental shift in the fu ture of work" (Wilkinson 2016, 4).

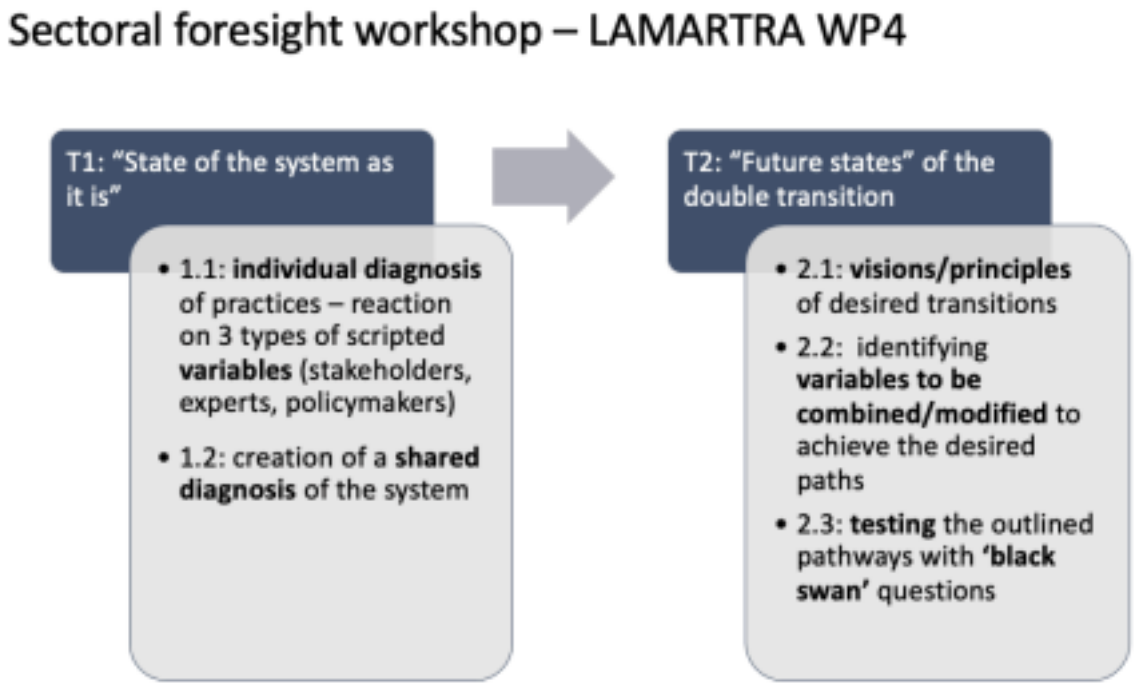
In the framework of the LAMARTRA project, the organization of two exploratory work

shops aim to reflect on existing and projected practices in the agricultural and con struction[1] sectors, with careful attention to consider both a "low-carbon transition" and "limiting negative impacts on the labor market". The workshops will have the dual ob jective of confirming and critiquing the initial diagnosis of the state of the sector, and then considering possible futures for the sector. Participants will be asked to project themselves on a time scale from 2023 to 2050. Following Godet (1993), this scenario workshop was developed in a participatory manner through a two-staged construction process.

The following methodological elements explain the methodology used for the agricul tural sector.

[1] Although this report only focuses on the agricultural sector, as mentioned above, another exploratory workshop following the same methodology will be written after the completion of the second exploratory workshop on the construction sector, which will take place at the end of November 2023.

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3



Course of the foresight workshop in two phases named T1 –T2

Phase I (T1)

The first stage (T1) seeks to "draw up a list of important variables" (Godet, 1993). The aim is to establish and confirm a collective diagnosis of the agricultural sector "as it is".

During this first phase, participants were asked to individually select three

"variable"[2] cards summarizing practices or findings in the sector collected during previous phases of the project. The aim of this first phase was to test and possibly confirm the variables identified in the previous research stages, while leaving participants free to add new variables, in order to gradually build a shared diagnosis of the system "as it is" at the end of phase 1. Indeed, before working on the normative aspect of this prospective exercise (Phase 2), it was considered necessary to first objectify the current state of the system, in order to identify possible/plausible futures.

In concrete terms, after each participant had chosen three "Given" cards displayed on a felt panel (once a card had been selected by a participant, it was no longer possible

[2] In principle, a variable sheet consists of the following elements: (1) definition of the variable, (2) relevant indicators, (3) a (statistical) review of the variable, (4) identifiable dynamics of change (continuation of trends, possible bifurcations), and (5) evolutionary hypotheses, i.e. a set of proposals for identifying possible future states of the variable. In the case of this workshop, we do not have a statistical retrospective of the variables (WP3) and have therefore chosen to use the qualitative data collected during the first phases of WP4 to provide a non-statistical retrospective of the proposed variables. Subsequently, during phase T2 of the exercise, identifiable change dynamics and evolutionary hypotheses will come from the participants themselves, with the aim of co-constructing these dynamics and evolutions in a participatory manner.

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

to select it again), they were invited to present each of these cards to the entire group. They had to explain why they had chosen these three cards, and why they were important to them. In this way, the other participants could also learn about existing practices in other sectors, and initial discussions were generated.

In a second phase, participants were asked to collectively make sense of these different findings to create a system representing the current state of the sector. The aim of this second diagnostic phase was to identify the system in which current practices are evolving, and how the variables in the scenario were potentially related to each other. (e.g. Are certain practices linked or do they need to be considered together? Are others separate or outside the system?)

They were then asked to position these different practices or sets of practices on a double-entry graph (here after referred to as A0) representing the dual objective of the LAMARTRA project: to think jointly about job quality and the low-carbon transition.

Phase II (T2)

The second phase (T2) focuses on the "future states of the system" and seeks to "prioritize and categorize" and then "combine" the variables (Godet, 1993). In concrete terms, the questions asked in this phase are "What do we want to happen?" and "What do we refuse to allow to happen? T2 aims to create one or more desirable paths for the sector by 2050.

In practice, in **the first phase**, participants were invited to start T2 from the "system diagnosis" made in T1, to imagine its (un)desired evolution and the conditions that would enable it to evolve (e.g. Which variables need to evolve, and why?). They were each invited to choose two "Drivers" cards, again arranged on a felt panel, and to explain to the whole group why these trends/trajectories (also previously defined

during the previous stages of the project) were important to them.

In a **second phase**, participants were asked to start again from the system created during T1, and to imagine its evolution by collectively identifying the variables on which to act and/or which were indispensable for envisaging the (un)desired transitions in their sector. Participants emphasized the combinations they needed to motivate to move towards an ideal scenario.

Finally, **the last stage** of T2 was aimed at "positioning oneself on the different scenarios" (Godet, 1993) and challenging them. Indeed, the resistance of the different pathways was tested by confronting participants with "black swans" - undesirable and unexpected events - to which they had to react.

Exploratory foresight workshop 1 - The agricultural sector – Explanation on the construction of materials and the practical organization of the workshop

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

Three steps are described in this section. First, we present how the scripted **"variable" cards** were **constructed** and **used** during the workshop. We explain the choices made in selecting and forming the participant groups. Finally, we present the practical details of the day.

Methodology and construction of the "variable" [3] cards for the workshop

The cards « diagnosis/pratices »

The cards (42) [4] were designed based on data from semi-structured interviews with key stakeholders in the agri-food sector, as well as from grey and scientific literature on transitions (D.4.1.1, D.4.1.2). Their analysis enabled Spiral researchers to identify workers' current practices, expectations and visions of their work and their sector. Each group received a set of 42 cards. Each participant could select three of them.

In concrete terms, these cards included:

- A title
- Three keywords
- A quotation
- Three key concepts

The cards « trends »

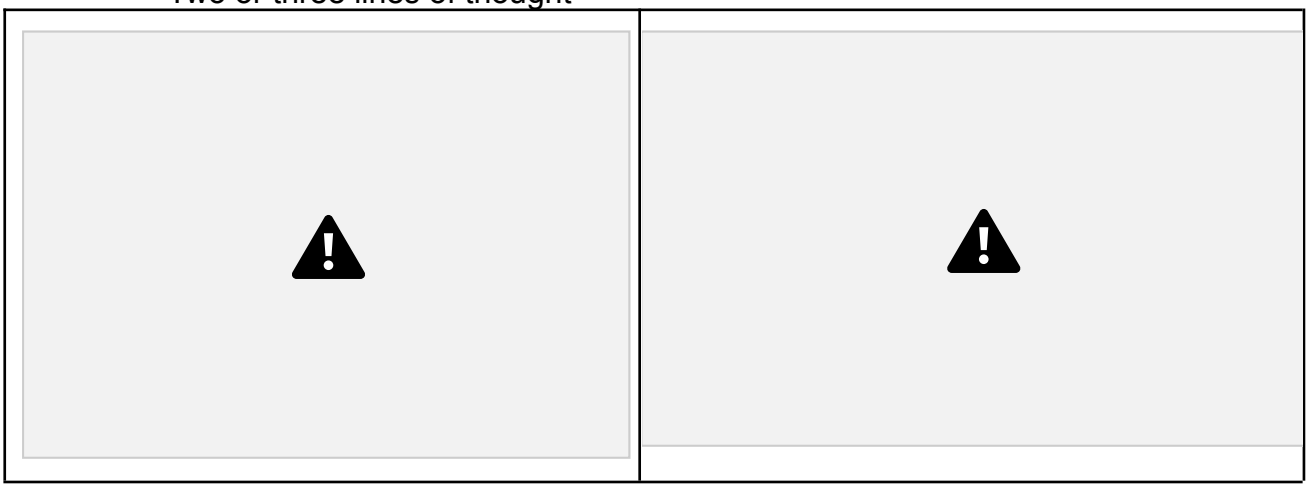
Most of these cards (30) were also based on semi-structured interviews with key stake holders involved in the transition of agri-food. A review of grey and scientific literature on transitions (D.4.1.1, D.4.1.2) was also used to design them. They enabled Spiral

[3] A visual is provided to illustrate in this section, but all the visuals used are listed in the appendix. [4] Given the number of "diagnosis/practices" cards drafted 42), it was decided to group them under three main themes: "agricultural practices" (GA), "profession/profile" (GB), "external factors" (GC). These codes are included in the labels of the different cards. In practice, this distinction was used to organize the physical layout of the cards on the day of the workshop. It is also used to facilitate the analysis of T1 in this report. It should be noted, however, that this pre-categorization was in no way imposed on the workshop participants, who were free to use the cards as they saw fit.

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

researchers to highlight several trends for imagining dual transition futures. Each group received a set of 30 cards. Each participant could select two of them.
In concrete terms, these cards included:

- A title
- Three keywords
- A quotation (if possible)
- Two or three lines of thought

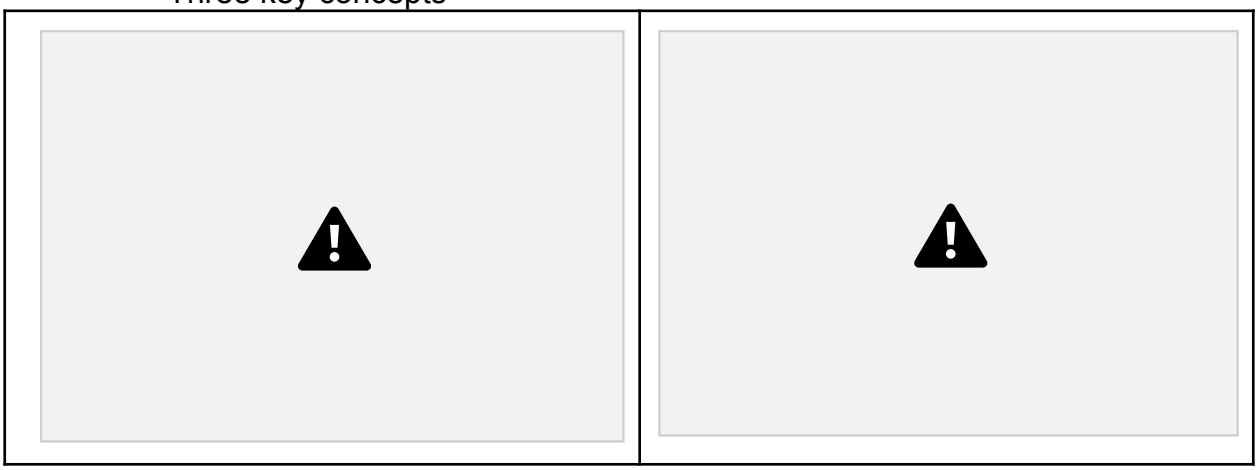


The cards « Black Swan »

These cards (4) were made by Spiral researchers and represented the irruption of undesirable and unexpected events that impose themselves on the sector. In concrete terms, these constraints raised the question: "How should we react to these events? Each group was presented with the 4 "black swans" and had to choose to discuss two of them.

In concrete terms, these cards include:

- A title
- Three key concepts



This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

Selection and sorting of participants.

To select the participants, the following principles were applied:

- Participants come from the same sector (agriculture or construction).
- They come from different sectors (sub-sectors).
- They come from two distinct regions (Brussels-Capital and Wallonia)3.
- They are workers' representatives or workers in the sector.

To ensure that the workshop benefited from heterogeneous profiles, we sought to in vite four types of participants:

- Participants who are representatives of **the sectors (and industry sectors) con cerned, whether at regional, inter-regional or local level.** In this respect, no dis tinction was made between regions, but on the contrary, invite the various regional representatives to think on both a regional and a national scale, given the scope of the LAMARTRA project. Their capacity as spokespersons is considered an ad vantage. In addition to being familiar with the evolving practices of their represent atives, they are also aware of the different visions that are closely linked to them. They can therefore act as privileged witnesses.
- Participants who work on **transitions issues in a transversal way** (either at an inter-regional or multi-sectoral level of authority), but who are interested in discuss

ing the sector in question. These people will be able to bring a more systemic view of the issues at stake and the variables to be taken into consideration.

- Participants are people who are in **the process of making a transition in the sector concerned, but who are experiencing difficulties in doing so.** These people will share their experiences and pragmatically challenge the conditions of scenario-based pathways for considering transitions.
- Participants are people who have **already made a low-carbon transition in the sector concerned.** They will share their experiences and concretely identify the conditions that have already worked on scripted pathways to envisage transitions.

To contact these people, we adopted a three-staged recruitment strategy:

- Stage 1: primarily via the work done in previous deliverables (mainly interviews)
- Stage 2: secondly, through a snowball effect. Stage 1 participants are invited to suggest people who might be interested in taking part in the event.
- Stage 3: based on the identification of representatives' official functions and/or their media presence on these issues.

A total of 113 people were contacted and 25 confirmed their participation. In the end, 19 people actually took part in the scenario workshop. They were divided into four working groups, as follows:

Group 1 :

- Centre wallon de Recherches agronomiques (CRA-W)
- Collège des Producteurs
- Alimento
- Mission régionale pour l'emploi du Luxembourg (Mirelux)
- Service Public de Wallonie (SPW)

Group 2 :

- Service Public de Wallonie (SPW)
- Collège des Producteurs
- Green Solutions for Urban & Rural Farming (GreenSurf)
- Agence Wallonne pour la Promotion d'une Agriculture de Qualité (APAQ W)

Group 3 :

- Mission régionale pour l'emploi du Luxembourg (Mirelux)
- Fédération Wallonne des Agriculteurs (FWA)
- Groupement de Recherche sur l'Environnement et d'Étude de Nouvelles Techniques Culturales (Greenotec)
- Green Solutions for Urban & Rural Farming (GreenSurf)
- Service Public de Wallonie (SPW)
- Wagralim

Group 4 :

- Agence Wallonne à l'Exportation et aux Investissements étrangers (AWEX)
- Institut Wallon de l'Évaluation, de la Prospective et de la Statistique (IWEPS)
- Union des Villes et Communes de Wallonie (UVCW)
- Natagriwal

Practical organization of the workshop

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

The one-day workshop was held on the Sart-Tilman campus of the Université de Liège on Tuesday, April 25, 2023. Here's an overview of the day's program:

45 minutes	**Introduction: welcome and presentation of the project**
9:00-9:15 a.m.	Welcome of the participants (pastries and coffee)
9:15-9:30 a.m.	Presentation of the LAMARTRA project and the progress of the SA
9:30-10:00 am	Separation into sub-groups and round-table discussion among participants
Morning	**T.1 "State of the system as it is": Phase of critical diagnosis of the variables and construction of a shared system "as it is".**
10:00-11:00 am	T 1.1 Individual diagnosis of practices and share with the group.
15 minutes	**Coffee break**

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

11:00 a.m. - 12:00 p.m.	T 1.2 Create a shared diagnosis of the system in which the par ticipants are.
60minutes	**Lunch time**
Afternoon	**T2: "Future states of the system Create one or more desired paths from the initial system.**
1:00-1:45 pm	T2.1 What are the desired system transitions? Visions and princi ples of desired transitions.
15 minutes	**Coffee break**
14:00-15:00	T2.2 Identify the variables to be modified to achieve the desired path
15:00-15:30	T2.3 Test important desired pathway outlines with "black swan" questions

10 minutes	**Coffee break**
15:30-16:00	**Sharing and presentation of results in plenary**
4:00 - 4:15 pm	Closing remarks of the day
16h15	Drink

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

Analysis: T1. State of the agricultural sector

Among the "variables" deemed important by the participants representing the sector at the four discussion tables, 26 "findings/practices" sheets were selected from the 42 proposed[5]. Some of these were selected several times by different groups: the table below gives an overview of the selected sheets and the number of groups that used them. Participants were also invited to suggest additional findings if they felt it necessary.

Tag card	Title of selected T1 variable cards	Nbr of mention
GA_05	A farm is managed like an SME	4
GB_10	Difficulty attracting young people to the sector	4
GC_09	Difficult access to land	3
GB_11	Agri-bashing: Tarnished image of the sector	3
GC_12	The global market and Wallonia's competitiveness	3
GC_14	Priority to national or local production	3
GC_24	Weak political response	3
GB_41	Increased requirements in terms of professional qualifica tions and skills.	3
GA_01	Long distance producer-product	2
GA_02	Diversity of farming practices	2
GA_04	Productivity imperative	2
GA_06	Precision and technological agriculture	2
GB_07	Difficult (and marginalized) farming profession	2
GC_08	Land work exposed to uncertainties	2
GC_22	Disconnect between citizens and the world of agriculture	2
GA_28	Sustainability versus profitability	2
GA_03	Necessary diversification	1
GA_16	Soil pollution (a limit to local agriculture)	1
GC_19	Production & consumption: 2 sides of the same coin	1
GC_21	Pilot center: strong links with producers, weak links ~~with the administration~~ among themselves[6]	1
GA_23	Lack of financial resources as an obstacle to changing practices	1

GA_25	Urban agriculture on the rise	1
GA_26	Urban agriculture: production, reintegration and education	1
GC_29	Labelling not a priority	1

[5] It should be pointed out that, at the close of T1, participants were given the opportunity to make a final round of discussions on one (or more) cards that had not been discussed, or to insist on elements they felt were important and had not yet been addressed. None of the groups felt this step was necessary. [6] One participant suggested to strike trough the words “with the administration”.

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

GB_31	The many hats of the "urban farmer”	1
GC_36	EU requirements	1
GC_40	Demographics & energy limits	1
GB_42	A skills-based profile search	1
Added card 1	Agrivoltaics	1
Added card 2	Household basket	1
Added card 3	Agricultural and environmental policies: different models and contradictions	1
Added card 4	Societal expectations, new food demand	1
Added card 5	Dominant family farm model and blurred legal protection as other models emerge	1

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

Report on discussions on T1 cards

This section presents a descriptive analysis of the first phase of T1, i.e. the justifications for the selection made and the discussions. The "Given" variables were grouped into three main themes: "farming practices" (GA), "profession/profile" (GB) and "external factors" (GC). This first analytical dimension will be used below to structure the discussion.

Farming practices

Under this theme, all the groups wished to discuss the observation that, today,

"**a farm is managed like an SME**" (GA_05). For many participants, this trend is both necessary and inevitable: farms that want to stick to the practices of previous generations are not sustainable and will disappear (Groups 1, 3, 4). Some participants link this to the "multi-faceted" nature of today's farmer (Groups 3, 4). In this respect, "managerial" skills can sometimes be seen as a "necessary evil" that could be used as a lever to achieve a desirable trajectory, both in terms of the quality of agricultural employment and the sector's carbon footprint. According to some, this need for entrepreneurial skills could force anticipation: on the one hand, of long-term and systemic thinking, and, on the other, of cross-disciplinary and diversified skills (Group 4). Group 2[7], on the other hand, stands out, and considered this card as a "non practice": participants point out that many farms have no accounting system, no idea of working hours, no idea of how much it costs to produce their products, and that the price of goods tends to be set according to neighboring prices.

Then, five diagnosis/practices were each selected by two groups. First, groups 2 and 4 both note a "**large producer-product distance**" (GA_01). For group 4, this distance between producers and the final destination of their products poses a major challenge that it is important to reduce. Indeed, when producers know the buyers personally, this reinforces their motivation to produce quality food (the farmer in the group insists that this does not imply that producers also do not care about the quality of their products). In fact, proximity directly enhances their efforts and thus encourages them to invest more resources to achieve this. Conversely, the producer-product distance constitutes a significant obstacle to the transition towards ecologically sustainable agricultural practices. Secondly, an observation discussed in two groups (3 and 4) is the "**diversity of agricultural practices**" (GA_02). For the participants of the third group, it is important to recognize - and above all to value - the diversity of agricultural practices, but also of cultures and consumption patterns (emphasis of the members of the group). Indeed, for those involved, it is necessary to avoid any divide between the different types of agriculture. For many farmers, their profession is a real passion, sometimes to the point of refusing certain financial aid out of pride: recognizing the diversity of practices in terms of aid and subsidies allocated would be an important step. The

[7] Due to differing facilitation styles and the time constraints of the workshop, the discussions around the selected cards of Group 2 will not be explained in this section, as we have no systematic notes on this subject. The selection of the various variables by Group 2 participants is, however, well recorded in the "number of mentions" column of the table above.

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

members of the fourth group, for their part, emphasize that diversity is a necessary attribute both in crops but also in the skills of farmers (they link it to the multiple hats that the modern farmer must be able to wear) and in the policies that govern practices. They denounce a tendency to "smooth diversity", particularly in current legislation. Thirdly, "**the productivity imperative**" (GA_04) is an observation entirely shared by the members of groups 2 and 3. The latter also draw attention to the need to avoid social dumping. Fourth, the practice of "**precision and technological agriculture**" (GA_06) is highlighted in groups 2 and 4. The discussions in this last group describe it as an ongoing and inevitable trend: "we are looking for constantly to be more efficient. The group's state of mind regarding this observation can be summed up as follows: "nice tool, to see what we do with it". Indeed, this can be

positive or negative, both for employment and the environment: for example, automation is detrimental to employment but mainly removes low-quality jobs. From then on, the main thing will be to see if others will be created. “Automate or hire?” : the choices that are made will dictate whether it is “and” or “or”. Participants also note that investment in technologies creates dependence through a ratchet effect: optimization is sought to ensure profitability and thus amortize the costs of the investment. In addition, investing in new technologies requires systemic thinking (ability to troubleshoot, energy consumption, etc.). Fifth, groups 1 and 3 draw attention to the finding “**sustainability vs profitability**” (GA_28). The first insists on the fact that ensuring profitable production remains an essential concern for the farmer. They also address that this has historically led to choices that were not always environmentally sustainable (e.g. use of phytosanitary products, overproduction) but practices are slowly evolving. Group 3, for its part, insists on the need to break down the opposition of these two factors: they must support each other. In addition, four “observations/practices” sheets gathered under the theme “agricultural practices” were mobilized by a single group.

Other variables were raised during exchanges in one group only. Group 1 emphasizes “**that diversification is necessary**” (GA_03) for different reasons. First, different pro ductions imply different forms of income and therefore profitability. Furthermore, the “typical farm” does not exist. Making practices co-exist promotes the resilience of the system and allows it to better “resist shocks”: risk management is therefore facilitated. Some participants also address “**the lack of financial resources as an obstacle to the evolution of practices**” (GA 23). They denounce "uncertain" and "volatile" mar kets, and highlight the case of Quebec (where the price of milk is guaranteed) as an example of good practice. Group 3 wanted to criticize the assertion that “**urban agri culture is booming**” (GA_25). According to some members of the group, urban agri culture is not booming: it has always existed and does not aim to replace rural food agriculture. However, it has been forgotten/invisibilized and has regained popularity - and especially attention - in recent years. Finally, group 4 partially mobilized the ob servation that “**soil pollution (is a limit to local agriculture)”** (GA_16). While the impact on local production was not discussed, soil pollution was mentioned as a prob lem by the farmer at the table. Particularly, residual pollution which remains a burden for the producer (for example, plastic residues in corn despite the efforts put in place to reach the thresholds). In addition, this pollution adds to land pressure because it

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

limits available land. Finally, some participants put forward the “paradoxical” hypothe sis that soil pollution could force a low-carbon trajectory, via transformation into waste land.

Profession/profiles

In this theme, all the groups wanted to highlight or discuss the “**difficulty of attracting young people to the sector”** (GB_10), which according to a large number of participants appears to be a major challenge. For group 1, the high age pyramid and the predominance of self-employed status limit employment opportunities as an

em
ployee. The role of affect in the choice to engage in this profession is also questioned. The technical requirements and specialized skills required today make it difficult to accommodate low-skilled, formerly seasonal people (for example, the profession of agricultural mechanic is particularly demanding). A nuanced observation in group 4: A speaker notes from experience that when young people (especially those with few qualifications) are involved in an operation, it generally works well because they find meaning in it. In addition, the majority of young people trained in the sector easily find employment afterwards, which demonstrates the existing demand. For him, and he is joined by the group, the difficulty lies more in the lack of promotion of the agricultural sector (in particular the devaluation of technical sectors in education) and above all in the limited accessibility to training (little schools in Wallonia and few possibilities for subsequent reorientation). It is emphasized that there are employment opportunities in the agricultural transition, which must be further highlighted. It is therefore the weak responsiveness of the political world that is being singled out: a general call is launched to make agriculture a major subject on the political agenda, and to increase access to information and training. Finally, group 3 also underlines that the trend towards mega farms complicates their take over (1/3 have no buyer, 1/3 perhaps).

In addition, two cards concerning the profession of farmer or its image were mobilized by three groups. Groups 2, 3 and 4 denounced a form of "**agri-bashing which tarnishes the image of the sector**" (GB_11). For members of groups 3 and 4, the tarnished image comes mainly from the use of phytosanitary products (fears about the harmful consequences of pesticides). A participant also highlights that the efforts of producers can be misinterpreted: for example, on organic farms, farmers often use bio-pesticides or organic phytosanitary products, these are less permanent and there fore require more frequent spraying. This is perceived negatively by some poorly in formed consumers (group 3). This example joins the mantra of group 4 to make agri culture a political subject, to put it back in the spotlight and thus give more access to information and training (to attract young people/new workers but also communicate well with consumers).

On the other hand, groups 1, 2 and 3 note an "**increase in requirements in terms of qualifications and professional skills"** (GB_41). The first group details a double trend: the farmer must both become more and more specialized (for example, in a digitalized world, he or she must learn to use cutting-edge technologies and work

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

remotely) and respond to a requirement for multifunctionality that has become obliga tory (which echoes the discussions stimulated by the strongly shared observation of firm discussions managed as SMEs). Moreover, this increase in skills goes hand in hand with the increase in requirements. For Group 3, this increase in requirements is focused on skills and job creation.

Then, groups 2 and 4 believe that the "**job of farming is difficult (and margin alized)**" (GB_07). However, some members of group 4 are uncomfortable with the term 'marginalization': they qualify this by insisting on the fact that it depends in particular on the type of culture or exploitation. For example, market gardening

benefits from a good image and the sympathy of citizens, livestock farming much less so. In addition, the quality of the profession has declined in recent years due to an increase in con straints imposed on farmers, which increases pressures. There is also a problem of valuing the profession and the work provided. However, for the Greensurf representa tive, the profession is gradually being revalued: in particular, thanks to the desire to change things and carry out projects with strong values by certain young/new farmers. This shows a desire for change.

Finally, in group 4, the representative of Greensurf (active in the urban agricul ture sector in Wallonia and Brussels) wanted to share her experience of the "**multiple hats of the urban farmer"** (GB_31). The latter fully shares the findings drawn up by the card, which corresponds to what it observes in the projects they support. Indeed, we go beyond the framework of production, the projects carry multiple values and meet criteria other than that of production research. Let us also point out that, despite the fact that the sheet was not selected, this observation was also made in group 3 during discussions on SME-style farm management.

External factors

Concerning external factors, four findings were widely shared and are found in three groups. Firstly, "**difficult access to land**" (GC_09) represents a major challenge for farmers and an opinion shared by groups 1, 3 and 4. For the first, agriculture re mains attached to a "strong heritage vision" , but over time, we observe a "generational fragmentation" where descendants prefer to keep land from a "capitalist" perspective, considering it as an "investment or a safe haven" (group 1). When land is put up for sale, it is often done with the objective of realizing a significant capital gain. Farmers cannot afford to acquire this land with the income from their production. Demand for agricultural land continues to increase, while the country ranks among the leaders in terms of land artificialization (for group 4, the latter increases pressure on prices and contributes to carbon emissions).

Faced with this situation, alternatives such as the use of photovoltaic energy are being considered to make land profitable in a different way. Group 3 also highlights the disparities between types of farms: cereals cost more (following the war in Ukraine in particular), other crops are neglected and cannot afford to acquire or maintain access

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

to lands. Moreover, as land prices have exploded, greater inter-sector competition is raging. An opinion also shared in group 4, for whom competition between different cultures and uses of land, such as leisure, increases pressure on land. Just like con glomerates (e.g. Colruyt) which monopolize and buy up land, which poses additional challenges for young people and people not from farming families. It also raises ques tions about access to employment and entry into the agricultural sector for low-skilled people. Ultimately, the lack of agricultural land leads to a reduction in employment opportunities. Finally, several members of the last group also highlight a difference between Flanders and Wallonia, with even higher prices in Flanders, linked in part to differences in the types and sizes of farms (large farms in Flanders).

In addition, groups 1, 2 and 3 took up the question of the "**globalized market and Walloon competitiveness**" (GC_12). For the first two, the market is above all European. For group 3, turning inwards risks creating supply vulnerabilities in certain sectors and representing a loss of income for local shops if they cannot export. They therefore agree with the observation of the first group that the market can only be thought of within a European framework.

Furthermore, the question of "**priority to local or national production**" (GC_14) is a subject addressed in groups 1, 3 and 4. For group 1, the observation is that less than 15% of what is produced in Wallonia is actually consumed on site. Inter national trade remains essential in the agricultural market, whether desired or not. The question then arises as to whether we should force a return to local production for geostrategic reasons or to reduce the carbon footprint. This is a legitimate question but one that remains unanswered. According to them, it should be noted that, after calcu lation, the international transport balance turns out to be relatively low. For group 3, even if the importance of local production and consumption has been highlighted by COVID-19, excessive withdrawal should be avoided. Indeed, climatic and political vul nerabilities could result, as well as difficulties linked to the import and export of our products (it is also essential to distinguish between production zones and borders when it's about agriculture). According to them also, finding a balance between local production and international trade remains a challenge to be met. Finally, group 4 un derlines that it is necessary to relocate the food chain, and in particular to develop sectors to feed livestock with leftovers or offcuts from local production rather than im porting them. However, they also stress that it is important not to go overboard, asking whether it is necessary to produce all food within all countries. Indeed, the dispersion of cultures could allow solidarity in the face of extreme climatic events or other crises. Additionally, it is important to keep in mind the benefits of economy of scale. Finally, the definition of what is considered local is also a crucial point to clarify.

Another strong point debated, "**the weak reaction of politics**" (GC_24) is un derlined by a majority of participants in groups 2, 3 and 4. Indeed, elected officials rarely have concrete projects linked to areas of politics. agri-food and agriculture and promises often remain unrealized (group 3). Public policies are numerous and come from different levels of power, but there is a lack of consultation between decision making bodies. For example, projects are funded by different ministries, leading to a

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

lack of monitoring and long-term vision. Call for projects mechanisms often favor short term strategies and unprofitable investments, due to lack of an overall vision (group 3). For group 4, a member highlights a significant lack of support in Wallonia regarding employment, both at the political level and within agricultural federations and organi zations (such as the FWA), which he finds very fragmented and heterogeneous. Em ployment is a subject that is too often neglected, yet opportunities exist in the sector and it is essential to highlight them. The group expands this idea by emphasizing the need to make agriculture a political issue and place it on the political agenda.

The participants also mention the difficulties of the profession, such as arduous ness, lack of leave and significant debts. However, it is emphasized that farmers some times contribute to these difficulties themselves (out of pride or too strong an attach ment to the farm to delegate), despite the aid available for hiring staff (group 4). It is
therefore crucial to better inform, deconstruct certain beliefs and change mentalities, particularly with regard to accepting help. A difference in mentality between Wallonia and Flanders is also mentioned, perhaps linked to the types of agriculture and farms specific to each region.

Furthermore, two “observations” sheets relating to factors external to the sector attracted the attention of participants in two groups. First of all, the observation that “**working the land is exposed to uncertainties**” (GC_08) echoes in groups 2 and 4. As detailed by certain members of group 4, the uncertainties are multiple. Climatic uncertainties play a major role, impacting harvests from one year to the next. In addi
tion, the farmer in the group adds that legal and political uncertainties add to these challenges, with sudden changes in laws imposed without consultation (top-down/uni lateral decisions), which can have significant consequences on yields, and require compensation. These hazards hamper long-term projections and prevent anticipation of future challenges. As a result, uncertainties increase constraints on agricultural em ployment, making the profession less attractive and generating fears about hiring. Faced with these uncertainties, it is therefore essential to think about the resilience of the agricultural system (group 4).

On the other hand, the first two groups point to a "**disconnect between citizens and the world of agriculture**" (GC_22). Indeed, this disconnection is an established fact (none the least the tarnished image of the farming profession) for those involved, the causes of which still need to be understood (group 1). As evidence of this discon
nect, the population doesn't know what it means to eat "in season", and wants straw berries all year round. Yet understanding seasonality and taking an interest in knowing what we eat should be necessary (Group 1).

Finally, 5 cards were discussed in one group only, including four in group 4. First of all, a consensus emerged around the observation that "**production and consump tion are two sides of the same coin**" (GC_19). For participants, this link is essential to maintain: the decline of organic since the post-Covid recovery is a good example,

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

as consumers have abandoned the habits acquired during the crisis (which had cre ated a boom for organic). But one participant insists that the link with the *citizen* is also important, as the latter can also have an influence: for example, a vegetarian is not a meat consumer, but has a strong political/citizen stance on livestock farming (group 4).

On the other hand, the question of "**pilot centers and their links with each other and with producers**" (GC_21) was close to the heart of the Greenotec member. In his view, the lack of links between these centers limits systemic and long-term think ing on the issues at stake, which is detrimental to the low-carbon axis. Moreover, there is a lack of medium- and long-term monitoring of the trials carried out, which runs coun ter to the long-term nature of agricultural work. Short-term results are favored, leading to solutions that are not very resilient. However, as other members of the group pointed out, it is important to find a compromise, as farmers need quick solutions to meet their urgent needs. Finally, it is essential to establish collaboration between the pilot centers in order to develop crop rotations and achieve more resilient, longer-term results. More over, employment in these centers is often precarious (fixed-term contracts), which compromises the robustness of the work carried out and the transmission of skills (Group 4).

In addition, "**EU-imposed requirements**" (GC_36) to reduce CO2 emissions remain a major challenge, with a lack of concrete progress to date and gaps in knowledge on the subject. The EU is criticized for its lack of coherence in the measures taken, particularly within the Common Agricultural Policy (CAP), where the objectives to be achieved are not always aligned with the subsidies granted, creating inconsist
encies. This is in addition to inconsistencies in the regulation of imports and exports, which distort competition with third countries and between member states (Group 4). Despite this, all in the group agree that the EU represents a central lever with consid erable potential to set the sector on a desirable trajectory. However, they insist that improvements are still needed, first and foremost in the coherence of measures (more on this further in the document).

The last card selected by the fourth group, the discussions around "**demogra phy and energy limits**" (GC_40) join those concerning the difficult access to land. Indeed, in view of the competition over land, the group expresses the desire to reserve land for food production (they position themselves against competition with other uses, such as leisure) and warns against artificialization of soils, which must be combatted. In addition, they specify that energy limits can benefit the low-carbon axis by bringing a sense of urgency and therefore an obligation to change practices.

Last but not least, the first group also addressed the question of whether **label ing is a priority or not** (GC_29). Participants note that the increase in the number of labels creates complexity by sending a sometimes diffuse message. For example, the organic label is important and very used. But what exactly does it cover? In addition, the members of the group call for a distinction to be made between short and long sectors/circuits: the label is not necessary in the first configuration but remains very useful in the second.

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

Additional cards designed by the participants.

During the two workshop sessions, participants were given the opportunity to propose the variables they felt should be addressed during the workshop. This oppor

tunity was seized by some participants in three groups.

Group 3 proposed two. The first, "**agrivoltaics**", underlined the possibility of diversifying income for farmers. However, participants pointed out that the issues of access to land and the sustainability of photovoltaics remain unresolved. The second concerns the "**household's basket**", and is aimed at denouncing the view that food is the most expensive item in a household budget. According to them, people can decide to buy lower-quality products and therefore allocate a smaller share of their budget to food, while rent and energy bills are practically incompressible. As a result, they point out that the proportion of the budget allocated to food is steadily decreasing, in contrast to that reserved for "non-essential" purchases (e.g. the new iPhone) .Moreover, ine qualities are reinforced as the most disadvantaged people cannot financially afford so
called "healthy" or "sustainable" food, which can have a direct impact on their health. Finally, they also denounce a significant disconnect between the consumer and the farmer, leading to an invisibilization of the work done behind the price.

Group 1 also wished to add two observations. On the one hand, they empha sized the co-existence of "**agricultural and environmental policies that lead to dif ferent models and contradictions**". This is based on the observation that several agricultural models co-exist at the same time. For example, the group wonders whether the CAP is truly common. Indeed, the measures adopted are sometimes contradictory to one another, or from one level of power to another. Moreover, at European level, the CAP has significant interactions with environmental policies such as the Green Deal. They note that there is considerable friction/tension between these European policies. Group members also point to "**societal attention and new food demands**": the existence of various movements (animal welfare, veganism, vegetarianism) is forc ing them to think differently about the system.

Finally, the farmers' practices consisting in collectives pooling of knowledge, and sometimes their land, equipment, infrastructure, etc., was mentioned fairly quickly in Group 2, and led to an additional card insisting on the "**legal vagueness surround ing the emergence of these new models**".

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

Groups summary results and A0

This section presents a descriptive analysis of the second phase of T1, namely the collective creation - in each group - of a system representing the current state of the

sector. Building on the previous discussions, participants were asked to establish links between the various findings/practices, and to identify those that should be considered together. They then positioned these different (sets of) practices on the A0 double
entry board representing the LAMARTRA project's objective: a double scale of "quality employment" and "low-carbon", to think jointly about the double transition. This allowed us to visually stabilize, for each group, a shared system translating the state of the sector "as it is" and thus offer a basis on which to build during T2.

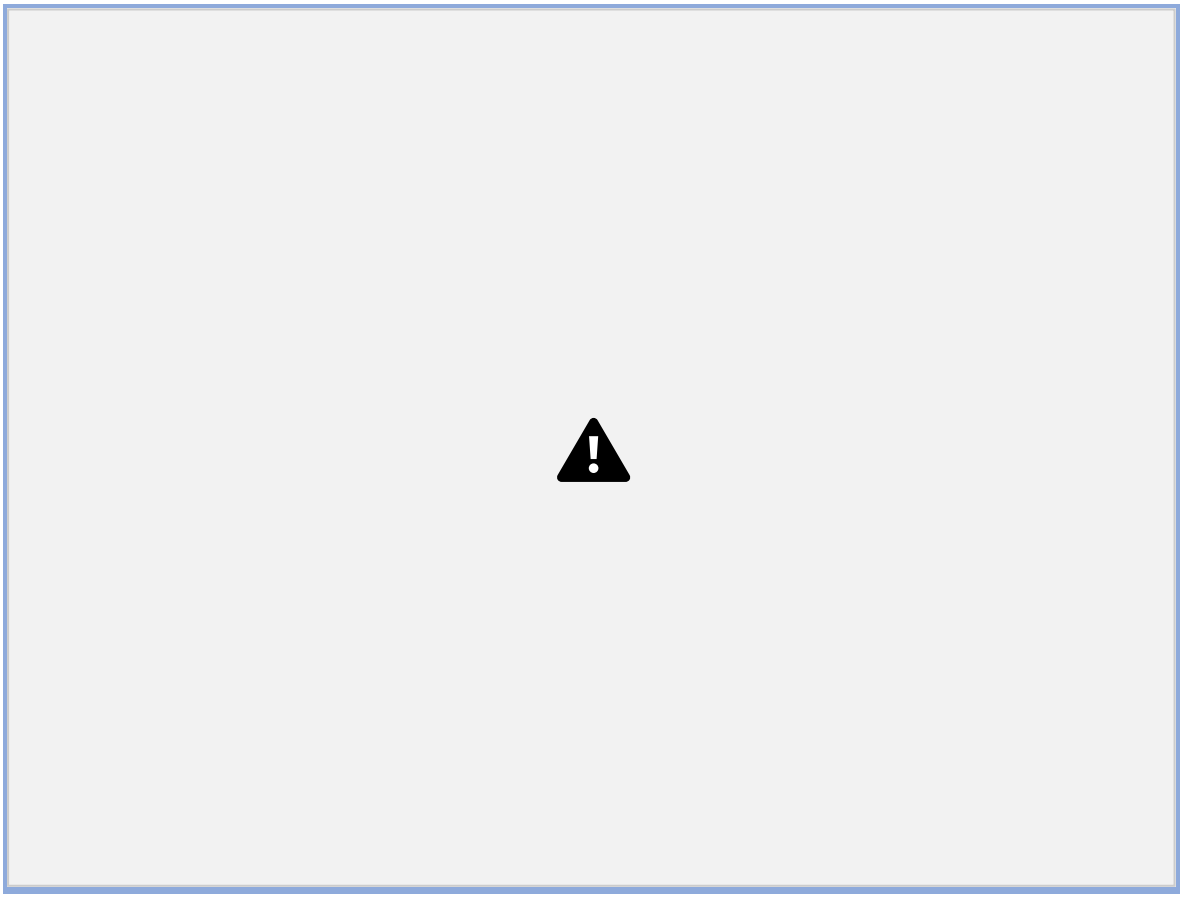
Group 1

Once asked to think of all practices as a system, Group 1 participants grouped these findings/practices primarily into three clusters. The first cluster covers "farming practices" (such as the fact that the "farm is managed like an SME", the skills required to be a farmer today, etc.), and is influenced by two other clusters. That of "difficulties", which includes access to land and the difficult attractiveness of the profession, and that of plural "agricultural policies", which complicate the system in which these different practices are carried out (see below).

The first box underlines Group 1's cluster thinking, while the second takes up the diagnosis shared at the end of T1.

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

Identification of clusters in Group 1



This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

Three clusters were imagined by Group 1 members:

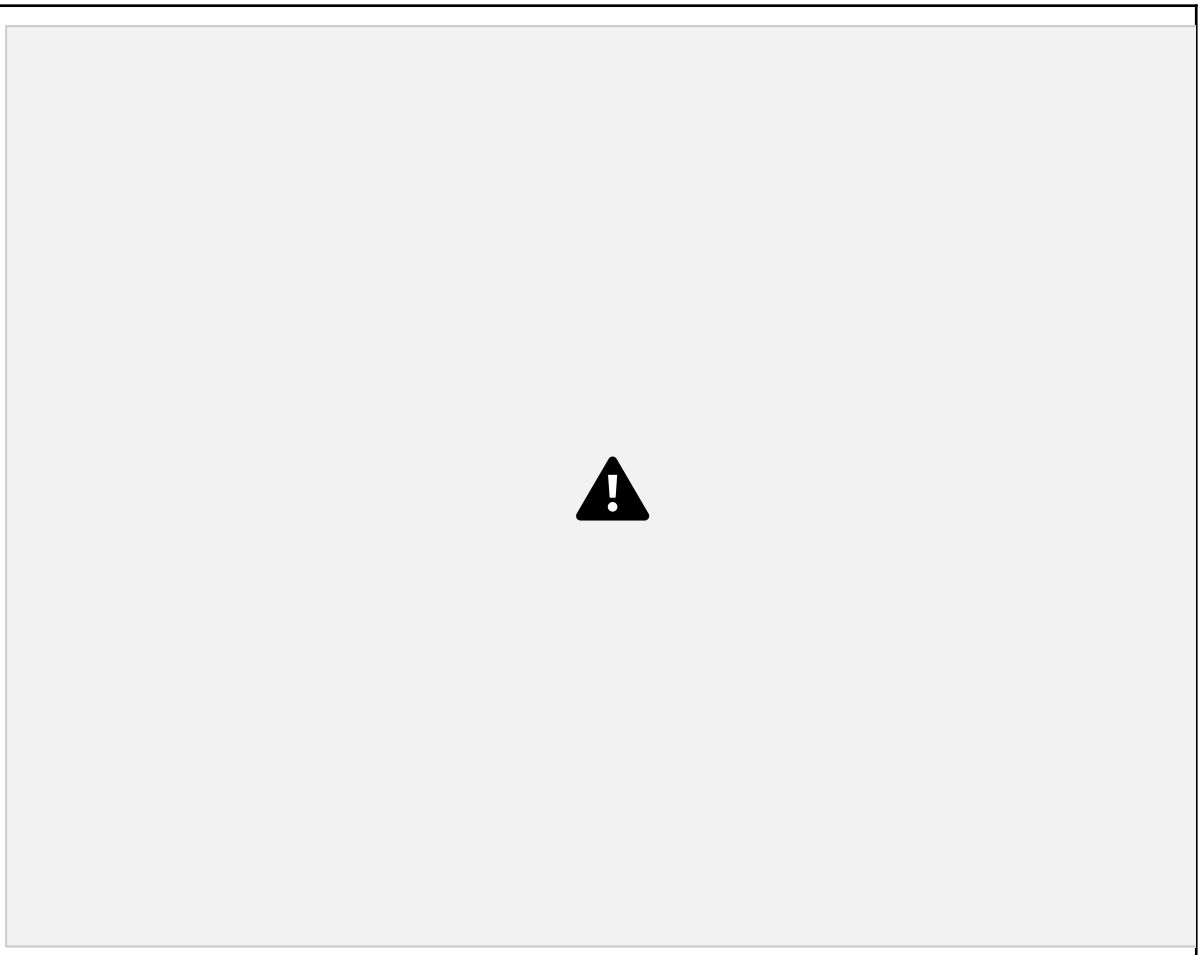
- A "**difficulties**" cluster: access to land and attracting young people to the sector.
- A "**farming practices**" cluster: the farm is run like an SME, the skills and demands of the farming profession are increasing, and farmers need to diversify their practices, first and foremost for profitability, but also to increase the sector's resilience.
- The latter is strongly influenced by the "**agricultural policies**" cluster (see additional card 3) and markets, which are first and foremost European and international before being national.

During these discussions, participants are already putting the system to the test, either by asking questions (How can we quantify the economic value of the environment? Should we force a return to more local/national consumption of products?), or by submitting existing practices in other countries. In particular, the possibility of identifying a **fair price for production-consumption and the way in which it should be estimated.** In practice, one participant explains that it is difficult to make this estimate for several reasons.

- Challenge 1: costs vary from one sector to another and from one product to another.
- Challenge 2: data collection is complicated. Everyone has their own accountability system (reflecting a diversity of ways of counting) and is not always willing to share it (resistance, notably from trade unions), access is also complicated by the RGPD and the "taboo" nature of the issue.

A0 Group 1 at the end of T1

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3



The need for participants to define the axes:

The "quality work/employment" axis:

- No unchosen uncertainties
- Medium-term prospects assured (based on comparable income) • Profession qualified as a source of fulfillment.
- Paid vacations.

Conversely, hardship, uncertainty and debt are problematic.

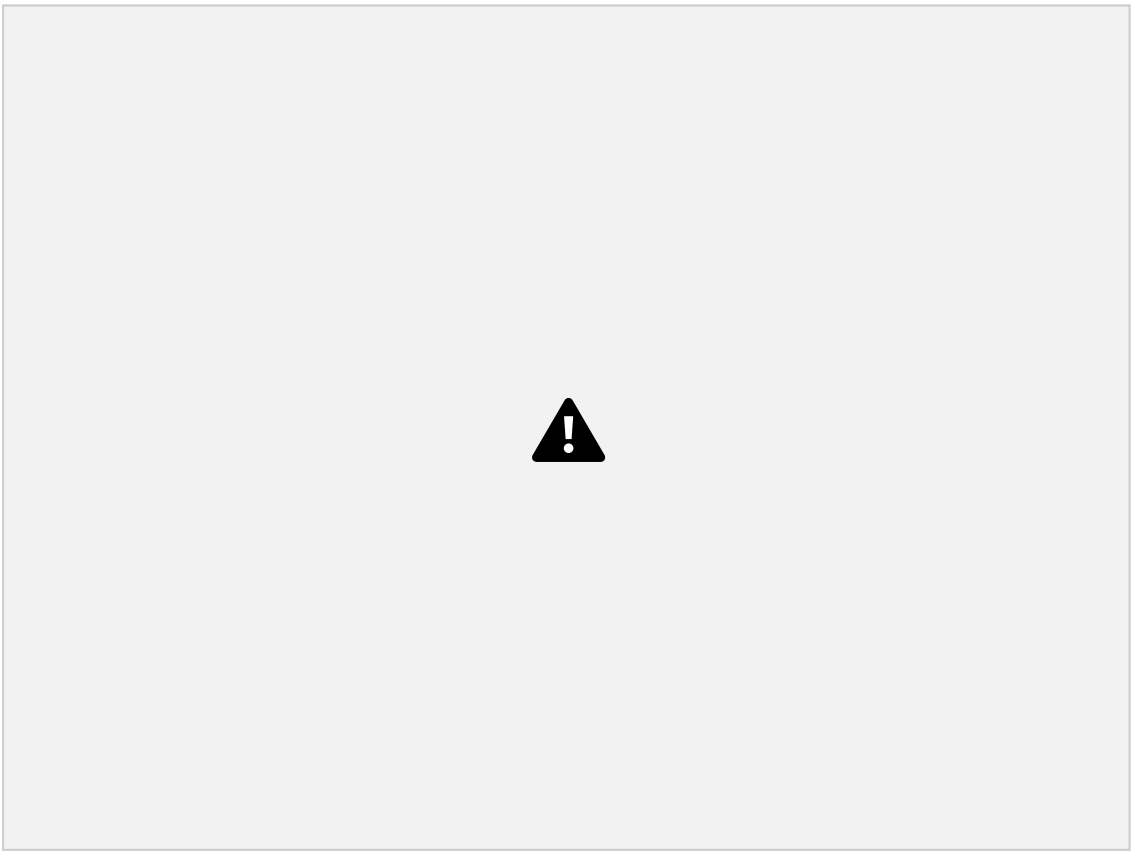
The "Low Carbon" axis raises the question of what emits, production methods and product types. Finally, this is a highly technical issue.

The most problematic cards on this double axis are the globalized market, difficult access to land, the low attractiveness of the sector to young people, the lack of financial resources to encourage changes in practices, and the disconnect between the citizen and the farmer.

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

Group 2

Identification of clusters Group 2



The participants organized the selected practices into sub-systems.

For the group, **agroecology** (GC_08) and the **Weak political response** (GC_24) are at the heart of both the desired and the current state of the sector.

The means to achieve agroecology as the center of the system is to act on the cards: **Disconnection between citizens and the world of agriculture** (GC_22), **Agribashing** (GB_11) and **Distance producer** (GA_01).

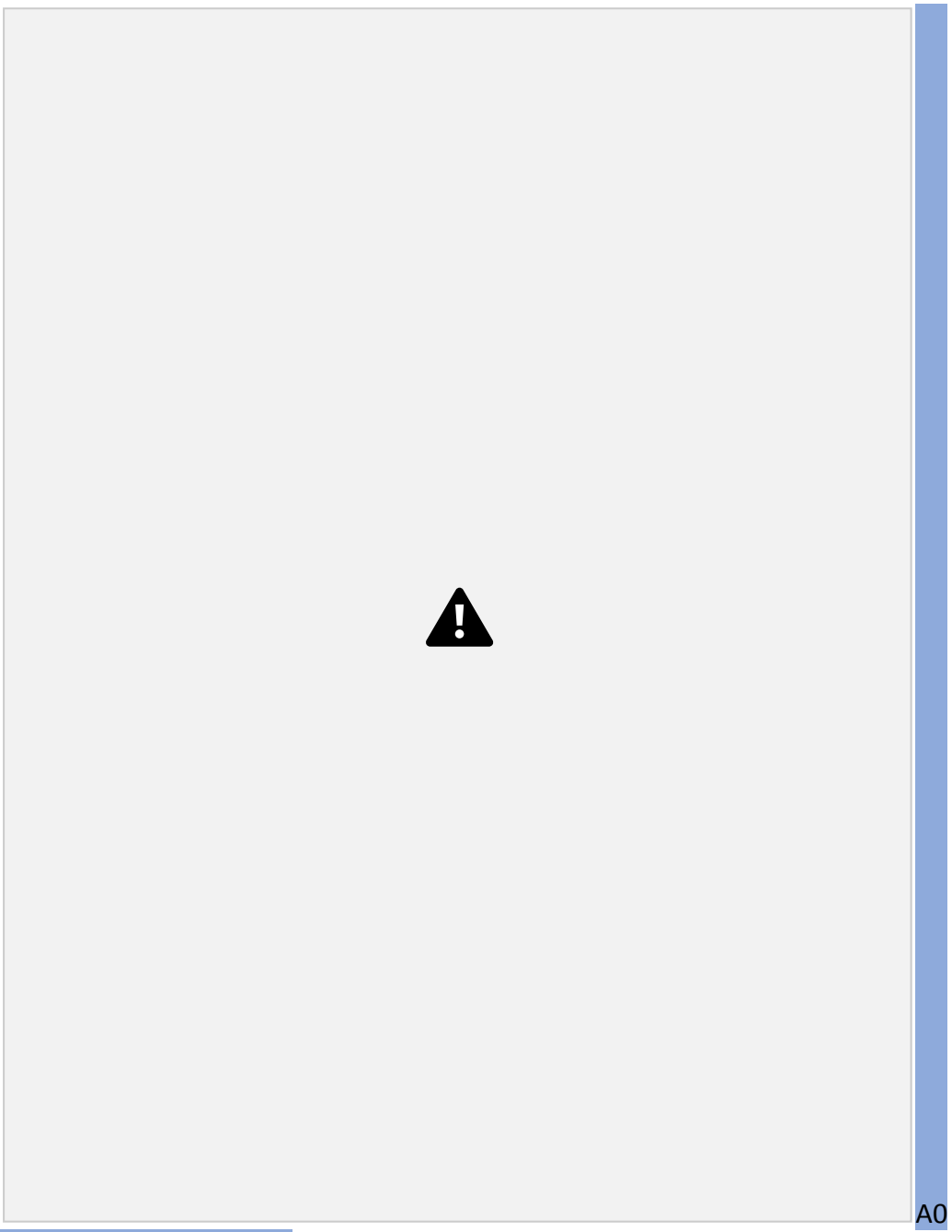
The cards **Global market and Walloon competitiveness (**GC_12) and **Imperative of productivity** (GA_04) are perceived as obstacles to the development of agroecological practices.

The card **Farm managed as an SME** (GA_05) is perceived as a necessity for achieving a transition to agroecology. Targeted as starting points for the transition are the training-oriented cards, i.e.; **Competency-based Profile Search** (GB_42), **Precision and Technological Farming** (GA_06), and **Increasing Requirements for Professional Qualifications and Skills** (GB_41).

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

Conversely, hardship, uncertainty and debt are problematic. The "Low Carbon" axis raises the question of what emits, production methods and product types. Finally, this is a highly technical issue.

The most problematic cards on this double axis are the globalized market, difficult access to land, the low attractiveness of the sector to young people, the lack of financial resources to encourage changes in practices, and the disconnect between the citizen and the farmer.



A0

Group 2 at the end of T1

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

The **Agroecology** (GA_18) and **Farm managed like an SME** (GA_05) sheets were positioned as "good practices" at the maximum of job quality and positive impact on the environment.

In contrast, the cards **Productivity imperative** (GA_04) and **Agri-bashing** (GB_11) were positioned as "bad practices" at the minimum of the job quality and positive environmental impact axis.

The card **weak political reaction** (GC_24) was one of the most difficult to place, as for them it was present everywhere. This was represented by mini axes on each side of the A0.

The **Global Market and Walloon Competitiveness card** (GC_12) was considered a "bad practice" (i.e. to be modified) that could have positive impacts on job quality, and was placed low on the vertical axis, but a little higher than the **Productivity Imperative** (GA_04) and **Agri-bashing** (GB_11) cards.

The card **Difficulty attracting young people to the sector** (GB_10) covers the en tire horizontal axis (positive impact on the environment).

The cards **Skill-based profile search** (GB_42), **Precision and technological ag riculture** (GA_06), and **Increasing requirements for professional qualifications and skills** (GB_41) have been combined into a new card entitled "**Farmer training today**". This training is judged to be better for job quality than for training in positive environmental impact, which is deemed to be very little present in the training of young farmers.

Finally, the vague definition of the axes was criticized. What do we mean by quality employment? (What is a quality contract? A permanent contract? Emancipation from the CPAS?) What do we mean by low carbon? The latter was redefined as "positive impact on the environment".

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

Group 3

A0 Group 3 at the end of T1

Following positioning on the graph, a clustering effect occurs towards the origin of the table, demonstrating dissatisfaction with the current state of the sector. In particular, links are established between the cards dealing with the difficulty of attracting young people to the sector. Agri bashing, management as an SME and access to land are blamed and linked to the difficulty of attracting young people to the sector (GB_10).
The issue of positioning the GA_28 card, opposing sustainability and profitability, was raised by participants, who pointed out that without this opposition the card would be much higher on the Lamartra axis. Price is not the only factor in profitability.

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

• A farm is run like an SME" (GA_05): its position depends on the type of operation.
• Supplementary sheet 1: "agrivoltaics": important distinction between agrivoltaics (hybridization: for example, the installation of photovoltaic panels to regulate the sun exposure of crops or livestock while producing energy) and voltaics (replacement of agricultural land by solar farms).
• Globalized market and Walloon competitiveness" (GC_12): Increased resilience and economic usefulness of the global (European) market • Difficult access to land" (GC_09): benefits large farms with the means to acquire land
• Priority to national or local production" (GC_14): according to one participant, the carbon impact of transport represents only 6% and is therefore not such an important factor.

The cards "weak reaction from the political world" (GC_24) and "household's basket" (supplementary card 2) were left out of the table to indicate a real problem and dissatisfaction on the part of participants with these findings.

During these discussions and reflections, we note that some members of the discussion tables are already suggesting ways of improving or orienting the system. First of all, dependence on subsidies should be avoided: the interruption or recurrent modification (without consultation) of support policies is perceived as a form of violence and contributes to the precariousness of the profession. This also makes it difficult to establish long-term strategies, as subsidies are modified/withdrawn from year to year, while farmers evolve over longer timeframes. These temporal dissonances were also mentioned in group 4 as a tension to be tackled: it is necessary to go beyond short-termist policies and urgent needs ("taking the nose out of the handlebars") to think and anticipate the medium and long term in order to improve the robustness and resilience of the system.

The participants also proposed a system of agricultural service vouchers to counter the labor shortage. In the current situation, the job is poorly paid and difficult: the associated costs (daycare, travel, miscellaneous expenses, etc.) are too high in relation to the income generated. As a result, there would not even be an economic incentive to leave unemployment for a job in agriculture. What's more, the group points to a dependence on foreign labor for seasonal contracts.

Finally, they call for the promotion of a proud identity, making sustainable agri-food a positional asset. This would not only enhance the image of workers in the sector, but also encourage consumers to adapt their consumption patterns and budgets.

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

Group 4

A0 Group 4 at the end of T1

The participants created four clusters of findings and practices to think about to gether[8]:

1. The **"political"** cluster includes the following cards: "difficult access to land" (GC_09) - "weak reaction from the political world" (GC_24) - "requirements imposed by the EU" (GC_36) - "demographics and energy limits" (GC_40). For the members of the group, the latter share the similarity of being dependent on politicians: it is they who possess the levers of action to bring about change in these practices/con
straints. In particular, the weak reaction of the political world and the requirements imposed by the EU occupy a special place in their system. The former is positioned

[8] Due to lack of time, it hasn't been possible to go over all the cards. Other associations could have possibility been suggested by the group, but the ones above have intuitively been underlined.

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

at the very least on each of the axes (quality employment/low carbon), as the partic ipants denounce the lack of relay at political level. However, they insist that genuine political support for the agri-food sector is a sine qua non condition for embarking on a desirable trajectory. In the same vein, they place European requirements at the center of the chart, for while the EU represents a central lever with considerable potential for committing to the LAMAR-TRA trajectory, improvements are still needed, with priority given to the coherence of measures.

2. The **"profession"** cluster set is made up of the cards "a farm is managed like an SME" (GA_05) - "the farming profession is difficult (and mar-ginalized)" (GB_07) - "difficulties in attracting young people to the sector" (GB_10) - "agri-bashing: the sector's tarnished image" (GB_11). With the exception of GA_05 (which, by forcing anticipation, systems thinking and skills diversification, is seen as an interesting lever for moving towards the LAMARTRA objective), all are in great need of improvement. It should also be pointed out that participants found it difficult to position these find
ings/practices on the low-carbon axis (and even refused to do so for GB_11, deem ing this axis irrelevant), insisting above all on the lack of quality in the farming pro fession today.

3. The **"production-consumption"** cluster includes the "long producer-product distance" (GA_01) - "priority to national or local production" (GC_14) - "production & consumption: two sides of the same coin" (GC_19) sheets. This grouping reflects the group's desire to emphasize the mutual influence of these two aspects, which should therefore be dealt with jointly rather than in silos. GA_01 is positioned at the extreme left of the low-carbon axis (distance from the consumer leading to emis
sions, notably due to product transport), but is in a neutral position on the employ ment axis, as participants point out that this depends on whether direct and/or indi rect jobs are considered. Conversely, GC_14 should improve the quality of employ ment by keeping it in the country (as it is better supervised in Belgium), but questions
arise as to its positioning on the low-carbon axis: depending on the factors taken into account (production, processing, transport, etc.), its carbon impact will vary. A similar observation applies to GC_19.

4. Lastly, the **"diversity"** set includes the "diversity of agricultural practices" (GA_02) and "the many hats of the urban farmer" (GB_31) sheets, and is intended to be very all-encompassing: the need for diversification covers projects, values, cul tures, skills and support policies. Again, participants had some difficulty in respond ing to the fear of thinking in terms of two axes at once. For GA_02, the difficulty is inherent: participants emphasized that stimulating diversity is very favorable to job quality, but is complex to position with regard to limiting carbon emissions, since this will depend on the practice in question. Similarly, for the participant who took part in GB_31, the diversity of projects makes it difficult to estimate the work they create (how many jobs and of what type(s)?) or their carbon impact. In addition, she adds that urban agriculture has other values (social ties, education, greening the city, etc.),

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

which she doesn't find in these two areas. In fact, the difficulties experienced by group members in navigating the chart are particularly evident with this set, which emphasizes the diversity of practices: either the sheet is deemed too all-encompass ing in nature to be finely positioned, or the axis criterion already seems too narrow (other indicators to consider than employment).

Analysis : T2. Desired states of the agricultural sector

The second phase of the scenario workshop sought to establish "future states of the dual transition of low-carbon and employment". Drawing on the shared diagnosis resulting from T1, participants were invited to work together to create one or more desirable transition trajectories. To this end, this second phase was divided into three phases, similar to the organization of T1.

In the first phase, participants were invited to individually select two « trend » cards or desired futures, identified during the preliminary phases of the project, which they felt were important for thinking about desirable transition(s) in the sector, and to present them to the group. During the discussions, the participants were led to identify together the trends that could alter the T1 system, and proceeded to position these trends on the two-axis A0 panel. The trends then gave impetus to the pre-established findings. A more detailed account of the trends is available at Appendix 1.

Trends chosen by participants

Tag card	Name of the « trends » card chozen in T2	Number of mention
D_01	Increase remuneration for maintaining biodiversity protec tion zones	4
D_03	Collectively adopting a fair price for sustainable products	3
D_06	Ensuring the consistency of imposed standards	3
D_23	A gradual, phased transition	3
D_28	Developing the circular economy	3
D_02	Maintaining access to land ownership	2
D_26	Improving energy efficiency	2
D_29	Focus on staff skills	2
D_04	Free oneself, in whole or in part, from subsidies	1
D_05	Develop new forms of subsidies Add: "Highly targeted microdecision subsidies" and "Redi rect subsidies" and "condition" premium maintenance.	1
D_11	~~Prioritize Combine sustainability with profitability~~[9]	1
D_12	Increasing the attractiveness of the sector	1

[9] The participants wanted to remove this card as they didn't see the incompatibility between profitaiblity and sustainability.

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

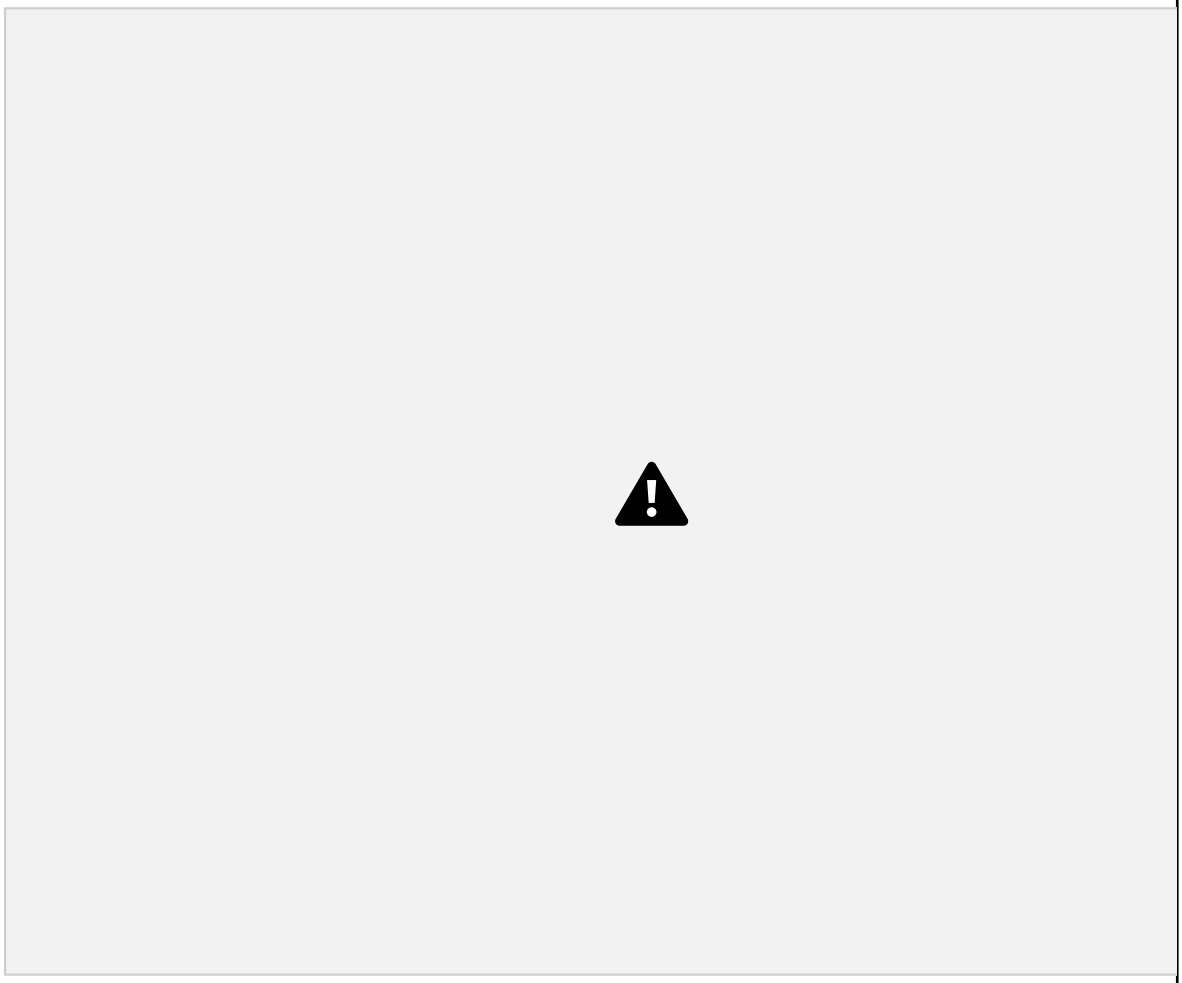
D_13	Mobilizing all players in the construction of the food sys tem	1
D_14	Creating a food self-sufficient Europe	1
D_16	Raising awareness of the importance of soil pollution con trols	1
D_20	Reduce greenhouse gas emissions by 80 to 95%.	1
D_24	Study the profiles of workers who are highly emitting pro ducers	1
(D+01) Addi tional card 1	Develop a sector identity	1
(D+02) Addi tional card 2	Integrate the price (equivalent) carbon	1

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

Result by group for the second part of T2

Group 1

A0 Group 1 at the end of T2



In Group 1, discussion between the various participants led to the identification of s major principles or visions:

1. "If it's expensive, you have to support it".
2. "Analyze the system as a whole".
3. "Consistency of the choices made (standards, incentives, etc.)". 4. Importance of "co-product" and "multi": multi-field, multi-function, multi investment.
5. "Seasonality as a fact".
6. "There is no such thing as a typical farm".

According to Group 1 participants, the evolution of the system should involve several key elements:

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

- **A transformation of the worker's profile**: Farmers are already over solicited, they have no time to reflect on their practices, they work non-stop. They are relatively few in number compared to the administrations in place to support and guide them. He's a multi-tasking, multi-functioning "super" farmer. The participants suggest a transformation of the farmer's profile towards one that will be more and more qualified (than it already is). The possibility of working part-time in the future could be envisaged. Farmers would receive subsidies conditional on low-carbon/quality employment practices. Isolation would be further avoided by maintaining meetings and exchanges with peers.
- **Transformation of subsidies**: Subsidies would no longer be linked to agricultural production, but directly to positive environmental externalities. Once again, the skills acquired by the farmer would make the difference. For example, there would no longer be subsidies for suckler cows, but for grassland and the diversity of its use. All this would be supported by a reinforced greening of the CAP.
- **Estimating a fair price**
- **Diversification of practices**
- **Targeted subsidies and recognition of political support for a double transition**

Participants quickly agreed on the variables on which to act.
A "difficulties" cluster: access to land and attracting young people to the sector. • Focus on staff skills
• And the study of worker profiles

A "farming practices" cluster: the farm is run like an SME, the skills and demands of the farming profession are increasing, he/she needs to diversify his/her practices with a view to profitability above all.
• Collectively adopting a fair price to remove the "versus" between profitability and sustainability

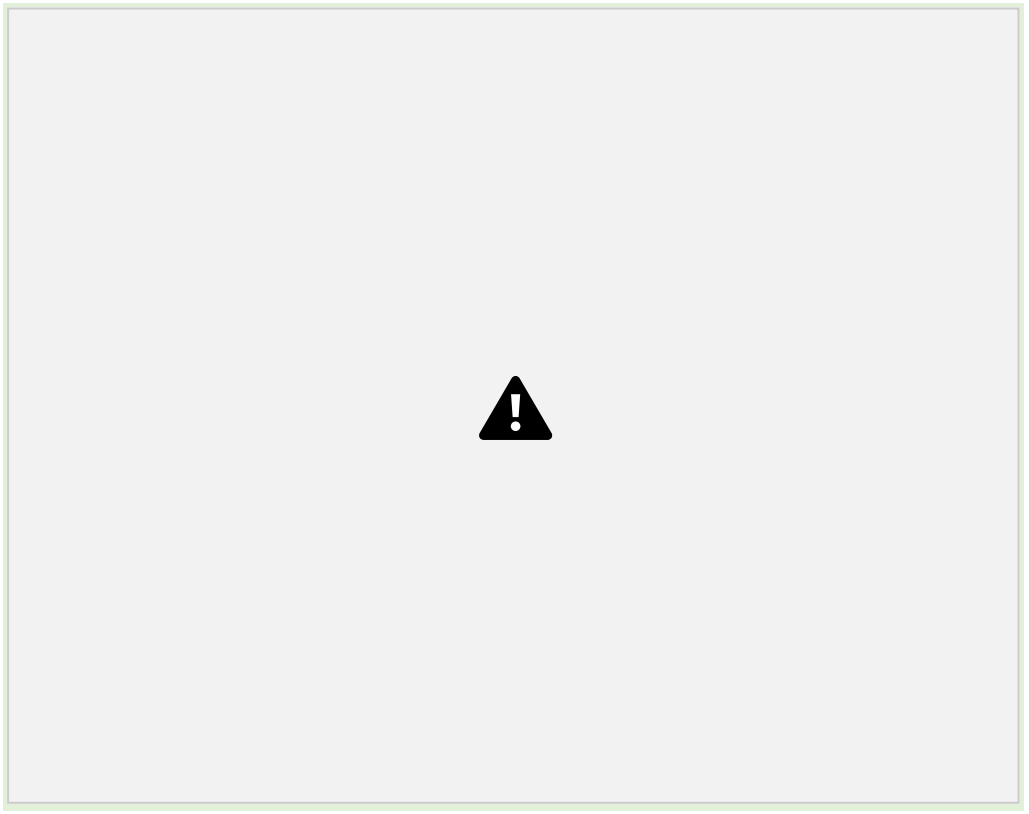
This last cluster is strongly influenced by the "agricultural polic**ies**" cluster and markets, which are first and foremost European and international before being national.

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

Group 2

A0 Group 2 at the end of T2

Following a T1 rich in information and somewhat prolonged, Group 2 entered the T2 phase behind schedule, and was therefore unable to develop the "Drivers" in depth. Moreover, the « drivers » positioning stage proved to be particularly difficult for Group 2 too. In order to unblock the situation, they therefore proceeded to distinguish between desirable and undesirable practices with regard to the cards: "consistency of standards" and "increase attractiveness" (see photos below).



This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

Group 3

A0 Group 3 at the end of T2

The selected drivers are designed to boost both the labor transition and low-carbon aspects of the above findings. Nevertheless, actions such as "increasing remuneration for maintaining biodiversity protection zones" (D_01) and "becoming totally or partially subsidized" (D_04) are considered incompatible. Some actions can be combined and lead to a significant improvement in the model. At the end of the exercise, the participants came up with a summary of 3 key points, detailed below (blue Post-its on A0 for group 3), for the actions most relevant to the outcome of their scenario.

- **Internalizing externalities :** According to Group 3 participants, the internalization of externalities, whether positive or negative, is an essential aspect of building a sustainable food system. This means taking into account the carbon cost of the entire chain, from production to consumption to processing and distribution, in order to make sustainable initiatives more competitive and

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

attractive. In addition, for the group there is a need to consider the ecosystem services rendered, recognizing in particular the value of the work involved in preserving ecosystems in both environmental and health terms. But there is a lso a need to recognize the positive externalities that are indirectly generated in these areas.

- **Enhancing the value of food :** Enhancing the value of food is another fundamental pillar of the transition to a sustainable system. This means reappropriating our relationship with food, understanding where it comes from, how it is produced and its impact on our health and the environment. A communication exercise is needed to make consumers aware of the issues surrounding their food. In addition, there is a need to focus on education, providing individuals with the knowledge and skills they need to make informed food choices, particularly in view of the abundance of information characterized by over-labeling of products. Finally, it is crucial to "glamorize" healthy and sustainable food, by promoting local, organic and seasonal products, to make them attractive and accessible to all. The participants also proposed a new "driver" card, focusing on the creation of a proud identity, in other words, making sustainable food an element whose adoption is socially valued, while avoiding a gentrification of sustainable foodstuffs. In particular, participants mentioned the introduction of price-conscious policies to ensure optimum accessibility.
- **Collective definition of a sustainable and desirable food system :** Finally, to achieve a sustainable and desirable food system, it is necessary to collectively define the objectives and principles underpinning it. This requires societal consultation, in which the various stakeholders, from farmers to consumers, play an active part in decision-making. It is also essential to develop a circular economy. Finally, the collective establishment of a fair price, reflecting real production costs and integrating externalities, is essential to ensure fair remuneration for producers and guarantee the sustainability of the entire food system.

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

Group 4

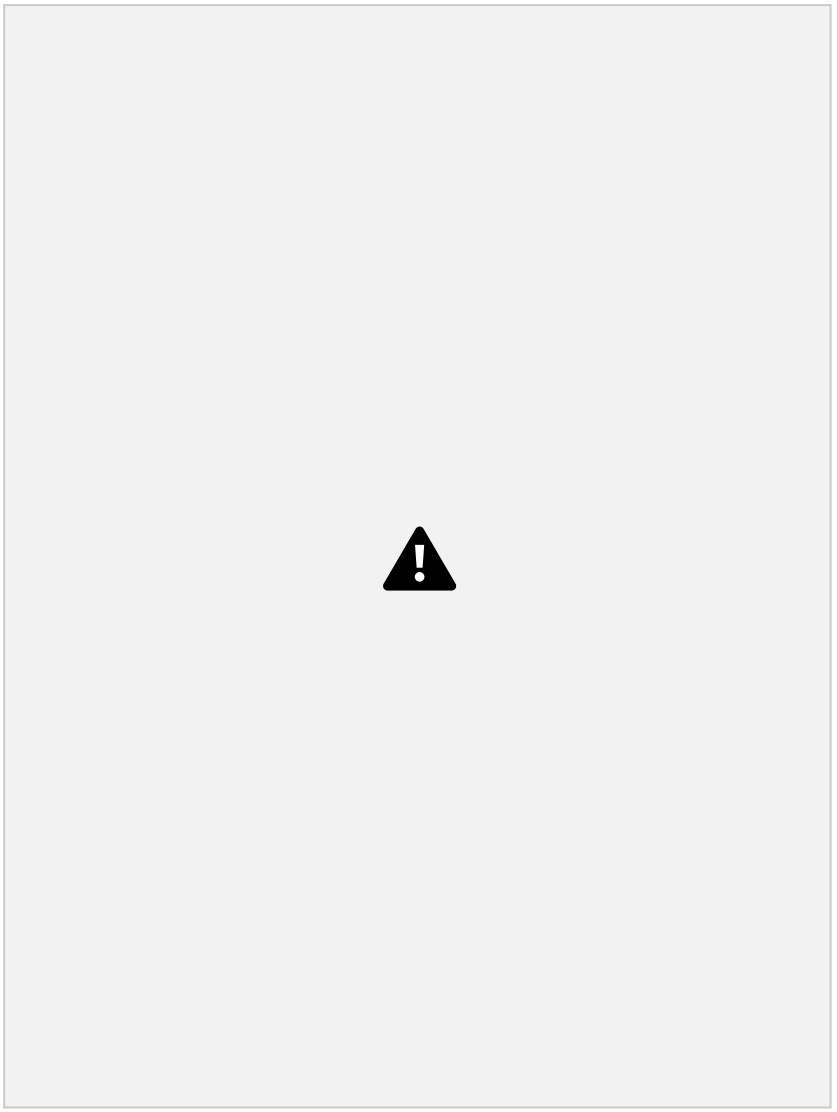
A0 Group 4 at the end of T2

Their action strategy (LAMARTRA ideal-type, horizon 2050) is based on 2 main points:

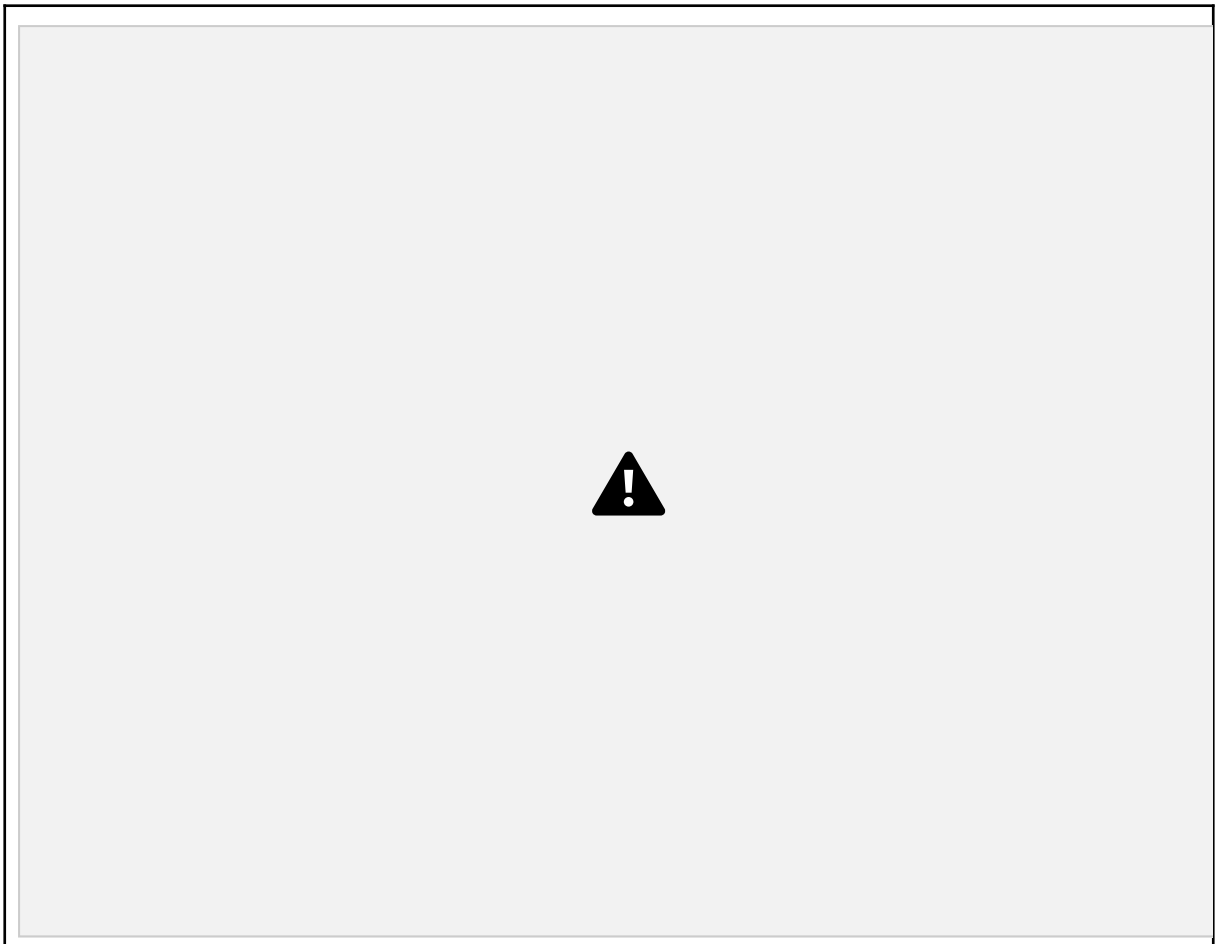
- **Ensure consistency in the standards imposed at EU level.** According to the participants, this is a prerequisite for the implementation of other measures, as these standards impose themselves on the sector and define their trajectories. These standards therefore have a direct influence on national practices, with subsidies regularly cited as an example. Acting consistently at European level is seen by participants as a necessary, cross
  cutting lever to steer the sector towards a desirable (and desired) trajectory. • **Benefit from a cascade effect**: by adopting a fair remuneration for the sustainable product, the sector then combines sustainability and profitability, increasing the attractiveness of the profession and thus raising the profile of the findings "large producer-product distance" (GA_01); "farm managed like an SME" (GA_05); "difficult farming profession" (GB_07); "working the land exposed to uncertainties" (GC_08); "difficulty in attracting young people to the sector" (GB_10); "agri-bashing : tarnished image of the sector" (GB_11) towards the Lamartra axis (cf. table A0 group 4).

The photo below shows the links established by group 4 concerning drivers:

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3



This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3



Facilitator's note: Unfortunately, we didn't have time to discuss the influence of all the selected trends on all the findings. What's more, there was a certain reluctance or difficulty on the part of participants in navigating this graph. Indeed, during the constrained navigation on the two axes, it was difficult to get them to graduate this ideal trajectory (dotted line) into concrete steps and priorities, even though "gradual and progressive transition" had been chosen as the chart by these same participants.

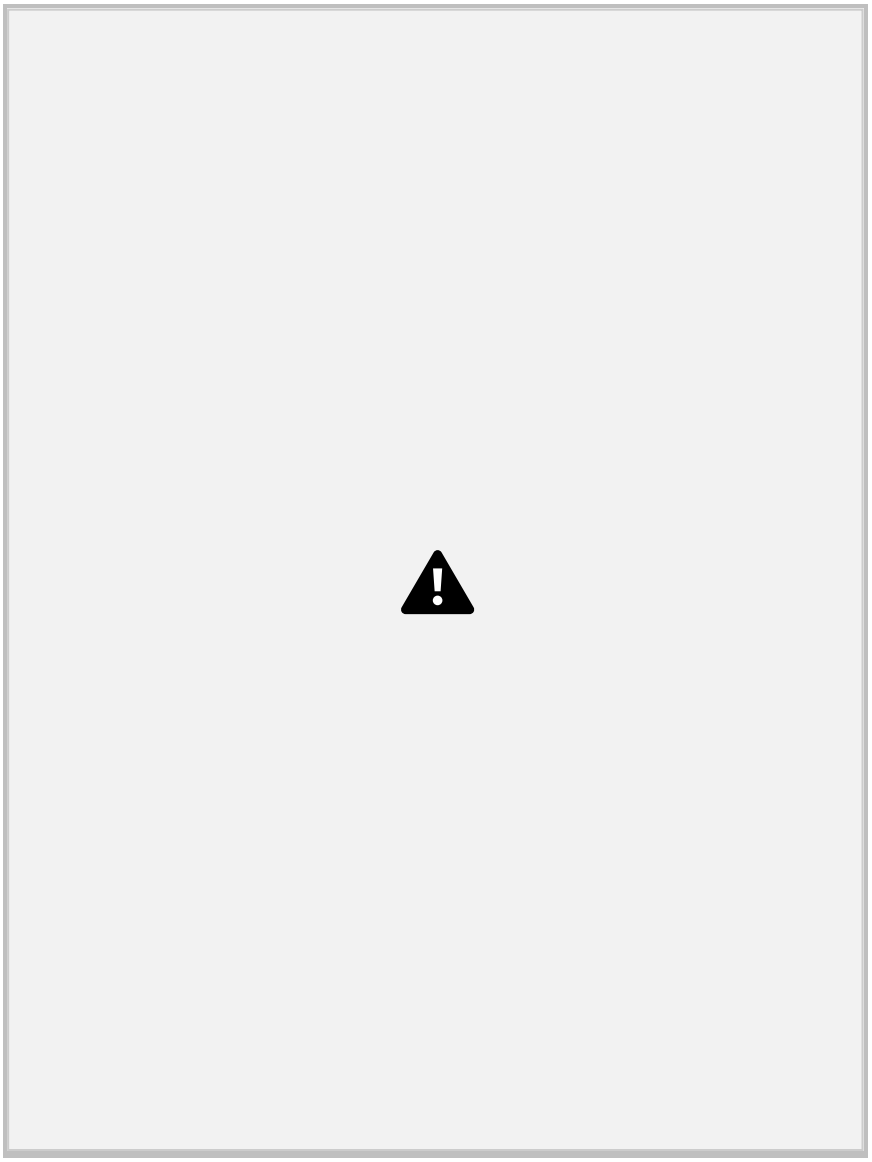
This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

Test the resistance of desired transitions to « blackswans ».

Finally, the last stage of the workshop involved testing the robustness of the transition scenarios envisaged and developed by each group, by confronting them with "black swans". These are undesirable and unexpected events that jeopardize the system and have been scripted by Spiral researchers. Each facilitator presented four potential black swans, from which each group had to choose two to deal with.

Group 1

Rsponse of Group 1 to Blackswans : Political Inertia and Hydric Stress.



This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

Political inertia

The participants propose :

- To increase the reconnection between the citizen and the producer, and to focus on this as a priority. To focus, among other things, on the segment of the population that has already been won over despite the absence of public funding, and to continue to inform it as a priority to ensure a form of relay with the rest of the population.
- Enhance the communication/vulgarization function, which should be carried out either by competent administrations or by private or civil society players.
- Increase private initiatives
- Set up labels.
- Increase support to associations.
- Reduce costs, e.g. through group purchasing.
- Work on better organization of producers. For example, have more structured producer groups to be a driving force capable of convincing consumers. For example, strengthening the role of cooperatives.

Finally, if none of these solutions work, a twofold observation must be made for the future.

Scenario 1: continue with the subsidy system until it no longer exists. There will be no low-carbon transition. The only thing that will remain will be a small parallel network, which will continue to represent a major cost for small plants, and a lower cost for large plants, but with no obligation to change.

Scenario 2: continuation of existing subsidies schemes, leading to slow erosion: elimination of certain forms of farming and agriculture, or gradual incremental change (increase in skills but slow transition).

Resisting water stress

The participants propose

- Turn to new crops. E.g. durum wheat
- Turn to new seeds.
- Turn to new techniques.
- Relaunch the entire production chain by adapting coupled with private and public support.

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

Response of Group 2 to Blackswans : Hydric stress

Only one black swan was discussed: water stress, both in terms of flooding and drought.

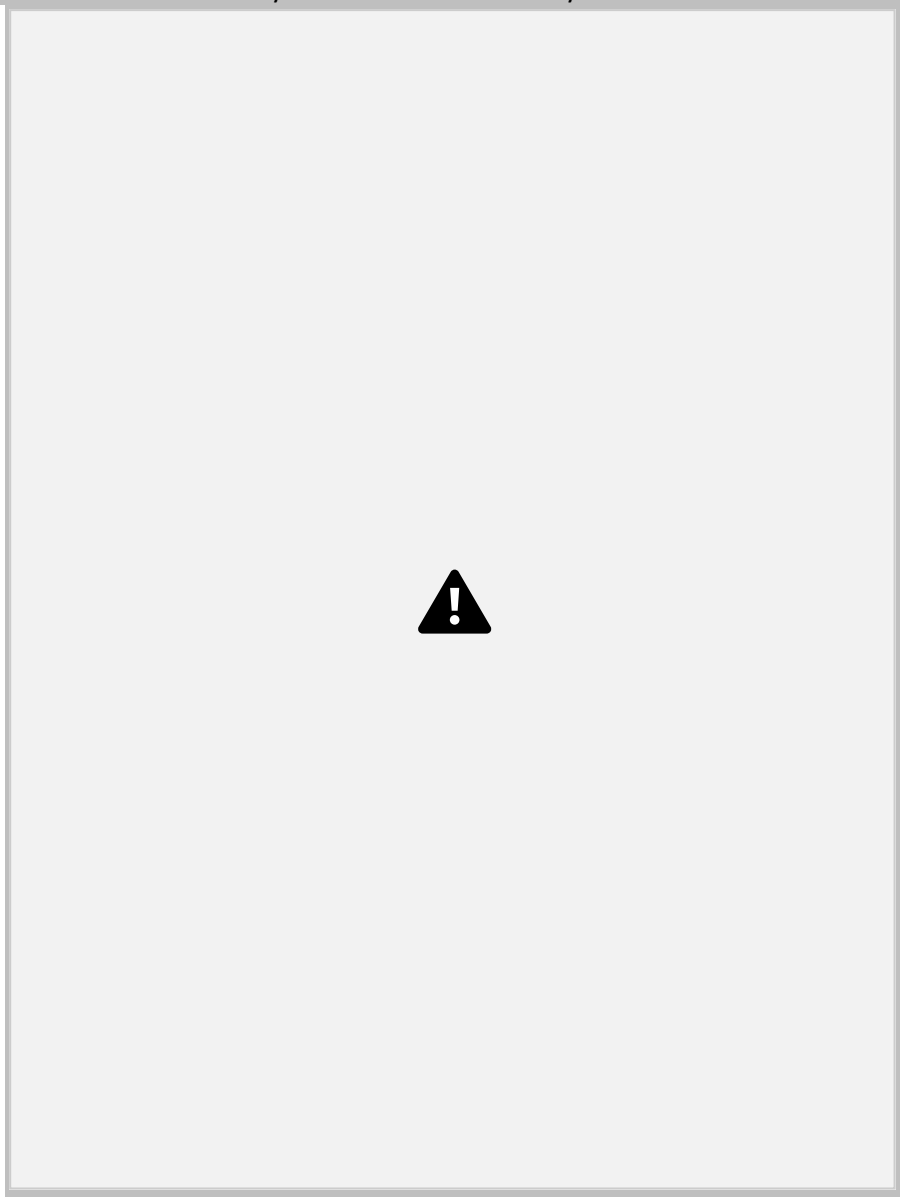
This black swan showed that the emerging trajectory was heavily impacted by wa ter stress, because if there's drought or flooding, there's a good chance that the whole of Wallonia will be affected, as the climate is more or less similar depending on the participant.

One possible solution would be to consider the collective aspect of the imagined trajectory more broadly, by integrating, for example, solidarity agreements with other European countries to compensate for production losses suffered by Walloon farm ers.

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

Group 3

Response of Group 3 to « Blackswans » : Hydric stress and instability of the international scene.



Water stress

According to the participants, this black-swan is reinforcing the divide between small and large farms (cf. Sainte-Soline in France). What's more, water stress is a constraint on certain farming practices. However, it can also encourage cooperation and impose a selection and prioritization of activities. Water stress is also likely to worsen the public's regard for farmers. It is also accompanied by a drop in yield and competitiveness, as well as a significant rise in prices for consumers.

To best guard against this type of event, the participants advocate a focus on anticipation and the reasoned management of water resources. They also believe that the diversity of agricultural practices, considered as an asset in their scenario, can increase the system's resilience to water stress. They also call for greater consideration to be given to insurance for the farming community, so as to spread

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

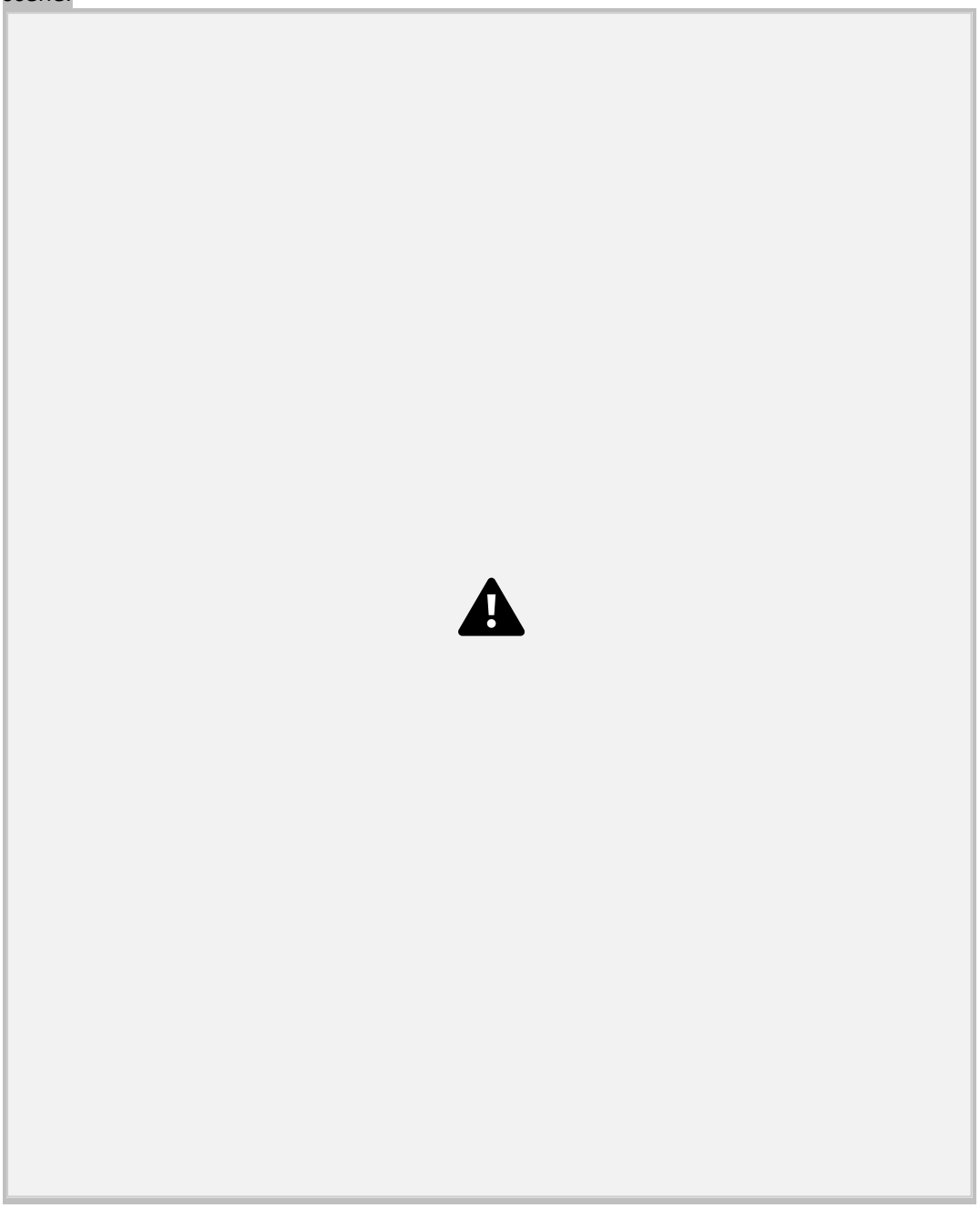
the burden of risk across civil society and not just to farmers. Finally, the participants consider that a measure could be taken to differentiate the price of water according to its use (e.g. irrigation or private swimming pool). Finally, agrivoltaics is mentioned as a tool for diversifying farmers' activities.

The scenario proposed by the participants seems to be more resistant to this instability, thanks to its emphasis on the local model and concentric circles of production (or production zones). What's more, the tendency to mobilize low-techs provides a form of independence from machines, and therefore from their own production and maintenance chains, as well as from energy demand. However, participants point out that higher costs will inevitably be passed on to consumers, and will weaken SMEs and small businesses. Imports and exports would in turn be disrupted, as would the energy market.

In order to respond effectively to this blackswan, participants suggested actively considering a low-tech sector; prioritizing local, short circuits and production zone systems; a possible return (although it has never quite disappeared, according to one participant) of urban agriculture; and considering other solutions in the face of the economic sanctions incurred.

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

Response of Group 4 to « Blackswans » : Pandemic and instability of the international scene.



Pandemic and international instability[10]

Once again, the importance of political action is highlighted by participants: if the sector proved fairly resilient during Covid, it's first and foremost because politicians left the chain open, as they considered it essential, resulting in a certain valorization

[10] The participants have discussed those themes by themselves in a simultaneous manner.

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

of the sector. If another decision had been taken, the story would probably not have been the same.

Covid has been a kind of enchanted parenthesis for the organic and local sectors, demonstrating that there is a way of reconnecting the citizen-consumer with the producer. The problem lies in the durability (perennially) of changes in consumer habits.

Crises highlight critical points, and we must not squander these windows of opportunity for change through a lack of proactivity and anticipation.

These various crises highlight the need for resilience in the sector, which can only be envisaged in a systemic (transversal to the entire chain) and long-term manner. This also ties in with the discussions and courses of action proposed during T2. This emphasis on the need for resilience in a way sums up the day's discussions, and in short constitutes the group's mantra.

According to one participant, the need for urban agriculture and other solutions to the economic sanctions incurred.

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

Discussion

To conclude the day, a number of observations were made about the workshop as a whole. These observations provide a basis for further reflection, and are structured around five points: agriculture as a world, observations on possible changes, factors for change, levers for change, observations on different possibilities for paths ahead.

Agriculture as a world

Agriculture can be seen as a "world" exposed to a number of different challenges, all of which have a major impact on possible developments. We have identified seven challenges.

A constrained world

Agriculture appears to be a world subject to strong constraints of various kinds:

- **Economic:** productivity and performance seem to constitute the dominant

normative horizon for the majority of agricultural practices. The imperatives of profitability permeate many of the comments and elements put forward by participants. This is particularly apparent in discussions about the high cost of land, or in the points made about the hyperspecialization of the sector (for example, if you're an arable farmer, you'd be hard pressed to consider fallowing or grazing part of your land, as this is not part of your farming practices).

- **Legislation**: the legal framework, in particular the CAP, appears to be extremely restrictive and highly specialized, with divisive effects on practices. For example, in Belgium, the establishment of agricultural production cooperatives is hampered by an unfavorable legislative and regulatory framework; the legislative framework also has the effect of making farming practices highly specialized and diversification more difficult.
- **Environmental**: as farming practices work with nature and living organisms, they are directly exposed to climatic hazards (droughts, floods, pandemics, etc.); their multiplication generates major uncertainties for the sector, which it must constantly integrate into its activities in order to find solutions to mitigate the difficulties they generate or better anticipate them.
- **Social**: this issue came up more "surreptitiously" in my observations. Yet it is an important reality for the sector: the difficulty of earning an income from the farm or coping with debts is a major problem for many farmers. This has a direct impact on the attractiveness of the profession for young professionals and new

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

entrants, against a backdrop of an ageing farming population - a reality specific to Wallonia.

- **Politics:** the political world appears rather remote, indifferent and dominated by technocratic logic (CAP decided by the European Commission).

A compartmentalized

Farming appears to be very much divided between different activities and sectors: arable farming and livestock breeding do not easily coexist on the same farm; cattle, sheep and goat breeding do not go hand in hand; a dairy farmer will not raise beef cows, etc. This strong horizontal division is also complemented by a vertical division: the farmer is a link in a long processing chain. This strong horizontal division is also complemented by a vertical one: the farmer is a link in a long chain of transformation. Farmers often appear to be far removed from consumers, which can also lead to a form of distance from their production: some people have suggested that producing for one's neighbor does not entail the same kind of responsibility as producing for distant consumers, since attention to production quality would be greater in the former case.

A world with their « noses to the grindstone»

Many of the participants underlined the short-term logic that underlies agricultural practices. This logic is underpinned by an economic dynamic which, for example, leads some farmers to rely on solutions proposed by the chemical industry to ensure soil fertilization or protection, rather than exploiting "natural" logics which reduce short-term profitability and mean immobilizing certain capital for more or less long periods. This makes agriculture a world in perpetual motion, with little time to stop and reflect on the issues at stake, question the current situation and imagine ways of evolving or transforming it. This is seen as a peculiarity of this economic activity, linked, for some, to the isolation of the farmer.

A world dependent on the soil

It may seem obvious: farmers work the land. This makes him/her a special economic player, as space is vital to his/her activity (unlike a service activity, which appears deterritorialized). This presents a major challenge: access to land, which was noted by all the groups observed. The cost of land is a very important aspect of farming, and conditions many aspects of its practice: several participants noted the high cost of land in Belgium, compared to neighboring France.

An interdependent and globalized world

The globalization of agriculture goes back a long way. Today, however, it appears to be heavily dependent on global dynamics, which are reflected both in the worldwide specialization of crops, generating numerous import and export flows, and

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

in farmers' dependence on world markets to set prices for their produce: pitted against sometimes distant producers with often lower production costs, they are exposed to significant losses in competitiveness.

A human world

This could seem like a paradox: agriculture, which exploits natural resources and is closely dependent on the availability of soil and the state of the climate, appears to be a very human practice. In fact, agriculture is designed to feed human beings, it maintains a great divide between nature and culture, and seems to take little account of the fact that it is also a practice that feeds non-humans, as it has serious effects on the functioning of ecosystems and biodiversity. This perspective is supported by agro
ecology in particular, but it still seems far removed from highly techno-dependent, even techno-centric, practices.

A techno-dependent world

Indeed, this was the final issue to emerge from the discussions of the groups observed: agriculture is directly linked to the living world in its practices, and appears to be extremely dependent on mechanical, digital and biotechnological technologies. It is even becoming almost techno-centric, as it robotizes to cope with the shortage of

human labor and/or further increase productivity to maintain its competitiveness.

Observations related to possible changes

The changes discussed in the workshops concern "improvements" to the existing situation, or even fundamental "transformations" of activities, practices and professions. These changes are seen as useful intermediaries in achieving the two objectives indicated on the graph proposed to participants: quality work and a transition to carbon neutrality. In the discussions, possible changes were envisaged mainly by questioning the factors of change. In the course of the discussions, action levers were also identified to enable these changes to take place.

Elements of change

Diversification

It seems to me that each of the groups raised the issue of diversification at some point in their discussions. This concerns the farming profession as much as the business itself. Diversification implies that farmers can develop new sources of income that improve their situation and the quality of their work, while also contributing to carbon neutrality and the preservation of nature. In this respect, several groups mentioned the combination of agricultural production and energy production, preserving the nurturing function of agriculture. The question of energy production by agriculture is considered via its co-products, notably in a circular economy logic (biomass exploitation).

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

This question of diversification appears to be an important factor of transformation, as it opposes in many respects the logics of compartmentalization and specialization that have structured agriculture since the post-war period. It also calls into question the heavy "legacy" facing contemporary agriculture, both individually and collectively: the farmer has to take care of the amortization of investments that sometimes span several decades, and a very high level of indebtedness that prevents him from developing his business and his profession; on a collective level, agriculture is the heir to intensive practices aimed at hyper-productivity, and is based on a highly petroleum-dependent "technostructure" (machinery, plastics, petrochemicals, etc.) that shapes many practices and is maintained by the major industries that produce this "technostructure".

The financial aspects

The financial question was discussed in all groups on two main aspects: the granting of subsidies within the framework of the CAP and the development of a "fair" price. On the first aspect, it was eco-conditionality that came up again: the granting of premiums is based on the development of practices that favor the preservation of the environment, landscapes and biodiversity. However, the social aspect was questioned: why don't subsidies include a social component? This brings us back to the second aspect of the discussions on the financial aspects: the assurance of a

"fair" price for the farmer, i.e. a price that integrates the constraints of profitability as much as the ecosystem services provided by the farmer in a balanced way.

The integration of the value chains of the agricultural sectors.

The notion of integrating agricultural value chains was not directly used by the participants. It did, however, seem to me that many comments and discussions fed the idea that it was necessary to improve the overall efficiency of value chains, not only to reduce costs and improve farmers' margins, but also to get closer to the end consumer by improving product quality. This idea seems to run counter to the logic of compartmentalization and distance between consumer and producer, frequently evoked in reports on the current situation. It also calls for more cross-functional practices to improve the efficiency of value chains as a whole, which could include issues associated with quality of work and carbon neutrality.

The participation of farmers to the transformations of agriculture

The issue of farmer participation has been identified by some as an important lever for transforming agriculture: to cope with the contextual transformations experienced by agriculture in recent decades, linked to economic and environmental crises, farmers are developing solutions that are often little-known. Involving farmers to a greater extent, pooling knowledge and scaling up innovations seems to be an

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

avenue that is still underdeveloped in the sector, due to the relatively high level of isolation of its professionals and the lack of time for in-depth reflection on possible innovations.

La formation et la professionnalisation

The average age of farmers is high compared to other sectors. Moreover, farming remains a family activity, often handed down from one generation to the next. As a result, the level of professionalism and training in the sector remains relatively low compared to other economic sectors. However, the transformations brought about by the decarbonization of the economy and the improvement of working conditions mean that the profession is becoming more complex, and practices need to be increasingly up-to-date. Many participants therefore stress the importance of training and professionalizing the farming profession to meet the challenges of this dual transition.

The levers to change

Alongside the factors driving change, the discussions also highlighted possible courses of action to enable certain desirable developments to take place.

The development of a « vision » and the paths to reach it

A sector "with its nose to the grindstone" and marked by the legacy of a heavy technosphere is facing major difficulties in transforming itself. It also appears that the objective of agricultural activity has shifted over time from the provision of food and food security to a purely productive one. Against this backdrop, some people are talking about the need to develop a long-term vision for agriculture, restoring it to qualitative rather than quantitative objectives, such as carbon neutrality and/or high quality work, as well as its function as a source of nourishment for human beings and other living species. Another objective also mentioned is "robustness", aiming for stability of the agricultural system in the face of fluctuations, rather than performance and productivity objectives.

Finally, aspects of justice are also evoked through the idea of a fair price, i.e. a price that enables farmers to make a decent living from their activity and ecosystem services to be remunerated, but also through the idea of food accessibility, the right to food being a fundamental right and food a basic necessity.

The roles of farmers and consumers in the transformation of the system

Both ends of the value chain are often seen as major levers for change: if agricultural production evolves, it will have a major impact on value chains, and conversely, if consumer practices evolve substantially, they could have a major impact

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

on value chains and production methods. Rethinking the farming profession in relation to new objectives for agricultural practice appears as much a lever for transforming the sector as a means of attracting vocations among younger people. Transforming consumer practices, in particular by placing greater emphasis on food quality in lifestyles, would also bring about major transformations in value chains.

A change in scale of agriculture

Agriculture is organized on an international scale, in terms of both production and markets. Developing agriculture on a "manageable" scale should make it possible to meet new objectives, in particular those of price and security of supply. The issue of food sovereignty often appears as an important lever to this end, but it cannot abstract from other factors, notably a combination of sound economic logics (import/export sometimes necessary to maintain economic equilibrium) and rationality in the management of agricultural production (importance of "terroirs" for certain crops...): Producing everything on a sovereign territory can lead to aberrations, since relocating agricultural production can lead to new dependence on imports, in particular for the various inputs required for production, but also to over-exploitation of land with negative environmental impacts).

Observations related to path change

The introduction of a debate on possible bifurcations linked to black swans helped to identify certain types of reaction.

Among the observations made, several salient elements can be identified:

- A protectionist reflex. In one group observed, the first reaction was to wonder about maintaining competitiveness: in the event of water stress, people first reacted by wondering whether the farms would have the capacity to remain competitive.
- Trust in the ability to adapt. In the same group, one participant raised the issue of farmers' ability to cope with environmental risks through adaptation and innovation: an area suffering from droughts and torrential rains is being adapted by farmers through the development of techniques for recovering and circulating rainwater.
- Back to normal after a period of adaptation. In a group dealing with the question of pandemics, the boom in organic products during this period was mentioned, as was the expectation of certain players in this sector that practices would change over the longer term. However, today's indicators seem to show a substantial drop in consumption of these products, and a return to the pre pandemic situation (or even a deterioration in the current inflationary context, which is pushing households to reduce their food expenditure, an important adjustment variable in their budgets).

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

- Cooperate rather than compete. The question of cooperation between farmers was raised by several participants as an important lever for transformation and as an essential provision for dealing with crisis situations. This non-competitive approach presupposes that farming practices evolve in such a way as to enable farmers to break out of their isolation and develop virtuous circles of innovation in practices and the profession.
- The need for a paradigm shift: from performance to robustness. Some participants regularly brought up the notion of "robustness" in their discussions, based on the research work of biologist Olivier HAMANT, published in his book "La Troisième voie du vivant". The notion of robustness aims to ensure a system's stability, i.e. its ability to withstand shocks and fluctuations. This is in contrast to the goal of performance (or productivity), which makes the system highly unresilient, or even weakens it.

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

References

Godet, M. (1993). *From anticipation to action. A handbook of strategic prospective*. Paris: UNESCO.

Moniz, A. (2006). Foresight methodologies to understand changes in the labour process: Experience from Portugal. *Enterprise and Work Innovation Studies* 2, 105-116.

Saritas, O., Pace, L.A., Stalpers, S. (2013). Stakeholder participation and dialogue in foresight. In K. Borch, S.M. Dingli, M. Sogaard Jorgensen (eds). *Participation and interaction in foresight, dialogue, disseminations and visions*. Edward Elgar Publishing, pp.35-69.

Wilkinson, A. (2016). Using strategic foresight methods to anticipate and prepare for the jobs-scarce economy. *European Journal of Future Research* 4 (12), 1-11.

Zwetkoff, C. (2012). Projet ONDRAF. Axe 1: le processus décisionnel, du plan au projet. ULiège, rapport d'expertise projet ONDRAF – évaluation plan déchets, Liège.

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

Appendix 1

Table of the trends discussed during T2 (In French)

Tag fiche	Titre	Synthèses des groupes
D_01	Augmenter la rémunération pour le maintien de zones de protection de la biodiversité	Groupe 1 : / Groupe 3 : Les services écosystémiques ne doivent pas se substituer aux activités de subsistance. Par conséquent, il est nécessaire d'augmenter de manière cohérente les formes de soutien financier destinés aux activités principales. De plus, les services écosystémiques sont souvent invisibilisés. Il faut introduire des facteurs de conditionnalités pour l'accès aux subsides. Enfin, il est important de prendre en compte l'internalisation des externalités, qu'elles soient positives ou négatives, dans le cadre de ce système de rémunération. Groupe 4 : La rémunération pour le maintien de zones de protection de la biodiversité devrait s'élargir à "services écosystémiques", ce qui englobe de manière plus complète et précise les mesures prises ou demandées. Cette approche garantit une rétribution équitable pour les agriculteurs, compensant ainsi le manque à gagner résultant de leur engagement. De plus, cette rémunération est étroitement liée à la nécessité de revaloriser le secteur agricole, reconnaissant ainsi que l'agriculture ne se limite pas à la production, mais englobe également la préservation de la biodiversité et des paysages. Cette notion reste cependant

		difficilement quantifiable.
D_02	Maintenir l'accès à la propriété foncière	Groupe 3 : Le projet "TERRE EN VUE" vise à maintenir l'accès à la propriété foncière en Wallonie et à Bruxelles, une initiative similaire existe également en Flandre. Il mobilise l'épargne citoyenne et met les terres à disposition des agriculteurs. Il joue également un rôle d'intermédiaire dans les négociations entre propriétaires et exploitants, tout en offrant un encadrement juridique et administratif. Pour faciliter la gestion, la création d'une agence serait bénéfique. L'objectif est de réduire l'artificialisation des terres, qui est un effet pervers des politiques de limitation. Et d'éviter ainsi une ruée vers l'acquisition de terrains avant les dates butoires. La densité de population intensifie cette problématique, qui remet en question la notion de propriété privée lorsque l'intérêt collectif est en jeu. Groupe 4 : Un consensus émerge autour de la table lorsque la question du maintien de l'accès à la propriété foncière est abordée. Au cours des débats du T1, il est devenu évident que tous les participant(e)s partagent le même constat et reconnaissent la tendance actuelle comme l'un des problèmes majeurs à résoudre.
D_03	Adopter collectivement un juste prix du produit durable	Groupe 1 : Collectivement, il est essentiel d'adopter un "juste prix" pour promouvoir l'adoption généralisée de produits durables. Il est également nécessaire de définir clairement les critères d'un produit durable notamment en vis-à-vis de l'empreinte carbone. Il convient également de prendre en compte tous les éléments impliqués, y compris les coûts de production moyens, tout en tenant compte des contraintes environnementales. Pour assurer une transition durable, il est nécessaire d'intégrer les coûts supplémentaires, qui devraient être supportés soit par le biais de taxes, soit par les consommateurs et pas uniquement par le secteur agricole. Groupe 3 : L'adoption collective d'un juste prix pour les produits durables est un objectif recherché par les participant(e)s. Cependant, cela nécessite la mise en place de deux dynamiques préalables, à savoir D_13 et D_23. L'objectif est de fixer un prix qui couvre les coûts tout en garantissant l'accessibilité pour tous les consommateurs, afin d'éviter la gentrification. Une proposition intéressante de tarification équitable est celle des frais de compte chez NewB. Groupe 4 : La durabilité est caractérisée par une diversité de labels et d'indicateurs permettant d'évaluer les produits ce qui prête à confusion. Lorsqu'on parle du juste prix, certains préfèrent utiliser le terme de "juste rétribution" pour assurer une équité dans toute la chaîne d'approvisionnement, en particulier pour les producteurs qui sont souvent les plus lésés. Dans le secteur agricole, l'offre et la demande sont extrêmement volatiles, ce qui rend la fixation des prix collectivement problématique. Il est essentiel de prendre en compte les spécificités et la diversité des pratiques agricoles, car ce qui peut être bénéfique pour un agriculteur ne l'est pas nécessairement pour un autre. Le concept de rétribution plutôt que de simple "prix" contribue à résoudre ce problème. Un exemple inspirant de label est le "Prix juste producteur", qui s'inspire de l'approche de Fair Trade et est initié par le Collège des Producteurs. Ce label repose sur des

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

		critères évalués selon quatre axes. Un modèle basé sur des points ou un système de scores pourrait être employé. Enfin le projet Terraé du cabinet Tellier, peut être une source d'inspiration pour promouvoir l'agro-écologie.

D_04	S'affranchir, en tout ou en partie, des subsides	Groupe 3 : Les participant(e)s considèrent que l'affranchissement des subsides est une conséquence plutôt qu'une action à entreprendre. Cela impliquerait une rémunération basée sur les engagements pris, évitant ainsi la logique à court terme et les subventions ponctuelles. Une telle approche accorderait plus d'autonomie aux producteurs dans le choix de leurs cultures. Il est également proposé de financer collectivement les services de préservation, en s'appuyant sur l'impact émotionnel et l'intérêt collectif pour les zones de biodiversité, comme le modèle allemand le suggère. Ce changement implique un déplacement de la dépendance vis-à-vis des institutions vers le marché. Cependant, il est important de noter que cette évolution pourrait avoir un impact potentiellement négatif sur la gestion des émissions de carbone si les subventions et par conséquent les conditions pour les obtenir étaient supprimées.
D_05	Développer de nouvelles formes de subsides Ajout : « subsides très ciblés de micro-décisisons ». « Ré-orienter les subsides » et de « conditionner » le maintien des primes.	Groupe 1 : Dans le cadre du développement de nouvelles formes de subsides, l'introduction de moyens supérieurs à ceux actuellement disponibles est souhaitée pour encourager les initiatives bas carbones, comme la rémunération liée à la préservation de la biodiversité. Le verdissement de la Politique agricole commune (PAC) est salué, notamment pour son potentiel de stockage carbone. De plus, il est essentiel d'établir un lien plus systématique entre les politiques de subsides et les demandes sociétales, en garantissant un accompagnement financier adéquat lorsque les initiatives sont coûteuses.

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

D_06	Assurer la cohérence des normes imposées	Groupe 1 : Il est essentiel d'assurer une cohérence entre les normes imposées par les différents niveaux de pouvoir. Malheureusement, il subsiste encore trop de pratiques incohérentes qui entravent cette harmonisation. Les incitants actuellement en place varient en termes de portée, ce qui crée des disparités entre les secteurs soumis à des exigences différentes par le marché. Par exemple, la question du glyphosate et le retour de la charrue illustrent cette divergence. Il est impératif d'étudier également les effets collatéraux des décisions prises et d'analyser de manière plus systémique leurs conséquences. Une analyse globale du système et de l'impact des décisions, au-delà des frontières, est nécessaire pour parvenir à une cohérence des normes. Groupe 4 : Les problèmes actuels liés à la cohérence des normes imposées révèlent des incohérences et des contradictions. Par exemple, le modèle actuel des stations d'épuration entraîne des blocages et des problèmes de valorisation, ce qui conduit à une interdiction de réutiliser les eaux en Flandre, en contradiction avec la demande européenne d'économie circulaire. De plus, le transfert de nitrates entre la Wallonie et la Flandre crée une situation perdant-perdant en raison de régulations contradictoires. Bien que des politiques visent à encourager les producteurs à passer au bio, l'absence d'incitations pour les consommateurs crée une inadéquation entre l'offre et la demande, rendant l'objectif d'augmentation des producteurs bio d'ici 2030 trop ambitieux. La superposition de règles complique également la situation. Pour assurer la cohérence, il est nécessaire d'adopter une vision globale et de prendre des normes en fonction des objectifs visés. Une solution possible consisterait à créer un cahier des charges ou une grille d'évaluation des projets intégrant divers indicateurs, afin d'orienter les initiatives et d'augmenter la résilience et la cohérence du système. Il serait également important de mobiliser les acteurs à différents niveaux, favorisant la cohérence au sein de l'Union européenne et au-delà.
D_11	Prioriser Combiner la durabilité sur la rentabilité	Groupe 4 : La priorisation de la combinaison de la durabilité sur la rentabilité nécessite une recontextualisation de cette dernière. Il est essentiel de prendre en compte les aspects sociaux et environnementaux des projets, tels que la protection de la biodiversité et des services écosystémiques. Évaluer la valeur de la préservation d'un paysage ou de la biodiversité, ainsi que la création de lien social, devient alors crucial. La durabilité, en tant que concept englobant, intègre naturellement la rentabilité, y compris la durabilité financière, dans ses critères. Cependant, il reste une question ouverte quant au seuil de rentabilité à partir duquel on considère qu'une marge est suffisante.

D_12	Augmenter l'attractivité du secteur	Groupe 4 : Afin d'augmenter l'attractivité du secteur, il est essentiel de mettre l'accent sur les compétences du personnel, en particulier en Wallonie où il existe un manque alarmant de formations pour les ouvriers agricoles et les permis de tracteur par exemple. Actuellement, seules 3 à 4 écoles sont disponibles. De plus, il est également nécessaire de prendre en compte la réorientation professionnelle des personnes plus âgées, qui se heurtent au manque de formations disponibles et au problème foncier. Un autre aspect clé pour renforcer l'attractivité du secteur et la qualité du travail consiste à rétablir la connexion entre les citoyens et les producteurs. En obtenant un fort soutien de la part des citoyens, l'agriculture pourrait devenir un sujet d'intérêt majeur et inciter le monde politique à prendre des mesures.
D_13	Mobiliser l'ensemble des acteurs dans la construction du système alimentaire	Groupe 3 : Il est essentiel de mobiliser tous les acteurs impliqués dans la construction du système alimentaire afin de créer des liens solides entre eux. Cela implique d'éviter les redondances, de guider la recherche, de faire remonter les préoccupations et de promouvoir la cohérence des initiatives, le tout dans le but d'optimiser l'efficacité et la rentabilité globale du système.
D_14	Créer une Europe autonome alimentairement	Groupe 3 : L'objectif est de créer une Europe autonome sur le plan alimentaire en tirant parti des diversités climatiques et des capacités de production du continent. Pour y parvenir, il est nécessaire de rationaliser la notion de "local" et de repenser les frontières. Il est important de favoriser les échanges entre pays qui offrent un bilan carbone plus avantageux que des échanges avec des pays plus éloignés. Une approche basée sur les zones de production et une nuance du "protectionnisme" sont nécessaires pour éviter un repli sur soi excessif. Malgré cela, il est important de reconnaître que la logique de marché reste prédominante. La prise en compte du prix carbone équivalent aura des conséquences sur les relations commerciales, et il convient d'exploiter une logique de cercles concentriques pour rationaliser les zones de production.
D_16	Conscientiser à l'importance des contrôles de pollution des sols	Groupe 4 : La pollution résiduelle reste un poids à charge du producteur malgré les efforts pour atteindre les seuils. (exemple des résidus plastiques dans le maïs)

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

D_23 Opérer une transition progressive et graduelle
Groupe 3 : Modification de la carte pour que le terme "progressif" signifie "inclusif" plutôt que "lent" et demande d'un recours plus fréquent aux forums hybrides Groupe 4 : La mise en place d'une transition lente et graduelle pour atteindre une vision à long terme présente des défis majeurs. La vision long terme est souvent en contradiction avec les résultats politiques court-termistes, ce qui rend sa réalisation difficile. Néanmoins, il est essentiel de développer cette vision pour garantir la cohérence nécessaire. Les participant(e)s soulignent que la responsabilité ne repose pas uniquement sur les politiques, mais aussi sur les porteurs de projets et les entreprises, qui peuvent être des acteurs clés de la transition. Des propositions émanent de structures plus durables que les cabinets politiques, comme l'administration et des organismes tels que la FWA. Il est crucial de prendre en compte l'existant dans la transition, car il constitue une base solide avec de bonnes idées et pratiques déjà présentes dans les exploitations actuelles. À l'échelle locale, les agriculteurs possèdent des connaissances et des astuces qui doivent être valorisées. En intégrant les compétences existantes, y compris celles qui ont été négligées, il est possible d'activer le bon sens et l'intelligence collective. Il est donc important d'inclure et d'écouter les acteurs de terrain en première ligne, car beaucoup d'entre eux souhaitent s'adapter malgré les contraintes imposées par le système global. Adopter une approche bottom up permet d'accroître l'adhésion. Une transition lente et graduelle est également essentielle en raison de l'inertie du secteur agricole à moyen et long terme. Il n'est pas réaliste de demander aux agriculteurs de changer du jour au lendemain. De plus, cela permettrait aux exploitants de prendre le temps nécessaire pour repenser leur exploitation, améliorer son efficacité et sa durabilité. Pour réussir cette transition, il est crucial de mettre en place des structures de soutien, telles que des centres de recherche ou des coopératives, afin d'orienter et d'accompagner les exploitants dans ces changements et cette redéfinition de leur métier. Cependant, il est important de rester vigilant quant aux intérêts commerciaux qui peuvent influencer ces structures et ne pas être entièrement alignés sur les besoins des agriculteurs.

D_24	Etudier les profils de travailleurs fortement producteurs de carbone	Groupe 1 : Il est essentiel de prendre en compte les travailleurs qui seront directement affectés par la transition vers une économie à faible émission de carbone. Une question cruciale se pose : devraient-ils changer de métier ou simplement modifier leurs compétences dans leur domaine actuel ? Malheureusement, le marché du travail actuel ne propose pas de possibilités de mobilité pour ce type de travailleur. Par conséquent, il est impératif de mettre en place des mesures d'accompagnement pour soutenir ces travailleurs afin qu'ils puissent s'adapter à cette transition sans la subir.

D_26	Améliorer l'efficience énergétique	Groupe 1 : Pour améliorer l'efficience énergétique et réduire les émissions de carbone, il est essentiel de mettre en place des incitants appropriés. De plus, il est nécessaire de considérer la terre comme un environnement co-produit, capable d'accueillir différentes activités et de mettre les champs d'activités en concurrence les uns avec les autres. L'utilisation parcimonieuse des produits tels que les engrais est également nécessaire, tout en veillant à travailler avec des machines agricoles respectueuses de l'environnement. Groupe 4 : L'amélioration de l'efficience énergétique serait bénéfique à la fois pour la réduction des émissions de carbone et pour renforcer la compétitivité et l'emploi. (Le temps a manqué pour développer ce point avec les participant(e)s)
D_28	Développer l'économie circulaire	Groupe 3 : Il est essentiel de concilier la rentabilité et la durabilité dans le développement de l'économie circulaire. Plutôt que de les considérer comme des concepts opposés, il est possible de trouver un équilibre entre les deux. Par exemple, bien que l'élevage soit souvent étiqueté comme une activité CO^2 intensive, il faut reconnaître qu'il offre de nombreux services. Groupe 4 : Il reste encore beaucoup à faire pour développer l'économie circulaire. Par exemple, il est nécessaire d'améliorer la redistribution des invendus alimentaires, ce qui contribue également à la création d'emplois nécessitant l'embauche de personnel. Il est crucial de développer la circularité dans l'ensemble du secteur agro-alimentaire, y compris la transformation, et de s'inspirer par exemple du modèle néerlandais pour la nourriture destinée au bétail. La fermeture des cycles de l'azote et du phosphore est essentielle pour promouvoir l'économie circulaire, tout en assurant la cohérence des normes.. En général, cela permettra d'améliorer les émissions de carbone en réduisant la consommation d'intrants et en favorisant la réutilisation de la chaleur, par exemple en établissant des serres à proximité des industries et en mettant en place des réseaux d'échange de chaleur qui existent déjà.
D_29	Mettre l'accent sur les compétences du personnel	Groupe 1 : Le développement des compétences du personnel peut être entravé par plusieurs facteurs. Tout d'abord, la formation n'est pas toujours facilement accessible, et même lorsque des opportunités de formation existent, les personnes concernées ne sont pas toujours informées de leur existence. De plus, l'adoption de nouvelles

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3

techniques peut être limitée en raison de leur coût élevé. Enfin, l'accès à la littérature pertinente peut également poser problème.

(D+01) Fiche supplément aire 1	Développer une identité fière	Groupe 3 : Le développement d'une identité fière implique la valorisation des comportements sans tomber dans le cliché bobo et en tenant compte des problématiques de classes socioéconomiques. Il est important de rendre les connaissances accessibles à tous. Il faut évitér également une dissociation malheureuse entre ce qui est considéré comme "sain" et la notion de "plaisir". En adoptant une logique de prix-conscient, il est possible de contribuer à la diminution des inégalités.
D+02) Fiche supplément aire 2	Intégrer le prix (équivalent) carbone	Groupe 3 : L'intégration du prix carbone dans les produits peut être réalisée grâce à un étiquettage intelligent qui reflète leur impact environnemental tout au long de la chaîne. Cependant, il existe un problème de surlabellisation, où l'abondance d'étiquettes peut compliquer le choix des consommateurs. Ainsi, des campagnes de sensibilisation sont nécessaires pour informer et abiliter le public. De plus, il est important d'internaliser les externalités liés à l'environnement. Cette approche doit également prendre en compte le secteur de la transformation, comme l'exemple des crevettes grises qui "partent en vacances" jusqu'au Maroc pour être décortiquées.

Appendix 2

All the variable data sheets (Given - Driver - Blackswan) are available in PDF format in Appendix 2 (in French).

Appendix 2 is available in Open Access on Orbi at :

This project has received funding from Belspo BRAIN-be 2.0 programme under grant agreement B2/202/P3