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Evaluation of the Operationalisation of the TATA-BOX Process

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Abstract The chapter evaluates how the TATA-BOX process supported the collective design of an agroecological transition. In order to carry out this evaluation, we interviewed a panel of 24 participants about their experience of the process and their opinions on it. In this chapter we set out the results in relation to three questions: How did the workshops go? What characterised the outputs? What effects were identified? On these bases, we discuss some possible improvements in the TATA-BOX process and the ways in which this process supported the design of an agroecological transition. We show in particular that the TATA-BOX process successfully initiated a collective design process as it allowed the participants to establish a common ground, define a range of goals to meet, and identify actionable means that could help to reach these goals. The process will nevertheless have to be continued through actual implementation. Various actors will most likely take responsibility for limited actions, rather than for the territorial agricultural transition project in its entirety. They will select the design solutions they need and might revise them. The TATA-BOX participatory process thus appears to be one step in the process of designing the territory's transition.

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Introduction

Many researchers today argue that the issues facing French agriculture call for an in-depth redesign of farming systems and territories (Martin et al. 2012; Meynard et al. 2012, 2017; Duru et al. 2015; Prost et al. 2017). This would require the development of capabilities around design in the agricultural world, from both a methodological and a theoretical point of view. In this regard, the TATA-BOX project (cf. chapter "TATA-BOX at a Glance") is original in two ways: its subject of research, namely how to support the design of an agroecological transition (AET) across a territory; and its strategy, which is to wager on "learning by doing". In order to produce scientific knowledge around this research topic, the project's researchers chose to implement a proposal for a design support process, on their own. This is demonstrated by the reflexive work carried out throughout the project, described in chapter "Towards a Reflective Approach to Research Project Management". It also implies being able to evaluate *a posteriori* the process that was implemented.

This process can be defined through two main features: it is participatory, and it is intended to support design. The evaluation of participatory methods is the subject of an abundant literature in the agricultural world, in the fields of agricultural development and the impact of agronomic research (Alvarez et al. 2010; Perez et al. 2010; Joly et al. 2015; Thornton et al. 2017). This literature emphasises the variety of dimensions of evaluation on contrasting scales. The evaluation of design methods is also a subject that has been addressed extensively, particularly in the field of Design Studies (Moultrie et al. 2006; Clevenger and Haymaker 2011; Détienne et al. 2012; Hatchuel et al. 2016). Depending on the case, the scope of this evaluation covers the product designed (value, originality, etc.), design as a process (quality of collaboration, team performance, effectiveness, etc.), or the learning derived from these processes.

Taking into account the objective of the TATA-BOX research project and the issue of developing design capabilities, we chose to evaluate the TATA-BOX process by applying design process evaluation frameworks. We accordingly focused both on the course of the process and on its outputs. This type of choice raises a number of methodological questions, for these frameworks were not originally intended for designing objects such as an AET. Therefore, wondering about how to evaluate the design process and its results afforded us the opportunity to rethink the methods, in order to carry out this evaluation. How did the workshops go? What characterised the outputs? What effects were identified? To answer these questions and to evaluate how the TATA-BOX process supported the design of an AET, we chose to survey a large panel of participants. Interviews were thus held subsequent to the design process. The intention was to evaluate participants' experience of the process, while remaining as true as possible to their statements in order to be able to pass these statements on to project collaborators and promote their reflection *a posteriori* on the process proposed.

Materials and Method

The TATA-BOX Participatory Process (cf. Also Chapter "Participatory Methodology for Designing an Agroecological Transition at Local Level")

The participatory process implemented as part of the TATA-BOX project is a variant of the methodological framework of Duru et al. (2015). It is composed of three workshops with different goals. These goals are defined as follows in management documents of the TATA-BOX process:

- Workshop 1: "Development of a common understanding of the situation", "Co-construction of an inventory of farming issues";
- Workshop 2: "Construction of a shared vision of forms of farming to develop, and of the organisation of a Territorial AgroEcological System", "Creation of forms of farming to develop";
- Workshop 3: "Design of intermediate states of the transition and identification of monitoring indicators", "Design of local farming governance for this transition", "Creation of transition pathways and governance to develop to achieve these desired forms of farming".

These three workshops were implemented in two fields of study, PETR (Territorial and Rural Balance Pole) of Midi-Quercy and Centre-Ouest Aveyron.

Material Collected

Twenty-four people were interviewed at the two fields of study for the project: 14 in Midi-Quercy, and 10 in Centre-Ouest Aveyron (cf. chapters "TATA-BOX at a Glance" and "Participatory Methodology for Designing an Agroecological Transition at Local Level"). The people who had participated in the 3 workshops of the process were targeted as a priority (we met with 13 of them). Interviews were also held with 7 people who had participated only in workshop 3, with 3 people present in workshops 1 and 3, and with 1 person present in workshops 1 and 2 (Fig. 1).

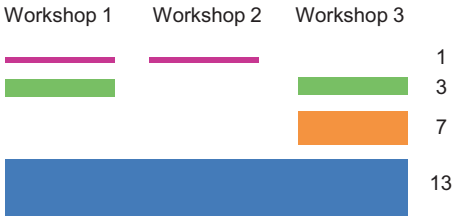

Fig. 1 Among the 24 interviewees, the number of participants in the different workshops

The data were collected during a semi-structured face-to-face interview with each of these people, with five main components: their expectations regarding workshops, how the workshops went, the results, the position of the process compared to others, and its influence. Photos of the different sequences of days were shown to them, to help them to remember.

Data Analysis

This data were analysed based on three main components: (i) the course of the participatory process, (ii) its direct results, and (iii) its effects (Fig. 2).

First, analysing the course of the workshops was intended to identify the real-life experience of the interviewees with regard to the process and the forms of interaction that took place between participants. Discourses were examined both qualitatively and quantitatively. On the qualitative level, the components of the process

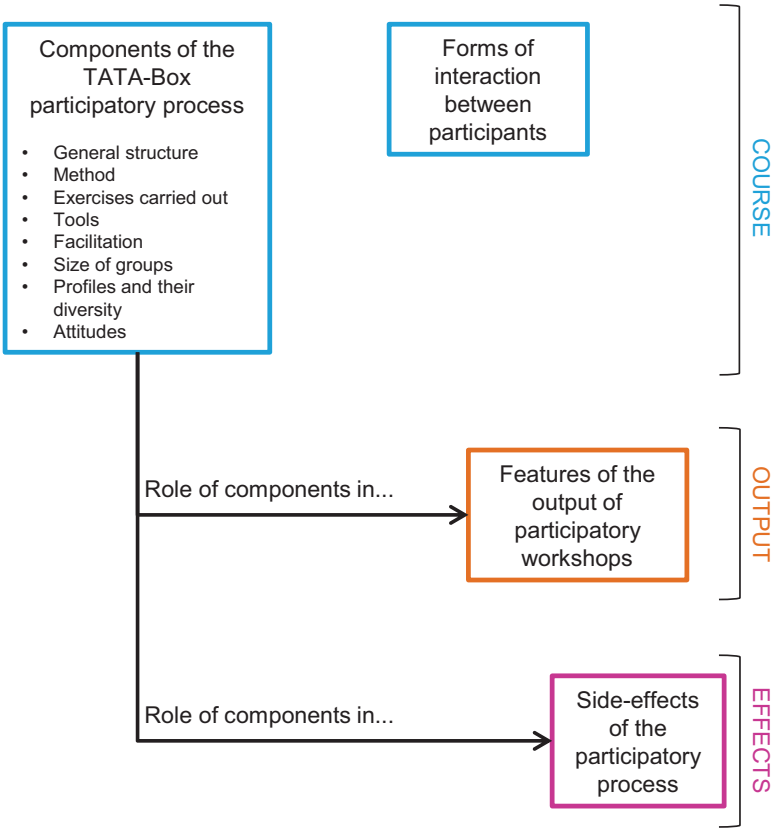

Fig. 2 Summary of objects and relationships between the objects analysed

discussed by the interviewees were initially detected by the analyst inductively: its general structure, the method, the different exercises carried out, intermediary work objects, the facilitation, the size of work groups, the diversity of participant profiles, and the participants' attitude.[1] The underlying meaning of the statements, whether positive, negative, or mixed-undetermined, was then defined. Likewise, discourses on the forms of interaction between participants were detected and categorised inductively (exchanges of viewpoints, articulation of viewpoints, discussions, consensus building), and then distinguished based on the meaning of the words. NVivo 10 software was used to codify the different categories of statements and then to quantify the number of contributing interviewees. For each component of the process and each category of interaction between participants, a second qualitative analysis "on paper" was then carried out inductively to describe the discourses in more detail. This at times led to adjustments in the coding carried out by NVivo.

The second thrust of analysis aimed at recording interviewees' points of view regarding the features of the outputs of the process. The interview guide contained targeted questions on the exhaustiveness, accuracy, originality, and degree of completion of outputs. These dimensions stemmed from interaction with the designers of the participatory process. They reflected these designers' effectiveness criteria for the process, concerning the quality of the result. The interviewees sometimes also addressed other features of the outputs. Interviews were processed quantitatively and qualitatively. NVivo software was used to: (1) allocate spoken elements to the categories of "exhaustiveness", "accuracy", "originality", "degree of completion", and "other"; (2) categorise these speech elements based on the meaning of the statement, whether positive, negative, or mixed-undetermined; (3) quantify the number of contributors to these different statement categories. Like previously, each statement category was then qualitatively analysed (inductively) to describe the statement in more details, which sometimes led to readjustment of the coding in NVivo.

Lastly, the third analysis component consisted in identifying the categories of effects mentioned by the interviewees and in describing their experience and expectations regarding these side-effects. Interviews were processed qualitatively. The content of statements was inductively grouped into thematic categories.

[1] As participants' attitude often appeared in their statements, it was treated like the other components of the process. It pertained to more than just the process, but this process explicitly aimed at allowing each person to express him- or herself without judgement, with balanced turn-taking to speak.

Results

The Course of the Participatory Process

A Process Deemed to Be Positive Overall

Table 1 shows that the method, exercises carried out, tools, facilitation, size of groups, and participants' attitudes are more often the subject of positive statements by the interviewees than negative statements. The exercises carried out and the work tools nonetheless present a significant number of "mixed, undetermined"-type statements. Statements on the diversity of participant profiles appear to be mixed. Those regarding the general structure of the process, which encompasses various aspects, appear to be negative somewhat more often. While this initial analysis provides a general idea about interviewees' feelings, it hides a wide diversity of experiences. The detailed analysis of the corpus for each component allowed us to identify the main ideas put forth and to group them together.

Diversity of Experiences Among the People Interviewed Regarding Each Component of the Process

Regarding the General Structure of the Process

General Feelings

There were few general expressions of feelings regarding the process, but they were positive (*"left thrilled", "only good things", "it went really well"*, etc.) – although they did not stop the people in question from making some criticism or pointing out difficulties, which are presented below.

Table 1 Number of interviewees with a positive, negative, or mixed or undetermined discourse regarding each of the components of the process; the higher the number, the darker the colour

	Number of interviewees that discussed the component	Positive	Negative	Mixed, undetermined
0: General structure of the process	22	11	18	10
1: Method	18	14	4	2
2: Exercises carried out during the day	20	15	10	9
3: Tools	18	14	9	6
4: Facilitation	17	13	5	3
5: Size of groups	8	7	1	0
6: Profiles and their diversity	24	17	21	14
7: Participants' attitudes	12	10	3	1

Institutional and Territorial Framework

The interviewees' statements highlight the original nature of the process framework, which is out of the ordinary and contains some degree of neutrality. The invitation from a research institute (INRA – French National Institute for Agricultural Research) facilitated the inclusion of people with different sensitivities, and participants contributed on an equal footing, which is not the case of typical hierarchical or institutional frameworks (two interviewees). However, some of them found it unfortunate that the process was not designed in closer conjunction with the territory, and in particular other initiatives underway, to better mobilise actors and to ensure the continuity of the work initiated by the TATA-BOX process afterwards. One interviewee was positively surprised by the attendance of so many INRA engineers to put local actors to work (*"at a place that we know, a local place"*).

Overall Dynamics of the Process

Three subjects were brought up in relation to the overall dynamics of the process. First of all, the process dimension was seen in a positive light (3 interviewees): the fact of defining a point of departure, a point of arrival, and reflecting on the pathway to reach it seems to have been particularly important. Next, the interrelation between the three workshops (understanding of the logic, appropriating and re-using the results from one workshop to another, iterations carried out on the results) was perceived in a variety of ways. One participant who joined the process during Workshop 3 spoke of the difficulty of understanding the goal of the undertaking, whereas another one insisted on the clarity of the overall interrelation of the workshops. Five participants mentioned difficulties in appropriating and re-using the results because the summary was not available before the following workshop, although for some this was offset by the way that the previous work was summed up during meetings (e.g. rich picture and cognitive map). The progression between the outputs of work sessions and those of the research team from one workshop to the other was viewed positively, even though the interviewees felt that the visibility of this work between workshops and the nature of the conclusions drawn from it could be strengthened. To conclude, the length of the process (1.5 years) and the intervals between workshops (6 months to 1 year) partially explain difficulties in appropriating and re-using results. Several interviewees saw this as a hindrance to memorising the work carried out during the previous workshop and to maintaining the involvement of the same actors throughout the entire duration of the process (especially when some of them had changed jobs in the meantime). Some people suggested the creation of an "intermediate session" to keep participants in the process between workshops (3 interviewees).

The Meeting Days

Statements on meeting days concern three aspects. First, several interviewees felt that the duration of single-day meetings was too long, taking into account availability or the intensity of the work. Workshop 3 was nevertheless perceived as being too short to achieve the established goals. Second, the calibration of the time dedicated

to the different exercises was viewed positively. The diversity of the types of exercises within a single day allowed people "*to not get bored*". However, it also sometimes limited in-depth exploration of certain subjects (1 interviewee). These dynamics also had differing effects on people. For example, two interviewees said that they finished the days "*fried*" or that it was "*gruelling*", whereas another one said, on the contrary, that she "*felt great*" at the end thanks to the format of these days. Third, the interrelation between these activities was experienced very positively ("*it flowed*") and certain people even specified that this fluidity was not typical in the meetings in which they usually participated.

The Method

A few statements regarding the method remained general and were positive. Three commonly addressed topics stand out. First, the comprehensive nature of the exercise set it apart from other processes. This was due to the diversity of the subjects addressed and the sheer range of conditions of the AET that had to be specified in the design of the pathway (2 interviewees), as well as the structuring of reflection in three domains (agricultural production, natural resources, and agricultural supply chains) (2 interviewees). Next, according to several participants, the interactive dimension allowed a variety of people to work together in a livelier way than with more classic approaches (1 interviewee), and helped them to envision future scenarios (1 interviewee) – a tricky activity that was nonetheless desirable in territorial reflection. Two interviewees nonetheless expected a more analytical and in-depth posture: one thought it unfortunate that neither a more in-depth quantified inventory of the state of local agriculture, nor forecasting scenarios, were done; the other emphasised the role of the organising scientists in the production of the results, allocating them a role of data analysis and the creation of proposals based on the work during workshops, which appeared to be reduced to data collection. Lastly, the method was deemed to be effective: it was productive (emergence of ideas, concretely specifying them in writing, effective resumption) without losing time due to its reflexive structuring and framework, a structure perceived as being non-restrictive (2 interviewees: "*It didn't feel like we were working hard, I mean it wasn't a constraint*"), contrary to other processes.

The Exercises Carried Out During the Workshops

At the time of the interviews, the majority of the interviewees no longer remembered the details of the different workshops. The photos presented by the interviewer helped, but not all of the exercises were systematically addressed. The interviewees gave the most details on Workshop 3, which was more recent (Table 2).

Table 2 Number of interviewees that had positive, negative, or mixed or undetermined statements on each workshop

	Number of interviewees who gave their opinion of the workshop	Positive	Negative	Mixed, undetermined
1: Workshop 1	9	8	0	1
2: Workshop 2	7	4	1	6
3: Workshop 3	17	13	8	6

The Main Exercises

Most points of view on Workshop 1 were positive and mainly concerned the benefit of building a common and structured representation of the current situation (Fig. 3). Only one interviewee had a mixed opinion (he felt that he was barely involved due to the general nature of the exercise). Statements regarding Workshop 2 are often vague (Fig. 4). Several people had only a vague memory of the course of that workshop and the ideas originating from it. Concerning Workshop 3, the statements of eight interviewees demonstrate their interest in the method for designing the transition pathway (Fig. 5). The originality of this method compared to the previous workshops and what the interviewees were accustomed to practising was often highlighted. Several interviewees, and sometimes the same people, nonetheless noted that this exercise was complicated or difficult, and spoke of a long start-up phase to understand the meaning of the tools and what had to be done. Difficulties persisted at times: (1) in finding the meaning of the ideas resulting from previous workshops embedded within tools; and (2) in providing the elements requested when the group did not have the required capabilities. Lastly, a lack of time was often mentioned for Workshop 3. For this reason, two interviewees would have liked to have limited the number of goals defined during Workshop 2.

Additional Exercises

The "prioritisation" of issues (Workshop 1) or of goals (Workshop 3) with the help of coloured stickers was often spontaneously mentioned as something that participants liked (Figs. 3 and 5). The same goes for the icebreaker implemented during Workshop 3, except for one person who claimed to have been unsettled by it (Fig. 5) ("*I don't know. She gave us those cards, and you had to imagine something or rather, and I didn't really understand what the point was, or if there even was one*"). Some participants said they did still wonder, at the time of the interview, if there was any connection between this icebreaker and the remainder of the exercises carried out during the day. Lastly, two interviewees made statements regarding plenary meetings. The first, intrigued by the consensus obtained during Workshop 2 despite

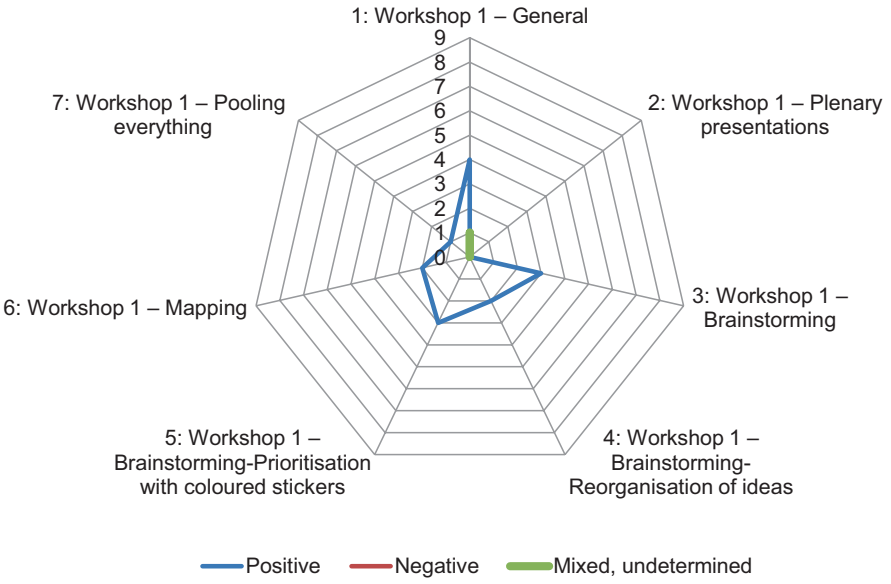

Fig. 3 Number of interviewees who gave their opinion on the exercises of Workshop 1

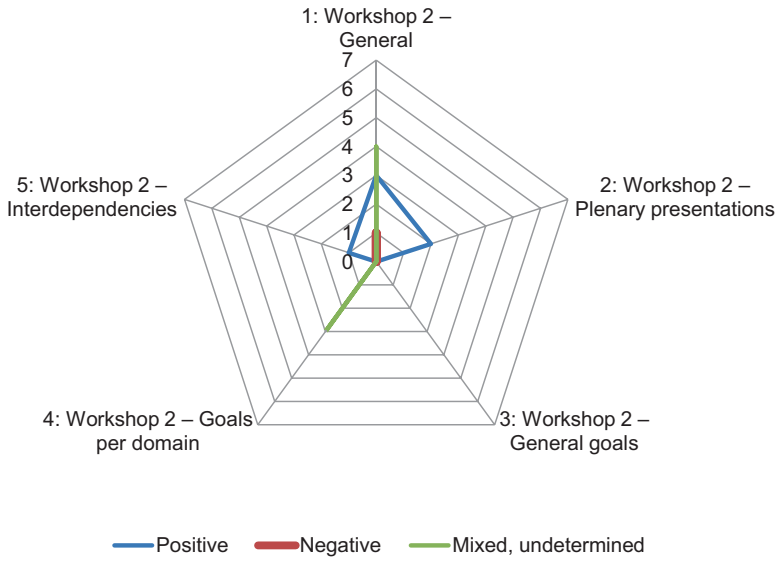

Fig. 4 Number of interviewees who gave their opinion on the exercises of Workshop 2

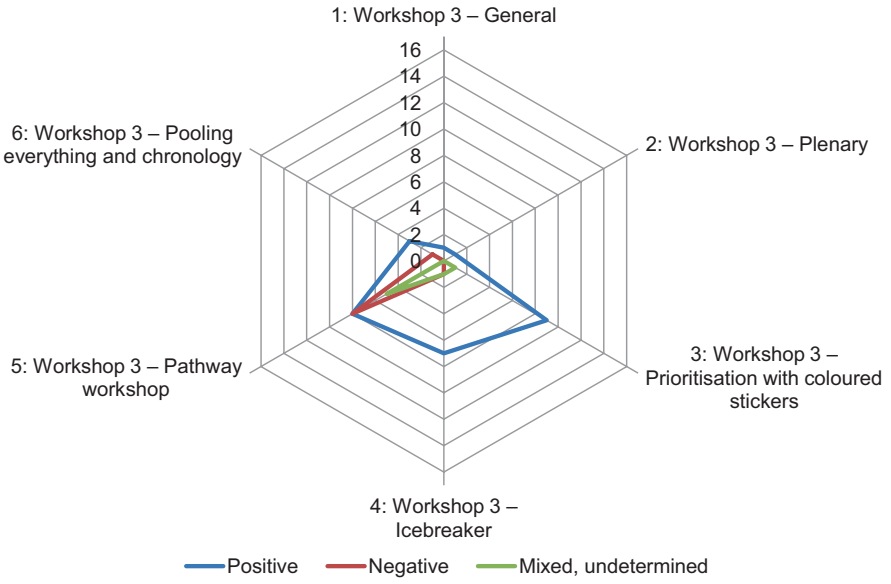

Fig. 5 Number of interviewees who gave their opinion on the exercises of Workshop 3

the diversity of participant profiles, wondered about the role that could have been played by the introductory presentations during the plenary meeting (cf. chapters "TATA-BOX at a Glance" and "Participatory Methodology for Designing an Agroecological Transition at Local Level"). The second person found the way of carrying out the plenary meeting during Workshop 3 to be highly original and interesting: the meeting was short and graphic tools were used to summarise the results of previous workshops.

The Tools Used

The tools mentioned during interviews are mainly those associated with Workshop 3.

Tools for Summarising the Results of Previous Workshops

Seven of the interviewees found the rich picture[2] very helpful, although two of them felt that it needed to be supported by a presentation. Various qualities were attributed to it: very clear, explicit, complete ("*it's all there. […] I didn't see any*

[2] Broad range of terms used to refer to the rich picture: "the diagram with all the relationships", "that sort of sphere", "the little potato with circles", "that sort of big map with the connections to everything", "that nice overview diagram", "the diagram presented at the beginning of the meeting", "that famous map that makes me dream".

omissions"), interesting, well-designed, figurative, educational, great, "*It really suits me*". It allowed participants to look back on what had already been done (cf. section "Regarding the general structure of the process"), presented all interrelations, made people reflect, structured the reflections on the farming project represented, and participants effectively used it during the day. One of them even thought that he would reuse it. Only one of the interviewees criticised the rich picture, because it put differing aspects on the same level, and contained too much information. Three interviewees had positive or mixed opinions concerning the cognitive map presenting the relationships between goals in diagram format: despite being difficult to interpret, they found that it clarified the choices of goals to be addressed first, and later, during workshops, allowed them to situate each goal with all of its connections. One participant summarised the way that he made use of these two tools during workshops: "*it allowed us to remember [the last workshops], that picture with the main guidelines that were adopted, with the images, and we would say to ourselves, 'that's true, we did say that, we said that', and afterwards, we would say 'but I don't really remember the details very well', and there, bam, we had that map*".

Six interviewees mentioned the fact that no minutes of meetings had been distributed before workshops, and five of them pointed out that they would have liked to have them as a reminder or to use prior to the following workshop (cf. section "Regarding the general structure of the process").

Tools Used During Workshops

Only two interviewees mentioned the post-it notes used during Workshops 1 and 2. Their use appears to be common yet was seen positively: they were used wisely to share ideas and detect similarities and differences. Five interviewees mentioned the coloured cards (and other similar materials) of pathway design workshops (Workshop 3), describing them as being more elaborate than post-it notes, visual, playful, and as good "starters" for discussions. Some highlighted the fact that the take up of these tools was not immediate and required the facilitator's mediation. Another interviewee recognised that these tools did a good job of framing the work, but felt that they also held it back. He mainly noted the benefit of organising pathway elements over time, with the help of arrows and the line that was used to position the different subjects: this produced an overview of the work and made it easier to talk about afterwards.

External Data

Two interviewees mentioned data that were unrelated to the participants' discourses. The first one felt he lacked the data to feel legitimate enough to make alternative suggestions and argue in favour of their feasibility. He would have needed a knowledge base (techniques in particular) in common with other participants to be established. Another one noted that a large amount of information was provided at the beginning of the second day (including the presentations by scientists) and

wondered whether these presentations had an influence on the direction of workshop discussions.

Facilitation

On the whole, the majority of interviewees congratulated the facilitators or praised their work. Their statements also contained details on the facilitators' activities, and each positive aspect was systematically addressed by 3 or 4 interviewees. (1) They highlighted the facilitators' ability to explain exercises, set things in motion to make progress, and reframe things. Nonetheless, two interviewees perceived a lack of methodological guidance by facilitators during Workshop 3. One experienced difficulties in learning to use the colour codes of tools. The other felt that his group was confused and a bit lost in terms of the different concepts used to define the transition pathway. One person spoke of tension between the group's difficulty in appropriating the content of certain goals, and the facilitator's engagement to make the pathway defining exercise progress. (2) The facilitators' ability to make participants express themselves and to establish dialogue between different mindsets in a respectful context was also highlighted. (3) The interviewees perceived facilitators as people who listened and took all viewpoints into account without stigmatising them. Two interviewees (from different groups in Centre-Ouest Aveyron) nonetheless noted that the facilitators slipped into participation in the discussions. They related this to the small group size, which caused facilitators to feed discussions. One person disliked the fact that the co-facilitator used the various tools extensively, rather than having a withdrawn position of listening and synthesising, which would have been more conducive to reflection. (4) The relevance of facilitators' interpretation and summarising of participants' statements was also apparent in the interviews. One person in particular noted: "*a real ability to respond to what is said, to try, when a sentence isn't clear, to seek clarity by asking questions, by responding, by re-formulating*". Lastly, two interviewees noted that the method was based on the facilitator's quality. Moreover, they perceived a level of participation and production that differed to some degree, depending on the facilitator in Workshop 3. One of them therefore predicted that the reuse of this method in other contexts by other people would require training of the facilitator.

Group Size

The interviewees described the groups formed for the work sequences as small groups. Their statements regarding this small size were essentially positive and touched on what that allowed them to do in terms of interactions between participants. One interviewee also related working in a small group to the ability to "*work well*" and with accuracy. During Workshop 3, the excessively small size of certain groups in Centre-Ouest Aveyron was mentioned as a factor exacerbating the weight of individual ideas. While only one person highlighted this direct effect of the small

size of certain groups, its effect via the low diversity of participant profiles was addressed much more broadly (cf. section "Participant profiles and their diversity").

Participant Profiles and Their Diversity

The diversity of participant profiles was seen in a positive light (13 interviewees), even if it was still inadequate or unequal, depending on the workshop (lower for Workshop 3). Fourteen of the 24 interviewees considered farmers' limited presence to be unfortunate, as there were fewer farmers than elected officials, administrative officials, and representatives of organisations ("*The 'real people' have to be at the heart of things*"), and some of the farmers were no longer working. Around ten interviewees also regretted the lack of stakeholders with an influence on changes in the agricultural world (elected officials from chambers of agriculture, agricultural syndicate representative, cooperative director, etc.). Other missing categories were highlighted more occasionally: food processors (butchers, manufacturers, etc.), state representatives, public project financial backers, banks and insurance companies, agricultural education and training actors, the water agency, river syndicates, as well as people working on hedges, bocages, and the development of riparian forests. On the whole, the interviewees considered there to be less diversity Workshop 3 than during the previous two workshops. This hindered the dynamics of the groups concerned ("*there were too few people to really have a debate*") and their production ("*when it comes to that topic, which we have to address, all of a sudden we don't have the right people to address it, and then we're a bit cornered*").

Two interviewees mentioned disadvantages of grouping together people with diverse profiles. For instance, the lack of common ground allowing for debate can make it difficult to call a dominant solution into question.[3] Furthermore, the promotion of one's institutional and political position can inhibit one's creativity.

Furthermore, three people said they felt they lacked the legitimacy to express themselves at times. Two interviewees thus questioned the justified nature of certain participants' statements around farming ("*you have to have first-hand experience, so my little criticism would be that people allow themselves to give advice without being familiar with the profession*").

Participants' Attitudes

Six of the interviewees spoke of participants' attitudes demonstrating respect and open-mindedness. Moreover, three of them were surprised by the discourse of certain participants, which did not reflect the mindset of the type of structure with

[3] Maize farming, for example.

which they were affiliated ("*with certain organic farmers, for example, things are really black and white, […] so-called conventional farmers aren't used to having such positive discussions with organic farmers*"). This is related to the constructive position aimed at promoting reflection, which appears in the statements of five of the interviewees. Yet, according to two interviewees, one person came to hold a more dominant position than the others in the group, which tended to hinder the discussions.

A Leading Place for Exchanging Viewpoints

Statements on interactions between participants contained strong connotations of the exchange of viewpoints (cf. Table 3): the concepts of collecting ideas, allowing everybody to express themselves, freedom of speech, a diversity of viewpoints, a wealth of ideas and exchanges, predominated. The few hesitations in this respect concerned Workshop 3 in Centre Ouest Aveyron, in which the small group size limited the diversity of viewpoints shared. The articulation of these viewpoints was also stressed. By contrast, disputes (arguments, debates, etc.) seem to have occupied little space. The lexical field related to them (11 interviewees) consisted mainly of simple phrases and nothing more ("*we talked*", "*we stuck the post-its up and then debated*"), which are difficult to interpret. Some interviewees indicated that there were no significant controversies or debates around subjects that were nonetheless controversial, or even that people voluntarily contained their arguments and avoided conflict, as a mark of respect. Some interviewees moreover mentioned consensus building as exchanges progressed, whereas others mentioned similarities in viewpoints from the beginning, with the former being slightly more numerous than the latter.

Table 3 Number of interviewees that addressed the different forms of interaction between participants

	Number of interviewees contributing to the group of ideas	Yes	No	More or less	Not easy	Don't know
1: Exchanges in viewpoints	23	22	6	3	0	1
2: Interrelation of viewpoints	11	9	1	0	0	1
3: Disputes	16	9	8	2	0	0
4: Consensus or consensus building	12	10	2	0	0	0
Average	*15.5*	*12.5*	*4.3*	*1.3*	*0.0*	*0.5*
Standard deviation	*5.4*	*6.4*	*3.3*	*1.5*	*0.0*	*0.6*

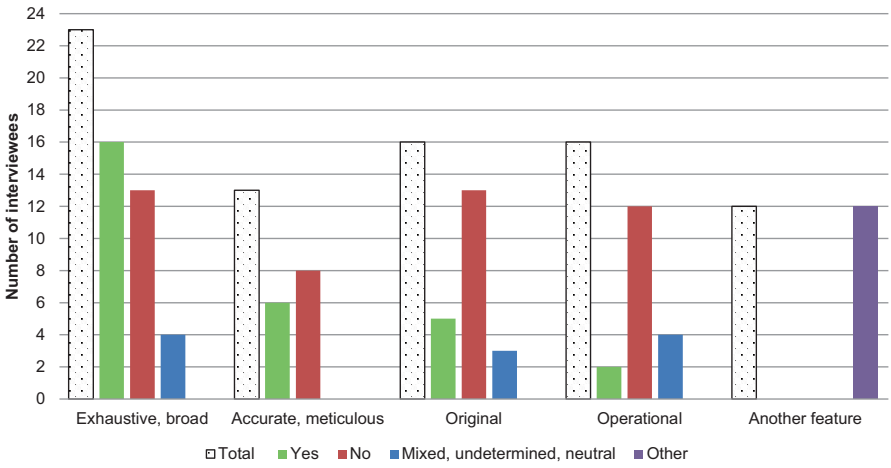

Fig. 6 Numbers in the categories of evaluations made by the interviewees regarding the different features of workshop outputs

The Features of Workshop Outputs

Figure 6 quantitatively represents the different categories of statements detected. To avoid increasing the number of categories of features, "exhaustiveness" was broadened to include all statements regarding the scope of that which was produced. Regarding exhaustiveness and accuracy, there was a similar number of interviewees with positive or negative statements. Regarding the originality and operationality of the outputs, more interviewees had negative opinions than positive ones. The exact nature of statements was subject to qualitative analysis below.

Exhaustiveness and Degree of Accuracy

Ten people stated that the outputs were generally either exhaustive or at the very least substantial, valuable, or wide-ranging. One of them said that it was the most complete exercise that he had participated in up until then. Another emphasised that this made it difficult to select a priority issue. Some comments nevertheless nuanced the scope of the outputs.

It was often highlighted that the forms of farming considered during workshops were the reflection of the people present, which included few farmers and operators in conventional supply chains, and at times few participants (in particular in Centre Ouest Aveyron for workshop 3). The interviewees thus questioned the representativeness of these workshops with respect to the supply chains and forms of farming in the territory. In particular, conventional supply chains without certification labels were rarely addressed, even though the interviewees stressed that they were the main source of income of many farms and that it was also necessary to consolidate

them and to reflect on the transformation of the systems in question ("*we might have not done enough thinking on transforming systems that are embedded within big industry today*"). Other supply chains existing in the territory were not considered either (such as milling wheat production). Even though a variety of agricultural models were mentioned in the two territories and discussions stressed their complementarity and necessary cohabitation, certain orientations were prioritised. One interviewee in Centre Ouest Aveyron noted that interactions were marked by agroecology. Moreover, even though other forms of farming were not excluded, those towards which the comments were oriented seemed, according to several interviewees,[4] to be targeted at more diversified farming developing local resources, family farming with autonomous systems to create value, and short supply chains.[5] This gave some people the impression of addressing niches or somewhat idealised agriculture, rather than the "overall truth". Moreover, the agricultural orientation that established a consensus between the participants surprised one of the Centre Ouest Aveyron interviewees, who thought that the representatives of certain structures were defending others, considering their usual positions. Still with regard to the lack of representativeness but in the opposite sense, one interviewee in Midi-Quercy found it unfortunate that his group revolved around the preservation of maize farming, without investigating alternatives.

Likewise, while several interviewees considered that the definition of issues and goals was relatively complete,[6] some mentioned subjects that were barely covered or not addressed during workshops, such as supply chain difficulties (in Centre-Ouest Aveyron) and the isolation of land parcels due to urban development (in Midi-Quercy), which was only addressed from the landscape point of view. Participants' experiences across a single territory were sometimes different in this respect: in Midi-Quercy, one of them felt that water was one of the main topics, whereas another person from another group felt that it was only alluded to. With regard to the impasses in Workshop 3, they were often the result of a lack of time to address all of the goals defined in the previous workshops.

Statements regarding the degree of accuracy of outputs were often less explicit. In particular, five interviewees simply answered yes or no to the question. Four believed that the subjects addressed were generally considered in depth. In particular, all of the important components of the pathway were covered during Workshop 3: the initial state, goals, the final state, governance, key actors, means of acting, financing. Seven of the interviewees presented a more mixed opinion on the degree of accuracy of the work carried out. Four made general statements on the shallow-

[4] Belonging to the two territories

[5] One interviewee in Midi-Quercy, on the other hand, found it regrettable that organic agriculture was not discussed during Workshop 3.

[6] "*when I saw the signs and I saw those diagrams [rich picture and cognitive map] I told myself 'it's all there'*"; "*Yeah, in terms of natural resources, I think that we got to the bottom of what we – we might have forgotten, but I think that we did structure the workshop well, yes… We didn't forget much, at least I don't think so? From memory, we left quite satisfied with what we had done. For the issues as well, I don't remember having seen a major issue that could have been forgotten…*"

ness of the subjects, due to the alternation between activities, the absence of "*well-defined proposals*", the additional time necessary to completely address all of the goals, or the lack of numerical data during the diagnostic. One interviewee doubted that Workshop 3 went further than Workshop 2, which was already quite detailed. Lastly, one interviewee highlighted the fact that transition pathway indicators could not be defined properly due to a lack of sufficient expertise and time.

Originality

The interviewees almost unanimously agreed that new paths for the territory or novelties for certain actors had been identified, but noted that the majority of them corresponded to the spirit of the time or existed elsewhere. Only five interviewees said that they had detected new or innovative ideas, without qualifying their statements. One of them gave an example of this[7] but it is difficult to know what the other four meant by "new ideas": new for them or for other actors? new for the territory or truly innovative? Three other interviewees stated that in any event, the paths of action defined during the workshops already existed elsewhere or were in line with a general trend. Eight even indicated that the ideas collected, whether all or the majority of them, were already being considered in the field, or were even being implemented. A few people moreover mentioned conditions that according to them were unfavourable to innovation during workshops: "*there was no emulation that day during the workshops that would have allowed us to say 'Yeah, we can do that!'*"; it is difficult for "*the people at the bottom*" to not stick strictly to what they have learned[8]; the inadequate diversity of the profiles limited the emergence of innovative ideas (statement originating from Centre Ouest Aveyron), or the diversity of participants, on the contrary, limited capacities to debate alternative solutions (lack of shared culture) or hindered the boldness of innovation to the benefit of political ideas related to the requirements of representation (statement originating from Midi-Quercy). Beyond that, two of the interviewees in Midi-Quercy highlighted a situation of lock-in[9] in certain current solutions that nonetheless do not appear to be sustainable. In this case, the protection of existing supply chains (maize, melon) was retained over the possibility of making them change quickly.

Following another line of thought, one interviewee was surprised by the positions taken by certain participants, which seemed distant from the typical positions of their organisation. He explained this in terms of their "field" activity as opposed to representation ("*at these meetings, I felt like it wasn't the real world, and that's interesting because there were people there, and not necessarily representatives, they were technicians or people working in the field that came to provide their point of view*").

[7] The idea that certification labels are no longer seen as an end in itself.

[8] This interviewee considers the research world as being the most capable of proposing innovations.

[9] Due to a lack of alternative solutions or a lack of common culture to overcome blockages.

Degree of Completion

A few interviewees talked about elements produced during workshops that could be put to use directly in the field, in particular the identification of key actors in transition pathways. However, only one of them said that all of the aspects necessary for what he called the operationalisation of the project were addressed in Workshop 3. The statements of 11 other people indicated that the outcome of reflection on implementation would require follow-up to the process. Five of them moreover insisted on the importance of concrete completion ("*if we just stick with what we've done, we won't make any progress*"; "*something needs to produce a result, otherwise… not much will be left over*"; "*now we need to move on to the project phase, to the phase of initiating something that meets the needs*"). As regards follow-up, several interviewees stated that they were unsure of how the transition to action would take place. One of them suggested that "*we now need to find a methodology: 'how do we transit from defining needs to action'*". A few conditions and mechanisms to implement paths stemming from reflection were nonetheless mentioned, such as a very local scale, knowledge of capacities for financing actions, sending of the final report to financial backers, dynamic and influential relays among decision-makers, publication of outputs online (such as on Territorial Rural and Balance Pole websites), experimentation and the demonstration of practices, the identification of constraints and means for concretising the actions defined,[10] the fourth workshop of the process foreseen by workshop organisers (cf. chapter "Participatory Methodology for Designing an Agroecological Transition at Local Level").

Other Features of the Product Mentioned

During the interviews, the interviewees mentioned other features of the workshop outputs. Each of these features was mention by only one or two people.

An initial aspect was the realism and degree of justification of some goals. One interviewee thought and liked the fact that the TATA-BOX project "*[has] been a federating space, for sharing data to be able to still manage to construct something realistic*". He and another person from Midi-Quercy nonetheless questioned the possibility of reducing water consumption, while a third person found, on the contrary, that future constraints, such as the lack of water, were not adequately taken into account during workshops. One interviewee in Centre Ouest Aveyron also saw a bit of utopianism in orienting toward the re-localisation of food and supply chains, taking into account their operating conditions and the current economic environment. More generally, two interviewees heard statements that they thought were disconnected from farmers' practices and constraints, and considered it unfortunate that the operation of farming was not developed to a greater extent, so that each participant might be able to better understand existing practices and that which was possible or reasonable to do given the constraints. One participant nevertheless

[10] Nonetheless partially carried out during Workshop 3.

liked the fact that the method led to awareness of constraints without stopping at them: "*For me, in that respect, the method was very timely, that's to say, it took into account these constraints […] but we couldn't fix them, in my opinion, it's kind of risky to bridle a hosting technique with this reality principle*".

One set of ideas addressed the relations between the elementary components of the outputs. By indicating that the subjects identified were indissoluble, one of the interviewees emphasised the systemic nature of the workshop outputs. Another interviewee, by revealing that some of the forces at play collided with one another, highlighted antagonisms ("*managing the water resource while protecting the maize supply chain: they don't go together*"). He and another person moreover defined the final result as establishing a common basis of the knowledge that each person individually brought to the table.

Some interviewees also spoke of the form of the output: ideas were "*posited*" in writing (this facilitated the identification of implementation conditions) and organised (prioritisation of subjects, chronology of goals), something was "*efficient*", "*it was subtle*", voting with coloured stickers was "*speaking without speaking*", the project was "*illustrated*", "*for agricultural production the goals were pretty clear (linking production and consumption)*", pathways were more "*complicated*".

Lastly, due to the profiles of the participants in Centre Ouest Aveyron, who were mostly sensitised to agroecology or organic farming, the outputs converged towards these forms of agriculture. This was less pronounced in Midi-Quercy, where the participants originated from a more conventional farming environment (cf. section "Exhaustiveness and degree of accuracy").

The Spin-Off of the Process for the Participants and the Territory

Individual Learning

Around half of the interviewees stated that they learned things during these meetings and that they reused this in their work. This learning concerned six different aspects: (1) reasoning logics or actors' sensibilities; (2) farming and its issues; (3) the initiatives emerging from territories; (4) reference points for acting or changing ways of acting; (5) new reflection; and (6) the detection of potential partners. The insert below contains a selection of *verbatim* quotes that illustrate the six categories of individual learning.

Some interviewees said they had become aware of issues during workshops, and that they intended to try to take that new knowledge into account in their territorial development or farmer support activities. Others had got useful ideas during workshops (on problems and key actors), that would help them to make progress on subjects that they did not previously know how to address.

Selection of *verbatim* Quotes Demonstrating Individual Learning

- *I arrived with that preconceived idea, which was finally knocked down (1)*
- *that let me size up the obstructions, to see a bit of those sensibilities, which I was aware of but I hadn't measured in terms of magnitude […]. that let me truly see sensitive points regarding the territorial agriculture question, and therefore maize, and that in terms of organic, we have to stop seeing two opposing sides of the bad conventional farmers on the one hand and the people who grow organically and are saving the planet, on the other. (1)*
- *that allowed us to become aware of a new position, another sector of activity, another supply chain, and all of a sudden to take it into account in our way of seeing things. (1) and (2)*
- *the agroecological transition is a subject that I had never addressed […] I was able to draw from all of this information that I didn't have before and which today feeds my thoughts. When I have projects that are emerging, I can make connections, and in the background, it also really helped me. (2)*
- *there's a whole aspect around methods that I learned a ton about, about production methods, supply cycles, the ties that will be established between farmers and their ecosystems […] that really let me immerse myself in farmers' ecosystems, and that also let me immerse myself in their techniques and concerns. (2)*
- *that lets people become aware of certain issues that they don't know about. (2)*
- *Mr. XXX […], who was against the Sivens dam […], against water reservoirs, for irrigation-free farming, he didn't know much about it […]. So, when I said when I had to say, as a professional… modest but stating things as they are, the guy completely changed position. […] TATA-BOX was a meeting place that allowed to… in the end, today, with those same people we are having a different discussion around that project. (2)*
- *we weren't aware of all of the initiatives […]. It wasn't that I discovered a supply chain that I wasn't aware of or something like that, but at times it allowed me to say, well, there's this or that that's being done. (3)*
- *we talked a lot about short supply chains. […] And in them, the need is essentially having a farming activity that supports the supply chain or even a peri-urban belt. For the time being, we aren't taking this into account. […] So, all of that will be a lot more present in my mind when I do a file analysis. (4) and (2)*
- *that allowed for a stage today during which we no longer have doubts around the desire to create this legumery. (4)*
- *the usefulness that I see is that it consolidated our common view of things and our forecasting of concrete action in territories, as we saw it […]. We*

(continued)

are truly embedded within that logic of action promoting sustainable agriculture, with an entrance into agroecology. (4)
- *by reminding me bit by bit, there were reflections that I hadn't had that came out in the workshop […], the story of labels, for example. (5)*
- *I participated in the meeting but after that, it stopped there; we don't have time to work on those problems. […] on the other hand, I would be curious to read the summary. […] it will answer questions that I never thought about, that I haven't had the time to explore in detail; it might consolidate some ideas that I have or that I've heard and for me, that's personal enrichment, that will expand my viewpoint of things, of the agricultural world. (5)*
- *It was the first time that I had heard of GIEE (Economic and Environmental Interest Groups) […], it enabled me later to get into contact with that structure again, to inform myself, and in the end, to talk to people involved in that project, and today, we are in the middle of creating bridges with these people. (6)*

Learning legend: regarding (1) reasoning logics or actors' sensibilities, (2) farming and it issues, (3) the initiatives emerging from territories, (4) reference points for acting or changing ways of acting, (5) new reflections, (6) detecting partners.

Reusing the Method

Around ten of the interviewees talked about reusing the TATA-BOX process themselves or its reuse by other people. The majority thought this method could be adapted to a variety of situations and scales.

Among the nine people who mentioned reuse by themselves or by an organisation to which they belonged, we find a gradient of intentions. Quite naturally, the people who had already reused the principles derived from the method at the time of the interview, or who definitely planned to do so, were essentially the people whose task was to host groups (groups of farmers or groups on the territorial level). The methodological elements mentioned were: the three workshops of the process, the method and organisation of Workshop 3, collective representation on a virgin map of the territory (farming systems, constraints, and conflicts), and the representation of ideas in the form of a rich picture diagram. Other interviewees did not exclude the possibility of reusing elements of the method, but had either not yet defined the situations for which they would do so, or saw obstacles to this, such as obtaining funding to gather a large public and then concretely implementing projects, the duration of the process, or the lack of hosting capabilities. At the time of the interview, a latter group did not plan to reuse the method.

Moreover, two people foresaw others reusing the method. One particularly suggested reusing it in the "territorial food project" in Midi Quercy. He also expressed the desire for a rather broad reuse, such as by the Chamber of Agriculture or other structures in the context of the process for setting up young farmers.

Use of the Results

Several interviewees stressed the importance of the outputs of workshops resulting in actions (cf. section "Degree of completion"). In this respect, four pointed out the issue of disseminating the results to decision-makers so that they could take them into account in their strategies (financial backers, elected officials, and directors of key organisations running projects). The success of this transfer of the results did not however appear to be a given, considering the questions formulated by some participants with regard to: (1) the possibilities of the agricultural world taking up the results, considering that it had little representation at meetings; (2) the lack of directors of influential organisations in the agricultural world and the lack of project financial backers at meetings; (3) the ability to mobilise key actors, including those in the agricultural world, with this mobilisation already appearing difficult in projects underway; and (4) the human resources available to conduct projects, as certain organisations that would be legitimate in this activity had very few resources. In view of the latter point, the interviewees hoped that the participants in workshops would create relays by taking charge of certain actions themselves.

During the interviews, a number of interviewees foresaw how results might be transferred in the context of projects underway on the territorial scale. Several of them noted connections to be made with the Territorial Coherence Scheme (SCoT, *Schéma de Cohérence Territorial*), in the context of diagnostic or dialogue processes. In Centre Ouest Aveyron, the results of TATA-BOX workshops were sent to the study bureau responsible for SCoT diagnostics, but discrepancies between calendars nonetheless limited their use in this context. One interviewee moreover mentioned a limit in making use of TATA-BOX outputs in the context of a SCoT, as the latter had to draw support from numerical data and not only from the feelings and suggestions of the actors.[11] Usage in the context of different territorial projects was also mentioned. In Midi-Quercy, this was the case of the "territorial food project" (*projet alimentaire territorial*). The ranking of the goals defined in TATA-BOX (cf. colour sticker placement exercise during Workshop 3) and the rich picture diagram appeared to be usable in this context, in particular by putting them online on the PETR website. Some people even wondered if the work carried out during TATA-BOX had not already played a role in the importance granted to certain actions of this "territorial food project", and in particular the legumery. In Centre-Ouest Aveyron, different projects were mentioned, such as those on the circular economy.

[11] Note that in the synthesis of Workshop 1 (diagnosis), statements made during workshops are supported by quantitative data added *a posteriori*.

At the time of the interviews, the reuse of some of the workshop outputs was foreseen in the reflection around these projects.

Lastly, the guidelines adopted during workshops consolidated some participants' viewpoints on that which their own activity should promote in the field. Some of them would have liked to be able to reuse the rich picture in their work.

Increased Familiarity with One Another

Lastly, several interviewees noted that the fact of having met certain actors during these meetings would facilitate partnerships for establishing projects. That would simplify establishing contact, and participants had gained better knowledge of each other's respective tasks ("*The PETR, agents […] call upon the Chamber for consular missions […] but they don't necessarily have knowledge of all tasks, and in particular the project support task […], so that also makes it possible, through this type of informal exchange, to also inform actors around other tasks for which capabilities are available and which aren't necessarily known, and then to prepare […] what comes next for another collaborative framework that might be a bit broader than that for which the Chamber is known*").

Discussion

In this section, we will first highlight the features of our analysis before returning to the feedback of actors regarding the TATA-BOX process, and drawing conclusions on its ability to generate a collaborative design process.

Feedback on the Features of Data Collection and Analysis

Data collection via interviews had both strengths and weaknesses for evaluating the TATA-BOX process. The interview guide allowed us to collect stories of the participants' experiences during these workshops and their projection for the future. Participants nonetheless experienced difficulties in remembering the course of the workshops during interviews, especially with respect to Workshops 1 and 2, which had taken place 6–18 months earlier. Moreover, the characterisation of the interactions between participants, based on these interviews, draws on two successive interpretations: the interviewee's interpretation, as well as the interpretation of the interviewee's statement by the analyst. To complete this work, a direct analysis of interactions based on a corpus of complete transcriptions of the discussions is underway. Concerning the outputs of workshops, the interviewees tended not to expand on their answers, and without a more open question upstream, the questions asked may have not provided access to what they saw as priorities. Lastly, the

quantitative analyses presented in this chapter have the advantage of giving a general snapshot of the statements of the survey. This snapshot is nonetheless oversimplified and should be used with caution, for two reasons: (1) each discourse category for which the numbers were calculated hides a broad diversity of content, and (2) the number of interviewees contributing to a single category of ideas does not indicate the quantity of ideas stated.[12] This picture must also be used with caution because allocating statements to different categories (NVivo coding) implies choices and the way of coding is refined as the analysis takes place. It is therefore necessary continually to return to that which was coded to ensure the homogeneity of the coding, although discrepancies can easily go unnoticed. For all of these reasons, qualitative analysis constitutes an important additional component, along with putting the quantitative analysis into perspective.

What Improvements to the Process Did the Participants Suggest?

As we have seen throughout this chapter, most of the participants perceived the TATA-BOX process in a positive light, both overall and with regard to more specific areas of analysis. We also saw that the process produced effects, whether these were the outputs of each workshop, or the individual learning that several interviewees mentioned. In this section we go back to discussing those aspects on which participants had a more nuanced assessment.

The Representativeness of Participants in Workshops

A diversity of agricultural actors participated in the workshops, yet this diversity was not as great as the effective diversity characterising the two fields of study. This imposed a limit on the exhaustiveness of the exercise and, according to some interviewees, on the originality of the solutions proposed. The implementation of the actions defined could be expected to be affected by this – and this was mentioned by the participants –, due to the lack of enrolment of key actors. From the first phases of the creation of the TATA-BOX process, its designers nonetheless took into account the issue of representing the diversity of viewpoints. To design the AET of local agriculture with the help of their methodology, Duru et al. (2015) recommended bringing together the stakeholders of different management processes involved,[13] and offered methods for identifying them. The detection of agricultural stakeholders in the Tarn-Aveyron basin was thus carried out during the first phases of specifying the TATA-BOX process, prior to organising the first workshops. While

[12] For example, a person who makes three different positive comments on an aspect of the process does not count for more than a person who expresses only one criticism.

[13] Agricultural production, supply chains, and natural resource management

this detection in itself seems to have left room for improvement (by adding categories, such as financial backers, or by specifying the diversity within certain categories, such as farmers), the lack of representativeness seems primarily to have originated from the mobilisation of actors in the different categories identified. To improve this mobilisation, different pathways could be explored, such as mobilising more relays that have an influence on certain categories of actors in order to send them invitations, organising shorter but more numerous meetings that are closer together in time to facilitate the availability of participants, or embedding the participatory process in existing devices (projects underway in the territory, regular meetings of CUMA, etc.). The latter pathway, which would disperse the process across different groups, bringing together only some of actors, would nonetheless require an intermediary process to articulate the work of the different groups.

Tension Between the Innovation and Realism of Solutions

Beyond the observation of the low level of originality of the results, some of the interviewees criticised the difficulty of extracting themselves from current solutions. Additionally, other interviewees criticised the lack of realism of some of the positions adopted by certain participants, and of certain collectively defined paths. This raises the question of the balance to be sought between these two tendencies and the mechanisms of establishing a dialogue between them. The protagonists on either side – if we can call them that, considering that they were not in open conflict –, did not change their positions during the workshops. As the purveyors of a certain vision of agriculture, they remained frustrated at not having been able to provide enough arguments in favour of this vision, and therefore having had no effect on the choices made. The solution mentioned by some interviewees, of establishing common ground upstream to enable people with contrasting positions to engage in a discussion, needs to be examined. While better knowledge of the logics underpinning the opposing sides' vision can effectively allow one to move beyond the first level of discussion, it also presents the risk of reducing innovative ideas to their obstacles and thus preventing any departure from set ways of thinking. The same goes for the idea of increasing the diversity of participant profiles: according to the majority of interviewees it would enable more creativity, but according to others it would have the opposite effect, due to the institutional positions that certain actors must maintain with respect to the outside world.

The TATA-BOX Process, a Collective Design Process?

In the Introduction we mentioned the issues in evaluating the TATA-BOX process using design process evaluation frameworks. Given the originality of the design goal, we applied a framework specific to the TATA-BOX process to achieve this. Our analysis allows us to detect, in the process, design stages that are well described

in other fields of design studies. This is what we discuss in this section. It will then allow us to conclude that the TATA-BOX process did, in fact, provide an adequate toolset for a collective design process, although this design process still remains incomplete today.

Establishing Common Ground

The interviewees' discourses reflect the importance granted to exchanges of viewpoints and their articulation in verbal interactions during the process. Disputes, in the sense of the confrontation of alternative ideas and arguments, appear less present. It therefore appears that verbal interactions allowed above all for common ground to be established around knowledge.[14] In collaborative design research, we speak of a cognitive synchronisation activity. Acknowledged as a mandatory step in design processes, this activity ensures a shared understanding and representation of both the design issue (what is at stake) and the knowledge that is known or missing. The statements highlighting the significant part of reflection emerging in the field among the ideas gathered during the workshops also follow this line of thought. But what about the more original ideas that appeared, and the ways of articulating ideas as a whole during the different workshops? Are these creations limited to building common ground? How does the TATABOX process foster generativity and creativity, which are also critical in design processes? Generative design activities[15] are based on argumentation, and it is the argumentative process that allows convergence towards a collectively-acceptable solution (Barcellini 2008). The apparently modest place of contrasting alternative ideas and arguments can lead one to think that the specification of the object to design (the AET of the territory) was limited in scope. The analysis of interactions based on the full transcription of workshops will allow us to put this hypothesis to the test. We can however already reflect on the role of argumentation, taking into account the particularities of the process.

Argument as a Way to Converge Towards a Solution?

The interviewees spoke of a consensus around the workshop outputs. How can this be explained, considering how little alternative ideas and arguments were compared?

Perhaps the participants agreed overall from the beginning. Several interviewees spoke of consensus building during interactions, while according to others, the consensus was immediately established thanks to the similarities in participants' ways of thinking. In addition to the bias related to differences in interpretation and inter-

[14] Even though a few interviewees pointed out limits to this activity: the development of ideas limited by time constraints and the scope of ideas limited by the diversity of participants.

[15] In particular, these cover the creation of new solutions, the identification of alternative solutions, and the evaluation of solutions.

viewees' choice of words to describe verbal interactions, this dissonance can be explained by different situations in different groups, as some converged without requiring lengthy discussions because of similarities in viewpoints from the beginning, whereas other groups effectively built a consensus based on initially divergent viewpoints. The use of argumentation appears less crucial in the former. Unfortunately, the collection of information on the diversity of participants' viewpoints in the various groups was not sufficient to be able to verify this hypothesis.

Even with participants whose viewpoints were divergent at the beginning, the features of the object to design may have required few arguments and disputes. Specifically, the role played by argumentation has been highlighted in design processes oriented at a single, fully specified solution, constituted, for example, by the plans for a new building. During TATA-BOX workshops, even though the goals and the pathways to achieve them had to be defined, the stance adopted in favour of the coexistence of different agriculture models may not have required the exclusion of many opinions. Likewise, the pathway defining exercise may have been carried out more in a spirit of detecting all favourable conditions than in one of selecting the means that it will be necessary to effectively activate. In this case, collective creation was most likely directed more at identifying the goals of the different participants, explaining their articulation, and defining actionable means, than at trade-offs between goals and between means to implement. Argumentation therefore appears to be less crucial to the completion of the collective undertaking: consensus is established on the basis not of a trade-off between competing solutions (competing goals and pathways) but rather of the relevance of allowing several solutions to coexist. Certain workshop sequences, such as defining a chronology for different pathways to enable a transition, would nonetheless imply trade-offs. Was there more argumentation? The information collected does not allow us to analyse this.

Is the Term "Design" Appropriate for Discussing the TATA-BOX Participatory Process?

The overall goal of the TATA-BOX project, based on the methodological framework of Duru et al. (2015), was to develop methods and tools allowing the actors in a territory to collectively design an AET on the local scale (Galvez et al. 2014). The goals of the three workshops were very different (cf. section "Materials and method"). Given the objective of drawing up an inventory and common understanding of Workshop 1, it is likely that interactions allowing common ground of knowledge (cognitive synchronisation) to be established were at the heart of this workshop. This workshop consisted more of the articulation between the different sets of information, than of "typical" generative design activities. Assuming that the options foreseen by the participants in terms of the forms of farming to develop and pathways to achieve them are not all reconcilable, Workshops 2 and 3 suggest that proposals were drawn up and choices made. We can therefore expect that the participants took part in generative design activities as such, backed by arguments. However, will identifying these different types of activity, which are characteristic of a collaborative design

process, be enough to say that the participatory process resulted in the design of an agricultural transition project? First of all, if there was design, the process that allowed it to be achieved may have had to include the research team's work of shaping workshop outputs, across the three workshops. The way of representing the results, even though it aimed at remaining as close to possible to the workshop materials, was the result of a creative process. For example, the way that ideas were articulated on the rich picture diagram constructed from material from Workshops 1 and 2, was not directly accessible in the raw data. Certain participants' passion for this diagram moreover clearly attests to the fact that it contained something more than this raw data. Second, designing a new building involves plans which, even though they can be adjusted during execution to deal with unforeseen constraints, will nonetheless be applied in their entirety by the project manager. The situation is different in this case, where it does not appear that a project manager is willing to implement all of the goals and paths of action that have been defined. The implementation of the results will therefore most likely be distributed among different actors, who will take responsibility for limited actions rather than the territorial agricultural transition project in its entirety. The work of Béguin and Rabardel (2000) shows however that design continues into use. The field actors who will take responsibility for transferring the results of the participatory process will certainly *a minima* select the ideas to convey. They may also appropriate them for themselves and change the goals and the pathway to achieve these goals. We can see therefore that the design of the Tarn-Aveyron basin's agricultural transition was not complete at the end of the TATA-BOX project. It continues and will be continued via the use that actors in the territory make and will make of the workshop outputs. The TATA-BOX participatory process thus appears to be just one stage in the process of designing this territory's transition. The hypothesis of implementation distributed among different actors is moreover a source of uncertainty as to the complete and coherent use of that which this process has produced. Specifying the status of the process implemented during the TATA-BOX project will require the description of its place and role in the design and implementation of a transition "steered" at territorial level.

Conclusion

The purpose of this study was to evaluate participants' experience of the design process and their opinions on its outputs and effects. It intended to help the method's designers to take a step back from it, in particular with respect to potential improvements.

According to the interviewees, the workshops resulted in a proliferation of shared information, possible pathways, and elements of the transition pathway envisaged. The content of the outputs, on the other hand, appeared unoriginal to them in absolute terms, even though ideas that were new for the territory or for certain actors emerged. The mechanisms for transferring outputs into concrete actions remained to be defined and seemed to be the main issue at this stage of the design process. In

addition to questions related to appropriation in the field and to financing, the limited availability of human resources that could legitimately coordinate the implementation of the transition project in its entirety makes it difficult to foresee such implementation. On the other hand, the benefits of transferring some of the results to existing dynamics in the two territories were expressed. The interviewees furthermore also provided evidence of the significant effects of the TATA-BOX participatory process for the individuals who participated in it. The discourses of participants regarding the participatory process in itself were globally quite positive. However, for each component of this process considered in detail, it is often hard to outline a common or dominant viewpoint among the interviewees. This can be attributed to their respective profiles and sensibilities: in itself this diversity is a result.

Some of these results appear in the methodological guide intended for future users of the TATA-BOX process. They thus constitute a potential resource for encouraging and improving future implementation of the method.

This study, based on participants' discourses, will be completed by a direct analysis of interaction during workshops. The latter analysis can be expected to produce a more detailed characterisation of the interaction, and allow for a better description of the collective dimension of design work supported by the TATA-BOX process.

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