



**Isara**

23 rue Jean  
Baldassini  
69364 LYON  
CEDEX 07

**Farming Systems  
Ecology Group**

Droevendaalsesteeg 1  
6708 PB Wageningen  
The Netherlands

**ESA**

55 rue Rabelais  
B.P. 30748  
49007 ANGERS  
Cedex 01

**HOW FARMERS PERCEIVE “DOING A GOOD  
JOB” IN AN AGROECOLOGICAL TRANSITION  
CONTEXT: IMPACT ON FRENCH FARM  
MACHINERY COOPERATIVES (CUMAs)**

Master thesis  
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**Mathilde Grau**

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ESA tutor: **Caroline Mazaud**  
WUR tutor: **Renée Cardinaals**

External tutor: **Anne-Claire Kubala**

**Author:** Mathilde Grau

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**TITLE**

How farmers perceive “doing a good job” in an agroecological transition context : impact on French Farm Machinery Cooperatives (CUMAs)

**Key-words:**

Doing a good job

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**Abstract:**

Perception of what “doing a good job” (DGJ) is has been noted in previous researches as a limiting and under-researched factor for cooperation, and thus innovation, in collective farmers’ organizations. Through the example of French farms machinery cooperatives (CUMAs), the study aims at filling the knowledge gap around i) the perceptions of DGJ for farmers in a CUMA, ii) the factors influencing these perceptions, and iii) the impacts of the different perceptions on the CUMA cooperation and agroecological innovation. Qualitative enquiries were lead in two CUMAs of Auvergne-Rhône-Alpes that initiated an Economical and Environmental Interest Group (GIEE). The database for analysis is constituted of the verbatim from twenty-one semi-structured interviews conducted in a variety of livestock farms and by a participatory workshop in each CUMA. Results show that i) at the farm scale, DGJ is about achieving a degree of efficiency, economic profitability, production and/or appearance that depends on the level of satisfaction of each farmer. At CUMA scale, DGJ is about caring for the material and social commons. ii) DGJ perception is subjective and specific to each farmer’s professional lifepath, group belonging and environment. iii) On one hand, heterogeneous perceptions of the DGJ lead to tensions that hinder exchange and innovation when the farm-level DGJ is incompatible with the CUMA-level perceptions of the DGJ, particularly if perceptions remain unexplained. On the other hand, perceptions of work well done that differ from the group norm also lead to transformative change when they are shared in CUMA meetings through storytelling. Further research should investigate facilitation frameworks that objectify work to alleviate tensions and foster storytelling in order to ease the evolution towards more sustainable farming systems based on peer-to-peer exchange.

## Highlights

- Farmers build their perception of “doing a good job” (DGJ) based on their professional lifepath experience, present priorities and constraints, and by observing, writing and talking about practices.
- Farmers exchange on DGJ by talking about their or other’s practices in informal arena and CUMA sub-groups but hardly in CUMA meetings.
- On-farm perceptions of DGJ incompatible with CUMA-scale perceptions of DGJ can lead to tension in the group.
- Storytelling about successful uncommon perceptions of DGJ in practice can lead to transformative change.
- CUMA leaders are not empowered to initiate and frame debate around divergent perceptions of DGJ between sub-groups. Workshops facilitated by a mediator could fill this gap and relieve silent tensions, ease storytelling, and therefore, the evolution towards more sustainable farming systems based on peer-to-peer exchanges.

## 1. Introduction

As a scientific discipline, agroecology “provides the basic ecological principles for how to study, design and manage agroecosystems that are both productive and natural resource conserving, and that are also culturally sensitive, socially just and economically viable”(Altieri, 1995). Agroecology (AE), in this case, can refer from plot scale to the food system’s scale, either to agricultural practices, a scientific discipline or a social or political movement (Wezel et al., 2009). The three dimensions (i.e., cultural, social and economical) are complementary to transition towards a more sustainable food system.

Because AE provides opportunities for this transition towards a more sustainable food system, it has been gaining interest in the recent years as an answer to a concern in food security, environmental degradation and policies with a focus on sustainability (IPES-Food, 2016). Moreover, COVID-19 crisis shed light onto the weaknesses of the European food system. This led the European Union (EU) institutions to enhance the importance of the push towards AE. The European commission mentions in the Farm to Fork strategy new CAP tools to boost AE, and the committee of the regions expresses its opinion to favor AE in the official journal (Committee of the Regions, 2021; European commission, 2020).

Since 2014’s law for the future of agriculture, the French government also started promoting AE systems as performant production systems on the economical, ecological, social and health aspects (Légifrance, 2014). In France, the AE dimension emphasized is the “practice”(van der Ploeg et al., 2019). This means that, if farmers refer to AE, they often refer to agricultural practices on-farm.

To develop AE production systems, innovation<sup>1</sup> is required, and innovations can only be locally adapted and implemented based on peer-to-peer interaction and cooperation (Navarrete et al., 2018). It has been shown and politically recognized that, to innovate towards AE systems, farmers (need to) rely more on peer to peer cooperation (Committee of the Regions, 2021; Légifrance, 2014; Lucas et al., 2018). The exchange of experimentation and experience between farmers plays an essential role in AE innovation because AE practices are dynamic and are going through “ongoing improvement” (Barbier et al., 2015; Dufour et al., 2003; van der Ploeg et al., 2019).

Peer-to-peer interaction/cooperation and the subsequent innovation can be fostered via organizations that strive to one goal with their members. It has been shown that in such organizations, long-lasting engagement and collaboration with a peer’s groups allow for incremental changes in the farming system (Lucas, 2018). Through an organization, farmers have access to financial, educational and technological support which can enhance the transition towards AE farming systems. Groups of economic and environmental interest (GIEEs<sup>2</sup>) are an example of such collective organization in France that bring together farmers to work on AE projects.

However, for cooperation to occur within an organization, there is a need for trust among members. If this is not in place, both the exchange of experience and the debate that is required for innovation may be hampered. Besides trust among members, it is often observed that heterogeneity<sup>3</sup> in groups can be positive to foster innovation (Béguin, 2007, 375; Lucas et al., 2019, 171). However, heterogeneity may also impair the capacity of group leaders to organize meetings or hamper the discussions among diverse farmers (Lucas, 2018; Lucas et al., 2019), while these group meetings are essential for building trust. According to Davezies (1993), trust, which is vital to cooperation, is built on storytelling during informal moments of meetings. This storytelling often relates to work

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<sup>1</sup> Here, innovation is understood as the creation or integration of a new technique or organization into the socio-economical context of farming systems or peer groups (Goulet et al., 2008).

<sup>2</sup> Groupement d’intérêt économique et environnemental, is a national recognition attributed to a local farmers group that get engaged in an economically, environmentally and socially effective project. The recognition gives access to three years of subsidized group facilitation and priority to access European FEADER subsidies. It was launched after the 2014 law for the future of agriculture as a means to foster agroecology in France.

<sup>3</sup> Heterogeneity in members’ age, life path (education, wage experience), family composition, farming system, philosophy, professional and political engagements, digital tool use (*see Colin de Verdière, 2020*).

and is used by members to share whether they have the same rules and professional norms (Davezies, 1993). Farmers experience these informal moments mainly through an organizational setting. Therefore, peers' debate around work seems to be helpful to allow for cooperation despite individuals' heterogeneity.

Coopératives d'Utilisation de Matériel Agricole (CUMAs), French farm machinery cooperatives<sup>4</sup>, are an example of cooperative groups that can be used to work towards innovative practices, such as AE (Assens, 2002; Pierre, 2015 in Lucas and Gasselin, 2021). Local farmers often have a long-lasting engagement in a CUMA, where they share resources such as machinery and workforce. In addition, a CUMA creates space for dialogue and discussions around farm practices that can contribute to adaptation and diffusion of multi-dimensional innovation (Allaire and Assens, 2002). In the group, farmers know each other, and discussions might lead to an innovation project. This vision has increased probability to turn into action if the CUMA, with the support of a CUMA advisor, applies for the GIEE subsidy. As a place for dialogue that can receive advisors administrative support, 28% of GIEE group recognition is attributed to a CUMA (Lucas, 2021).

However, within CUMAs, members' heterogeneity has increased recently with the digital and agroecological developments in agriculture, as well as with changes in family composition - farmers increasingly married with non-farmers- and farmer's professional life path - rise in farmers' education - (Chardon et al., 2020; Colin de verdière, 2020). Professional life path is here defined as the education, internships, wage experience prior to owning a farm and hands on until present. Diverse professional trajectories contribute to diverse socialization, meaning individuals shaped to different social contexts. During their primary socialization - i.e., childhood- and secondary socialization - i.e., adulthood-, some of the values and norms they have been taught orally and ways of doing they have practiced, are embodied and stay with them (Castrà, 2010).

This heterogeneity may in turn jeopardize the implementation of AE practices because, as Brives (2021) outlines, whether or not cooperation between CUMA members is achieved is determined by the perception of what "doing a good job" is. "Doing a good job" (DGJ from now on) or a job "well done" is here defined as the work done to reach the goals the worker or someone else has set, and to achieve a result defensible from the worker's point of view (Clot, 2013). When there is heterogeneity in "ways of working and conceiving quality of work", conflicts arise around maintenance, use and availability of equipment, as well as respecting rules and engagements around machinery (Colin de Verdière, 2020).

This study will complete the research phase of the Co-Agil project aiming at securing cooperation in French farmer groups (UMR Territoires, 2019) by filling the knowledge gap on farmer's perceptions of what DGJ is and their impact on the collective's dynamics and functioning.

The aim of this study is to understand the impact of different perceptions of DGJ among CUMA members on their cooperation, specifically in the context of AE transition. First, I will define the perception of DGJ of individual farmers. Second, I will investigate which factors influence the perceptions of individual farmers. And third, I will investigate the impact of these (un)discussed perceptions on the cooperation within a CUMA, as well as on the transition towards AE<sup>5</sup>. We hypothesize that i) The perception of DGJ varies with the scale considered (farm or CUMA scale), ii) The professional life path and progress into the transition towards agroecological practices influence the perception of DGJ, iii) If different perceptions of DGJ are not spoken of in depth, misunderstandings and tiredness of repeating rules create tensions and conflicts, iv) Farmers ongoing an agroecological transition in a CUMA where it is uncommon are isolated and have little transition power on their peers.

## 2. Study sample and methods

### 2.1. Study sample

Two CUMAs were selected for this study following the advice of the agroecology mission leader of the regional federation of CUMAs: they will be named CUMA 1 and CUMA 2. Both CUMAs had initiated a GIEE, but CUMA members could individually chose whether or not they wanted to be part of the GIEE. CUMA 1 developed a GIEE focused on improving the fodder harvest chain work organization - i.e., cooperation between farmers. CUMA 2 initiated a GIEE to develop conservation agriculture. The study sample comprised 21 self-owned livestock farms, equally divided over the CUMAs and GIEE (5 farms in each group except CUMA1+GIEE that had 6 farms). The assumption was that farmers belonging to the GIEE have begun the AE transition on their farm while the ones not involved in this subgroup have not implemented AE practices. Characteristics of the farmers can be found in Tables A.1 and A.2. In the results and discussion, farmers are referred to with the CUMA number, GIEE belonging ("+" if he or she belongs to the GIEE, "-" if not) and a letter (A for the oldest farmer of that group).

In the end 25 farmers participated to the 21 interviews because in 4 cases both owners represented their farm jointly. In the sample all but two farmers were males. The two women of the sample replied with their male partner.

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<sup>4</sup> CUMAs involve around 12000 farms, meaning more one third of French farms with the goal of sharing economic and efficient production means. Local cooperatives, managed by a board constituted of its members are organized in county, regional and a national federation. This allows administrative and facilitation support, plus lobbying forces to obtain political support for farmers' groups.

<sup>5</sup> Agroecological practices are here considered as practices increasingly relying on ecosystem services to improve farm autonomy. Practices that use fewer chemical inputs, diminish soil erosion and favor soil life and biodiversity. Talking about wanting to try these practices, thinking about the farm as a holistic synergetic system, and questioning the system permanently are considered steps into an AE pathway.

Ages ranged from 24 to 58 in CUMA 1 with a mean of 44 and from 30 to 60 with a mean of 43 in CUMA 2. Most farmers had professional degrees: at high school level (n=10), 2 years of higher education (n=7), an adult degree (n=5), and one a master's degree (n=1). Most had a role in the governance of a CUMA, may it be the ones investigated or another one they were involved in. There were eleven (former) elected officials (president, treasurer), three machine planning managers, the board members and four member that had no further responsibility. Three male farmers were single and 20% of the other had a family composition with a non-farmer partner.

## **2.2. Methods for data collection**

### **2.2.1. Semi-structured interviews**

Semi-structured interviews (SSI) were the main data collection method in this study. They were conducted on the 21 participating farms. In this qualitative method, thematic or moment-based open-ended questions are asked to every participant. Follow-up questions may have been used to gain details about central topics (Kallio et al., 2016). Semi-structured interviews were chosen as the preferred method for this study as they allow farmers to talk freely about their own (subjective) perception of DGJ as well as what has the themes structuring their perception, or how do they actually do the farm job in practice. Additionally, this method fits the sociological character of our research as I need to interpret the lexicon, expressions and attitude to understand the farmers' perceptions.

Semi-structured interviews were conducted face-to-face with one or two study participants from the farm, except for one interview that was conducted by phone because of sanitary constraints. Each exchange lasted between 1,5 and 2 hours and comprised the sections presented in Table 1. The full interview guide can be found in Table E.1.

### **2.2.2. Picture confrontation and farm tour**

Other methods, confrontation with pictures (PC) and a farm tour (FT), were used in and around the SSI as tools to gain a better understanding of the perception of DGJ and the impacts thereof (see Table 1). The farm tour happened at the beginning of the interview. Its purpose was first to collect data, meaning images of their actual work. Second, inspired by clarifying interview techniques, the purpose was to be able to refer to farm elements in the interview so that the farmer didn't share general statements but rather actions embedded in their context (Coquil, 2014). During the interview, confrontation with pictures taken by the farmers of their own work, allowed them to verbalize practices that may seem obvious to them but are not generally discussed (Barbier et al., 2015). On top of that, I selected 8 pictures in case the farmers couldn't take pictures and to be able to compare between farmers. At the end of the interview, I asked them to do "roadside farming", meaning to share the thoughts they would have passing by the field showed in the picture (Burton et al., 2020, 5).

### **2.2.3. Participatory workshop**

One participatory workshop (PW) with each CUMA was organized to discuss the results of the semi-structured interviews' analyses. The purpose of this workshop was to understand whether the analyses were validated by study participants, and potentially gather new ideas. This was done by doing a meta-plan around the first and third research question: questions were answered individually on sticky notes, read out loud and placed on a wall by creating sub-groups with headings (D'Agostino et al., 2020). Subsequently, the research analysis was presented and finally there was a debate about the results' coherence with their day-to day work situations. Meta-planning allowed all farmers to express their thoughts in order to visualize the diversity of perceptions of DGJ and impact of these perceptions on the collective.

## **2.3. Method for data analysis**

The interviews were transcribed and classified per farm and per question type using Microsoft Excel. This first allowed for an analysis per farm and then for inductive thematic analysis. This method consists of finding analysis themes and meaning patterns from the data obtained from the interviews rather than from literature and/or theory to encode qualitative information (Boyatzis, 1998). Finding themes inductively avoids narrowing down the analysis from the start by staying open to new theme ideas. The themes were then used to describe, categorize and, when possible, quantify DGJ perceptions and factors influencing DGJ perceptions.

Categorization and quantification were used for three purposes i) comparing farmers' perceptions of DGJ (differences and agreements), ii) have an overview of the origins of their values, norms and ways of doing, and iii) establish a link between the perception of a good job and the importance farmers attributed to the elements of their work environment.

To characterize the importance of DGJ themes, three categories were built (Table 1):

- the main theme (MT) is the first idea farmers mentioned when answering "What is DGJ to your mind?", it is the criterion farmers look at first to decide if the job is well done,
- the secondary themes (ST) are all the criteria that I could pick in the farmer's interviews that contributed to perceiving the job as well done,
- the theoretical themes (TT) are ST that are not implemented yet.

Research Question	Method*	Method sub-division	Analysis
Perceptions of DGJ	FT	Taking pictures of DGJ in practice	Comparison of DGJ in practice
	SSI	What is doing a good job?	ITA **: quantification of the importance of themes in DGJ: main themes (MT, score 2), secondary themes (ST, score 1) and theoretical themes (TT, score 0.5)
		Ideal farm	
		Best and worst farming season/moment (clarifying interview technique)	
	Values important at work		
	PC	Pictures taken by the farmer	
Pre-selected pictures			
	SSI	Satisfaction about CUMA maintenance and driving habits, topics to avoid in CUMA meetings	ITA
Influencing factors	SSI	Farmers' professional lifepath	ITA: principles embodied during professional lifepath
		Sayings kept in mind by the farmer	
		Farmers' group belonging	Group belonging
		Farm past and present	ITA: Importance of farmer's environment elements: Primordial (3); Important (2); Considered (1); Secondary (-1); Wanting to exclude it (-2); Absent (0)
		Reasons behind farm work organization	
	Most important place on farm, core profession		
PC	Pre-selected pictures		
Impact of (un)discussed perceptions	SSI	When is DGJ discussed, how, where and with who?	ITA
		Working with and getting feedback from others	
	PW	Impact of different perceptions	
Impact on AE transition	PC	Pre-selected pictures	Selection of relevant examples
	SSI	Ideal farm	
		Relation to other CUMA/GIEE members	
		Freedom of speech in meetings	

Table 1. Data collection and analysis method used per research question

\* FT= Farm Tour; SSI= Semi-Structured Interview; PW= participatory workshop; PC=Picture Confrontation

\*\* ITA= Inductive Thematic Analysis

### 3. Results and discussion

#### 3.1. Perceptions of “doing a good job”

The interview results showed a distinction between DGJ perception relating to one’s own work (on-farm) and relating to work within the organization (CUMA). These two perceptions will be discussed separately below.

##### 3.1.1. Perception of DGJ at the farm scale

Within DGJ on-farm, two description levels were identified, the theoretical good job (DGJ<sub>T</sub>) and the practical good job (DGJ<sub>P</sub>). For the DGJ<sub>T</sub> perceptions, the following themes were extracted from the interviews: economics, efficiency, appearance and production. The DGJ<sub>P</sub> was the result of the mental combination of the DGJ<sub>T</sub> and the farmer’s satisfaction level.

##### 3.1.1.1. Theoretical good job

The DGJ<sub>T</sub> is the overarching perception of DGJ, meaning it is not associated with a practice. Table 2 gives an overview of the importance scores (MT, ST or TT) of the identified themes for DGJ<sub>T</sub> perception on-farm. Answers were a combination of one or more of the four themes: efficiency, economics, production and appearance. Detail per farm can be found in Table B.1. Efficiency relates to work organization satisfaction, production covers all produced products on farm, economics concerns the farm income, whereas appearance relates to how the farm looks and smells like. Table 2 shows the interview excerpts of DGJ when the theme is a considered a main theme.

DGJ <sub>T</sub> theme	Indicator	MT*	ST	TT	Thinking type	Interview excerpt
Efficiency	Fulfilment	13	6	0	Finish the task	"if I start something and I don't have time to finish it, it won't be well done" (2-D)
					Do not go over it again	"Work well done is work where [...] you are satisfied with yourself and you don't have to come back to it" (2-C)
	Working speed				Minimize time	"[A good job is when it is] done fast and well" (1-C)
	Maximize quality				"You shouldn't try to go too fast either, you should take the time to do your job [here reflect on animal's health while feeding them]." (1-D)	
Production	Quantity	6	10	0	"You do a good job, but you know it afterwards, not before. The old-timers used to say that crops only look good once a year, the best is to see them look good at harvest time." (1+A) or "[Cows produce] 9500L/year, yes yes yes it has to piss [milk]" (1+B).	
	Quality				"The weather was threatening, we had to be quick, we asked all those with the mower before coming, we put 25 ha on the ground in three hours, we had a great weather behind, we made a great silage in three days."	
Economics	Farmer's income	6	10	0	"Doing a good job is first of all getting a decent salary" (1+B)	
	Farm profitability				"Above all, there has to be a good economic outturn" (1-B).	
Appearance	Visual aspect	6	5	3	"If around a farm it's clean, it's tidy, then we think that he's a tidy person, he's square in his head, his work must be well done, that's what we think." (1+C)	
	Activities smell				"I'm much more careful, it's true that I had to understand people, going to spread liquid manure on Friday afternoon, when they arrive in their secondary residence..." (1-C)	

Table 2: Theoretical perception of what doing a good job is according to farmers per category of the definition themes

\*MT= Main Theme; ST= Secondary Theme; TT= Theoretical Theme. “2-D” can be read Farmer D in CUMA 2 non-GIEE group, more information about this farmer can be found in Table A.1 and A.2.

“Efficiency” was seen as the most important theme in the perception of DGJ (Table 2). For a majority of farmers (n=8) the most important indicator of efficiency was the feeling of fulfillment to consider the job «well done». There were two thinking types: two farmers that needed to finish the task in one go, and six farmers that didn’t want to revisit a task that they finished (which may have been in two times). The second indicator was the working speed, one considering he was doing a good job if he reached maximum working speed and two when taking the necessary time to do the work with maximum quality.

“**Economics**” and “**production**” were the second and third most important themes of the definition. Farm income was centered mainly on farm profitability (MT n=2, ST n=2) and then on farmer’s income (MT n=4, ST n=8). Production was always present in farmers discourse as it is the base of their income source. Quality was often mentioned in relation with the quality of milk, silage (high nutritional value, exempt from rain) and cow conformation. Some farmers not only considered economics or production, but the economic aspect was intertwined with the production aspect: “When it works out in the end: the technical results, the economy.” (2+B; read *Farmer B in GIEE of CUMA 2*). One example is, “*I do what I can with what I want*” (1+A) reflecting a low input high added value production system, where DGJ is getting a good production according to the standard of having a profitable farm.

Fourth, DGJ had to do with farm visual and olfactive “**appearances**”, meaning how the farm, machinery, cows and crops look and how the activities smell. Crop appearance (i.e., sowing density, height homogeneity, color, straightness of rows, absence of weeds, etc.) were criteria farmers often mentioned and that one farmer (1-E) considered essential as he worked on others’ farms. Farm appearance (i.e., how clean, neat, tidy buildings, farm surroundings, and farmyard were) was the MT for 4 of the respondents (1+C, 1+E, 2+A, 2-E) or was mentioned it as contributing to their evaluation of DGJ (1+B, 1+F, 2-B). Three mentioned the aspect of their animals – i.e., clean, healthy, well groomed, conformed according to market demand- or fences – i.e., straight wire and poles- as MT (1+C, 2-D, 2-E) and one as ST (2-A). Two farmers mentioned they arranged the slurry amendments according to the weather and day of the week in order to reduce farm activities’ smell (ST : 1+B, 1-C).

Overall, the DGJ<sub>T</sub> differed from one farmer to another. Our results are similar to Dejours’ analysis that work is judged according to its efficiency, justice – here the economic aspect being a just retribution of the production- and beauty (Dejours, 2003). I will now describe how and explain why DGJ into practice (DGJ<sub>P</sub>), i.e., the result noticed on farm, is even more diverse.

#### 3.1.1.2. Practical good job

The practical good job (DGJ<sub>P</sub>) is the ways of doing and getting organized to reach an end result, satisfying enough to be considered as a job «well done». Two farmers with a similar perception of a DGJ<sub>T</sub> can have different perceptions of a DGJ<sub>P</sub>. Disparities appeared in all four themes of the perception of a good job, reflecting the level of satisfaction of each farmer. Not only their satisfaction level differed but the way they expressed it differed as well.

##### 3.1.1.2.1. Level of satisfaction and how it is expressed

On the “**efficiency**” theme, satisfaction levels differed on various criteria. We will give two illustrations:

1- *Machinery driving speed*. The interviews showed two sub-groups. For sub-group 1, achieving work as fast as possible is the key point, whereas sub-group 2 considers all consequences of their work such as i) time you will spend repairing – “They used to take the meadow chopper one day and return it all broken [...] if you hitched it up after them, you'd have half a day's work to repair it.” (1+C)- or ii) the decrease in your work quality – “Some people mow at 20-25km/h and I mow at 10-12km/h. The conditioner is no longer of any use above 14 km/h.” (2+A)-.

2- *Collective harvest efficiency*. Some will say there is a need to avoid losing time – e.g., unhitching the forage harvester pick-up when the meadow gate is too small- in order to do the work for all members before it rains and do a good job (2-C); others are more “taking your time” based, e.g., one did not understand why young people are “so stressed out” (1+A). To put it in a nutshell, the first illustration shows two types of mindset: “go fast” or “well-thought before it’s done”; the second one shows to what extent members consider the impact of their work on the other members’ work and stress level. One that might be a short-term vision at farm scale focused on the time it takes for themselves rather than a vision taking multiple factors into account e.g., harvest quality, repair time and cost, impact on the group functioning.

On the “**economic**” aspect what farmers called “good income”, or “profitable system” varied. In CUMA 2, farmers wished for an income ranging from 1200 to more than 2000 euros. In CUMA 1, some considered their system profitable when very productive (40 cows/workers, 9500l/Cow/year) with high input, other when less productive (32 cows/worker, 7600l/Cow/year) with low input, organic, almost only grazing systems.

For the “**production**” aspect, satisfaction levels also widely varied. Dairy cattle farmers were satisfied with milk yields ranging from 7000 to 8700 L with Montbéliarde breed and 8000 to 9500 L with Holsteins. The same happened with protein rates in silage. For dairy cows, interviewees were happy with a Total Nitrogenous Matter (TNM) ranging from 14 to 19% while some didn’t have the rates in mind and wished for a balanced fodder, the technician giving advice on what supplement to buy according to fodder analysis.

For “**appearance**”, farmers had different ranges of when it is perceived as clean or tidy. For example, for some the barn was empty and clean after the power washer had given back the concrete floor its original color. For others, it was when the meter layer of manure was out of the building with none left on the paved feed area not judging on the pavement color.

##### 3.1.1.2.2. Satisfaction or acceptance, obtaining a defensible result

Drawing from the diversity of results, I make a distinction between a “satisfaction level”, i.e., the ideal level they would love to reach, and an “acceptance level”, i.e., the level with which they could be happy regarding the constraints. To illustrate this with the income, a farmer mentioned he earned 500€ per month but paid back his

young farmer loan (2-D). This constraint made this income acceptable while the farmer would ideally have earned more. The acceptance level seems to be similar to Yves Clot's definition of DGJ according to the worker i.e. a result defensible to his eyes (Clot, 2013). While the satisfaction level seemed to be closer to a result that can be defensible in front of other farmers, depending on the group norm.

The acceptance level is often accepted because it is perceived as temporary – having a loan or securing farm accounts, a meadow seed mix or harvest technique that is going to improve, an extreme weather event, a step of the process exceptionally failed- or because it allows the farmer to reach his most important goals – having animals not perfectly clean but spending the weekend with his family, having a 7600l/cow/year production but having a profitable farm-.

### 3.1.2. Perception of DGJ at the CUMA scale

Doing a good job at the CUMA scale didn't focus on the same themes than at the farm scale as it was more related to how members interacted with each other as opposed to how a farm performed. On the CUMA scale, the identified themes were related to machinery: consideration and transparency and related to social relations enabling machine sharing and trust: adaptation, dedication, involvement and flexibility.

**“Consideration”**, i.e., taking others' needs into account, was reflected by whether or not the farmers asked themselves “Am-I giving the machine back the way I would like to find it?”. This related to how clean, repaired and on time the machinery was returned.

**“Transparency”** was linked to respecting the group rules, first like being open about breaking or hitting something, second like transparency around personal engagement with a machine. First, not being transparent about an action that could damage the material lead to increased repairing time and cost and the frustration of not being able to identify who was responsible. Second, it was preferred that farmers sign up for a machine only if they really had the intension and financial means to use it, continue paying their share when disengaging or at least inform they disengaged as soon as the decision is taken.

**“Adaptation”** meant if farmers were willing to adapt their working schedule either to go help their neighbors or leave machinery for the one that needed it most urgently. In that regard reciprocity was essential to be considered a good CUMA member and preserve trust relationships (1+D, 1+E, 1-C,).

**“Dedication”** was seen as an important theme for DGJ on CUMA level. One remarkable example was when farmers called their neighbors with front mowers to come and help on a Sunday morning, to boost the speed of the silage harvest and store it before the rain came (1+E). Furthermore, dedication towards group members such a taking news or giving a hand to one that had an accident entered into account into DGJ as a CUMA member.

The feeling of **“involvement”**, i.e., being useful for the collective, made some feel they were DGJ. “I feel good in the group, especially since the GIEE, I'm more involved and I'm a driving force. I feel that I am not useless in the CUMA [...] I have the feeling that I have a role in the CUMA.” (2+E)

Lastly, a farmer was considered a good CUMA member, when he/she was **“flexible”**: being *“open minded”*, i.e., receptive to other ways of doing the job than your own way.

## 3.2. Influencing factors on how DGJ is perceived

Based on the combination of study participant's characteristics and results from the interviews, three important factors could be identified: professional life path, group belonging and environment.

### 3.2.1. Professional life path

The perception of what DGJ is influenced by the professional life path because it led them to embody principles. In the 21 interviews, 13 principles were identified (Figure 1). Principles are here practices, values, social norms that lead to ways of thinking and behaving. Interviews revealed, 33% of principles were embodied during farmer's youth in their family (farm), 18% during initial training and internships and 8% during professional experience before starting their own farm (Figure C.1.). After setting up their farm, farmers put some embodied principles to practice on a daily basis – E.g., organization, meticulousness, communication. Other principles, such as “Ways to grow in your work” can come to mind only when they face a problem – e.g., soil erosion, economic crisis, decreasing yields-, and then lead to transformative change as their perception of DGJ was adapted and reassessed. They might have a phrase or practice heard in a non-professional setting -3%- pop in mind, find out solutions through further professional trainings -6%- or dare to take practices – e.g., conservation agriculture-through a trial-and-error process during their farming career -17% of embodied principles-. Not only GIEE member where not exclusively trying out and adopting AE practices. When an experiment succeeds, farmers change their perception of DGJ around that element. Coquil (2014) comes to the same conclusion: trying out new practices can lead to transformative change of the farmers' perception, and Barbier et al. (2015) point out that the transition from conventional agriculture can be very slow as it is a series of micro-adjustments.

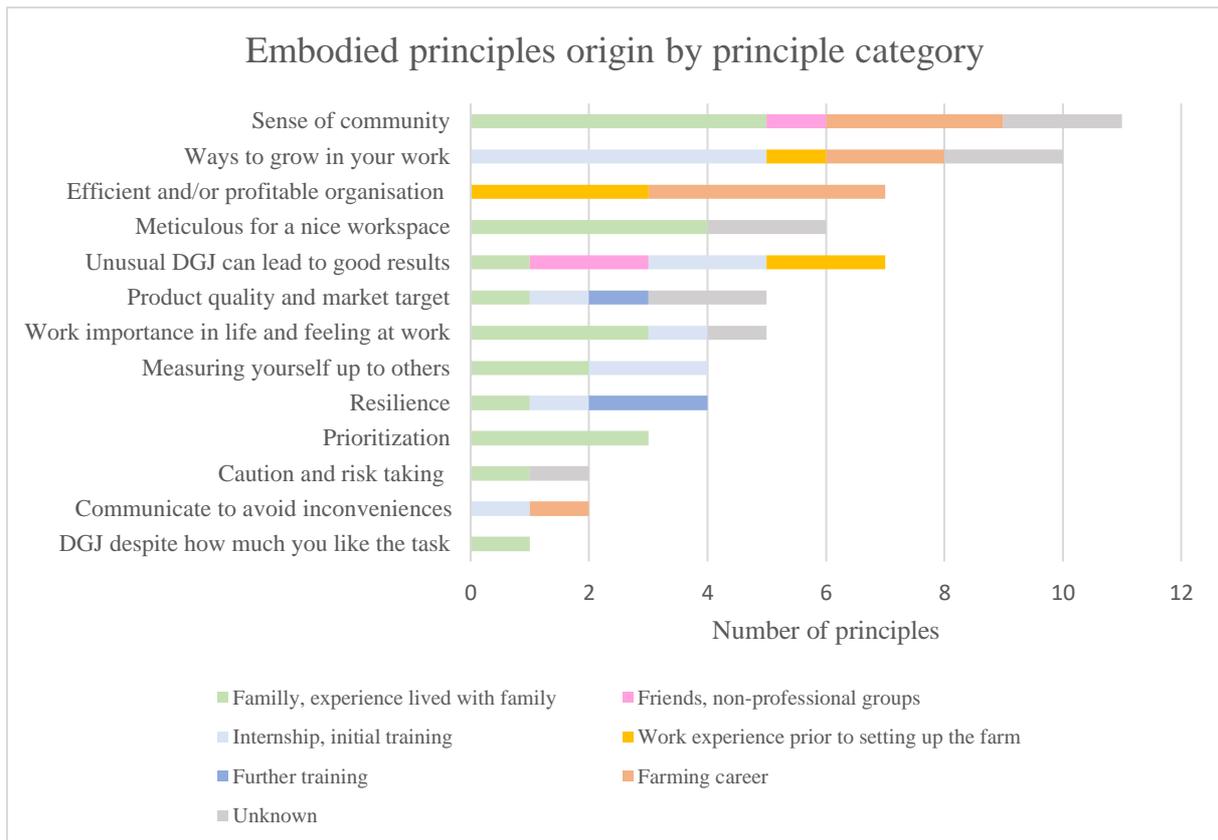


Figure 1: Embodied principles' origin by principle category

### 3.2.2. Group belonging

On the one hand, drawing from the interviews, I note that farmers in contact with civil society/ other professions, for example at the city council -8 farmers- or in associations -2 farmers- can be influenced in their definition of DGJ. They face, for example through jibes, the public opinion transferred by media about farming and the role of farming in civilians' concerns. Three situations have more or less impact.

**1-** If civilians explain their opinion to the farmer – e.g., Glyphosate use (2-C)- and as a result of farmer's explanation they change their mind, the farmer may not change his perception of DGJ. However, if a farmer does not have the time or possibility to explain and is sensitive to public judgment, hearing civilians' opinion might still lead him change his perception of DGJ and his practices – e.g., reduction of chemical inputs (1-C)- or, if there is no way to improve – e.g., critique of all forms of livestock system (1-C)-, to lose the motivation to be a farmer.

**2-** If civilians' opinion remains unchanged despite farmer's explanation, this may give the farmer pause for thought. For example, combined participation in a city council and diving club, listening to the news, and having an independent nutritionist may have contributed to make low carbon livestock farming a goal for one member.

**3-** Comments that trigger the farmers' image and responsibility may also have an impact. The farmer can in this case reconsider his or her farm appearance (Cf 3.2.3.) or how he or she would preserve the cleanliness of the road to avoid car accidents (2-B).

On the other hand, farmers who mostly interact with other farmers that have the similar point of view may stick to their ideas. If, through their socialization, they embodied practices and ways of thinking that fit in the group norm, it will reinforce their position and won't trigger change in their perception of a job «well done». On the other hand, farmers in contact with others that have a different point of view might think twice about what DGJ is. However, this only happens if the farmers differing from the group norm keep talking about their practices and reasoning -which is something most non-conventional farmers, e.g., organic, don't do (1-D, 2+B). These farmers, knowing they are different from the norm - low input, organic, no-till, low carbon- and convinced it is the right way, won't come back to their old conventional perception of DGJ, despite contact with other opinions (1+A, 1-D, 1-E, 2+A, 2+B, 2+C, 2+E, 2-C). At best, they will add new practices or principles to expand their philosophy -eat what you produce, enhance soil life, promote biodiversity, produce with what you want/have, reduce greenhouse gas emissions-.

### 3.2.3. Environment

Farmers operate within a farming system and give more or less importance to the different elements that are part of their environment. What influences their work is not only professional (the agricultural system, farmers' collectives, the State through administrative requirements) but also private (family, friends, leisure activities) or omnipresent (oneself, civil society). Using the data from the semi-structured interviews, I sought to quantify the importance that farmers attached to elements in their immediate environment (Table D.1.).

Concerning farm elements, the importance reflected the DGJ<sub>P</sub> and its satisfaction levels. Indeed, I considered the centrality in their job, affinity, knowledge and the level of recurrence in their speech, meaning how much they cared or were concerned about that aspect in their work.

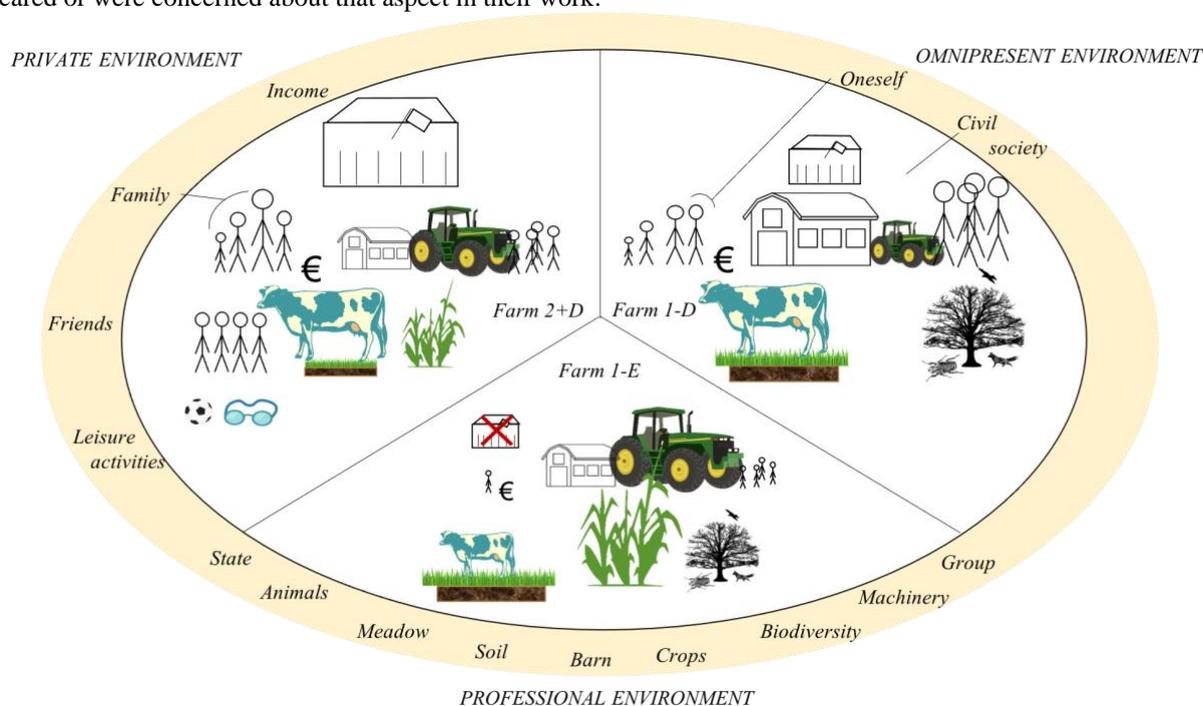


Figure 2: Importance given by farmers 1-E, 2+D and 1-D to the elements of their professional, private and omnipresent environment based on data from Table D.1. "1-E" can be read Farmer E in CUMA 1 non-GIEE group, more information about this farmer can be found in Table A.1 and A.2.

Elements external to the farming system could change these satisfaction levels by changing priorities of the DGJ<sub>T</sub>. For example, farmer 1-E attributed most importance, work time and knowledge to machinery, meadows, and crops and wanted to get rid of administrative paperwork to only focus on "his job" (Figure 2). Farmer 2+D, had his family as first priority, making him dedicate efficient time to profitable activities, i.e., animals, and paperwork for subsidies. For farmer 1-D, animals, meadows, biodiversity and hay drying barn had most importance, with time restrained by family and group involvement.

Overall, a first element clearly influencing farmers' DGJ<sub>T</sub> was giving importance to oneself and one's family. Among the nine farmers prioritizing or giving importance to themselves - reduce the drudgery of work - and their family, seven had the efficiency as a MT of their DGJ<sub>T</sub> perception (Table 3). This could be to spare time for their family -which sometimes meant lowering the satisfaction level- or feeling fulfilled by not going over the same task twice. The exception to this correlation, was a farmer that preferred taking his time "as in the old days" (1+A). Second, a link could also be established between the importance given to the judgment of their work by civil society and the appearance weight in their DGJ<sub>T</sub> perception. Five farmers cared about the image that the farm tidiness and cleanness reflected of agriculture and of themselves to civil society and fellow farmers (2+A, 1+B, 2-B, 1+E, 1+C). Two farmers were particularly concerned with noise pollution and olfactive nuisance to keep good-neighborly relations (1+B, 1-C). When appearance was a MT, it increased the satisfaction level on appearance aspects.

### 3.3. Perceptions' impact on cooperation

Along CUMAs history, perceptions of DGJ have always been diverse in the group. But farmers with diverse DGJ<sub>P</sub> can cooperate in part because DGJ is discussed in sub-groups in informal settings but not in CUMA meetings. This allows to keep the members around the same table but also has negative side effects on the group cohesion.

#### 3.3.1. Important cooperation elements smoothed by DGJ perceptions' diversity

During participatory workshops, farmers mentioned in which aspects diverse perceptions of DGJ could be a cooperation smoothing factor. I present two that stood out from the results but Groos et al.'s paper (2021) discusses these factors in more depth.

One of the main CUMA goals is to satisfy most CUMA members with machinery. Perceptions diversity makes it hard to satisfy everyone when there is only the possibility to choose one material. But when the CUMA has the sufficient financial capacity to buy different materials for one task, it allows for more availability and thereby less stress in the group. Cooperation is further smoothed by leading to a more appropriate use i.e., less break downs, repairing and maintenance time and costs, helping to keep farmers within the CUMA.

Another goal is to continue attracting young generations: in that regard the collective has to innovate. This is smoothed by heterogenous perceptions of DGJ. While on the short term, the group is seen as more efficient by farmers when perceptions are similar, on the long term, some farmers realize that if they have a working group that thinks in the same way, they might apply a wrong technique and all “go straight into the wall”. Hence, if some farmers demonstrate different and successful ways of doing, and the group is open to new ideas, the collective may reconsider the practice and do something different from their habits that leads to a better job.

### 3.3.2. (Un)discussed perceptions of DGJ

#### 3.3.2.1. Sub-groups and informal arena

In the interviews, I noticed that farmers speak of what DGJ is in terms of practices and based on farming systems. They do not ask “what is DGJ for you?” but rather say “I saw your field/ cow you did a good job; it looks good” and the discussion can go on.

They talk about practices in informal arena such as stopping at a field corner, borrowing a machine, eating together during the silage yard, drinking coffee, or staying longer at the end of a CUMA meeting.

This mostly happens in sub-groups within the CUMA. These groups are farmers working together because they have the same purpose, passion or DGJ perception at farm or CUMA scale, or that just get along. But it hardly happens within large groups, with the exceptions of meetings or discussions organized dedicated to sharing practices – e.g. GIEE meeting or messaging application, machinery choice, “Ecolait” working group (BTPL, 2018). Therefore, except if the farmers trust each other or have interest in sharing -reciprocity, finding answers-, the practices addressed are countryside rumors or the neighbor’s field: not their own practices or opinions.

Overall, it is my perception that by chatting about practices, observing others’ fields, and sometimes writing advice on machinery, members build the professional norm of the (sub-)group, an implicit agreement on what is “well done” at farm and CUMA scales. As this is not discussed within the CUMA meetings, sub-groups can continue sharing different opinions and, as a consequence, may lead to tensions.

#### 3.3.2.2. CUMA meetings

DGJ stays undiscussed in CUMA meetings for three main reasons:

*First* because it is not perceived as a relevant topic. For a CUMA member, CUMA meetings should cover machinery use and needs and the cooperative functioning such as finance, projects and roles, not individual work with the common machinery.

*Second*, because it is uncommon to publicly explain your point of view on the main topic. It often happens that attendees do not show a sign of comprehension or that they nod in agreement despite what they think (1+E, 1+D). It is therefore rare that they mention their opinion about individual work. Some farmers never talk about what happens on their farm as they may have no interest in sharing (1-E), are afraid of other’s judgment (2+E) if they expose their difficulties or lack of understanding or are not “big talkers” and find it inappropriate to “complain” or “to boast” (1+B). This leads to others being unwilling to open up as well, except for farmers that have embodied being transparent and sharing (1+D, 1+E). Another reason for not mentioning their opinion on individual work is that it may be perceived as telling others how to do their work, which is usually not appreciated (2-E, 2+D, 2-B). Farmers likely prefer to stay neutral rather than risking relationships with other members.

*A third reason* is the association between work and the worker i.e., talking about the quality of work can be seen as a personal attack. This is enhanced by the fact that if there is a problem, CUMA members do not talk about the objective quality of work to reach the common goal but rather about someone’s work. This is addressed in small groups but avoided in CUMA meetings not to cause a confrontation.

*Overall*, not addressing detailed perception of DGJ, meaning “potential contentious topics” is a mean to keep an heterogenous group around the same table, as Lucas and Groos et al. also show (2021; 2021). But a side-impact is that not expressing mis(contentment) when all actors involved in the decision making are present, makes it difficult both to satisfy everyone and to solve the CUMA issues.

#### 3.3.2.3. Impact of (un)discussed perception on the CUMA

Concluding from DGJ perceptions’ results, at farm scale, all agreed that the farm had to be profitable and at CUMA scale, that DGJ was reaching the common goal to have recent and performant machinery at a reduced cost.

Most important differences in DGJ that led to tensions in CUMA 1 and 2 were when farm-scale DGJ<sub>P</sub> impacted CUMA-scale DGJ relating to machinery. Differences in appearance expectations led to different satisfaction levels around how clean and repaired machinery was handed in. Trying to achieve efficiency could lead to machines driven too fast and increasing repairing costs. Related to production, when the DGJ<sub>P</sub> of a sub-group is seen as responsible of machinery premature wear. And finally, economics, if some farmers have no interest anymore in sharing machinery in the CUMA because it doesn’t improve farming profitability. Tensions were reinforced if members didn’t have practices responding to social themes of DGJ at CUMA scale.

Silence around DGJ perceptions creates deadlocks. To avoid confrontation, group leaders repeat the rules to the person in charge of the issue -if he/she can be identified- or to people present at CUMA meetings. Repetition doesn't change action if the understanding of the rule, i.e., the satisfaction level on that aspect differs from one individual to another. Conflictual topics involving individual work quality -e.g., the perceived premature wear of the forage harvester- therefore stay untreated. They can lead to underlying tensions in meetings, a feeling of injustice – e.g., “why should I pay for the one that doesn't know how to work”- or, for group leaders, a feeling of being powerless.

### **3.4. Perceptions impact on agroecological development**

#### **3.4.1. Transition towards AE, hampered or fostered by different perceptions**

While farmers having a unique perception of DGJp might be isolated, speaking about uncommon practices or what is or is not a job “well done” help moving the line of the group norm.

##### **3.4.1.1. Different perceptions can also isolate some farmers and hamper innovation**

In the interviews, two farmers were the only organic farmers in their CUMA. This led them to avoid speaking about their practices in general meetings or to some of the CUMA members. In one case because others denigrated organic, in the other because he experienced being laughed at. While some of these members observed their practices by passing by, they didn't question the status quo of making organic a taboo. Here, it seems that questioning the norm is rejected especially when the system promoted, organic farming, is seen as a critique of the “good job” they think they are doing. This being the result of successive national policies calling for farming systems greening without addressing lock-ins, as outline by Lucas (2021).

##### **3.4.1.2. Story telling fosters innovation**

On the other hand, when farmer differing from the norm – organic in this example- persists in talking about his practices, it can lead to transformative change. In CUMA 1, a farmer perceived as a “big talker” pushed the CUMA to buy machinery adapted to organic crops. This led to a greater number of farmers converting to organic or occasionally trying out or using the machines. Although the latter say that they reduce inputs with these machines for economic reasons to underline their difference with the “ecologists” - as Lucas (2021) and Miéville-Ott (2000) also point out - this has influenced their perception of a good job. Not only did some of them change their practices, but it moved this type of alternative agriculture from being a taboo to being a subject. Therefore, allowing for greater storytelling around the practices may decrease the resistance in trying them out, and potentially in adopting them in the end.

##### **3.4.1.3. Speaking about what they are not satisfied with in their work can lead to peer groups building around innovation**

In CUMA 2, the GIEE was born because farmers dared to speak out an issue that made them consider they were not DGJ: soil erosion. Four farmers spoke about it in pairs with someone they trusted. They then realized they were four and asked for support to the CUMA network to learn how to resolve that problem. This resulted in a GIEE around conservation agriculture. Being in a group to start a brand-new way of farming in the area was essential to face the social pressure of radically coming out of the professional norm: “It wasn't a conflict with my father... but it was still a change of practice that he didn't necessarily understand. But as four people got involved... it's not the same, I wasn't the only one to be eccentric. So, it was fine.” (2+E).

#### **3.4.2. Towards a more successful agroecological transition**

For AE to be promoted through CUMAs, a pathway is to allow in-depth objective discussion around DGJ perception to happen. This implies taking farmers out of their comfort zone by going out of silence around their practices and perceptions. In that regard, a mediator will be needed to build trust through common rules, set a common goal, objectify work and mitigate potential interpersonal conflicts. This pathway only has a chance to succeed if i) the CUMA requests help to overcome long-lasting issues due to DGJ perception diversity, hence if most members are willing to attend the discussion, ii) there is a follow up of the action planned.

While this pathway doesn't directly promote AE, it takes the first step to accept others' way of perceiving DGJp and might tend to reduce tensions to allow for deeper cooperation and exchange. The action plan can then be directed towards AE if it responds to the group needs.

### **3.5. Limitations of the study**

Most of this study results, apart from the detailed and specific tensions and impact of the DGJp, could be adapted, reused and deepened to understand other CUMA contexts.

One limitation of this study dataset is the over-representation of respondents that were involved in CUMA governance ((former) elected representatives, machine planning manager, board members *see Tables A.1 and A.2.*). This limited insight into the perception of DGJ of member that are less conscious about machinery repair time, cost, CUMA management struggles, etc. As a consequence, this study couldn't verify if non-involved members were the cause of the issues they were singled out for and to which aspect of their DGJ perception this could be related to.

On top of that, I tried to take the complexity of each farmer profile into account in the quantification of tables C.1 and E.1. which resulted in a quantification that was specific to my appreciation despite the intention to look at the results in an objective way.

Further research could shed light on the underlying reason for tensions due to different perceptions of 'well done' work. Are they due to the fact that formal group rules and implicit norms are i) understood differently by members, ii) more or less included in their perception of DGJ on the farm, and/or iii) not within the knowledge and skills of members - for example, not being able to notice if the machine is damaged-? These results would help to build participatory workshop frameworks that would need to be tested and adapted to each situation type. This research would then provide a knowledge base on the relevance of conducting workshops to talk objectively about FGD and its potential to help overcome underlying tensions and facilitate the agroecological transition. The facilitation method proposed in Table F.1. could be a starting point for this investigation.

## 4. Conclusions

“Doing a good job” perception by farmers is subjective and can be characterized at two scales, the farm scale and the CUMA scale. At the farm scale, it can be described at two levels, the theoretical good job (DGJ<sub>T</sub>) and the practical good job (DGJ<sub>P</sub>). The theoretical good job is often a composition of efficiency, production, economy and appearance. The DGJ<sub>P</sub> depends on the satisfaction level and the acceptance level of each farmer, i.e., representing the ideal level and the level at which satisfaction is achieved considering the constraints. The DGJ<sub>P</sub> may differ with a similar DGJ<sub>T</sub>, but most often the DGJ<sub>T</sub> also varies from one farmer to another. At CUMA scale DGJ can be split in two categories: machinery-related themes (consideration and transparency) and social related themes (adaptation, dedication, involvement and flexibility).

Diversity in perceptions of what DGJ is and their different satisfaction levels is influenced by the different professional life paths of farmers, the evolution of their practices and their actual farming system and environment. DGJ at the CUMA scale is more of a common norm that the group shapes by setting up rules and discussing in a formal and informal way. Still, individual understanding plays a role in how the collective functions.

Doing a good job is discussed mainly through sharing opinions about practices in informal settings. The individual scale is not spoken of in CUMA meetings to allow for diverse farmers to collaborate. While this preserves the collective by avoiding direct conflicts about the diversity, it also creates tensions because of the lack of understanding the diversity of perspectives.

The AE transition pathway that some farmers are undertaking on their own, especially when it is branded by a specific label such as the organic label, isolates them from interacting with other farmers. However, when a group is formed to undertake such a transition, or some continue sharing their practices despite negative reactions, the transition power is substantial.

This qualitative study concludes that the diversity of perception of a job “well done”, is an underlying source of tension in the CUMA and a resource for the innovative potential towards AE. A pathway for improvement is to address the topic objectively around a common goal through a discussion organized and mediated by someone outside the CUMA, on their demand. This could alleviate tensions and foster storytelling in order to ease the evolution towards more sustainable farming systems based on peer-to-peer exchange

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## Appendix A

CUMA	CUMA1											
GIEE Belonging	GIEE	GIEE	GIEE	GIEE	GIEE	GIEE						
Farmer	1+A	1+B	1+C	1+D	1+E	1+F	1-A	1-B	1-C	1-D	1-E	
Age	55-60	45-50	45-50	45-50	40-45	20-25	50-55	45-50	45-50	30-35	30-35	
Education	HSD	HSD	AD	5Y	2Y	2Y	AD	HSD	HSD	2Y	AD	
Partner profession	NF	NF	NF	NF	F	F	NF	NF	NF	NF	/	
Wage experience prior to owning a farm	14y. Farm worker	Family helper, military service	Military service	Research, geological section analysis	9 y. as an account	Apprenticeship organic farm	Factory work, 5y. replacement service, military service, milk weigher	Military service, combine harvester driver, internship	Internships, military service	Replacement service, internship in Canada	Replacement service + internships	
Farm activity	Dairy cow	Dairy cow	Dairy cow	Dairy ewe	Dairy cow	Dairy cow	Dairy cow	Dairy cow	Dairy cow	Dairy cow	Dairy cow, farm work firm	
CUMA engagement (1, 2 or other CUMA)	Board member	Elected official	Elected official	Elected official	Machine planning manager	Board member	Former Elected official, machine planning manager	Elected official	Member	Elected official	Member	

Table A.1. CUMA 1 study participants characteristics. CUMA= French farm machinery cooperatives; GIEE= Groups of economic and environmental interest; HSD= High school degree; AD= Adult degree; 2Y= Two years of higher education; 5Y= Five years of higher education; F= Farmer; NF= Non-Farmer.

CUMA	CUMA 2												
GIEE Belonging	GIEE		GIEE		GIEE	GIEE	GIEE						
Farmer	2+A		2+B		2+C	2+D	2+E	2-A	2-B	2-C	2-D	2-E	
Age	45-50	40-45	45-50	30-35	35-40	30-35	35-40	60-65	55-60	45-50	40-45	30-35	
Education	AD	2Y	HSD	2Y	AD	2Y	2Y	HSD	HSD	HSD	HSD	HSD	
Partner profession	F		NF	NF	/	NF	NF	/	NF	F	NF	NF	
Wage experience prior to owning a farm	Military service, internships	Account, internships	Replacement service	Cheese making 6+ years	Internships	Internships, 3years employee for a cattle fattener	Internships	Milk weigher while family helper	Military service, family helper, milk control advisor	Military service, 1,5years Suckler cow farm worker	9 years slaughterhouse herdsman	10 years cattle truck driver	
Farm activity	Suckler cow		Dairy cow		Dairy cow, dairy goat, cheese-making	Suckler cow	Suckler cow	Suckler cow	Dairy cow	Suckler cow	Suckler cow, veal calves	Suckler cow	
CUMA engagement (1, 2 or other CUMA)	Machine planning manager		Elected official	Member	Elected official	Machine planning manager	Elected official	Former elected official	Elected official, Machine planning manager	Elected official	Board member	Member	

Table A.2. CUMA 2 study participants characteristics. CUMA= French farm machinery cooperatives; GIEE= Groups of economic and environmental interest; HSD= High school degree; AD= Adult degree; 2Y= Two years of higher education; 5Y= Five years of higher education; F= Farmer; NF= Non-Farmer

## Appendix B

DGJ <sub>T</sub>	1+A	1+B	1+C	1+D	1+E	1+F	1-A	1-B	1-C	1-D	1-E	2+A	2+B	2+C	2+D	2+E	2-A	2-B	2-C	2-D	2-E
economics	2	2	0	1	1	1	2	2	1	1	2	0	2	1	1	1	0	1	0	1	0
efficiency	0	1	1	2	2	2	0	0	2	2	2	2	0	1	2	2	1	2	2	2	2
appearance	½	1	2	0	2	½	0	1	1	0	2	2	0	0	½	0	1	1	0	2	2
production	2	1	1	0	1	1	2	0	0	1	2	1	1	2	1	0	2	1	1	0	2

Table B.1. Theoretical perception of what doing a good job is according to farmers graded per category of the definition component. "1+A" can be read Farmer A in CUMA 1 in the GIEE group, more information about farmers can be found in Table A.1 and A.2.

## Appendix C

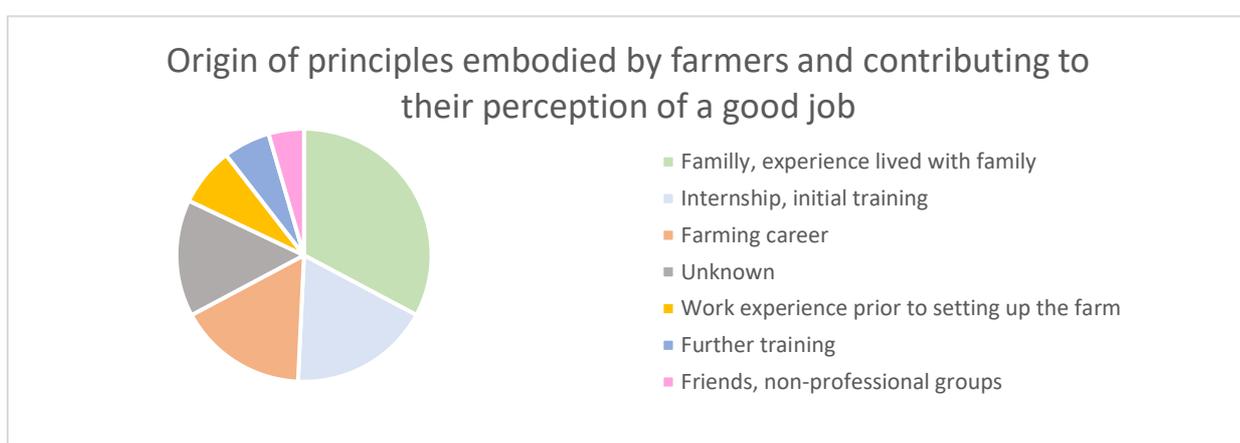


Figure C.1. Origin of principles embodied by farmers and contributing to their perception of a good job

## Appendix D

Farmer	1+A	1+B	1+C	1+D	1+E	1+F	1-A	1-B	1-C	1-D	1-E	2+A	2+B	2+C	2+D	2+E	2-A	2-B	2-C	2-D	2-E
Animals	3	3	2	3	3	2	-2	3	2	3	1	3	3	3	3	3	3	3	3	3	3
Barns	-1	2	2	2	2	2	-1	2	2	3	1	1	-1	1	1	3	3	1	2	2	2
Meadow	2	3	3	2	3	-2	3	2	2	3	3	2	2	3	1	2	2	2	2	3	3
Crops	1	3	3	-1	3	-2	3	2	2	0	3	3	-2	3	1	2	2	2	2	1	0
Biodiversity	0	0		-1	0	0	0	0	0	2	1	1	2	0	0	2	0	0	1	0	0
Soil	0	0	2	2	1	1	0	-1	1	2	2	3	2	3	1	2	1	2	1	1	0
Machinery	-1	2	3	1	1	1	1	2	-1	1	3	2	1	1	2	1	2	2	2	2	2
Group	2	3	3	3	2	2	2	3	3	3	-1	1	2	3	1	3	3	2	2	1	1
Oneself	2	1	2	2	2	2	-1	1	2	2	-1	1	-1	-1	2	2	1	1	-1	1	-1
Income	3	3		2	1	2	3	2	1	2	1	1	2	1	2	1	-1	2	1	-1	1
Family	2	1	2	3	2	1	-1	-1	3	2	0	1	-1	0	3	-1	0	-1	-1	-1	3
Friends, hobbies	0	0	1	2	0	2	0	0	0	0	0	0	0	0	2	0	0	0	1	-1	-2
State	0	-2	1	1	1	1	-2	1	0	1	-2	-2	0	1	3	1	0	3	-2	0	0
Civil society	0	1	1	-1	1	1	0	3	3	0	0	1	2	0	0	0	1	2	1	0	0

Table D.1. Quantification of the importance given by farmers to the elements of their private, professional and omnipresent environment.

## Appendix E

Table E.1. Interview guide

Guide	<p>My name is Mathilde Grau, I am in my 5th year of agricultural engineering school at ESA in Angers and I am doing my final thesis for the FRCUMA. In my research project, I am conducting 20 interviews in two CUMAs with the aim to explore the quality of work on the farm and in the collective.</p> <p>Today we are going to discuss several themes: your background, your work, the CUMA, your projects.</p> <p>The expected time is between 1 and 2 hours.</p> <p>If you agree, I will record this interview so that I can be faithful to what you say when transcribing and analyzing it. This interview will be anonymous.</p>
1- Farm introduction	<p>Farm tour</p> <p>Can you introduce yourself and your farm?</p> <ul style="list-style-type: none"> <li>• Characteristics of the farm: surface area, crops, livestock units, nature of activities</li> <li>• Status of the farm (GAEC, EARL, auto entrepreneur), how long has it been under this status?</li> <li>• Date of setting up on the farm</li> <li>• How do you market what you produce? (Farm sales, cooperative, etc.)</li> </ul>
2. Farmer's professional life path and group belonging	<p><i>What led you to become a farmer?</i></p> <p>Can you tell me about your professional background?</p> <ul style="list-style-type: none"> <li>• What education and training did you receive? (Level, type and number of years of study, professional training, voluntary work, before or after setting up)</li> <li>• What work experience did you have before setting up on this farm? (Positions, responsibilities, tasks)</li> <li>• What led you to make this choice of training/studies/volunteer work?</li> <li>• What has left an impression on you, what have you learnt from it?</li> </ul> <p>Can you tell me about when you joined the CUMA/GIEE?</p> <ul style="list-style-type: none"> <li>• <b>When</b> did you join?</li> <li>• For <b>what reasons</b> (pushed by someone else, financial issue, desire to cooperate, technical challenge, need for social ties, etc.)?</li> <li>• What is your role?</li> <li>• Have you always had this role?</li> </ul> <p>Do you have (now and in the past) any other commitments (professional, associative and political)?</p> <ul style="list-style-type: none"> <li>• Do you have any responsibilities?</li> <li>• When did you join?</li> <li>• Why did you join?</li> <li>• What do you gain from it? (Professional, associative, farmer's union or political groups)</li> </ul>
3. Farmer's work and work on the farm	<p>Can you describe your day and the activities you do from the time you get up to the time you go to bed?</p> <ul style="list-style-type: none"> <li>• Which of these activities are not job-related?</li> <li>• Are there any other regular activities that you did not mention?</li> <li>• Do you consider these to be part of your job or an additional activity?</li> <li>• What do you consider to be your core business?</li> <li>• What activities are you called upon to work on? Do you have any feedback on this work?</li> </ul>
	<p>How is the work organized on the farm?</p> <ul style="list-style-type: none"> <li>• Who does the work on the farm (labor unit + others)?</li> <li>• On what principles is the division of labor based/ why is it divided that way? (Personal affinity for the activities, workers' skills - what they bring, their strengths/weaknesses-)</li> <li>• Do you have strong principles, values around work, things you do not compromise on? Where did you get them from? (Did your relatives have sayings they often repeated about the right way to work, do you often repeat a phrase or saying to your children?)</li> </ul>

4. Quality of work on the farm	<p>Why did you take this picture? // Show me something you are proud of in your work.</p> <ul style="list-style-type: none"> <li>• What makes you say it was a good job? (Emotional -confident, satisfied-, performance, result, objective, ...)</li> <li>• What is the history behind this picture? (Technical itinerary, efforts, people involved, etc.)</li> </ul>
	<ul style="list-style-type: none"> <li>• How would you rate the quality of work on the farm? (everyone in the right position).</li> <li>• What causes it to deteriorate? (When there is no time, when this person does it) or improved?</li> <li>• <b>To your mind, what is doing a good job?</b></li> <li>• In relation to you, what do those you work with (parents, employees, partners) perceive as a good job on the farm? <ul style="list-style-type: none"> <li>- How do you know? (Issues of disagreement, mutual expectations not met)</li> <li>- (How) do you discuss it?</li> </ul> </li> <li>• Do you know why you have a different perception of a job well done?</li> </ul>
	<p>I suggest that during the visit you show me the most important location for you in terms of work, how about that?</p> <ul style="list-style-type: none"> <li>• In this location, what was your best experience/year/campaign, i.e., the time when you were really proud of your work. <ul style="list-style-type: none"> <li>- What did you do in particular to judge that you had done a really good job? (+ precise/charted details on the topic mentioned).</li> </ul> </li> <li>• Which campaign stood out for you because you were really unsatisfied with the work you had done, not because of the weather but because of the quality of your work. <ul style="list-style-type: none"> <li>- What did you do in particular to judge that you had done a really bad job? (+ precise/charted details on the topic mentioned).</li> </ul> </li> </ul>
5. Présentation générale et lien à la CUMA/GIEE	<p>What services does your CUMA provide?</p> <ul style="list-style-type: none"> <li>• Are you satisfied with them?</li> <li>• What is <b>important for the smooth running</b> of these services (establishment of rules, compliance with standards, good understanding)?</li> <li>• What projects/purchases/equipment are you involved in with the CUMA? <ul style="list-style-type: none"> <li>- How much of your equipment belongs to the CUMA?</li> <li>- Who do you share the equipment with?</li> </ul> </li> </ul> <p>How do you organize the use of the CUMA's equipment (centralized planning, planning by machine held by the machine manager, etc.)?</p> <ul style="list-style-type: none"> <li>• How well do you think the machines are used?</li> <li>• How is what is done different from what you want to be done? <ul style="list-style-type: none"> <li>- What setting do you adopt on a particular machine (forage harvester)?</li> <li>- What is your ideal for a given practice (silage)?</li> </ul> </li> <li>• Do those with whom you share the CUMA's equipment share your opinion on the use of the machines? How do you notice this? Do you talk about it?</li> </ul> <p>What do you think of the maintenance of CUMA's machines?</p> <ul style="list-style-type: none"> <li>• How is what is done different from what you want to be done?</li> <li>• Do those you work with share your opinion about the maintenance of the machines? How do you know?</li> </ul> <p><b>Course of the group activities</b></p> <p>If you had to describe the atmosphere of the group, what would you say?</p> <ul style="list-style-type: none"> <li>• <b>How do you feel in this group?</b> (At ease, well integrated, a bit excluded or left out, etc., feeling of belonging).</li> </ul> <p>What <b>vision, common goal</b> do you share with other members?</p> <p>In which meetings do you talk about work, practice, reasons for doing it?</p> <ul style="list-style-type: none"> <li>• What do you talk about/how do you talk about it?</li> <li>• What characterizes them? <ul style="list-style-type: none"> <li>Frequency, (in)formal purpose, period, places, participants, <b>freedom of expression</b></li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>• Which meetings do you find the most useful for the smooth running of the group work?</li> <li>• Are there meetings where there are certain subjects that are best avoided? Which ones? Why or why not? Is everyone aware of this? (Topics to be put on the back burner: practices and reasons for implementing them, values, which highlight heterogeneity, previous conflicts)</li> <li>• Are there any meetings you don't attend / would rather not attend?</li> </ul>
	<p>Do you notice a difference in the way you talk about the way you work with your other CUMA, JA, GIEE, in informal / unofficial meetings?</p> <ul style="list-style-type: none"> <li>• Are they more or less extensive?</li> <li>• Who do you have these meetings with? why? (Sharing the same equipment, same membership, friends, used to working together, etc.)</li> <li>• How is the atmosphere in these groups?</li> </ul>
	<p>Did you get what you expected from the CUMA/GIEE?</p> <ul style="list-style-type: none"> <li>• You told me that you joined the collective for x reason, are you satisfied? <ul style="list-style-type: none"> <li>- Do you aspire to something else in the CUMA/GIEE (other current equipment, projects/purchases)? Why is this not happening?</li> </ul> </li> </ul>
	<p>Do you know of any CUMA/GIEE members who have a similar or contradictory definition of a job well done? How do you know?</p>
	<p>I suggest you take a look at these pictures and tell me what you would think if you passed by a field like this</p> <ul style="list-style-type: none"> <li>• Seedbed preparation combined with sowing with a double axle tractor after ploughing</li> <li>• Hoeled maize</li> <li>• Hoeled maize with bindweed growing in the row</li> <li>• Wheat with a few weeds</li> <li>• Renewal of a meadow after mechanical destruction</li> <li>• Destruction of a temporary grassland by scalping and milling in the summer to plant a biomax cover</li> <li>• Temporary grassland sown in rows.</li> <li>• Triticale sown under white clover</li> <li>• Grassland sown under meslin</li> </ul>
	<p><b>Your farm, past, present, future</b></p>
	<p>Do you have any constraints at work that you did not have before?</p> <ul style="list-style-type: none"> <li>• How long have you had these constraints for?</li> <li>• Has this changed the way you work?</li> <li>• Has your work experience changed?</li> </ul>
	<p>If everything was possible, if there were no limits, what would your farm be like? What would your work be like? And the impact of your work on your personal life?</p> <p>Do you think this vision is original or common among CUMA/ GIEE members?</p>
6.Farmer's sociological heel	<ul style="list-style-type: none"> <li>- Identity (surname, first name, age)</li> <li>- Personal family situation (status, number of children, spouse's activity)</li> <li>- Do you manage to reach the income you would like to have? What would that be?</li> </ul>

## Appendix F

Timing	Goals	Content	Facilitation method
30'	Ice breaker	<ul style="list-style-type: none"> <li>- Build a group-feeling by choosing a picture explaining one's opinion about a question</li> <li>- Planning presentation</li> </ul>	"Photolanguage"
20'	Introduction to the topic	Shed light on the diversity of perceptions: <ul style="list-style-type: none"> <li>- For you, what does « doing a good job » mean?</li> <li>- What examples of a good job could you give?</li> </ul>	Metaplan: <ul style="list-style-type: none"> <li>- 1 idea / sticky note</li> <li>- Classify farmers' answers according to the four themes of DGJT.</li> </ul>
35'	Thesis results inputs and debate with farmers	Illustrate the diversity and subjectivity of DGJ (DGJT, DGJP, satisfaction levels), and its influencing factors (life path, environment). No judgement.  Debate: does that reflect what you see around you at work?	Microsoft powerpoint slides
40'	What's next for the CUMA?	How does what we have learnt can help us cooperate more easily? <ul style="list-style-type: none"> <li>- What is the impact of what we have seen on the cooperation in the Cuma and on your own farm?</li> <li>- Now we have noticed these impacts, what's next?</li> </ul>	Metaplan: <ul style="list-style-type: none"> <li>- 1 idea / sticky note</li> <li>- Classify farmers' answers in clusters</li> <li>- Debate</li> <li>- Relate action to each cluster</li> </ul>
10'	Wrap-up, closing words	Satisfaction: What farmers liked, disliked, suggest for improvement	

Table F.1. Facilitation framework used in the participatory workshops with farmers