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AGRICULTURAL DISTRIBUTION CHANNELS UNDER PRESSURE AND STRESS FOR FARMERS TO ACCESS MARKETS

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Abstract

While long supply chains remain the dominant model, other forms of distribution are being (re)constructed or reaffirmed: short channels and hybrid channels. The aim of this article is to understand whether a farmer's choice of distribution channel has an impact on tensions at work. More specifically, the aim is to analyse whether stresses differ according to the type of distribution, whether one distribution channel seems preferable to another in terms of limiting the stresses experienced and/or perceived by farmers, and whether it is possible to limit work-related stresses a priori, when constructing the channel. This analysis was carried out on an exploratory and qualitative basis, using individual and group interviews with a sample of farmers in a mountainous area. Our results identify sources of work-related tension for each type of distribution. This original work focuses on the upstream side of the channel. It explains the various tensions at work and identifies ways of managing them during the construction of a channel.

Key words: Agriculture, Collective strategies, Distribution channels, Distribution logistics, Food supply chain, , Individual strategies, Role tensions.

Introduction

Traditional distribution still constitutes more than 80% of food distribution (Enthoven and Van den Broeck, 2021). Traditionally the preserve of so-called "long" supply chains (LSCs), these have shown their limitations in recent years. The search for better-quality food has led consumers to turn to more "virtuous" forms of distribution: short distribution channels (SDC). In Europe, it is estimated that 15% of farms sell more than half their produce through short distribution channels (Enthoven and Van den Broeck, 2021). Despite this, SDCs are facing major constraints due to a lack of foresight from stakeholders, who are (re)discovering this distribution model without fully understanding its ins and outs, particularly in terms of organisation and, above all, logistics (Mundler and Jean-Gagnon, 2019). At the same time, other practices are emerging and developing, representing a hybridisation of the two conventional models (Le Velly and Dufeu, 2016). These developments are leading to a change in the work of the farmer, who must control costs, seize opportunities, innovate and optimise distribution (Rucabado-Palomar and Cuéllar-Padilla, 2018). A lack of preparation for these changes can lead to underperformance (Paul, 2018), withdrawal strategies, or even mental health problems such as suicide or depression (Cheriet et al., 2020). Thus, although the health and well-being of farmers is a major issue in the study of supply chains, particularly short supply chains, these aspects are rarely mentioned in research (Bayir et al., 2022). **This work aims to understand**, *in the preparatory phase of the development of a distribution channel, what professional tensions are induced by existing distribution channels, but also what tensions emerge from the channel under construction.*

The objectives of this research are threefold. Firstly, to understand the choice of distribution channel and its impact on work-related stress for farmers, particularly if the stress differs according to the type of distribution chosen. Secondly, they seek to verify whether a distribution channel seems preferable for limiting the stresses experienced and/or perceived by farmers. Finally, they question the possibility of limiting work-related stresses a priori, when the channel is being constructed.

This work will enable us to understand the perception of the work associated with each of the food distribution channels, so that we can make recommendations to try and limit their impact.

The first part presents the transformations in agricultural distribution in the light of professional tensions. Then the second part presents the case of Saint-Flour Communauté and analyses the professional tensions felt by the players in each of the circuits.

-1- Role tensions in Food Supply Chains (FSC)

Agri-food systems are organised in contrasting ways. The dominant model is still that of long supply chains. However, over the last fifteen years or so, short supply chains have been gaining in importance, but with them come a host of obstacles, mainly for producers (Enthoven and Van den Broeck, 2021). The international literature highlights the benefits and limitations of each type of FSC. This paper highlights the fact that while the benefits of these FSCs are a priori a source of satisfaction for farmers, their limitations can reveal professional tensions. In the agricultural sector, each food supply chain generates limitations (1.1.) which are likely to be sources of tension in the work of players in the agricultural sector (1.2.).

1.1. Dominant long FSCs and their limitations

Economic development has facilitated the emergence of long channels, which act in a centripetal manner, bringing together a multitude of geographically dispersed players, from producers to end consumers. In these schemes, the major food processors and supermarkets dominate to the detriment of farmers (Corvo, 2021). Relationships are vertical and function mainly in a coercive way, creating tensions that generate both constraints and confrontations from which farmers come out the losers (Elghannam et al., 2017).

The role of these long supply chains in lubricating trade, distributing flows and making large volumes available, with extreme price competitiveness between production areas and end markets, remains the keystone of the edifice. However, all this generates strong tensions which are the root cause of deep-seated problems for agricultural players (Corvo et al., 2021). In long FSCs, the priority is to achieve economies of scale because of the large volumes of final consumption. Controlling production processes and outsourcing food processing and distribution to companies outside the farm is therefore the norm (Corvo et al., 2021), giving rise to tensions at work. Spoljar, 2015) identifies three kinds: those linked to changes in work schedules, mechanisation and the use of chemical products; those linked to the reduction in their learning opportunities, due to the delegation of certain tasks to other players (trials,

experimentation, etc.) or to mechanised systems (milking, etc.); and the last one linked to the increase in professional illnesses linked to the use of phytosanitary products.

In addition to these tensions, long FSCs are also a source of tension with stakeholders in civil society, particularly in terms of food safety and the ecological balance sheet (Corvo, 2021). Over the last few decades, this model has raised concerns and been the subject of numerous criticisms, including the difficulty for farmers to access the market, pollution and the threat to food security (Corvo et al, 2021; Thomé et al., 2021; Torok et al., 2022; Azima and Mundler, 2022a; Bayir et al., 2022), negative effects on farmers' welfare and rural vitality (Weiss, 2007; Corvo et al., 2021; Torok et al., 2022; Azima and Mundler, 2022a). These criticisms have led to the emergence of international quality management standards and food safety management systems throughout the world (Thomé et al., 2021). They have also given rise to other forms of supply that have emerged as "resistance sites" to conventional agro-industry (Azima and Mundler, 2022a).

1.1.1. The revival of short FSCs and their limitations

Short FSCs represent direct sales from a farmer to a customer or with a single intermediary, even though this concept is open to discussion and variation (Enthoven and Van den Broeck, 2021). This definition may also include a limit on the distance between producers and consumers. They encompass a diversity of organisations (fairs, farm sales, traditional markets, etc.) reflected in the literature by three types of specific architecture (Jarzębowski et al., 2013). The first uses "*direct sales*" between farmers and consumers "*face to face*". The second, known as "*proximity*", refers to an intermediary such as a farm shop, and the third, "*extended type*", relies on labelling systems such as Protected Designations of Origin (PDOs). The use of one of these forms of distribution is conditioned by the volume and variety of production (Rucabado-Palomar and Cuéllar-Padilla, 2018).

Conceptually, short FSCs constitute different forms of organisations that can facilitate the transition to a more sustainable food system (Jarzębowski et al., 2020), as they are based on integrated community relationships and trust values (Azima and Mundler, 2022a, 2022b). There are many logistical challenges, including communication and acquiring new skills in services and organisation through new structures and processes (Rucabado-Palomar and Cuéllar-Padilla, 2018; Lankauskiene et al., 2022). Here again, these issues are inherently fraught with tension, as they introduce areas in which farmers have little or no specific skills. These new roles are difficult for farmers to acquire due to a lack of resources, training and/or time. In addition, this organisation generates a need for specific logistical infrastructure and

the acquisition of technologies, the investment in which is often difficult to obtain for an individual player who finds himself 'virtually obliged' to find collective synergies (Rucabado-Palomar and Cuéllar-Padilla, 2018; Jarzębowski et al., 2020).

Paciarotti and Torregiani (2021) moreover validate these points and also identify other limitations likely to lead to role tensions in farmers' work or with customers: small number of varieties and quantities produced, complex coordination with a multitude of customers, high logistical costs.

Added to these limitations is the need to deactivate a regulatory framework perceived as encouraging long FSCs (Jarzębowski et al., 2020; Azima and Mundler, 2022a) with a difficulty linked to the articulation of private and professional lives (Azima and Mundler, 2022a). Thus, while the short channel has many advantages, it also carries with it a number of "ills" often attributed to its small scale and limited resources, leading to the conclusion that most of the problems they encounter can be resolved by hybrid FSCs, which offer a wider range of choices than do short FSCs (Bayir et al., 2022).

1.1.2. Hybrid FSCs also face challenges

The perspective of hybrid channels, developed in the early 2000s, is more empirical. By going beyond the existing dichotomy between global and local approaches, the "hybrid channel" represents an arrangement capable of responding to the market and acquiring resources without necessarily disconnecting from other channels (Le Velly and Dufeu, 2016; Rucabado-Palomar and Cuéllar-Padilla, 2018). This type of FSC is partly an extension of the literature on short FSCs, which explains why some authors do not distinguish between the two forms, such as Burgess et al. (2022), Corvo et al. (2021) or Rucabado-Palomar and Cuéllar-Padilla (2018).

These approaches converge on a strong territorial anchoring, a promise of difference (organisation of production, exchange, food consumption or associated benefits), a desire for agricultural development, and the consideration of several cooperating stakeholders. In practical terms, the hybrid channel is the product of a collective that combines human, material and natural resources to improve work coordination (Le Velly and Dufeu, 2016; Corvo et al., 2021). Collective action can have a social impact that can be evaluated (Corvo, 2021), share new knowledge, visions, values and material resources, and support a transition towards practices that are in demand by the market. However, there are many individual and

systemic barriers to collective action (Le Velly and Dufeu, 2016; Azima and Mundler, 2022a). The large number of players involved raises the question of how to create a community group, with the inclusion of different stakeholders who do not necessarily know each other and/or do not always want to cooperate. In addition, decision-making within the group can be a source of tension. The issue of marketing is also problematic, as it involves a large investment of time in trying to increase the customer base (Rucabado-Palomar and Cuéllar-Padilla, 2018).

To conclude, integrating role tensions as a key to the analysis of distribution channels makes it possible to understand the stress factors they induce for farmers. It is difficult *a priori* to identify farmers' perceptions of each of the boxes in the Djabi et al. typology (2016, 2019). Nevertheless, a study of the limits of each of the FSCs makes it possible to identify *a priori* elements that will be perceived as role tensions by the farmers (cf. Table 1).

Table 1: Limitations of FSCs that can be translated into risks in terms of role tensions for farmers

Long FSCs	Short FSCs	Hybrid FSCs
Health risks (Spojar, 2015)	Privacy risks Azima and Mundler, 2022)	Risks to cooperation and knowledge between stakeholders (Rucabado-Palomar and Cuéllar-Padilla, 2018; Le Velly and Dufeu, 2016 ; Azima and Mundler, 2022)
Risks of reduced learning capacity (Spojar, 2015)	Risks relating to regulatory constraints (Jarzębowski et al., 2020; Azima and Mundler, 2022)	Risks to decision-making (Rucabado-Palomar and Cuéllar-Padilla, 2018 ; Le Velly and Dufeu, 2016 ; Azima and Mundler, 2022a)
Risk of tension with civil society over environmental issues (Corvo et al., 2021 ; Thomé et al., 2021 ; Torok et al., 2022 ; Azima and Mundler, 2022 ; Bayir et al., 2022)	Risks relating to access to facilities (Rucabado-Palomar and Cuéllar-Padilla, 2018 ; Jarzębowski et al., 2020)	Risks of lack of time for marketing (Rucabado-Palomar and Cuéllar-Padilla, 2018)
Risk of tension with civil society over food safety issues (Corvo et al., 2021 ; Thomé	Risks relating to skills (management, IT, marketing) (Rucabado-Palomar and	

et al., 2021 ; Torok et al., 2022 ; Azima and Mundler, 2022a ; Bayir et al., 2022)	Cuéllar-Padilla, 2018 ; Lankauskiene et al., 2022)	
Risks associated with the loss of consumer relationships (market access) (Corvo et al., 2021 ; Thomé et al., 2021 ; Torok et al., 2022 ; Azima and Mundler, 2022a; Bayir et al., 2022)	Risks linked to logistics costs (lack of flow and variety which increase transportation costs) (Paciarotti and Torregiani, 2021)	
Risks relating to the authority of downstream players (Bayir et al., 2022)		

Source : authors

1.2 Role tensions in food supply chains

Originating in the 1960s under the impetus of Kahn et al (1964), this notion (of a psychological nature) is useful for understanding the factors which affect behaviour at work. In the context of the agricultural actor, the choice of a food supply chain generates specific tensions which it is useful to analyse in order to avoid the possible deficiencies they could cause if they affect the work too significantly.

The role is commonly defined by the latter as “*a set of recurring behaviours adopted by an individual*” and is observed through the activities performed. A fertile stream of research from the 1960s-1970s has recently been revived in the light of the profound changes that various sectors of activity are undergoing (Rivière et al. 2013; Bollecker and Nobre, 2016). The Katz and Kahn (1966) model was revised in 2016 by Djabi et al. to take into account the criticisms of the initial model. In their contribution, they propose an analysis grid that crosses two dimensions (table 2): the nature of expectations and their purpose. Expectations can generate four different types of tensions: 1/ mutually contradictory expectations (contradictions between the expectations placed on the focal person by one or more transmitters), 2/ expectations in conflict with those of the individual (expectations of the organisation in conflict with those of the individual), 3/ ambiguous expectations (discrepancy between the information available and the information required), 4/ excessive expectations (expectations that exceed the time or resources available to the individual). Analysis based on role tensions

is currently attracting renewed interest because of the profound changes that many jobs are undergoing (Rivière et al. 2013; Bollecker and Nobre, 2016, Djabi et al., 2019), including the agricultural sector, as mentioned above.

These tensions are stress factors that can lead to dissatisfaction, fatigue and, ultimately, health problems, as well as a marked drop in the individual's performance (Jackson and Schuler, 1985; Grima, 2000; Commeiras et al., 2009).

Table 2: Djabi and Perrot's grid for analyzing role tensions (2016).

		Purpose of expectations		
		Role definition	How to reach one's objectives	Evaluation of the results
Nature of expectations	Conflicting expectations	The focal person perceives contradictory expectations on the part of one or more transmitters with regard to the definition of his/her position, missions, responsibilities, scope of action, etc.	The focal person perceives contradictory expectations on the part of one or more transmitters concerning the way to achieve fixed objectives (e.g. planning of actions, etc.).	The focal person perceives contradictory expectations on the part of one or more issuers concerning the evaluation of his/her results (e.g. amount of remuneration, evaluation system).
	Expectations in conflict with those of the individual	The focal person perceives a contradiction between his or her expectations (in terms of needs, values, skills, etc.) and those expressed by the transmitters with regard to the definition of his or her position, missions, responsibilities, scope of action, etc. The focal person also perceives a contradiction between his or her expectations (in terms of needs, values, skills, etc.) and those expressed by the transmitters with regard to the definition of his or her position, missions, responsibilities, scope of action, etc.	The focal person perceives a contradiction between his/her expectations (in terms of needs, values, skills, etc.) and those expressed by the transmitters with regard to how to achieve the set objectives (e.g. work planning, etc.) The focal person perceives a contradiction between his/her expectations (in terms of needs, values, skills, etc.) and those expressed by the transmitters with regard to the evaluation of his/her results.	The focal person perceives a contradiction between his or her expectations (in terms of needs, values, skills, etc.) and those expressed by transmitters with regard to the evaluation of his or her results.
	Ambiguous expectations	The focal person considers that expectations regarding the definition of his/her position, missions, responsibilities, scope of action (etc.) are ambiguous (unclear, vague).	The focal person considers that expectations regarding how to achieve fixed objectives (e.g. work planning, etc.) are ambiguous (unclear, vague).	The focal person considers that the expectations placed on the evaluation of his/her results are ambiguous (unclear, vague).
	Excessive expectations	The focal person considers that the expectations placed on him/her in terms of job definition, missions, responsibilities, scope of action (etc.) are excessive.	The focal person considers that expectations regarding the way in which fixed objectives are achieved (e.g. work planning, etc.) are excessive (e.g. excessive procedures, traceability).	The focus person considers that the expectations placed on the evaluation of his/her results are excessive (e.g. impossible standards).

Source: Djabi and Perrot (2016)

In examining this model, it appears that the choice of one or more food supply chains (FSCs) leads to limitations that can be analysed from the viewpoint of the professional role and the generated tensions. These supply chains (particularly those described as SFSCs) are seen as more resilient and inclusive systems, with a presupposition of sustainability which, while it is a strength of the system, nevertheless poses problems for farmers. They must constantly readapt their work to adjust to economic constraints and their internal production, processing and marketing dilemmas in order to achieve the best level of efficiency (Jarzębowski et al.,

2020; Enthoven and Van den Broeck, 2021). In addition, other organisational arrangements (supported agriculture trials to support producers) show limitations in terms of the results obtained compared with initial expectations (Paul, 2018). This generates mental pressure and high levels of tension at work, as producers struggle to reconcile satisfying demand and optimising their distribution. Not only do they have to adapt to the distribution channels in which they are present, but they also have to look for new ones. This is also paradoxical, because the most lucrative distribution method (conventional) is the one they 'reject', because although it is more lucrative, it forces them to produce more, in defiance of their original convictions. Customers' expectations make it much more difficult for them to organise their work, creating a significant work overload that clearly causes them to lose control of their business and distribution system (Mundler and Jean-Gagnon, 2019). Rucabado-Palomar and Cuéllar-Padilla (2018) have explained the difficulties that some producers may have in overcoming, in particular, the tensions associated with a shared decision-making process in a cooperative or associative structure (lack of a participatory tradition, passivity and selfishness on the part of some, lack of a sense of belonging to the project). There has been an abundant and varied literature over the last thirty years on the construction of distribution channels. It is impossible to cite it exhaustively in this article. On the other hand, authors who approach it from the angle of role tensions within a collective approach are rare (Rucabado-Palomar and Cuéllar-Padilla, 2018). It is therefore from this angle that this study analyses role tensions in a mid-mountain farming population.

2. Methodology and presentation of the case

Research design.

This work forms part of a LEADER research programme, a Territorial Food Programme (TFP) which seeks to develop agricultural activity and its outlets for and by local players. The funding for this exploratory study means that the fieldwork can be replicated in other regions or abroad, with the aim of comparing potential differences between the architectures of these channels. The Saint-Flour Communauté area is an agricultural area, 90% of which is devoted to livestock farming, which includes two sectors (meat and milk and cheese). A number of hybrid initiatives have been tried in the past, without success (notably the pooling of flows and the farm click & collect). The aim of this project is to analyse the distribution methods used by farmers and to find a form of hybrid distribution that is relevant to the stakeholders of the Saint-Flour Communauté in the Cantal department (France), while at the same time

addressing the areas of tension. The analysis therefore focuses on farmers' current distribution methods, and on a study of the problems associated with establishing a hybrid form of distribution in the area. The purpose of this study is to understand farmers' perceptions and attitudes to this distribution architecture, which calls for an exploratory qualitative study to enable a more detailed analysis of the players' positions. A qualitative study is also more consistent with an understanding of behaviour and perceptions.

Sample selection and case study

Saint-Flour Communauté offered to take part in this project and contacted all the farmers in the area (77 farms), whose main characteristic is that they are small. A sample of 22 volunteer farmers was selected (34% of the parent population). The department is characterised by a predominance of farms producing meat, milk and dairy by-products. The characteristics of the final sample reflect the predominance of farms and are shown in table 3.

Table 3: Structure of the sample

Interviewee N°	Nature of farming	Production capacity (yr)	Number of employees on the farm	Use of long FDS	Use of shorts FDS	Notes on the age of the structure
16	Goats/ewes	14,000-15,000 liters	2	No	Yes *	Recently taken over by daughter
17	Cows	35,000-40,000 liters	3	Yes *	Yes *	
20	Cooperative (cows)	9 million liters	50 farmers	Yes *	Yes *	
4	Cooperative (cows)	7 million liters	40 farmers	Yes *	No*	
9	Cows	650,000 liters	4.5**	Yes *	Yes *	
22	Goats	15,000 liters	2	No	Yes *	
26	Cows	220,000 liters	5	No	Yes *	
12	Cows & Ewes	120,000 liters	3	Yes *	Yes *	
23	Cattle	25-30 cattle	1.5**	Yes *	Yes *	Less than a year's seniority
25	Cattle	50 cattle	2	Yes *	Yes *	
27	Cattle	170 cattle	3	Yes *	Yes *	
14	Cattle & pigs	80 cattle	2	Yes *	Yes *	
19	Cattle	120 cattle	3	Yes *	Yes *	
21	Cattle	100 cattle	3	Yes *	Yes *	
29	Cattle	40 cattle	2	No	Yes *	Less than a year's seniority
1	Cattle	20 cattle	1	Yes *	Yes *	Nearly retired
5	Pores	1,800 cattle	16	No	Yes *	
6	Cattle	25 cattle	1	Yes *	Yes *	
7	Cattle	75 cattle	2	Yes *	Yes *	
10	Cattle	45 cattle	1	Yes *	Yes *	
13	Cattle	80 cattle	1	Yes *	Yes *	Less than a year's seniority

Shaded boxes correspond to the meat sector

* desire to develop this type of circuit

** part-time workers

Source : authors

Twenty two semi-structured face-to-face interviews (15 for the meat sector and 7 for the cheese sector) were conducted with farmers between February and April 2019. They were

supplemented by three interviews to gain a better understanding of the constraints associated with the meat industry: two cutting plants and a slaughterhouse. The interview grid included 5 subjects:

1. Past, present and future activity and distribution;
2. Communication and information with other players (including customers);
3. Flow characteristics;
4. Storage ;
5. Delivery and Identification of past and future collective forms.

This interview guide enabled us to understand the stakeholders' perceptions of the role tensions associated with their businesses, but without addressing them directly, which limited the risk of influencing the stakeholder. This enabled us to analyse the existing situation (channels currently in use), and the perceived risks arising from the various hybrid channels that had been developed, often with little success in the area.

All the interviews were recorded (26 hours 40 minutes in total). They were transcribed and put together to give a total verbatim of 125,317 words (289 pages). They were also analysed using the Nvivo QSR 12 software according to the coding grid in the appendix (derived from the different types of distribution channels, and the grid in Djabi and Perrot, 2016). The granulometry of the coding grid is shown in Appendix 1.

Once all the interviews had been carried out, 5 group meetings (between July 2019 and September 2020) were held to meet the willing participants (farmers, local authorities and researchers). During the first meeting, the results of the interviews were presented, confirming that the results obtained for the long and short FSCs were well understood. The aim of the group meetings was to gain a better understanding of the points of tension linked to the hybrid circuit under construction. To do this, different types of hybrid organisation were proposed to the stakeholders at each of the meetings. The stakeholders were asked to react to the proposals. The meetings were recorded, transcribed and subjected to a floating content analysis using NVivo QSR 12.) This enabled a number of tensions to be identified.

The coding grid allowed a two-parts analysis. The first concerns the current tensions experienced by the players in the context of the organisation of their distribution. The second concerns the hybrid circuit under construction and is based on the past experiences of the players, and on the perceived limits of this form of distribution (more complete results can be

found in appendices 2, 3 and 4). And lastly, a better understanding on an ad hoc basis, enabling certain difficulties to be taken into account upstream of the hybrid channel project.

2. Results and discussion: Role tensions present in all types of FSC

Overall, and in accordance with the literature, the three types of FSC appear to be sources of tension (see Table 7 for a summary). In long FSCs, the difficulties are more related to the evaluation of results and to the definition of the role as perceived by the farmer himself (expectations in conflict with those of the individual). In short FSCs, the main tensions stem from the definition of the role and the achievement of results (to a lesser extent from the way in which objectives are reached). And finally, in hybrid FSCs (Table 4), the tensions relate more to the definition of the role and, to a lesser extent, to the results. **Generally speaking, the tensions identified in the literature are found in this work, but other tensions seem to be emerging (Tables 4, 5, 6).**

Table 4: Limits of long FSCs that can be translated into risks in terms of role tensions for farmers

Long channel						
	Role definition		How to achieve objectives		Evaluation of results	
	Results from the field	Literature correspondence	Results from the field	Literature correspondence	Results from the field	Literature correspondence
Conflicting expectations						
Expectations in conflict with those of the individual	Emphasis on quantity over quality		The initial product is of good quality, but is destroyed by intermediaries		The differences between the various PDOs are not valued by the market	
					Quality is not rewarding enough	Risks associated with the self-management of downstream players
Ambiguous expectations					Uncertainty of demand	Risks associated with the self-management of downstream players
Over-expectations					Too much price and margin pressure	Risks associated with the self-management of downstream players

Light grey boxes: specific to the meat industry

Dark grey boxes: specific to the cheese sector

Source: Authors

Table 5: Limitations of short FSCs that can be translated into risks in terms of role tensions for farmers

	Short channel					
	Role definition		How to achieve objectives		Evaluation of results	
	Results from the field	Literature correspondence	Results from the field	Literature correspondence	Results from the field	Literature correspondence
Conflicting expectations	Customers only want certain pieces	Risks to access to facilities/regulatory constraints			Cost of transportation	Risks related to logistics costs
					Low local margins	
Expectations in conflict with those of the individual	Difficulty developing commercial capabilities	Risks to skills	Planning difficulties	Risks to skills		
	Difficulty in proposing a complete offer					
Ambiguous expectations	Vision of the profession: farmer vs. Business	Risks to skills			Difficulty in setting prices/costs	Risks to skills
Over-expectations	Little time for the sales approach	Privacy risks			High cost of individual packaging	Risks related to logistics costs
	Deliveries are taking too long	Privacy risks				
	Packing in small batches takes too much time	Privacy risks				
	Lack of time (profession)	Privacy risks				

Light grey boxes: specific to the meat industry
 Dark grey boxes: specific to the cheese sector

Source: Authors

Table 6: Limitations of hybrid FSCs that can be translated into risks in terms of role tensions for farmers

	Hybrid channel					
	Role definition		How to achieve objectives		Evaluation of results	
	Results from the field	Literature correspondence	Results from the field	Literature correspondence	Results from the field	Literature correspondence
Conflicting expectations	Loss of link with end customer					
Expectations in conflict with those of the individual	Problem of pooling heterogeneous qualities					
Ambiguous expectations					Intra-territorial competition	Risks to cooperation and knowledge between stakeholders
Over-expectations	Group coordination	Risks for decision-making				
	Quantities requested					

Light grey boxes: specific to the meat industry
 Dark grey boxes: specific to the cheese sector

Source: authors

Table 7: Results by variable and sector

Tensions	Tensions in the literature		Work-related tension	Application sector
	Also featured in the study	Not validated by the field		
Long FSC				
Health risks		x		Cheese and meat
Risk of reduced learning capacity		x		Cheese and meat
Risk of tension with civil society over environmental issues		x		Cheese and meat
Risk of tension with civil society over food safety issues		x		Cheese and meat
Risks associated with the loss of consumer relations (market access)	x			Cheese and meat
Risks relating to the authority of downstream players	x			Cheese and meat
Product quality risks			x	Cheese and meat
Short FSC				
Privacy risks	x			Cheese and meat
Risks to regulatory constraints	x			Meat
Risks to access to facilities	x			Meat
Risks to skills (management, IT, marketing)	x			Cheese and meat
Risks linked to logistics costs (lack of flow and variety which increase transport costs)	x			Cheese and meat
Risks associated with business specialisation			x	Cheese and meat
Hybrid FSC				
Risks to cooperation and knowledge between stakeholders	x			Cheese and meat
Risks to decision-making	x			Cheese and meat
Risks of lack of time for marketing		x		Cheese and meat
Product quality risks			x	Cheese and meat
Risks associated with the loss of consumer relations (market access)			x	Cheese and meat
Risks linked to the quantity produced			x	Cheese and meat

Source: authors

2.1. Specific features of each sector

More specifically, the internal organisation of the sectors has an impact on perceived tensions. The cheese sector is organised around PDOs, which allow territories to be differentiated, but not cheeses within the same designation. This sectoral organisation is a source of tension because production methods within the same label can lead to significant differences in the organoleptic qualities of finished products. Because of the PDO, this difference is little valued

by the customers of long FSCs, which is reflected in the negotiations with downstream players, where quality is not perceived by farmers as being sufficiently profitable. In short and hybrid FSCs, this aspect does not appear because farmers have a direct link with the customer, which enables them to explain the differences. There is also tension over product quality in the meat sector. However, this is not reflected in the same terms because of the way FSC is organised. In long FSCs, animals are sold live to wholesalers or other merchants. Downstream operators are responsible for transporting the animals, slaughtering, processing and packaging the products. These operations can have a significant impact on the quality of the finished product (for example, stress during transport hardens the meat) and depend on another player. The multitude of players delegating food processing and distribution (Corvo et al., 2021) is perceived by farmers as destroying the quality of the initial product, which tends to devalue the work they do. These aspects are not found in short and hybrid FSCs, due to the farmer's control over these tasks. This suggests that farmers on long FSCs contracts are more likely to turn to standard products not marked by quality labels, if they wish to reduce the stress perceived in their work. Two other elements of tension specific to the meat sector appear in our results: the complexity of the tasks and the risks linked to planning skills. In long FSCs, producers concentrate on the production of animals. The use of short FSCs adds a lot of complexity and activities for farmer-breeders, which explains why they are less present on this type of channel (Rucabado-Palomar and Cuéllar-Padilla, 2018). This is because they have to plan all the downstream tasks (transport, slaughtering, processing, etc.) right through to the end consumer.

Moreover, in this type of channel, farmers generally do not have access to certain facilities (tools for processing meat, preparation of canned food), which are often highly regulated and therefore very costly. This limitation has an impact on the quantity of meat sold, as consumers prefer specific cuts, which means that the whole animal cannot be valued every time. Nevertheless, hybrid FSCs represent an opportunity for them to control downstream tasks by limiting investment (Rucabado-Palomar and Cuéllar-Padilla, 2018). This result implies that hybrid channels seem to be the FSC that decreases professional tensions the most.

2.2. Tensions are present in long FSCs

In addition to the quality concerns mentioned in the previous section, our results show that the tensions associated with long channels mainly relate to expectations that conflict with those of

the individual and the evaluation of results. All the tensions stem from the actors' downstream authority (Elghannam et al., 2017). Their power of negotiation/coercion is significant, reinforcing this dependence by playing on the regularity and quantity of orders that can "*stop overnight*".

These results differ from some of the literature (Spoljarić, 2015), that highlights suffering linked to the transformation of work (mechanisation, reduction in the variety of tasks, use of products). Here, the tension stems from the organisation of the FSC itself, where certain players are perceived as focusing more on cost control at the expense of product quality. However, in the supply chain, quality standards must be common to all players (Ahmani and Bouazza, 2022), which is not the case here and creates tensions. This may lead farmers to produce more in terms of quantity with "low" quality standards, in order to reduce their workload.

2.3. Tensions present in short FSCs

The main tensions in short channels concern the definition of the farmer's role and the evaluation of results. In terms of the definition of the farmer's role, the main problems noted in the literature relate to a lack of skills and the balance between private and professional life. As far as the commercial aspects are concerned, some players feel that this task is not part of their core business. These aspects represent a difficulty in terms of the workload (explanation, etc.), the skills to be developed (IT, loyalty tools, etc.), and the time required for different tasks (adapting batch sizes, etc.). **These aspects can be positively evoked by the literature (Nasr, 2019). In this study, although farmers acknowledge that direct relationships with their customers are rewarding, this interaction is also a source of tension, particularly when they multiply the types of distribution in short FSCs.** Another tension is linked to the risks of specialisation. The short cycle implies diversified production (meat, cheese, vegetables, etc.) to better meet customer expectations.

This diversification is only possible when the short FSC becomes the exclusive distribution model. However, many farmers use short and long FSCs at the same time. In fact, although many authors oppose these two types of FSC, it has been shown that in reality the two models coexist (Thomé et al., 2020), which seems to show the limits here, from the point of view of professional tensions. Over and above the commercial aspects, the organisation of farmers on short distribution channels often leads to a work overload. Indeed, these channels entail a

broadening of tasks in addition to productive ones. To this accumulation of tasks is added a more complex organisation, seeking to balance the number of tasks while controlling costs. This overload is also amplified by the multiplication of short channels used by the farmer.

As far as assessing results is concerned, the factors causing tension are linked to two elements: logistical costs and management control skills. These results are in line with the literature. Short distribution channels mean that the farmer prepares (packaging, processing into individual portions, etc.) and often delivers the product himself (Paciarotti and Torregiani, 2021). Apart from the time-consuming aspects already mentioned, these activities raise two issues: the cost of packaging and the profitability of transporting small volumes. In the area, there is fierce competition in both sectors, which affects the profitability of the canal by driving prices down. As you move away from the area, selling prices rise, but so do transport costs, which eat into margins. Added to the logistical difficulties is the difficulty of setting a price, which is generally based on the price of the competition rather than on a break-even point. The choice of short FSCs requires a variety of skills (Rucabado-Palomar and Cuéllar-Padilla, 2018; Lankauskiene et al., 2022), which farmers sometimes do not have.

To limit tensions at work, the results show that it is preferable to limit the types of short FSCs in which farmers are present (farm sales, markets, catering, etc.) in order to limit the risks associated with the work-life balance and to try to better control logistical costs. In addition, agricultural training courses should develop specific training for short FSCs to fill the gaps in marketing, management control and logistics.

2.4. Hybrid channel tensions

In hybrid channels, the difficulties are mainly linked to the definition of roles and the evaluation of results. In the definition of roles, a risk perceived as important and noted in the literature is linked to collective decision-making, which can run counter to the individual player's strategy on various aspects (production, marketing, etc.). The risks associated with decision-making are widely documented in the literature (Rucabado-Palomar and Cuéllar-Padilla, 2018; Le Velly and Dufeu, 2016; Azima and Mundler, 2022a). Three other aspects emerge: the perceived quality risk, the loss of the link with the end customer, and the quantity risk.

Hybrid channels are most often developed on the basis of a quality reference: label, charter, etc. (Lequin, 2018) and some players do not wish to adhere to a standard for various reasons (differentiation from the competition, personal ethics, investment required, etc.), which poses problems in the event of mass flows to meet a demand. In the case of standardisation of production, massification is also rejected because quality also depends on extrinsic factors such as the nature of the soil and grassland, which have an impact on the quality of the milk and meat (Monin, 1991). The pooling of flows between farmers is therefore limited by convictions linked to quality and comes up against distrust of competitors. The results here differ from the literature, where it is the time associated with marketing activities that poses a problem in this type of channel (Rucabado-Palomar and Cuéllar-Padilla, 2018). They show that it is the indicators that need to be communicated that are more problematic. This is certainly linked to the construction phase of the hybrid channel. If this study had been carried out in an existing channel, the result might have been different.

Added to this are the difficulties of losing contact with the end customer. Farmers fear losing contact with the market, which reflects a desire to maintain a direct link with the customer for information relating to the product itself (cheese maturing, farming methods, etc.). By their very nature, hybrid FSCs are positioned between short FSCs and long FSCs, which implies tensions that can be shared. The loss of customer relations and quality seem to be risks that are sources of tension. In addition, there is the fear, for some, of not being able to produce in sufficient quantities to satisfy this new market. However, this point is undoubtedly specific to the uncertainty of the FSC in construction, as almost all the people interviewed in the sample can increase their production.

In terms of assessing results, the main perceived risk is linked to cooperation. The identified risks relate to the capture of the added value of the collective by certain producers. This difficulty also appears in the literature (Rucabado-Palomar and Cuéllar-Padilla, 2018). In the region, fierce competition and low demand fuel this perception.

For the most part of players, these points could be overcome by good organisation, in particular by increasing sales to more distant areas, and by assigning a sales agent for the entire territory with sales targets for each player. To reduce organisational tensions, the hybrid FSC cannot be managed without a management structure that is considered "neutral" by the players. The creation of an association was rejected by the stakeholders in favour of the involvement of a third party, in this case, the local authority.

Conclusion, limitations and further research

This work highlights that whatever form of distribution is envisaged, it is a source of tension in the workplace. It highlights the sources of role tension within the distribution channels (table 7) and suggests ways of reducing them. The aim was to show the importance of analysing potential tensions at work before farmers set up in business or CAAs are created. This study is original in several respects. First of all, it addresses the notion of role tension under the heading of collective strategies, which is little dealt with in the literature (Rucabado-Palomar and Cuéllar-Padilla, 2018). Secondly, it studies the upstream side of distribution channels through the prism of labour, which is also little dealt with by authors, who often focus on the downstream side (via consumers). This explains in particular why few of the long FSCs variables identified in the literature appear in this research.

The methodology developed, which includes an interview phase and a group discussion phase, makes it possible to limit the role tensions detected a priori in the channel under construction.

The recommendations developed are ways of reducing the tensions at work for farmers, some of which may appear to be at odds with market expectations (particularly those linked to the reduction in quality in long distribution channels). Nevertheless, this work sheds light not only on the role tensions of the FSC, but also on the tensions that exist throughout the SC.

This work, which is exploratory in nature, is not without its limitations. These include the fact that it focuses on only two sectors (milk and meat) and on a limited area. Consideration should be given to replicating this study in other French regions with similar topography, both in the same sectors and in other sectors (market gardening, fruit growing). In addition, it would be interesting to see in other countries whether these data can be verified in mid-mountain areas. It would be interesting to make a comparison with other regions and countries, without taking topography into account this time, in order to check whether or not it is a discriminating factor.

It would also be possible to replicate this study on farms slightly larger than those surveyed, as it is likely that their distribution, with larger volumes, would offer other collective dimensions that would be interesting to study. Seen from the managerial angle, this study highlights the main professional tensions by type of channel. This a priori analysis enabled

recommendations to be made to farmers with a view to reducing these tensions. However, other tensions may arise during the implementation phase. It would therefore be interesting to compare this work after the canal has been built.

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Appendix 1: Distribution tensions - examples of nodes and coding

- DISTRIBUTION CIRCUITS

Long circuits

Short circuits

Hybrid circuits

- CHEESE

- MEAT

- DJABI & PERROT GRID

Role definition/ conflicting expectations

Role definition/ Expectations in conflict with those of the individual

Role definition/ Ambiguous expectations

Role definition/ Excessive expectations

How to achieve objectives/ Mutually contradictory expectations

How to achieve objectives/ Expectations in conflict with those of the individual

How to achieve objectives/ Ambiguous expectations

How to achieve objectives/ Excessive expectations

Evaluation of results/ Conflicting expectations

Evaluation of results/ Expectations in conflict with those of the individual

Results assessment/ Ambiguous expectations

Results assessment/ Excessive expectations

- CURRENT DISTRIBUTION ORGANIZATION

+ Organization and planning

+ Sales and communication

+ Storage

+ Networks

Upstream link

Neighborhood link

Other networks

- EXPERIENCES WITH HYBRID CIRCUITS

- VISION OF THE HYBRID ORGANIZATION

Appendix 2: Results for long channels

Long Channel			
	Role definition	How to achieve objectives	Results assessment
Conflicting expectations			
Expectations in conflict with those of the individual	<p>Quantity at the expense of quality: "They produce too much and badly. They make bad food to distribute to Parisians, but I want to make top-quality produce to distribute to my neighbors - that's the difference. After that, yes, those who produce tons of meat and cheese need trucks to send them.... There's probably a need." (29) "We wanted to work with Charade, the wholesaler in Cantal ... we said it was stupid not to work with them, because we could sell volumes alongside them." (12) "There are dependency links on our side." (4)</p>	<p>The initial product is of good quality, but is destroyed by the intermediaries: "the problem with the merchants is that when we sell to merchants, we now try to have it slaughtered here, because we realized that when we sold to merchants and it was killed all over France, it lost a lot of weight, because it wasn't necessarily fed like it is here, so we lost out" (27). In other words, it's the same quality of meat, and they do what they want, and when you sign a contract with them... In other words, they make you pay penalties... the problem was the quality didn't suit them, the quality wasn't followed, so they stopped". (6)</p>	<p>The differences between the different Protected Designation of Origin (PDOs) are not promoted by the market: "We have a Cantal PDO, but when consumers come to the Cantal department, if they've tasted several different Cantals and prefer the one on one side or the other, they go to the producer and take their Cantal. We worry about visibility at national level ... the consumer is lost in the end. We have an PDO and that's Cantal, but afterwards in the PDO, like we have Bordeaux with different châteaux and then everyone will prefer the château to the thing, but it's still the Médoc, Saint Emilion appellation" (17) "We abandon our product after two days when it goes to the maturer... he puts his own brand on and uses the product" (4) "The PDO wasn't enough in terms of quality" (20)</p> <p>Quality is not rewarding enough: "I've set a price, and for me the cheese we make is a quality product, we put all our energy and passion into it... For me, anyone who asks me to lower my price is someone who underestimates our work." (16) "I don't want to sell it to Carrefour... I want it to stay around fine tables" (26)</p>
Ambiguous expectations			<p>Uncertainty of demand: "So, from one day to the next, they can say to me 'Listen Charlotte, we don't have the time anymore, it's taking up too much time, too much space, it's not going to work, we have to stop', so in fact I cover my bases in the sense that I tell myself we don't know." (27) "The problem was that there were no calves that looked alike, and the problem was that they had set a starting price. In the end, depending on the grading afterwards, they downgraded them</p>
Excessive expectations			<p>Too much pressure on prices and margins: "My worry is that it's not me, it's not my way of producing that's making me raise the price, because I do everything to keep the price as low as possible. It's not my way of producing, it's always the intermediaries." (6) "No, I don't want to go to the supermarkets because they ask us to lower our prices, so for me it's out of the question". (16) "I lose around 400 euros per animal when I sell to wholesalers" (21)</p>

Light grey boxes: specific to the meat industry
 Dark grey boxes: specific to the cheese sector

Appendix 3: Results for short channels

Short Channel			
	Role definition	How to achieve objectives	Results assessment
Conflicting expectations	<p>Customers only want certain pieces: "Some of them asked me, but they only wanted the good pieces at a low price, that's the problem". (27) "That's it, because I realize that it's very difficult to do direct sales. There are certain cuts of meat that are difficult to sell. People only want the best cuts. And there would be a lot of them to process. That's why big companies like Bigard and company offer a lot of chopped steaks." (1)</p>		<p>Transportation costs: "If we sell 40 kilos of cheese to someone, we're going to charge them for freight, transportation...". (20) "Today, the problem we have is that we have customers who want us to expedite. But transport management means that if we send one or two cheeses on a pallet, it's not interesting for the transporter. He prefers to load a platform and send off the whole tarpaulin." (4) "On the other hand, the problem is delivery, because I'm not going to drive fifty kilometers "out" and fifty kilometers "back" to deliver 10, 15 or 20 pots, but shipping is expensive." (10)</p> <p>Low local margins: "Basically, the difficulty I'm having today is to go, let's admit it, to Paris, with the aim of improving margins a little in Clermont, where it's busy, people know a lot of people, prices are still being dragged down, and direct sales are becoming less interesting, even harder. (14) "And I'm from the commune and they (an organic store) won't take my cheeses. We didn't even talk price or anything, she told me no because she had a customer ... he didn't want it." (16)</p>
Expectations in conflict with those of the individual	<p>Difficulty in developing sales skills: "As I'm sure others have already told you, to sell directly, you have to find the customers. It takes a lot of time, it requires sales skills, and that's something I don't have. "(1) "After that, I think that for me personally, the Internet is a great working tool that I'm not at all familiar with. My son is more into it, he uses it a lot, but the problem is that it's still a question of time, i.e. I personally can't create a site." (6)</p> <p>Difficulty in offering a complete range: "What seems obvious to me is that when you offer something complete, people come. (10) "I only make one product, so I'm often asked for other products" (26) "Some crémiers want to have several products: they don't want to go and get their Bleus d'Auvergne... they want to get all their blue-veined pasta from the same farmer." (12)</p>	<p>Planning difficulties: "With the slaughterhouse, we make appointments... all the dates are already known to the laboratory. The refrigerated vehicle is rented on those days, and we have to have roughly one animal - one day - one person" (19) "Me (cutting plant), I tell the customer when there's availability, then they have to contact the slaughterhouse, we just tell them the date" (3)</p>	
Ambiguous expectations	<p>Vision of the business: farmer versus trader: "No one has had the courage to go out and make a commercial approach ... It's like I was saying earlier, we're having trouble keeping our customers. We don't really know how to go about it, because after all, we've also got customers who are getting older, so we need to renew our customers, and how do you renew them out of the blue? I don't know how to catch someone passing in the street and say, would you like to buy Aubrac meat? So we're wondering whether we shouldn't give up direct sales" (25) "I don't like going out to look for them because I always feel like I'm bothering them - that's probably a mistake, because business is also about going out to ask them, but I'm more at ease when people ask me" (6)</p>		<p>Difficulty in setting prices/costs: "It's difficult to sell them meat because everyone else is making meat and the prices are very low, the prices aren't lucrative, which creates competition, and the farmers didn't calculate their margins at the start, they didn't calculate their prices, and I did the same as them, I didn't calculate, I based myself on the prices my colleagues were charging. I based myself a little on the same prices. But in fact our prices were too low." (1) "We're going to recover a certain number of parcels that will be equivalent in quantity and quality of the pieces inside; if I do retail sales I'll have a price for each piece I'll have accounting that will be much harder to manage and that's something I absolutely don't want to reach." (19) "I can't say, because I have cheeses that are sold by weight, and others that are sold by the piece. So it's complicated, I can't say what it's worth, well, I've never actually done the calculations" (16).</p>
Attentes excessives	<p>Little time for the sales approach: "I've never had too much time to go knocking on doors to see what the results were" (14) "Because it's time-consuming, finding customers, marketing and all that". (7)</p> <p>Deliveries take too much time: "I spend my whole day or an extra day making individual deliveries" (10) "Today it takes us more than a morning and a half to make a full round. In general, when I arrive at a creamery at 12:30, it takes me more than half a day for those who are local like Saint-Flour." (12)</p> <p>Packing in small batches takes too much time: "I'll read you the price of cartons, but as soon as we can avoid cartons, it's true that it's a lot of work to deliver in cartons". (12) "Shipping means preparing orders, and cheese today comes in many forms. A Cantal is a big cheese weighing 40 kilos... We make half wheels, quarter wheels, eighth wheels, sixteenth wheels, thirty-second wheels and even two hundred gram portions... It's a lot of work when it comes to packaging. We pack everything, even the 200-gram portions. We put them in cardboard boxes." (20)</p> <p>Lack of time (profession): "For the cattle business, we're not selling direct at the moment because of a lack of time, as I was on my own. "(14) "Yes, after that, we're still facing the same problem, which is that we all have to get on with it. But then I can't see the organization. "(16) "It's a headache, which is why it has to be at least lucrative, because the work is one thing, but it's the mechanics in your head that are more complicated, especially when you've got lots of things to manage on the side, so you still have to earn a bit of a living, and the problem with direct sales today is that it's not rewarding enough, because depending on how much time you spend on it, you'd still have to manage to make more profit out of it all. (14)</p>		<p>The cost of individual packaging is significant: "We collect and unload from the guys. Because the cost of cardboard isn't negligible, so we do that when we deliver, but when we ship, it's the cardboard." (9) "Making small boxes in small quantities, we pay a lot of money for that." (12)</p>

Light grey boxes: specific to the meat industry

Dark grey boxes: specific to the cheese sector

Appendix 4: Results for hybrid channels

Hybrid channels			
	Role definition	How to achieve objectives	Results assessment
Conflicting expectations	Loss of the end-customer link: "We have the contact with the customer, they know who they're talking to... they tell us if there's something wrong... we want to keep this customer contact" (21) "We have to keep the relationship with the customers, otherwise there's no		
Expectations in conflict with those of the individual	Problem of mutualizing heterogeneous quality: "Transportation and storage can be mutualized. But when it comes to marketing, knowing that we're not doing the same thing, that we're not doing it with the same philosophy, and that we may be targeting the same clientele, it becomes more complicated... at the end of the day, we don't have the feeling that we're selling the same meat" (1) "Whereas I'm all for setting up a platform, but I don't want to mix my bun with people who do anything at all". (6)		
Ambiguous expectations			Intra-territory competition: "It's possible, but it's going to get tricky when there are several producers of the same products! It's a bit tricky to give out addresses, and what's more, we're not going to go and canvass the customer who's going to take the same product as what we're offering." (17) "If there's an opportunist out there and he takes our customer, what are we going to do? He says 'I'll do the same thing cheaper'" (21) "Because there are producers and producers, there are small producers and there are big producers. We don't all have the same resources and that creates groups and tensions. That's what happened at the Drive. There were those with big operations who didn't look at their budgets the way we did with our small operations. We had to keep up with them, and sometimes they would propose things that were huge for us. We couldn't invest because it was too expensive, so we couldn't keep up." (16)
Excessive expectations	Coordination of the collective: "There are two possible options, either it's the producers who invest their time and manage it, but I see it as a bit complex because we don't necessarily have the time... so for me it can work if there are people who are highly motivated and ready to invest their time for a minimum period at least, and if there are enough people... So the other option might be something that's entirely Comcom-dependent." (10) "You really need someone from the Quantity required: "It's clear that we can't produce a calf every week. On the farm, that would be too much. For about 12 weeks, we don't have 12 calves to kill every week. (25) "It's the quantity that we don't sell, you have to produce regularly, which isn't the case. So after that it's the quantity that's lacking." (10) "I don't want to expand... I won't be able to supply" (16)		