A form of organisational innovation in agricultural enterprises and its impact on the greening of practices: the case of collective farms

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Abstract
A number of conditions are required for organizational innovation in agricultural enterprises. Using the example of a recently-established collective farm, the text explores the various organizational innovations that have been introduced to promote the sustainability of the agri-food system.

Keywords: farm - innovation types - collective enterprise - agri-food system sustainability - participative workshop

1. Introduction

The transformations needed in agri-food systems to meet the challenges of climate change and biodiversity erosion must mobilise organisational innovations as much as technological innovations. However, the organisation of the socio-technical systems of our post-modern, capitalist and technocentric societies (Rosa, 2018) emphasises the design and dissemination of technological innovations rather than the design of unique human arrangements to meet these challenges.

As part of the "Carrefour de l'innovation agronomique", the theme of which was "Organisational innovations for the agro-ecological transition and sustainable agri-food systems", a series of workshops was organised to analyse organisational innovations from different perspectives (natural resources, techniques, business, sociosystem), The aim was (1) to identify the network of players involved in a process of organisational innovation, (2) to analyse some of the obstacles and levers that need to be taken into account if transformative organisational innovations are to succeed, and (3) to propose a diagram showing the stages in a trajectory of organisational innovation conducive to the transformation of practices.

The following text reports on the work of the workshop on organisational innovations within companies.

Based on the testimony of a young farmer who has set up a **Groupement agricole d'exploitation en commun (**GAEC) with 8 partners, the members of a participative workshop discussed two questions:

1 - What are the conditions for successful organisational innovation at farm level (assets, constraints, levers, obstacles)?

2 - How can organisational innovation make it possible to green practices and ensure the sustainability of the agri-food system?

The Workshop was made up of twenty people, including researchers, teachers, farmers, development workers and students.

2. Organisational innovations in agricultural businesses

Organisational innovations represent a major transformation in the way companies operate and adapt today. They encompass changes in structures, production processes, work organisation, management practices and organisational cultures. These innovations aim to improve the efficiency, flexibility and competitiveness of companies. Organisational innovations make it possible to create sustainable competitive advantages in a constantly changing economic environment (Damanpour & Aravind, 2012).

Organisational innovations can take many forms, from the reorganisation of hierarchical structures to the adoption of new management technologies. For example, the introduction of project-based management has enabled many companies to better manage resources and respond more quickly to market needs. Similarly, the adoption of the Agile methodology (Agile manifesto, 2001) has transformed the way teams work, encouraging collaboration and adaptability.

Organisational innovations also include changes in human resources management practices, such as the introduction of continuous training and professional development programmes to improve employee performance and job satisfaction. Finally, the introduction of participative management has strengthened employee commitment and fostered a more inclusive corporate culture. But it should be noted that this movement to adapt ever more finely to a form of capitalism is giving rise to critical approaches (Boltanski and Chiapelllo, 1999; Rosa, 2018).

On farms, organisational innovations consist of transformations or improvements in the way farms are managed and structured, and in the way social interactions and work are organised. They concern various aspects, such as governance, human resource management, work organisation, production processes, the integration of new technologies, and the relationship between farms and their economic and social environment. These organisational innovations can arise from the adoption of sustainable management practices, such as organic farming and agroecology, to improve the resilience of farms while reducing their environmental impact (Pigford & al.,2018).

Organisational innovations in agriculture also include changes in the structures of cooperation and collaboration between economic players (Gillerot, 2023). Integrated value chains encourage better coordination between the various players in the agricultural sector, thereby improving efficiency and product quality. A well-known example of organisational innovation is the agricultural cooperative. Based on solidarity and collective action, agricultural cooperatives have enabled farmers to pool their resources, protect themselves against risks (such as weather) and negotiate more effectively on the markets. However, since the creation of their status and the associated financial aid (law of 29/12/1906), agricultural cooperatives have seen their objectives and values evolve. In fact, some people refer to a "cooperative capitalism that makes the pursuit of profit a cardinal value to the detriment of the services provided to farmers" (Valiorgue et al., 2020). The objectives assigned to an organisation can therefore change radically, depending on the values held by its members or their representatives. The way organisations evolve depends, in particular, on their structures for cooperation and collaboration.

Finally, organisational innovations can play a crucial role in the farm start-up phase by enabling farmers to structure their activities effectively and optimise the use of available resources (through pooling, for example, Lucas, 2018). To do this, they can invent appropriate mechanisms for collaboration, coordination and decision-making, in line with their aims and values. In fact, this period of creation is particularly conducive to innovation, the expression of values and the associated strategic choices, making it possible to move away from "business as usual". Once the business has been launched, it is more difficult to devote time to "rethinking" the organisation, unless this time has been included in the activities of the members of the organisation.

3. Setting up in agriculture, an opportunity to innovate in business - Example of the Gaec de la Petite Mouliche

3.1. The story of a collective farm project

In 2021, the eight future partners of the future GAEC de la Petite Mouliche will meet together for the first time. These eight people did not all know each other: some had met during their studies, others in community and activist groups, in Clermont-Ferrand or elsewhere. They have come together around a shared desire to "create a farm". But "creating a farm" can take on an infinite number of meanings. Discussions then got under way to collectively sketch out the contours of this farm. These discussions, held one weekend a month for almost 3 years, covered a wide range of subjects. Firstly, they focused on the dreams and desires of each individual, then on shared values, governance, decision-making methods and areas, and the collective organisational tools to be put in place. The resulting project is set out in a charter that sets out how the group will operate.

Alongside these discussions, the search for a farm to take over began. Following an advertisement published on the Répertoire Départ Installation (RDI) of the Puy-de-Dôme Chamber of Agriculture, the group contacted and met the couple who were giving up the farm, who were rearing dairy cows in the commune of Cunlhat. To seize this opportunity, the group embarked on an "official" installation programme (Box 1). The members completed their Young Farmers' course with a view to receiving a future young farmers' grant (installation aid), and the group was assisted by a management centre to consolidate the economic forecast and the legal status of the economic structure. These documents form the basis for the group's search for funding from banks, the Region and the Department.

Box 1: characteristics of the farm to be taken over and the project for the farm to be created

Farm to be taken over :

- Legal structure: Sole proprietorship
- Useful agricultural area: 52 hectares
- Production system: conventional dairy cows
- Workforce: Farm manager and collaborating spouse
- Specific farm equipment: Stabling and arable and haymaking equipment

Collective project :

- Legal structure: GAEC
- Production system: mixed farming-poly-breeding-market gardening (or sheep and goat rearing with cheese processing, country bakery and diversified market gardening) in conversion to organic farming.
- Workforce: 8 managing partners
- Specific farm equipment: Redevelopment of the barn to accommodate the infrastructure and equipment needed for the 3 production workshops (straw-bedded areas, milking parlour, cheese dairy, cold room, flour mill, bakery).

In November 2023, the group filed the GAEC's articles of association and bought the barn and a few adjoining hectares (the rest of the land was leased). They embarked on a conversion to organic farming, began refurbishing the barn and set up diversified market gardening, peasant bakery and sheep and goat rearing workshops with milk processing.

3.2. Innovations: strengths, obstacles and levers

The project to set up the petite Mouliche farm took a long time because of the desire of those behind the project to innovate both in the form of the farm structure and in the way the collective enterprise operated. A. Gillerot has analysed the strengths, obstacles and levers that the partners have experienced since the start of their project. Here is what she found.

Obstacles and barriers

First of all, the collective was confronted with the lack of existing references on the technical, economic and organisational functioning of collective farms. In addition to the members, who had few models to draw on, it was also the installation support organisations and the banks that lacked elements of comparison with the projects they usually follow. Faced with this lack of references, Ferme de la Petite Mouliche had to defend itself and prove its worth to the people it had to convince of the project's relevance throughout the installation process.

In addition to a lack of references, the farm takeover was confronted with a lack of support, particularly in terms of collective organisation. The local support structures that were called upon to help the farmers set up in business were experimenting with this type of project for the first time with the Petite Mouliche farm. To deal with more specific issues, such as the management of human and interpersonal dynamics within a collective, the group had to seek support from outside the region, from its network of friends and from the Fermes Partagées cooperative society (SCIC) based in the Rhône-Alpes region.

Finally, the collective was also confronted with the absence of a legal status that met its needs and desires. The legal status of a société coopérative de production or société coopérative et participative (SCOP) offered the advantages sought by the collective, namely the long-term future of the farm, which was freed from an individual experience (the reserves being non-distributable, they belong to future generations of associates). However, at the time it was set up, farms with SCOP status could not yet apply for the young farmers' grant. The collective therefore adapted its project and finally set up as a GAEC.

Advantages and benefits

Despite all the obstacles, the process of setting up the farm was successfully completed, and the farm was purchased and started up. There were a number of advantages to this approach.

Firstly, from the outset - and throughout the installation process - the members of the collective have thought out, defined and applied a structured way of operating. This involved creating and implementing tools for horizontal governance (absence of hierarchy) and self-management (through structured meetings, working groups, mandates with rotating roles), care tools (through security frameworks, collective handling of tensions and conflicts, or through strategies enabling members to easily leave the project) and communication tools (through different channels for exchanging and storing information).

Secondly, the collective has been able to draw on a wide network, both territorial and extraterritorial, both personal and professional. Through the 8 members of the collective, the network of social interactions on which the farm can rely has increased tenfold, giving the farm access to relevant resources in a wide network of friendly contacts, farmers' associations and institutional structures.

Thirdly, as the installation process lasted three years, the members of the collective benefited from another advantage: the time they needed to reflect and build up sufficient financial capacity to devote several years to the creation of their project without it paying for the work they had put in.

The levers of such a facility for the sustainability of farming systems

Collective farming seems to offer a number of levers for the greening and sustainability of farming systems. These levers lie in the creation, circulation and pooling of resources within a collective farm (Figure 1).

As well as pooling social resources to increase networking and exchanges between peers, pooling human resources makes farming more viable. The collective approach means that on-call duties can be shared, so that farmers can regularly take weekends off and holidays. It also ensures a sense of conviviality and solidarity that addresses the frequent risk of isolation among farm workers.

Pooling material and logistical resources reduces operating costs and optimises investment (one tractor for the farm is enough) and marketing routes (one lorry transports vegetables, bread and yoghurt), which also has a positive impact on the carbon footprint associated with transport.

The collective also relies on the pooling of economic resources to ensure economic solidarity between the production units. Such a system provides a safety net for the various production units.

Finally, the pooling of resources encourages co-construction within the farm. Decisions are discussed, reflected on and made collectively, and a record is kept (through systematic note-taking) to ensure that they are passed on and remembered.

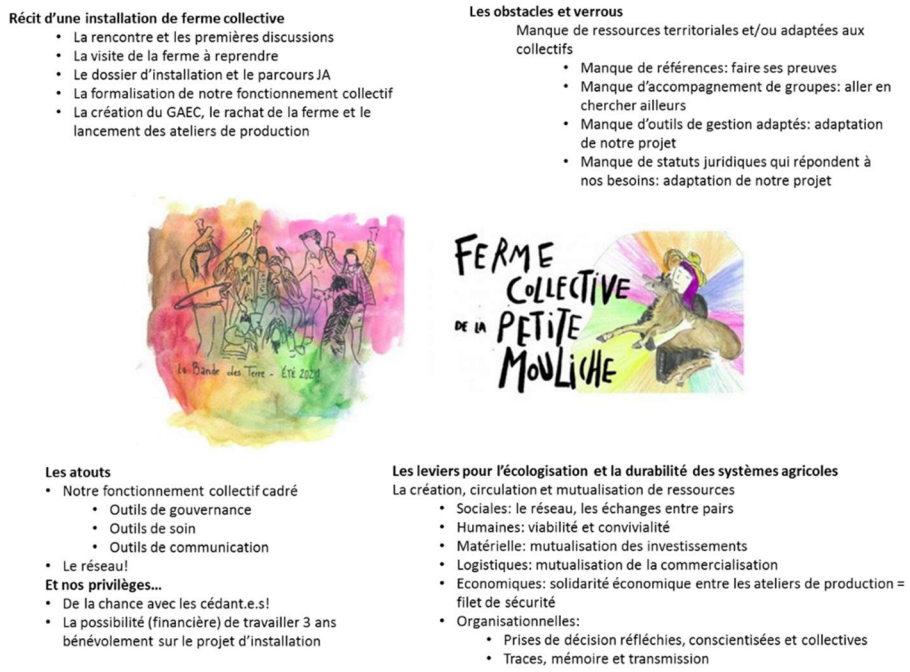

Figure 1: *summary of the analysis of the advantages and obstacles to setting up on a collective farm (according to A. Gillerot)*

4. Conditions for organisational innovation on collective farms

Following the presentation of this case study, discussions between workshop members led to a number of general conclusions about organisational innovation on collective farms. The group's proposals corroborate the analyses carried out in other observations of collective farm installations (Morel, 2018).

First of all, it appears that collective farms offer a number of advantages when it comes to defining an organisation that is suited to one's aims. Because they take longer to set up than individual projects, they give their members the opportunity to think through their project, refine their ideas and prepare for future challenges. What's more, each member's financial contribution is reduced, making it easier to set up and reducing the economic risks for everyone involved. The diversity of activities carried out within the group helps to secure income and adapt production to market needs. Added value is captured more effectively, so everyone benefits from a more stable income. Secondly, in its day-to-day operation, this type of farm enables its members to reflect together on how to govern them, by implementing innovative methods (for

example, using a collective operating charter) to avoid conflict and preserve the balance of the group. In this way, the collective provides a space where shared values can be developed, helping to maintain the group's cohesion. The social life that develops on the farm encourages mutual support. This helps to ensure the continuity of the project, because if one partner runs into difficulties, the collective can absorb the shock more easily. Finally, the work is more evenly distributed between the members, which lightens the load for everyone and makes it easier to manage peak periods. What's more, each member brings his or her own skills to the table, which is particularly useful for managing administrative tasks and putting together grant applications.

However, collective farms also face a number of constraints. First of all, the current legal and socio-economic framework is often ill-suited to this type of organisation, which makes official recognition of these projects more difficult and can create barriers to finding farms that are ready to be transferred to a group. There is also little specific support for these farms in farm advisory services, which limits the resources they can access to deal with the challenges they face. Secondly, for a collective to function well, it is essential that good relations are maintained, which requires constant investment on the part of its members in terms of exchanges and communication. The diversity of expectations in terms of salary or life goals can complicate the long-term management of the project, as can the greater ability of younger generations to switch from one professional activity to another. Relationships between existing members can make it difficult to integrate new people. The decision-making process can become complex and slow, because it requires all the members to be consulted: the cost of coordination is increased in a collegiate organisation (Laezga, 2001). Finally, the choice of short distribution channels, although very rewarding, can also represent an additional constraint, as it requires access to markets that are sometimes far away, while guaranteeing enough margin to pay all the members of the group. Furthermore, the economic model of these farms, which often seeks to maximise added value, can be difficult to adjust when changes in production become necessary.

Despite these obstacles, a number of levers can be activated to facilitate organisational innovation. One of the main strengths of the collective is the shared motivation around a common project, which helps to maintain cohesion and commitment among members. Initiatives like Terres de Liens are also helping to pave the way for new farm models that are better adapted to today's needs. The diversity of production within the farm offers flexibility that helps to secure income, while allowing each member to contribute according to his or her skills. Economic solidarity between members is another important lever, helping to absorb financial uncertainties. The organisation of work on a collective farm is more flexible, so tasks can be shared out more effectively and members have more time to themselves. Finally, the sharing of expertise between members, and networking with other collective farms, increases knowledge and strengthens collaborative practices, while consolidating the collective structure.

The list of proposals made by participants at the Workshop is summarised in Table 1.

Table 1: *List of conditions for innovation in setting up collective farms identified in the participatory workshop*

Constraints	Assets
- Unsuitable legal and socio-economic environment - Disruption of established models - Difficulty in finding sellers for this type of project - More cumbersome decision-making process - Life goals, levels of remuneration that may differ, stability of commitment of each partner (generation Z, less commitment to a long-term project) - The choice of short circuits can be a constraint (distance from markets, level of added value to be able to remunerate the collective). - the long-term future of the collective - the need for cultural capital within the collective	- Time taken to mature the installation project due to the collective nature of the project - Shared values - Lower capital investment - Distribution of risks - Better working conditions through the distribution of on-call duty and work peaks - Diversity of activities - Sufficiently qualified to draw up grant applications and manage administrative tasks - Reflection on the organisation of governance

	- innovative tools and methods for managing teams and the associated risks (conflict, attrition, etc.) - Social life within the collective - Solidarity and mutual aid - Easier to perpetuate the project in the event of the failure of a partner - Project to capture maximum added value
Locks	**Levers**
- The legal forms of collective farms: the legal systems and tools are unsuitable for collective farms and do not allow this type of farm to be recognised. - The renewal of partners is complicated by the interpersonal relationships that have developed within the initial group. - The business model is complex and the obligation to capture maximum added value does not encourage adaptation of the production system. - Group support does not really exist in consultancy organisations	- Motivating a group to work together on a common project - Original organisations (e.g. Terres de liens) are opening up to new farm models - The logic of the product range made possible by the collective project - Economic solidarity between partners - Work organisation that is adaptable due to the collective nature of the organisation and that allows for free time - The distribution of expertise within the group and the construction of knowledge shared between the partners - Setting up a network of collective farms

5. The impact of organisational innovations in collective enterprises for the greening of practices and sustainable agri-food systems

The emergence of collective farms represents a major change in the way farms are organised. These farms challenge the traditional model of farming while adopting shared management of resources, responsibilities and decisions. Unlike traditional family and corporate farms (Purseigle et al., 2017), these farms operate with several partners who pool investments, spread financial risks and share decisions and day-to-day tasks. They tend to take the form of self-managed cooperatives. Self-management is an organisation in which "all decisions are taken by the community, which is, each time, concerned by the object of these decisions. In other words, a system in which those carrying out an activity decide collectively what to do and how to do it" (Castoriadis (1979, p. 381) quoted by Hévin (2021)).

As we have seen in this case, participative governance means that every member has a say. This makes management more inclusive and democratic. A collaborative model of this kind brings together and enhances the value of diverse skills, whether technical, administrative or strategic, and enriches the diversity of activities. They also facilitate access to modern technologies and markets, while promoting more environmentally-friendly farming practices, such as organic farming and short distribution channels. We have noted in particular how not only the overall economic capital can be built up by the contribution of each individual, but also how social resources, i.e. the social ties forged by each individual outside the collective, constitute a common social capital used to access the information or resources that matter.

Research into the sociology of organisations, which has focused on the adaptation of organisational forms to their environment, has shown how matrix organisations are particularly well adapted to a complex and unstable environment. The strong internal coordination between members of the collective and the possession by each of them of their own external social resources enable them to adapt to changes in their environment (technical, economic and social) and to master new practices quickly. This is what is found in other, less tightly-knit groups of farmers (Compagnone, 2019). It is therefore conceivable that

these collective farms could be both more resilient and better able to experiment with and develop sustainable practices such as agroecology.

However, there are two potential obstacles to this type of organisation: the need for its members to be sufficiently involved in a collective project, and the risk of the organisation degenerating into a hierarchy. So, on the one hand there is disintegration and on the other rigidification. For Hénin (2021), the question of member recruitment is decisive. He tells us that "Particular attention must be paid to building up a body of members sensitive to the acculturation of the organisation's political values. Certain organisational principles can be strengthened and pushed beyond the only democratic guarantees offered by co-operatives in order to deal with the internal factors of degeneration (bureaucratisation and member apathy in particular, which feed off each other). The practices of task rotation, shared decision-making processes and broader governance, by including stakeholders, help to strengthen self-management principles". The issue of turnover among members of the collective is no longer seen as a handicap but as an advantage. For Hénin, the essential question is not why employees leave the cooperative "but in what circumstances they arrive, and how this can help to counter the process of degeneration".

6. Conclusion

At the end of the workshop, the participants concluded on the importance of setting up collective farms in the current context of generational renewal of farmers. This is because collective farms can be one of the answers to the need to diversify farming models in local areas. They can also provide a response to the difficulties of identifying young people in agricultural training, who are looking for models for setting up in farming that are not a complete break with what they know in their environment (Christen, 2017).

Provided that the collective is properly prepared and equipped, this type of set-up is a source of numerous organisational innovations and a commitment to green practices.

This type of set-up is therefore to be encouraged, as it meets the needs of a number of would-be farmers, which presupposes support from the socio-professional framework to remove certain clearly identified obstacles. Research into new forms of financing and access to land, into the possibilities of developing legal forms that encourage the management of collective farms, and into tools and methods for supporting collective projects should be encouraged.

Sidebar: the three key ideas that emerged from the workshop

- Collective installation is an organisational innovation that facilitates the takeover of certain farms and the installation of a new generation of farmers.

- This type of installation is often a lever for greening practices

- There are a number of hurdles to overcome before it can be spread (land acquisition, legal forms, support for groups, etc.).

Ethics

The authors declare that the experiments were carried out in compliance with the applicable national regulations.

Declaration on the availability of data and models

The data supporting the results presented in this article are available on request from the author of the article.

Declaration on Generative Artificial Intelligence and Artificial Intelligence Assisted Technologies in the Drafting Process.
The authors used artificial intelligence in the translation process from French to English

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Authors' contributions
Conceptualisation (AG, PP, CC, KG) - Drafting - Revision and correction (PP)

Declaration of interest
The authors declare that they do not work for, advise, own shares in, or receive funds from any organisation that could benefit from this article, and declare no affiliation other than those listed at the beginning of the article.

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