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PSDR4 - In search of Mid Tier Food Systems (MTFS)

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Abstract : Towards a better understanding and developing of French mid-tier food supply chains

The objective of this article is to underline the diversity of our case studies, and to show how they reflect the innovation processes grouped under the term MTFS. Our article is structured into three parts. First, we explain how we selected our case studies and the criteria used to choose them. Then we explain the specificity of these innovative food systems: their uncertainties in terms of stabilization and their need; the importance of intermediary actors; the processes of qualification and fair remuneration; the importance of shared governance. Finally, we highlight the different barriers and levers linked to these systems. In conclusion, we focus on the tools available on the PSDR4 site and show how the project, by naming little-known and innovative systems, is now promoting their development and a transition towards sustainability.

Keywords: Alternative food systems, Action-research, Governance, Innovation, Accompanying

Introduction

The PSDR4 MTFS project was founded as a result of questions raised by development actors and researchers about a relatively unknown and elusive subject that we have named "MTFS" for Mid-Tier food Systems or "Système Alimentaire du Milieu" in French (Fleury et al. 2016). Shortly before the project was submitted, both the stakeholders involved and the researchers mobilised shared the same observation about localised food systems or short circuits encountered in the Auvergne-Rhône-Alpes region: a process of 'growing these circuits' and hybridisation (combination) between short and long circuits had been at work for some years (Chazoule et al., 2015). This process, which had been little studied until then, deserved to be addressed / explored in order to gain a better understanding of it, but also to provide better support for it, so as to help stakeholders in the region to position themselves and make decisions. The approaches we saw emerging at the time raised a number of questions. Were they sources of value creation? Was it really possible to combine the advantages of long and short distribution channels? What were the risks? And above all, how could such initiatives be supported? Although short distribution channels are now well known, and the support provided to project leaders is better mastered, these innovative and complex forms needed to be closely observed in order to answer such questions.



1. Our methods and observation grid

Yes, we can observe these innovative forms, but how can we observe an object whose contours we do not know? How can we identify MTFS that we only know to be in-between two well-established forms of organisation in food systems? Faced with this difficulty, we decided that a wide-ranging comparison with the innovative approaches that we could observe would enable us to better understand and define our subject, by moving back and forth between theories and concrete cases. From then on, we had to adopt an inductive methodology, with a strong emphasis on the field. But how do we choose these initiatives? On the basis of what criteria? To answer these questions, we found the scientific literature extremely useful. In addition to the concepts of short and long distribution channels, and alternative and conventional food systems, which are already well known to our team (Fournier and Touzard, 2014; Le Velly, 2017; Praly *et al.*, 2014), we could also refer to a whole section of American literature on the existence of an 'agriculture of the middle' driver of vector of 'values-based supply chains' (Stevenson *et al.*, 2011; Lev and Stevenson, 2011; Hardesty *et al.*, 2014). The aim of this work is to study the creation of value through the interaction between producers, intermediaries and consumers and the recognition of the environmental and social qualities of products. The monographs produced by American researchers also gave us examples of these hybrid chains and enabled us to understand some of their characteristics (Brives *et al.*, 2017).

We were therefore able to identify 4 main characteristics that enabled us to target the approaches we wanted to study: (i) intermediated approaches, (ii) promoting transparency and the circulation of information as well as large volume flows between the various operators (from producer to consumer), (iii) promoting new forms of governance of territorialised supply chains, (iv) relying on the emergence of common and shared values in order to move these organisations towards greater sustainability. Once this list had been drawn up, we were able to select interesting case studies that presented those characteristics. Surely, not all the case studies had all of the mentioned elements, but at least they all share some similarities. Confronting the field enabled us to question this list of characteristics and to give it a special status. Rather than providing definitions, the elements selected were considered as questions. Are we really seeing the development of new forms of governance in circuits involving intermediaries, who usually dominate the sector? Are the economic, social and environmental values defending a source of greater sustainability for the various operators?

1.1 Our sites

We met with a number of people involved in these initiatives: farmers, wholesalers, processors, distributors, local authorities, catering companies and start-ups, all of whom were likely to be involved in these interesting cases. This first phase enabled us to briefly describe the history and operation of various initiatives. Then, as we progressed and came across new cases that challenged our initial list of criteria, we decided to take a closer look at 12 approaches. These were then described in the form of standardised fact sheets (Isara blog¹ and PSDR4 Regional Site²), drawn up on the basis of interviews analysis with various stakeholders. They have now been brought together in a booklet presenting all the cases studied (Chazoule *et al.*, 2020).

Our sample includes **three fact sheets** on local quality meat chains: one on the "100% Charolais" chain in the Roannais region, one on the "Isère Flavor Breeders" (Éleveurs de Saveurs Iséroises), and one on "Heavy Pork" (Porcs Lourds). In these three, producers have come together to work with processors and distributors to develop supply chains that promote local, high-quality meat. **Two additional fact sheets** focus on producers' platforms: "Harvest" (Recolter) and "Local Flavors" (Saveurs du Coin). These sheets describe how producer groups have invested in distribution platforms to market local products through various outlets. Another fact sheet examines wholesale markets, with a particular emphasis on the

¹ <https://blog.isara.fr/les-outils-innovants-des-syam/>

² <https://www.psd-r4.fr/BOITE-A-OUTILS/Systemes-alimentaires-du-milieu>



Grenoble National wholesale market, to understand their role in establishing MTFS. Additionally, **two fact sheets** explore vegetable markets: the first, “Organic Peeler” (AB Épluche), created by two farmers, and the second, “Lezsaisons”, established by a catering company. **Three fact sheets** highlight initiatives aimed at supplying local products to the catering industry. The first is the “Leztroy” fact sheet, detailing a regional catering company actively using local produce. The second is “Toque et Sens”, which covers Sodexo's strategy for local sourcing. The third is “Shared Canteens of Isère” (Cuisines Mutualisées de l'Isère), showcasing the Department's efforts to control and enhance local purchasing for school canteens. Finally, **one fact sheet** examines how local authorities can influence the development of MTFS in their area, focusing on the Isère Departmental Council's establishment of a “food hub”.

Most of the fact sheets are structured in the same way. We begin by describing the history of MTFS, noting a few key dates. Then we describe its organisation. We focus on the shape of these complex circuits from producers to consumers, and on the issues involved in defining quality, determining prices and meeting logistical constraints. We then provide information on a number of key characteristics of MTFS: territorial anchoring, shared values, product qualification and modes of governance. Finally, we seek to identify what we consider to be particularly innovative about the MTFS studied.

We would like to emphasise two points here. Firstly, it should be noted that most of the approaches we studied were linked to each other (or involved several initiatives coexisting) and that an operator involved in one MTFS could also be involved in another. This point is a consequence of the systemic nature of the phenomena observed. For example, while the “Recolter” and “AB Epluche” platforms and vegetable centres deserve to be analysed. They link together a group of actors in two unique MTFS, and also different actors involved in other MTFS, especially if we look into the school catering policies of the Isère Departmental Council and the Pays Voironnais Conurbation Community. The MTFS stories told in these sheets often intersect, and we see the protagonists moving from one to the other. Secondly, we would like to emphasise that when we drew up these factsheets, we deliberately focused on elements that seemed promising in terms of renewing relations between actors in the food systems, but also wanted to highlight the difficulties encountered.

Based on these cases, several articles have been published, enabling us to better define what makes these approaches so special (Chazoule et al., 2018; Le Velly et al., 2020; Fournier et al., 2020). The challenge for us was not so much to define what MTFS are as to emphasise what the project's professional partners also called 'doing MTFS'. In other words, we clarified the processes involved in the emergence and consolidation of these territorial partnership circuits (Le Velly et al., 2021).

2. What our surveys tell us about these MTFS experiences

The twelve cases studied are relatively heterogeneous, but they are nonetheless an initial snapshot that opens up the field of possibilities, by making visible original modes of organisation experimented with by players who want to move towards new ways of operating. Simultaneously, they encourage us to maintain an optimistic viewpoint regarding the possibilities for change and the development of more sustainable food systems. We also want to highlight that setting up MTFS is not a smooth ride. Innovation means overcoming certain obstacles, finding solutions to unexpected difficulties and redirecting action as a function of what we learn. The MTFS we present here are all unique stories, marked by the motivations of their respective promoters and by the constraints and opportunities they discovered in the course of action. Understanding these systems will allow us to better define their characteristics and the processes at work in their development.

2.1 MTFS are innovative systems marked by uncertainty and trial and error

This uncertainty and trial and error primarily focuses on outlets. A number of initiatives were set up with a specific outlet in mind, but ended up changing it. For example, the “Recolter” platform was set up to supply



school canteens with local products, but the weakness and irregularity of orders subsequently led it to target traditional restaurants, company canteens, hospitals and retirement homes. “Saveurs du coin” also experimented with its marketing strategy, trying out and then abandoning the idea of setting up a basket system. The “heavy pig” chain in the Loire also faced similar difficulties. At one point, the curing company behind the project withdrew, and the Ressins agricultural college, which raises the pigs, had to turn to another company. The story of “Eleveurs de Saveurs Iséroises” is also remarkable. The initiative was born out of a partnership with traditional butchers. But to develop and diversify their outlets, the producers quickly turned to the mass retail networks and the public and private catering sectors. In addition to the changing nature of outlets, several cases illustrate the difficulty of planning a long-term business when customers are not committed to the long term. This type of uncertainty is particularly cited by structures set up to supply mass catering (“Recolter”, “AB Epluche”). While some customers make an effort to establish long-term relationships, many still work on an ad hoc basis. This makes it very difficult to make structural choices such as investing in equipment or hiring staff. Some structures may be over- or undersized, with production capacity that does not match market expectations or variations in production. This uncertainty about outlets is coupled with uncertainty about the nature of the product to be offered. The quality expected depends on the target customers, and may therefore change depending on the market. “Eleveurs de Saveurs Iséroises” does not supply exactly the same meat to supermarkets as it did to traditional butchers. The quest for economic sustainability also involves making adjustments to the offered products. For example, in the “100% Charolais sector in the Roannais region, the initial idea was to process the whole animal in order to produce minced steaks. But this meant that the noblest cuts were not properly exploited. Farmers therefore sought to develop a second market for the hindquarters of the best animals.

The existence of this uncertainty and trial and error is not abnormal. In the final analysis, it corresponds to a fairly classic innovation situation. MTFS are not based on well-established and stabilised production and marketing models, as can be the case for conventional sectors and increasingly for short distribution channels. Setting them up involves trial and error, learning as you go. Of course, saying that this situation is not abnormal does not mean that it is not difficult. In particular, achieving a sustainable business model does not necessarily happen at the first attempt, or even along a trajectory whose stages are known in advance. In some cases, the search for sustainability is not successful.

2.2 MTFS are systems in which taking back control of intermediary functions is central

The *raison d'être* of “Saveurs du coin”, “Recolter” and “AB Epluche” is precisely to act as an intermediary, capable of grouping together and offering a complete range of products from several producers to distributors or catering companies wishing to offer local produce to their customers. For “AB Epluche”, the aim is also to process the fruit and vegetables so that they are ready to use. For the producers behind these initiatives, the challenges of intermediation are twofold. On the one hand, these outlets give them access to large sales volumes and a change of scale compared with the usual short distribution channels. On the other hand, the objective is to entrust management and marketing tasks to the intermediary structure thus created. In all three cases, the producers may be called upon from time to time to deliver goods or meet customers, but they are not responsible for finding customers, managing and invoicing orders, scheduling deliveries, managing stocks and so on. These latter tasks are carried out by the structure's managers and employees.

Another form of intermediated relocation used in our MTFS cases is the use of existing intermediaries. The “Leztroy” catering company, for example, has established direct relationships with producers, and hopes to develop these further in the future, but it also uses traders and wholesalers to source local produce. The growing demand for local products has also been identified as a development driver for wholesale markets located close to major conurbations. This is true of the “Marché d'Intérêt National” (National Wholesale Market) (MIN) in Grenoble, which is seeking to become a central player in food supply to shops and restaurants in the city centre. The MIN is also working to make its logistics as efficient



as possible, for both economic and ecological reasons (fleet renewal, natural gas engines, pooling of journeys/ transport, return of lorries loaded with waste to be taken to the sorting centre).

In some cases, these two intermediation methods are mixed. For example, “Saveurs du coin” completes its range by buying products from non-member farmers outside its area (kiwi from Ardèche, milk from Burgundy, garlic from the Drôme, etc.). “AB épluche” has also developed a trading business. MINs and wholesale markets can also be the place where initiatives from producers and professional intermediaries come together. With this in mind, the Grenoble MIN hosts the “Mangez Bio Isère producers' platform” and has sought to organise a “producers' box”, where farmers can sell their products directly to MIN customers. In the best-case scenario, this can lead to a complementary mix of producers' and traders' products.

2.3 MTFS promotes a “Good and Link” qualification

What the various MTFS cases we have studied have in common is that they offer a different quality, superior to that of standard quality markets. This difference primarily concerns the local origin of the products. There are several ways of promoting this to customers. Meetings with producers are often organised. For example, from the outset, “Saveurs du coin” planned events in supermarkets, within its local production areas. In other cases, the origin of the produce is visible through product packaging and point-of-sale advertising (“100% Charolais du Roannais”, Heavy Pork or “Porcs lourds” and “Eleveurs de Saveurs Iséroises”). For the catering industry, information is included on menus or on small signs placed on tables for diners, and information sheets are also prepared presenting the producers (“Leztroy”, “Sodexo”, “Conseil départemental de l'Isère”). Lastly, some regions have developed brands that enable consumers to identify the origin of products.

However, the quality we value is not limited to the product's origin. It generally extends to other criteria, set out in specific documents. The specifications for the “100% Charolais du Roannais”, “Porcs lourds” and “Eleveurs de saveurs iséroises” sectors all include references to the breed of animal, rearing conditions and feeding methods. In all three cases, the aim is to guarantee to the customers concerned about ecological, ethical or health imperatives, but also to offer meat of superior gustative quality. For example, in the Heavy Pigs sector, the pigs are fattened on straw rather than slatted floors. In this sector, as with “Eleveurs de Saveurs Iséroises”, the feed is also certified GMO-free. In addition, in its communications to consumers, the “100% Charolais du Roannais” chain emphasises its support for local producers, using a diagram showing the shared values between operators. In none of the cases we examined were organic products the only option available. However, the specifications generally include environmental criteria, which appear to be essential to the transition process. Finally, it should be noted that quality differentiation can also be pursued downstream in the supply chain. For example, for “Porcs lourds”, the drying time required to make dry sausages has been extended from 3 to 6-8 weeks. This quality differentiation is the main argument for paying a higher price. The “Leztroy” catering company, for example, explains that by offering a range using local, quality products, it can obtain a better price from its customers for the meals it provides.

In addition to the quality resulting from the transformation of practices throughout the process, MTFS are also characterised by value-adding processes, highlighting the links between the various partners involved in the exchange. Here too, the issue of fair remuneration appears to be an essential differentiation criterion. As a result, the specifications often emphasise the quality of the products (the good) as much as the quality of the relationships between the actors (the link) (Fournier, 2020).

2.4 MTFS is a system that seeks fair remuneration for producers

MTFS are interesting to look at in order to understand how prices are determined in practice. Many of them were set up with the aim of offering remunerative prices to farmers in their area. They therefore logically refer to production costs. In the “Porcs lourds” and “100% Charolais du Roannais” sectors, as in



the early days of “Eleveurs de Saveurs Iséroises”, farmers calculated their costs in order to reach agreement with buyers on a selling price for their animals. For “Saveurs du coin”, as for “Recolter”, fruit and vegetable purchase prices are also based on the costs of member farmers, and “Saveurs du coin” has set minimum price thresholds below which it will not go.

However, it should be emphasised that, in the various MTFS studied, this logic centred on production costs is frequently combined with a logic centred on market prices. The manager at “Recolter” explained that he still had to “adjust to the average market price” to remain competitive, and that he took this into account when negotiating with farmers. Similarly, for “Eleveurs de Saveurs Iséroises”, it was later decided that it would be more appropriate to reason on the basis of market prices, adding to the quotations a surplus corresponding to the costs of the superior quality produced.

The question of remunerative prices must also be seen as the result of the economic efficiency of MTFS as a whole. When MTFS move away from simple direct sales, the increase in prices paid to producers does not necessarily correlate with the increase in prices paid by the final consumer. This is particularly true for initiatives involving mass catering. Leztroy, Sodexo and the shared canteen of the Isère departmental council have all taken steps to reduce kitchen costs (by reducing waste, low-temperature cooking, etc.). This quest for overall efficiency is also linked to issues of economies of scale. On this point, the MTFS we studied have room for improvement. For the moment, their managers are reporting higher costs due to insufficient volumes.

2.5 The MTFS are developing forms of partnership-based, local governance of sectors

The uncertainties linked to the identification of outlets and the definition of quality are addressed in several MTFS, through the search of forms of partnership-based governance. The challenge is to reach a collective agreement on the operating rules of the various MTFS components. Note that this is not a common practice. In traditional long distribution channels, farmers can lose interest in marketing and consumption conditions. In contrast, catering companies that buy from distributors or supermarkets that buy from their central purchasing agencies do not need to be aware of production constraints such as seasonality.

On the other hand, setting up MTFS often means that the players involved get to know each other and manage to find adjustments that take account of their respective constraints. MTFS are therefore set up with a view to seeking synergies between players in the agriculture and food sectors, similar to those also sought in regional food projects. In the heavyweight pork MTFS, an “industry contract” has been signed, summarising the commitments of each one of the operators. Similarly, “industry meetings”, run by Roannais Agglomération and the “Pôle agroalimentaire Loire” (Agri-food center), bring together all the members of the Roannais 100% Charolais project. One of the most important issues is the balance of materials, and the use of the whole carcass, not just the parts usually used for minced steaks. The “Eleveurs de Saveurs Iséroises” case also bears witness to this ongoing search for adjustments. For example, the farmers' representatives, the manager of the butchery department of a Super U supermarket and the managers of the Grenoble abattoir have held numerous discussions to resolve logistical and meat-cutting problems. Other adjustments to the meat quality had to be found as well, particularly between the farmers and the butchers.

In MTFS aimed at the mass catering market, this partnership governance is demonstrated when discussions lead to adjustments on both sides. On this point, the “Recolter” platform emphasises the importance of passing on information to its customers, so that they are aware of the constraints involved in production. This has led one school restaurant, for example, to change its menus. By simply indicating “raw vegetables made from local vegetables”, without specifying which vegetables, it facilitates Recolter's work and makes it easier to obtain local produce at a controlled price. A second example can be found in the case of Leztroy. The Collective Catering and Nutrition Markets Study Group (or “Groupement d'Etude des Marchés en Restauration Collective et de Nutrition” (GEMRCN)) recommends serving two pieces of



soft cheese with a bloomy rind, such as Brie or Camembert, every month. As this type of cheese is not available on its territory, this catering company worked with a local GAEC to develop a new recipe. In this case, and no doubt in many others, it is through the creation of a new product that supply and demand are balanced.

This form of partnership governance is a key to the economic success of MTFS. When it is absent, it complicates their long-term viability. On this point, the lack of long-term commitment on the part of buyers is highlighted in the cases of “AB épluche”, “Recolter” and “Saveurs du coin” as a real difficulty. These platforms need a stable base of contracts, enabling them to plan ahead and organise themselves, without which they in turn cannot commit to producers. This situation once again illustrates the systemic nature of MTFS's effectiveness. A clear and intelligent commitment on the part of each of the stakeholders enables them to plan their activities and control their costs, to the benefit of the whole.

2.6 MTFS have to overcome certain obstacles to reach transforming potential

The MTFS studied also reveal the bottlenecks/obstructions that can hinder the establishment of innovative approaches. When we talk about the bottlenecks/obstructions, we are emphasising the constraints linked to existing organisational methods: the choices made in the past partly hinder the establishment of new ways of doing things.

The three sectors established around meat products are a good illustration of this phenomenon. In all three cases, the promoters of the project were confronted with the weight of what already existed. In the case of “Eleveurs de Saveurs Iséroises”, it was relatively difficult to convince local producers to take part in this initiative, which broke with traditional marketing methods and required them to review the way their animals were fed. The problem was even more glaring when the Heavy Pigs initiative was launched, with no producers signing up and only one agricultural college agreeing to raise pigs in the conditions demanded by the curing company. Similarly, when “100% Charolais du Roannais” was launched, its initiators received a refusal from the industrial slaughterhouse with which they usually worked. As a consequence, they turned to an inter-communal abattoir working with farmers in short circuits. They also had to contend with the health regulations in force, which were designed for industrial production and entail high additional costs for smaller volumes. Other obstacles arise at the marketing stage. For example, “Eleveurs de Saveurs Iséroises” has had to deal with supermarket regulations. In this case, the Grenoble abattoir, where the animals were slaughtered, was not referenced by the Carrefour centre, making it difficult to sell to a shop in this network.

The efforts described above to communicate the specific quality of products can also be seen from this perspective. In many channels, buyers expect a certain price level and are not spontaneously prepared to pay more. In this respect, the “Recolter” platform acknowledges that its prices are relatively high, and the challenge is to make its customers understand the added value in terms of the quality that it offers.

The MTFS developed around collective catering also bear witness to the weight of existing rules. The Isère Departmental Council was initially faced with the fact that it had no control over the purchases made by the managers of its secondary school kitchens. It then had to deal with the prohibitions of the public procurement code, the health regulations in force and the production constraints of the kitchens, all of which made it difficult to purchase local products.

2.7 However, MTFS has a number of levers at its disposal

However, the existing rules and infrastructures are not just restrictive. In some cases, they even provide support for the development of innovative approaches. A number of initiatives have been launched by groups normally involved in long distribution channels. This is particularly true of “Eleveurs de Saveurs Iséroises”, which was set up with the support of the Isère livestock farmers' union networks. The presence of slaughterhouses, processing companies, wholesalers and transporters in the region also helps MTFS to develop. For example, “100% charolais du Roannais” includes not only a local slaughterhouse but also a



processing company specialised in minced steaks. Lastly, MTFS that sell to supermarkets or catering establishments rely on the infrastructure of these channels.

The importance of public support in the emergence of MTFS should also be emphasised. The existence of the bottlenecks outlined above can also be put forward as a justification for such support. Innovative MTFS approaches would often not be possible without financial support, at least initially, to compensate for the obstacles posed by existing infrastructures and rules. In the cases studied, the public actors provided support of several kinds. First of all, they contributed to the funding of certain projects, through investment grants or the financing of consultancy services. But other forms of support are also possible. The public sector has been a driving force behind a number of projects, but it has also been able to support initiatives by regularly purchasing the products on offer at a reasonable price. In this respect, public procurement for school catering is a possible lever for perpetuating MTFS.

Finally, we believe that the issue of support for these systems is essential. Throughout the programme, this was a major part of our discussions (Trognon et al 2020). Over the course of various meetings, one idea quickly became apparent: that only the development of a support ecosystem involving an alliance between different spheres, that usually work in isolation, would enable these innovative systems to be supported as they move towards sustainability. A MTFS is neither a company nor a group of homogenous players, as a collective of producers might be, but a system of heterogeneous actors from different professional backgrounds. Building partnership governance therefore requires support that is itself built at the crossroads of these different worlds. Three are dedicated to economic operators (farmers, processors and distributors), one is dedicated to consular chambers (all three), another is dedicated to local authorities, and the last covers support services (in particular funding, logistics and technical bodies). These different colleges enable structures that would otherwise have little opportunity to meet and discuss, but also to work together to build cross-sector and cross-territory support projects that facilitate the development of MTFS.

2.8 With regard to MTFS, we can validate a number of intuitions that were present at the start of the project

The cases we have studied confirm the existence of organizational and partnership innovations in territorial food systems that deserve to be described. There are indeed approaches similar to the concept of MTFS. Although not all of these approaches are stabilized or have yet proven their sustainability, many are in development, emerging, or planned. In this regard, the founding gamble of the PSDR MTFS project has paid off. This is even more evident when considering the broad diversity of MTFS and the range of stakeholders supporting them. These include actors in the food chain (farmers, wholesalers, processors, catering companies, distributors) as well as local authorities. We observe some strengths, such as the creation of new partnerships between certain farmers and their intermediaries, but also some weaknesses, such as the difficulty in finding a sustainable economic model. Some cases also illustrate the challenge these MTFS face in reconfiguring themselves over time, particularly as they need to scale up to reach more markets and consumers. And therein lies the challenge. There are expectations to supply various locations and scales, including nearby towns, all secondary schools in a particular department, and eventually all secondary schools in the entire region. In the end, the region appears to be a veritable “laboratory,” where a wide variety of players are experimenting with alternative ways of organizing agricultural and food systems.

2.9 What tools can MTFS use?

As we have said, MTFS are innovative systems that have to cope with a lot of learning. The constraints associated with the way in which the players operate do not make it easy to change practices. As for the players involved in MTFS, they often lack the keys that would enable them to propose new ways of operating to operators wishing to “do MTFS”. Throughout the project, we therefore worked on developing



tools. The first of these is a video presenting the MTFS concept to interested economic operators and regions³. It is supplemented by six different fact sheets which focus on several key moments in the development of MTFS: (i) Transforming the player system into a credible collective, (ii) building an ethical partnership, (iii) creating and sharing values, (iv) agreeing on 'complete/full' specifications, (v) evaluating and monitoring performance, (vi) setting up a 'model' for support and resilience (Chazoule et al., 2020). In addition to these fact sheets, we have also developed a 'MTFS Game'⁴ to encourage the various operators in the system to get together and work out other possible futures (Trognon et al., 2020).

3. Contributing to regional transitions

The project wanted to take action on the development of sustainable, re-territorialised industries in the Rhône-Alpes region. It aimed as well to play a part in supporting them by creating and testing ad hoc tools. The researchers faced significant operational challenges, as they were committed to including their stakeholder partners as active contributors to the study, rather than treating them objects of analysis or experimentation. The production of these tools was therefore at the heart of our collective approach. At the end of the project, we can consider that these objectives have been achieved, by producing and developing both "case" sheets and "tool" sheets. Two "serious games" have been developed to support the development of two supply chains, "100% Roannais" and "Toques et Sens" in Meyzieu.

In addition to these tools, regular monitoring has been carried out of the various schemes and sectors "making MTFS". This naturally involved interaction with various existing support structures. Over the 5 years of the program, regular meetings with the economic operators in our case studies, the various support structures, the local authorities, the researchers and the players involved in the project have helped to build a close relationship and a real community of action. The partnership between researchers and stakeholders was assessed by our partners as being of a very high quality, based on cooperation rather than collaboration. In this sense, cooperation being understood as the desire to work together, whereas collaboration is seen as simply the need to do so. What emerged as well were new ways of working for everyone involved, and changes in the practices of researchers, stakeholder partners and also the economic operators who shared their time and thoughts with us. While it is difficult to assess the impact today, it is certain that this regular joint work around student placements, meetings, workshops and feedback seminars will have an impact on everyone's practices. One example of the benefits of such collaboration can be seen at⁵.

A number of facts underline the importance of creating these links and making changes in practices. As random as it may seem, for example, thanks to their participation in one of the games, two professionals became client-supplier in a MTFS dynamic. Similarly, following the reflective workshops on support, one actor was able to usefully decode the practices and aspirations within his organisation. In terms of agro-ecological transition, the MTFS project has also helped to establish a dynamic aimed at a transition towards more sustainable practices. This is illustrated by the questions raised by the "Saveurs Iséroise" farmers about their transition to HVE status. For these farmers, relocation and ecological transition must go hand in hand. We must also emphasise the collaborations built up during the project with public actors and local authorities. These began in Isère with the agri-food cluster, with which we continue to work. They are continuing today with the Department, but also with the Lyon metropolitan area, which wanted to work on developing MTFS for its metropolitan area. Finally, students have also been heavily involved in the project as part of their final year of engineering studies. They took part in the various stages of the project, and prepared and ran the games. They also met the concept several times and took part in its construction and stabilisation.

³ The video can be viewed at: <https://www.youtube.com/watch?v=wQ0MasaEoiU>

⁴ A video presenting the game can be viewed at: <https://www.youtube.com/watch?v=7fXC2lpGezY>

⁵ To view this testimonial: <https://blog.isara.fr/les-syam-quels-benefices/>



One fact that highlights our work's contribution to regional development is the widespread adoption of the term MTFS by various stakeholders and operators. This includes an initial definition of the term, an understanding of its specific features, and knowledge of the supporting tools. It is important to note that the term MTFS barely existed before the project, but it now represents a more concrete concept that practitioners can understand, develop, and support. Moreover, the term MTFS has expanded beyond the initial actor-researcher partnership to be embraced by the broader research community. In this way, the project has named and defined innovative organizational forms within the sector. Consequently, we can expect that, supported by insights from case studies and toolkits, the introduction of this new concept will facilitate the development of these hybrid supply chains in the future, as well as their advancement toward greater sustainability, thereby contributing to regional and territorial development.

Conclusion

MTFS are hybrid systems that borrow from different models. As we have seen, they seek to draw on both the principles of justice (solidarity, fair remuneration, mutual aid) generally associated with short distribution channels and on methods of action derived from long distribution channels (logistical optimisation, supply chain management, etc.), by creating or mobilising intermediaries from both the conventional economy and the social economy. They are seeking to build innovative collectives around rules of governance that include all operators to transform practices around price construction, while creating new ways of qualifying products. Lastly, as we have shown, they are diverse and can be led by different types of players or actors and be deployed on different scales. Taking an interest in MTFS is therefore not so much an attempt to fix them in one definition as it is to gain a better understanding of the process of what 'makes MTFS', leading to the development of sustainable and resilient food systems on a large scale of consumers (Le Velly et al., 2021). As they share common objectives with local food projects, their creation can be supported by public authorities.

At the end of this article, we can say that the work carried out as part of the MTFS project opens up important fields of research and research-action. The project has enabled us to gain a better understanding of the initial innovations we were observing, allowing us to identify them and propose tools to support them. Also, it helped us gain a better understanding of how they are organised and how they hybridise, and shown how complex these forms are, how fragile they are and the barriers they face. Thus /therefore many questions remain unanswered. In particular, the project did little or nothing to address the question of the role of consumers, despite the fact that this appears to be essential to the development of these systems. Work on *value-based supply chains* defines consumers as strategic partners in the exchange. They are seen as a kind of third-party certifier (external actor), who, thanks to their knowledge of the approach and the operators involved, can guarantee producers a remunerative selling price. There is a tacit agreement that makes these approaches "food from someone" rather than "food from somewhere" (Brives et al., 2017). In the approaches we studied, we were unable to investigate this question and check how consumers were involved in the construction of MTFS. Very often, they were not engaged because they were still too much a part of the commercial sphere. This can certainly be explained by the state of progress of the initiatives used to understand these hybrid systems. As we have shown, they were not yet widely deployed and only involved the consumer through quality labels that were sometimes not yet well known or identifiable. The products circulating in the MTFS still need to be qualified, and the help of the regions is essential here. Nevertheless, the context is changing, and the current health crisis is encouraging greater proximity to consumers. Similarly, citizens' initiatives are developing and local authorities are increasingly looking at how to qualify products from their area. It seems to us that the leverage provided by local authorities, when they activate a territorial brand that meets the expectations of their area, could encourage a transition towards more sustainable practices. In our further work on these hybrid objects, we need to look at the role of consumers and local authorities in different areas: governance of the process (in particular to counteract certain power relations and the potential to transform towards sustainable performance), but also the construction of qualifications and values.



Another point to be developed in our future research concerns the coexistence and hybridisation that the emergence of these systems creates on a regional scale. The MTFS project had a stakeholder focus, aimed at gaining a better understanding of how the innovative approaches we were monitoring emerged and developed. We suggested that these multi-partner systems were built on a mix of scales (ranging from local to international), beyond the boundaries of a single territory and beyond geographical proximity, but with the prevail of relational proximity. However, the significant development over the past year of territorial food projects, particularly in the Auvergne-Rhône-Alpes region, and the involvement of local authorities that we have seen in certain MTFS, means that we need to take into account the integration of these systems into the territories. We therefore need to look at how these systems fit in with the processes of complementarity and competition that they can generate. We also need to look at the links between MTFS and local authorities. This will be the subject of a future project. In terms of research fronts, MTFS raise questions about the development of hybrid forms of collective action, the links between public actors and private players, the development of strategic partnerships as envisaged in work on *value-based supply chains*, the emergence of new forms of diversification and qualification, the issue of 'economic arrangements', the implementation of policies and new forms of territorial governance and coexistence, the reterritorialisation of food and its relevant scale, and finally the issue of transition. In our perspective, all these issues point to the transition processes underway today around these new food systems and the importance of continuing research into these hybrid objects.

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 for the English translation.

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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All publications relating to the 33 projects in the PSDR4 programme can be consulted at: <https://www.psd.fr/>

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