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DESIGN OF AN AGRI-FOOD SYSTEM ON THE MIRECOURT TERRITORY : ARTICULATION BETWEEN TECHNICAL AND FOOD LOGICS

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Abstract: The desire to reconnect agriculture and food to develop more sustainable food systems is emerging in many territories. On the INRA Experimental Facility in Mirecourt, we have been implementing an system experiment since 2016 to place an agricultural system in transition to an agri-food system. This transition is rooted in the local territory and involves mutual influences between technical systems and food systems. Through two examples, we develop the interdependencies between the agro-technical logics and the food logics expressed at territorial scales.

Introduction: European agricultural development in recent decades has been marked by an expansion and strong specialisation of agricultural activities. These transformations have led to the development and domination of an agro-industrial model and the widespread involvement of farms in long marketing channels, producing increasingly processed and standardised foodstuffs. While the arrival of these products has considerably improved food safety, it has also profoundly altered eating habits. Coupled with increasingly sedentary lifestyles, changes in eating habits are becoming public health problems (overweight, obesity, diabetes, etc.), particularly for disadvantaged populations (Esnouf et al., 2011). In this context, we are seeing the development of initiatives to reconnect agriculture and food in opposition to the dominant system. Producers and consumers are thus seeking to rehabilitate traditional, more localised forms (AMAP, shops and farmers' markets, on-farm gathering, etc.) that refuse access to quality food reserved for the upper social classes.

The territory of Mirecourt (Western Vosges, France) is part of this context of transition. In this area, a series of initiatives are being set up in a living lab type approach (Feche et al, 2018), jointly mobilising institutional players (local authorities, medical and educational establishments, educational institutions, research organisation), private players (farmers) and users of the area (groups of citizens involved in reintegration, food aid and popular education). Within the framework of this living lab, a set of initiatives are developed to contribute to a relocation of links between producers and consumers (Coquil et al, 2019). The aim of this article is to show the mutual interplay of influence between food initiatives on the territory and technical agricultural systems.

Material and methods: This work is based on the INRAE experimental farm in Mirecourt. Since 2016, a diversified organic crop-livestock system has been set up with the aim of contributing to local and quality food. This system is based on traditional productions of the region (cow's milk, cereals) but also develops diversification crops (lentils, sunflower, field vegetables) and animal workshops (suckling sheep, pigs) designed to complement the farm's other productions. Production is intended exclusively for human consumption.

This system is designed according to a step-by-step design approach in which an important place is given to the acquisition of experience by the experimenters (Coquil et al, 2019). The experiment pilots are placed in situations of strong interaction with professional and citizen groups in different scenes where they are led to exchange on their practices and activities (visits by farmers and students, participatory workshops with local citizens). An important place is given to citizens' collectives in the design of the agricultural system, particularly in the setting up of a plot of open field vegetables.

Results:

Agronomic and technical logics at the service of food systems

An outdoor pig fattening unit has been in operation since 2017. This breeding unit is designed to be completely self-sufficient from a feed point of view and is designed to complement the other units in the system. The pigs play the agronomic role of detritivore of the system. They only valorise non-marketable productions: from sorting of crop mixes, non-marketable milk due to a temporary increase in cell counts, non-edible vegetables (onions set to seed, spoilt potatoes). Consequently, the number of pigs reared is defined on the basis of the storable resources produced by the system (from sorting cereals), supplemented in a timely manner by perishable resources (milk, fresh vegetables) at the time of their production.

Although this breeding unit is designed on the basis of agronomic systemic logics (economy of range), it nevertheless supports local food initiatives and contributes to the local development of quality supply chains. Indeed, all the pigs produced on the farm are valorised by a butcher's shop in the West Vosges. The craftsman testifies to "remarkable butchering qualities, marked by very low water loss from the hams". Moreover, the logic of our organic pigs reared outdoors without antibiotics meets the requirements of the craftsman. Indeed, the butcher demands a method of rearing without antibiotics and he recently decided to label his structure as organic.

Food logics drive technical systems

In the spring of 2018, a plot of field vegetables (potatoes and onions) was set up on the experimental facility. The needs and desires of the food banks established in the Mirecourt area were decisive in determining the species and varieties to be planted. The plot on which to plant vegetable crops was then determined according to the agronomic requirements of the plots. A collective tasting workshop (bringing together experimenters and citizens' groups) was organised at the end of the growing season. This workshop was an opportunity to discuss the diversity of the different varieties of potatoes grown (firm, melting flesh). Thus, the citizens (also beneficiaries of these vegetables in the framework of food aid) were able to express their preferences regarding the different varieties tasted but also with regard to the diversity of vegetables grown on this plot. As a result, the 2019 cropping plan was drawn up taking into account these proposals: modification (maintaining, deleting and adding) of potato varieties, planting of other species (courgettes, tomatoes, carrots, leeks) and will be renewed in 2020.

The field vegetable plot is the place of strong interactions between production and consumption: its design (dimensioning, composition) and its management have been defined by the food logic of certain players in the living lab. The technical management methods are defined by the exchange and sharing of experiences by and in the actions of the various stakeholders (experimenters, citizens, associations for integration and assistance through work).

Discussion – Conclusion

Thinking about a reconnection between agriculture and food requires reasoning agricultural systems in close relation to the food systems in which they are embedded. Indeed, we show in this article that the food logics (carried by "eaters" and artisans) and the technical logics of agricultural systems are in strong interaction on the experimental farm of Mirecourt. The "local", especially through the living-lab type approach developed on the Mirecourt territory, is a privileged stage for the development of this type of interaction.

However, the proposed models, and in particular the open field vegetable model, face forms of resistance and opposition, particularly from the agricultural profession. Indeed, despite a request from some professionals for the development of certain systems (non-irrigated field vegetables inserted in crop-livestock systems rotations), some local development structures denounce these forms of agriculture as unfair competition to hyper-diversified market systems developed on small areas. In fact, these two forms of agriculture, based on different logics, are coming into confrontation. This raises the question of their articulation articulated rather than their opposition. The living lab, seen as a network of actors whose collective action is based on mutualisation, can then offer a framework conducive to cooperation between these models.

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