【Working Paper】

Transformation of French Family Farming: from Diversity Study to Coexistence Analysis of Agricultural Models

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Abstract

Following to the presentation about the transformation of French family farming, this article aim at studying the concept of agricultural model and how it leads to discuss the stakes of coexistence and confrontation of different forms of agriculture. In the first part of my presentation, I shall expose the main features of French agriculture and its contemporary transformation. In the second part, I shall briefly compare some of the well-known analytical frameworks of forms of agriculture. In the third part, the concept of agricultural development model is introduced. And finally, I will explain why it could be relevant to consider the coexistence and confrontation of agricultural models.

1. Features and transformation of French agriculture

Continuing decline in farm numbers

In France, the number of farms has fallen, from 2.3 million in 1955 to 450,000 in 2010, employing only 966,000 people (Figure 1). It represents less than 3% of the French working

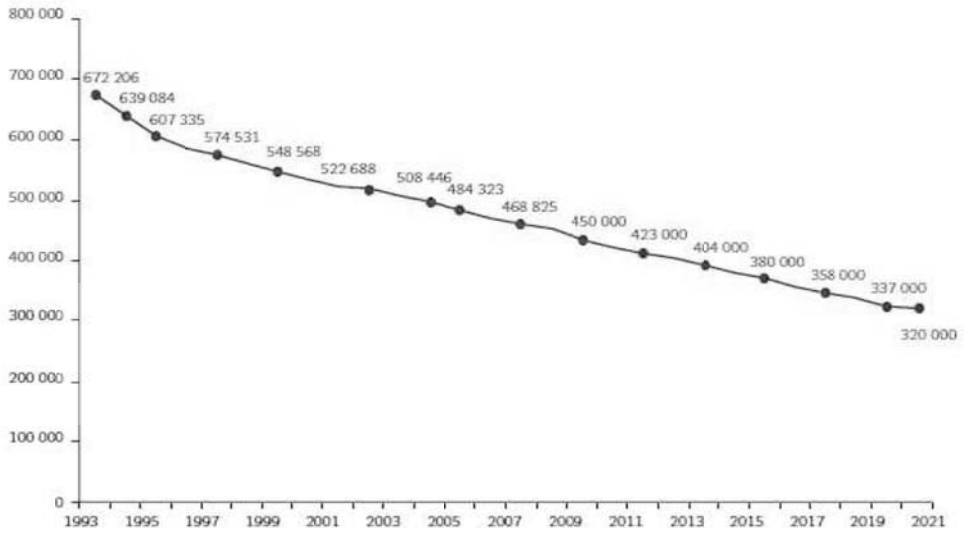

Fig 1. Continuing decline in French farm numbers

Source : Lefebvre, CNASEA, données MSA, 2009

population. The decline is regular, although there has been national and European agricultural policy very different. The determining factors are in particular the increase in labour productivity, the low attractiveness of the agricultural profession and some weakness of the land regulation *(Gasselin et al., 2014)*.

Increasing use of hired and external labour and aging of farmer

The family character of French farms, although still present, has faded in many ways: through the development of wage labour, but also to some dissociation between the operating capital and family heritage or by the attenuation in family transmission strategies *(Purseigle et al., 2017)*. Since the 1950s, the trend was towards shrinkage, specialisation and concentration of family farms, greater mechanisation, use of chemical inputs, and joint management of the sector by the public authorities and the agricultural profession. The average utilized agricultural area per farm has increased from 14hectares in 1955 to 56 hectares in 2010. 17% of the farm labour is provided by non-family permanent employees in 2010, compared to 14% in 2000. The seasonal wage labour increased from 5.6% of agricultural labour unit in 1988 to 10.5% in 2010.The proportion of farmer over 60 was 20% in 2010, compared to 15% in 1988.

Recourse to agricultural service companies

French farmers make more frequently use of farm service companies and farm machinery cooperatives, often in substitution of mutual aid inside the family (Figure 2).

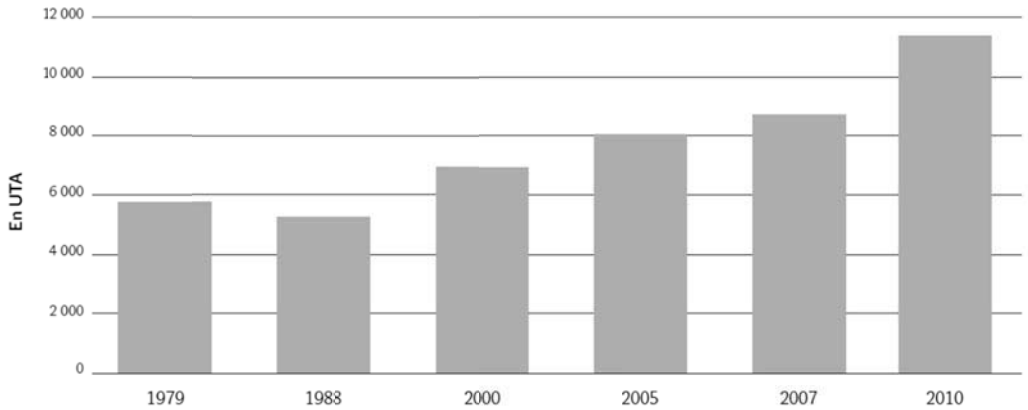

Fig 2. Recourse to agricultural companies

Sources : Agreste, recensements agricoles et enquêtes Structure

Overall distribution across French farm types

In a study on the French census of 2000, Pierre-Marie Bosc and their colleagues consider that family farms are farms with no permanent wage workers *(Bignebat et al., 2015)*. They define the patronal farm as holdings that report more than one Annual Work Unit of permanent wage labour (familial and non-familial) or a very high proportion of seasonal wage labour. And the Corporate farms are those farms that report no family labour and a clear disconnection between the owners of the capital and the labour engaged in productive activities including managerial one.

Table 1. Overall distribution across French farm types *(Aubert et al., 2014)*

	Number (%)	"Annual Work Unit" distribution total	"Standard Gross Margin" in total
Family farms	540,933 81.6%)	60.1%	56.5%
Patronal farms	113,996 (17.2%)	32.3%	37.7%
Corporate farms	8,112 (1.2%)	7.6%	5.8%

Using these definitions based on the only labour variable, over 80% of French farms are family farms. They represent 60% of total annual work units and 56.5% of the standard gross margin that measures the production or the economic dimension of an agricultural holding.

Iincreasing concentration of farm labour and regional specialization

We can see in this map the number of farmers in 2010 and the variation rate from 2000 to 2010 *(Hérault et al., 2016)*. It shows an increasing concentration of farm labour and a regional specialization (Figure 3).

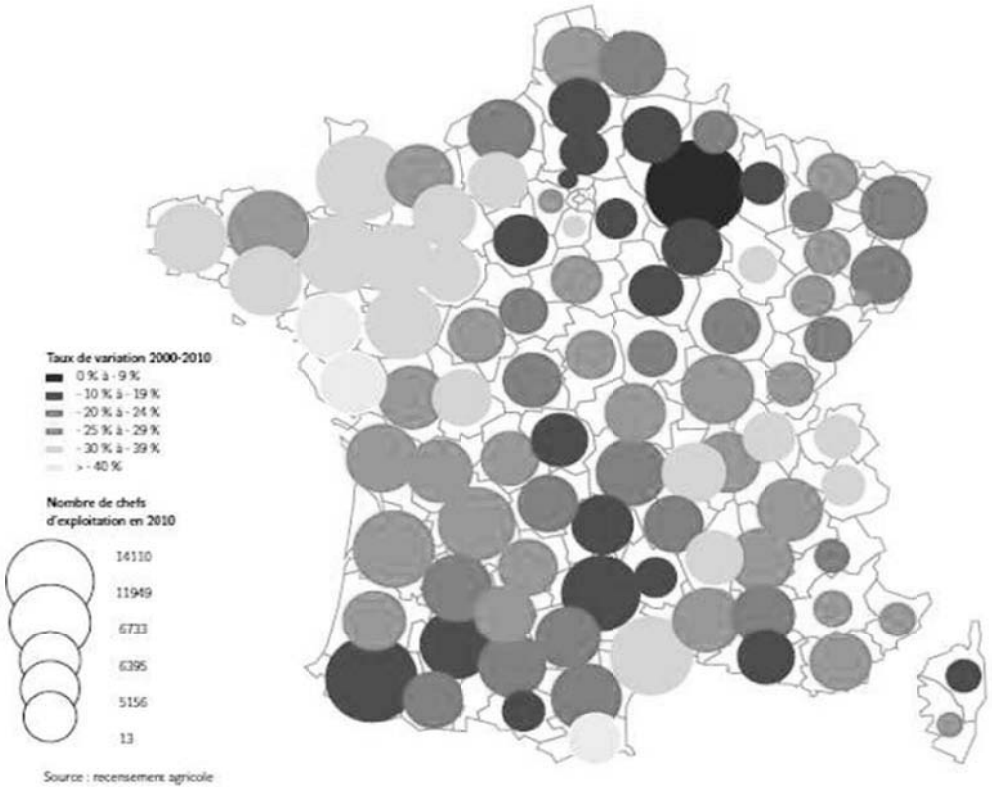

Fig 3. Number of French farm managers in 2010 and variation rate from 2000 to 2010 *(Hérault et al., 2016)*

Distribution of added value in the food value chain

The figure 4 represents the distribution of added value in the food value chain between the farmers and the actors of the collection and food processing and actors of the commercialization *(Hérault et al., 2016)*. We can see Farmers regularly lose added value in the food value chain.

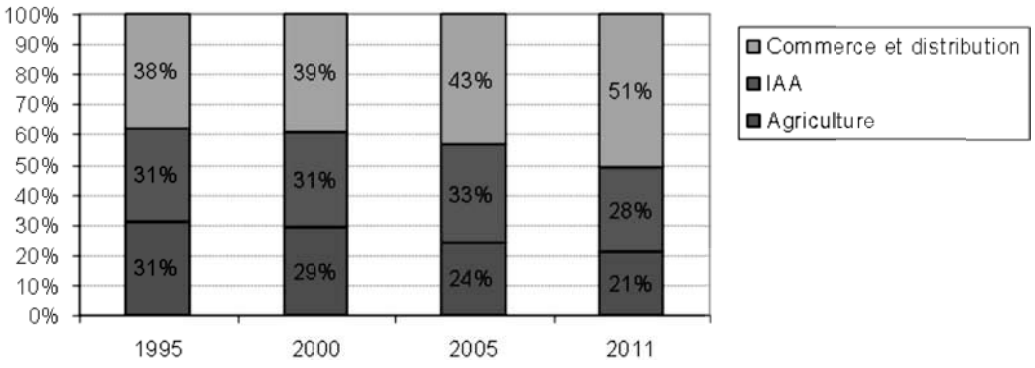

Fig 4. Distribution of added value in the food chain *(Hérault et al., 2016)*

The history of the French farmer leads four marginalization process

The first step is a demographic marginalization since the farmers became a minority population, even in rural areas *(Gambino et al., 2012)*. The farmer also suffers from an identity marginalization within the rest of society. The French society recognizes the farmer's food functions and that they maintain landscape and heritage values *(Mollard, 2003)*. But farmers are also often criticized for the pollution they cause, for the poor quality of food they produce and for a supposed retard to follow the process of cultural, social and technological modernity. The third step is a political marginalization *(Deléage & Sabin, 2012)*. Farmers tend to disappear or lose power in many political arenas, including in local authorities. The fourth, marginalization occurs in the value chain: the French farmer has gradually been deprived of the value by the upstream industries (including farm machinery and chemical inputs suppliers) and by downstream processors and distributors.

Opportunities for differentiation

In the Figure 5, the left curve represents the increase of the official quality signs between 1925 and today, with the controlled appellation of origin (AOC) and the protected geographical indications (IGP). The right curve represents the increase of organic farming between 1996 and today, with the farm numbers in black and the areas in white. These increasing represents opportunities for market differentiation and value creation, and attest of rising of "political" and citizens' demands.

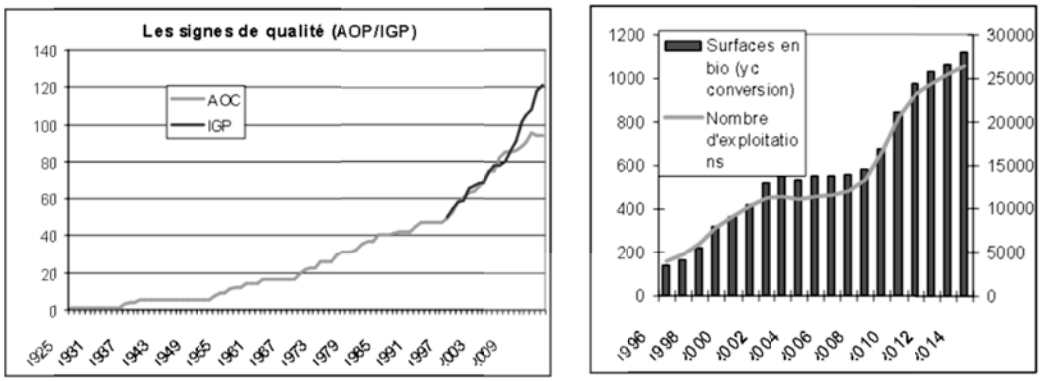

Fig 5. Opportunities for differentiation *(Hérault et al., 2016)*

French agriculture still consuming

Nitrate rates in surface water does not decrease between 1998 and 2014 *(Hérault et al., 2016)*. Figure 6 indicates an increase in energy consumption in agricultural production be-

tween 1973 and 2014. The agro-ecological policy of the current government doesn't succeed in reducing consumption of energy and chemical inputs, including pesticides.

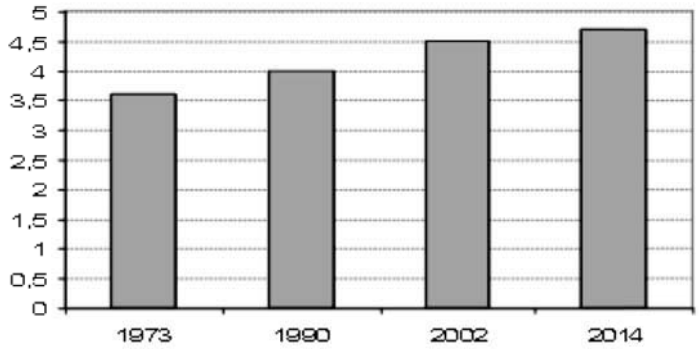

Fig 6. Total energy consumption (Agriculture, Mtep) *(Hérault et al., 2016)*

Unions

In France, five farming Unions have demands and projects highly contrasted. But family farming is not an issue in the political debate between farming unions. All unions, at least in their discourse, agree to defend family farming, even if they define it in different way. For this reason, the Peasant Confederation, affiliated with Via Campesina, claims a peasant agriculture, and prefers not to talk of family farming. The political projects of farming unions differ mainly on technical choices, marketing modalities, environmental requirements, farm sizes, principles of the agricultural policy and modalities of territorial integration. The social form of the farm is a secondary debate.

2. The analytical frameworks of forms of agriculture

After these considerations on the French family farming, I would consider the analytical frameworks available for its analysis. I will only recall four main approaches: The Farming Styles, the Sociotechnical Transition Pathways (also called Multilevel Perspective), the Sociology of Agricultural Worlds and the Agrarian Systems.

Farming styles

The Farming Styles theory is conceived and promoted by Jan Douwe van der Ploeg *(van der Ploeg, 2008)*. He defines the farming styles in vague terms as a specific way of farming

shared by a large group of farmers. Farming styles might be located in the tradition of actor-oriented research. Then, the farming styles aim at exploring the points of view of farmer themselves. Farming styles define local patterns of coherence developed by farmers to technology and markets, which are the two principle variables considered.

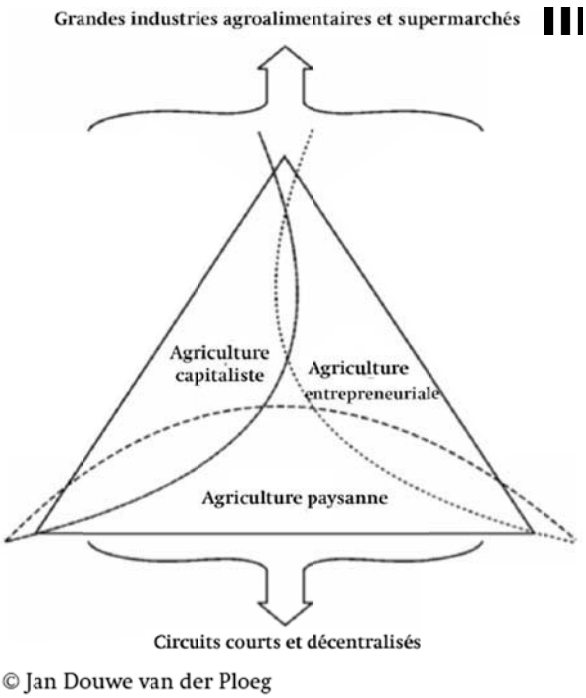

Fig 7. Farming styles

Sociotechnical transition pathways

The Sociotechnical transition pathways also called the multilevel perspective theory *(Geels & Schot, 2007)* distinguishes three levels of analytical concepts (Figure 8): niche-innovations, sociotechnical regimes and sociotechnical landscape. Sociotechnical regimes stabilise existing trajectories in many ways: for example, by the cognitive routines that blind engineers, by the standards, by the adaptation of lifestyles to technical systems, etc. Niche-innovations are developed by small networks of dedicated actors. Sociotechnical landscape forms an environment beyond the niche and the regime with macro-economics and deep cultural patterns.

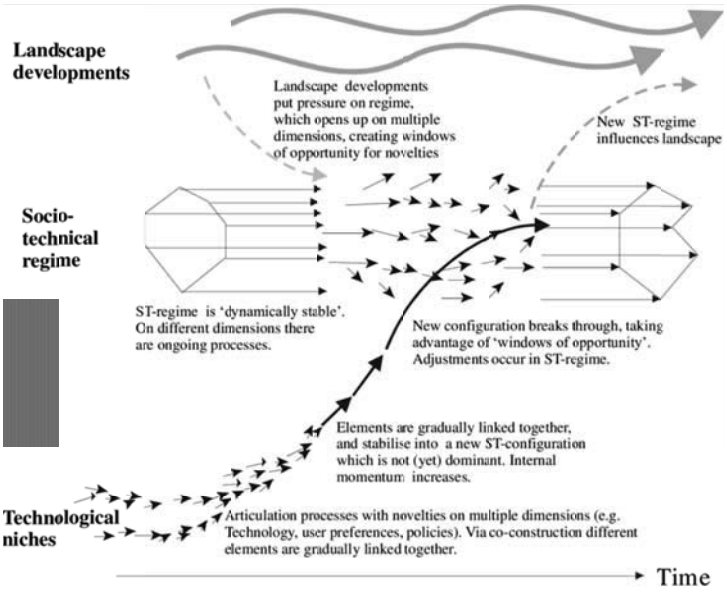

Fig 8. Sociotechnical transition pathways *(Geels & Schot, 2007)*

Sociology of agricultural worlds

"Sociology of agricultural worlds" is a theory that recognizes agricultural forms in a process of differentiation along three axes *(Hervieu & Purseigle, 2011)*. The first axis fo de Figure 9

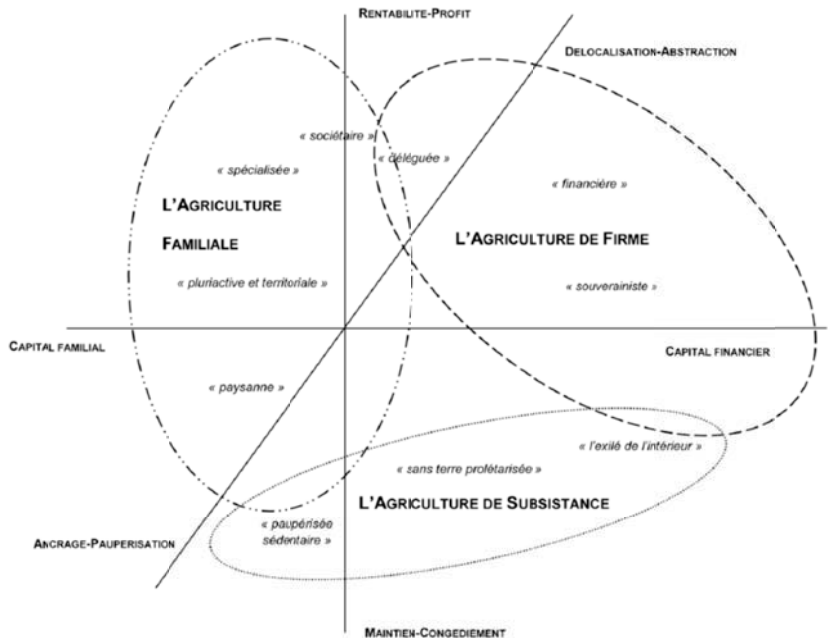

Fig 9. Forms of social and economic organizations of works in agriculture *(Hervieu & Purseigle, 2011)*

contrasts the financial capital with the family capital. The second axis opposes the dynamics of social and territorial insertion with dynamic of relocation, but opposes also the dynamics of pauperization to the so-called abstraction where the firm is diluted in tax arrangements and complex combinations of legal status. The last axis opposes sustainability strategies to profit strategies.

Agrarian systems

The agrarian system theory is characterized by the modalities of exploitation of the ecosystem and by a technical level *(Cochet, 2015 - Cochet, 2012 - Mazoyer & Roudart, 2006)*. It considers also the social relationships of production and exchange that define the conditions for distribution of the added value. It includes production systems that have differentiated in the history. These production systems stand out by their productions, their level of equipment and their labour and land productivities.

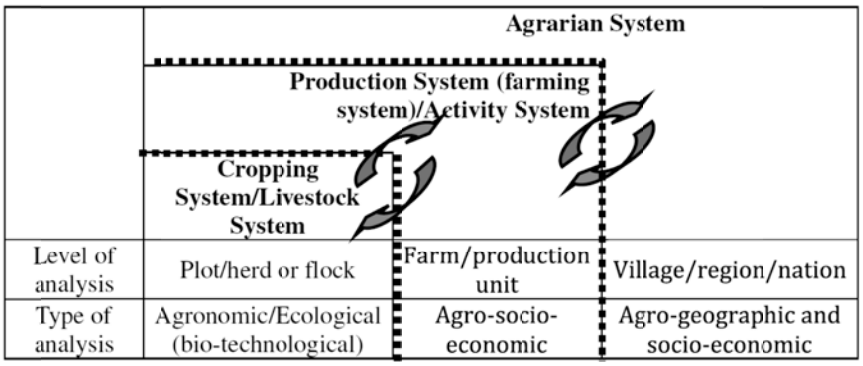

Fig 10. Agrarian systems *(Cochet, 2012)*

The four analytical frameworks have divergences about the way to characterize agricultural forms and the way to interpret the conditions of their coexistence. Particularly, they oppose an actor-oriented approach where human being is an actor and a subject of his history against an approach that sums up the actor to a system or to "a sum of capitals". They oppose also political and epistemological postures between those who consider that "there is room for all" and those who consider "it is a matter of power relationships with domination, exclusion and resistance ". Additionally, they distinguish themselves depending on what are the key variables considered: work, technology, relations to the nature, relations with the market, etc.

3. The concept of agricultural model

What is an “agricultural model"?

In this theoretical context, what is an agricultural model? First, it’s an abstract, schematic and simplified representation of the reality. An agricultural model refers to the ways of thinking about development in agricultural sector. Then, an agricultural model could be an experiment, a prophetic horizon to defend ideas, a utopia, an analytical framework... We propose to distinguish three meanings[1]:

- archetypes of an observed reality (now or in the past): In the scientific research, the archetypes are built on the basis of analytical framework (four of them have been presented above).
- statement or a claim (social, trade union, political, identity, etc.): When Via Campesina define and defend peasant agriculture, it is a model. It is a representation, a convention to which actors refer as a project, as a desired future but also as a "model to follow".
- standard for the action (such as organic farming).

Defining an agricultural development model

The agricultural development model can be considered as a social and technical form of agriculture observed in a given context. But, it also refers to a vision of the future and the way to achieve this future. I propose to define the agricultural development model by three broad dimensions of project and action:

- First, it implies an intended target collectively perceived as positive, often thought in terms of stakes (demographic, ecologization, climate change, energy, employment...)
- Second, the agricultural development model is characterized by some principles of action (in terms of power sharing, decision making, distribution of wealth, treatment of social relations, definition and arbitration of Justice)
- A finally, the agricultural development model depends on specific relations that actors, whether they be farmers, consumers or other actors of the food systems, have with :
  - the activity, giving particular emphasis on work, feeding, consumption and collective action *(Arendt, 1994)*.
  - the territory, the market, the state
  - the Nature, the technology and the Knowledge.

Obviously, defining an agricultural model imply to recognize an overall coherency be-

[1] In this article, it will therefore not be considered the "farm models" derived from a mathematical or computer formalism.

tween all of these variables. And some variables could be considered as highly decisive and then overdetermine the agricultural development model: for example, in the relations with work, technology, market or with Nature...

Different ways of thinking and interacting with Nature

To illustrate last point, I present below different ways of thinking the interactions between the farmer and Nature. The focus could be:

- The reductionism approach (when the Nature is understood as delimited elements: genes, varieties, species component soil, water)
- Or the Systemic approach (when it is considered the interactions between elements, at different temporal and spatial scales, and emergent properties)
- Or the Holistic approach (when Nature is considered as a whole, not reducible to its parts)

- The approach by the Insurance process is opposed to the focus on the Regulated natural dynamics.
- The Simplification of the ecosystemic interactions against the Complexity management.
- The Standardization (plant, soil, growing conditions) against the Heterogeneity management
- The Instrumentalization of Nature objects against the equivalence relation between Human being and Nature (in a gift/counter-gift relationships)

Conclusion - Why thinking coexistence and confrontation of agricultural models?

In some countries, such as Brazil and Vietnam, agricultural development is organized around agricultural models translated into normative, statistical, institutional and political types. These models are embodied in well-differentiated social and technical forms of agriculture, often referred to as family or industrial. In France, the history and the structures of production, innovation and regulation draw agricultural and food models less assertive or more gradual. However, the processes of assertion of models and the issues of coexistence and confrontation are also very strong, as evidenced by the debate on the “farm of 1000 cows”. Agroecology is also a good example: it is variously interpreted by the different actors and very polysemic in the use that makes it by public policies. On the other hand, the problematic still remains little instructive in the French research.

"Coexistence" encompasses various modalities and combined "positive" interactions (syn-

ergies, complementarities, cooperation) and / or "negative" (conflicts, competitions, exclusions) and / or "neutral" (hybridization, coevolution) *(Gasselin, 2016)*. It is to remove any ambiguity and recall that these modalities often have nothing peaceful that we titled this article "Coexistence and confrontation" of agricultural models.

Then, it is possible to distinguish five major fields of questioning in theoretical and empirical aspects of "coexistence and confrontation of agricultural models" *(Gasselin et al., 2017)*:

1. Work that allows characterizing the diversity and differentiation of food systems, forms of agriculture, productive systems, etc.
2. Works that compare the efficiency, functions and performance of these forms. These comparisons are essential to confront them, to make arbitrations, to play complementarities.
3. But these works are only a first approach and do not say anything about the interactions between agricultural models, about the controversies. It is also our goal to characterize and interpret what is in debate, which is the object of oppositions of actors in the field of ideas on what is legitimate to defend, with strategies for legitimizing the positions of some, or of discrediting those of others.

And finally, there is the question of the governance of this diversity, of this coexistence: it is the question of the regulation of interactions, of how to make choices, of how debate and decision-making are organized. In this way, it is:

4. Favor the setting in politics of the invisibilities, the marginalities (situations in margin of the conventional models)
5. To nourish the professional and political debates, by the instruction of the sociotechnical controversies by which affirm and oppose models agricultural.

In short, we think it is necessary not to limit ourselves to characterize the diversity of the forms of agriculture and to compare their social, economic and environmental performances. It is also fundamental to study the interactions between agricultural models, to analyse the controversies that concern them, and to propose a governance of this coexistence of agricultural models.

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