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R&D integration to foster Organic Farming in France

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Introduction

Agriculture is supported worldwide by complex research, development, outreach and education systems, mixing public and private actors with differing interests. Our goal is to show that current structure of the French R&D system devoted to organic farming (OF) must be considered as an asset, although it has faced less interests and more difficulties than the systems devoted to conventional agriculture. To do so, we will first review the historical building of these two systems, with a special focus on their drivers and on their goals. Then we will compare and analyze these two dynamics.

Historical perspective on the building of the French R&D system

France has a long-standing tradition of governmental planning and action in different economic sectors, and agriculture is one of them. It has been considered a strategic activity post-World-War-II for independence in food production and to occupy an important place on the international scene. Therefore it is logical that the French government acted for the development of the R&D system in France, and assigned its goals.

Before WWII, the R&D in agriculture was achieved mainly through agricultural schools. By the end of WWII, France needed to rebuild its agriculture, and to overcome a period of insufficient food supply. In 1946, the government established one research organization, INRA (National Institute for Agronomic Research) to push the French agriculture forward. Its goal was to *carry out all sorts of research dedicated to profitability of techniques and of farming systems* (Bustarret 1959). The scene is set: agriculture must be profitable, and the way to reach profitability is in the design of techniques to be delivered to farmers after they have been verified (Bustarret 1959). INRA was (and is still) structured vertically in divisions defined by scientific disciplines. This structure was supposed to be the most efficient organization to achieve its mission.

During this post-WWII period, several initiatives from both the public and the private sectors aimed at ensuring the development of agriculture through the dissemination of techniques and farmers' support and advice. Farmers' branch unions created Technical Institutes that were dedicated to evaluating and disseminating agricultural techniques. Governmental services, at the same time, played their role through on-farm demonstrations, the establishment of a one-on-one relationship with farmers to deliver advice, a role also played by the private firms selling fertilizers, plant and animal protection products and other inputs, but also by farmer-supported local exchange groups or outreach organizations that hired technicians to run these groups and conduct experiments. Up to the 1960's, the diversity of these actors involved in the development of agricultural practices created conflicts, mainly between governmental agencies and farmer's unions. The main argument was that the farmers denied the government the legitimacy to set out goals and progress paths for them (Rolland 1984). These conflicts ended with the recognition of the programming role played by the farmer's dissemination initiatives and the governmental support given to the *Instituts Techniques* as a major actor in between research and farmers, with the explicit mission to carry out experimentation to setup techniques and disseminate them.

A vertical structure emerged from research to farmers through extension services. The government supported system funded the salaries of their agents and oversaw the functioning of these institutions. About 60 experimental and demonstration farms also contributed to this system and benefited from

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government support. This period, which ended in the 1990's, was characterized by the keywords *productivity*, *technical packages*, *production specialization* and *vertical integration*.

By the 1990's, concerns about environmental protection and management built up, and raised concerns about the impact of agriculture on the environment (Matson et al. 1997). This led to a progressive change in the messages sent to farmers, who were now required not only to produce at the same rate, but also decrease their environmental impacts. Agriculture became multi-functional, not only producing food or fiber, but rendering services such as water quality, biodiversity management, landscape character preservation and other ecological amenities. This can be seen as the premises to sustainability, a keyword that gained momentum during this period and superseded multi-functionality. This change, supported by several local incentive programs that were funded nationally or Europe-wide, targeted change at farming system scale rather than at practice scale (trying to promote redesign rather than efficiency gains or input substitution to follow the ESR framework proposed by Hill and MacRae, 1995). Indeed, the farming system scale was supposed to offer more opportunities and leeway to achieve these changes. However, the overall R&D system remained unchanged in its structure, only slightly adapting to its new goals. For example, INRA added the keywords Environment and Alimentation to Agriculture in the late 90's, but kept its structure in divisions defined by scientific disciplines, giving little room for farming systems research, compared to plant and animal breeding and protection. Horizontal programs promoting interdisciplinary research on selected topics such as plant or animal health management, to ecosystem services support by agriculture did not appear until 2010. The development system remained backed by 13 *Instituts Techniques* still organized by production types.

The building of the organic farming research and development support

Organic farming in France began before WWII, but organic farmer's unions did not develop until after. In 1958 the first organic farmers' union Groupement d'Agriculture Biologique (GAB translated as 'Organic Farming Group') was created in Western France to exchange information between farmers (AgenceBio 2015). Several others followed, with the support of agricultural engineers. These unions did not receive public official support. But Organic farming was shaped by several private standards used to certify food sold to the public as organic. In 1978, the Fédération Nationale de l'Agriculture Biologique (FNAB or Federation of Organic Farming Unions') was created, to join the different organic farming organizations to represent the interests of organic farmers and actors. Four years later, in 1982, Institut Technique de l'Agriculture Biologique (ITAB, translated as 'Organic Farming Technical Institute') was created to coordinate experimental research carried on organic farming in different places in France. ITAB lacked the governmental recognition that the other *Instituts Techniques* had, with no recurrent governmental financial support to the operation of the organization.

Organic farming was first legally defined in France in 1981. Seven years later, in 1988, a unified norm defines organic farming products and certification processes. The European Commission set its organic food regulation in 1991, which superseded national regulations when they were less stringent.

Government supported research, through its institutions, gained momentum on organic farming, although slowly and unequally. In 1999 the government proposed a plan to support the development of organic farming in France, which was subsequently renewed under different forms up to today. In 2000 INRA created a board to coordinate and support its organic farming research. The final step in institutional recognition and support is made in 2012, when the ITAB was qualified as an official Institut Technique, joining the other institutes dedicated to sectorial production created after WWII. However, ITAB's task was made more complex by being dedicated to a given production system rather than to a single commodity or cropping system. Despite its broader and systemic coverage, ITAB has a much smaller task

force than other institutes. It must work with other institutes to create an interest in organic farming within these organizations that have a long-standing history of working for conventional agriculture.

Comparison of the two dynamics

Figure 1 compares the two post WWII dynamics of building the R&D agriculture system. The upper part of the figure retraces the government supported events of these dynamics, while the lower part denotes events that emerged from farmer's initiatives. From post-WWII up to the 1980's, the government shaped the R&D system dedicated to productivity of agriculture establishing the vertical scheme described above and installed the different agencies and supporting structures. In parallel, coming from farmers, the organic sector organized itself its own technical support. Although the government supported the development of organic farming since the 1990's, it began to integrate the two R&D systems much later. Organic farming shaped its own R&D system in France before it was integrated by the government.

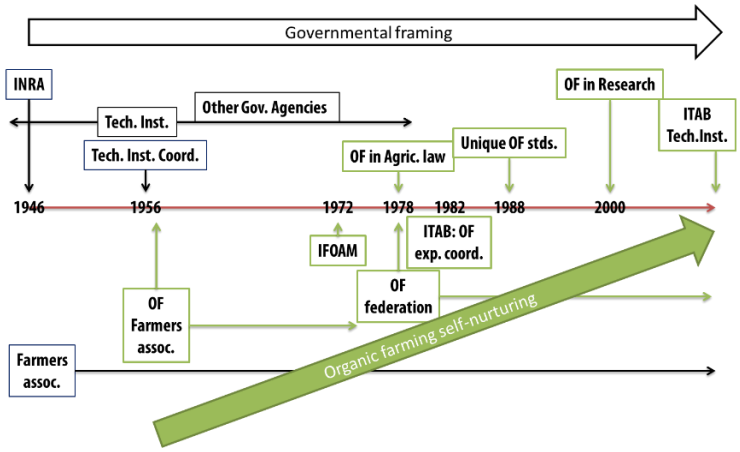

Figure 1: Chronological perspective of the building of the French R&D systems for agriculture. Above the time axis: governmental actions; below: farmers' initiatives. In green, the organic farming related organizations and unions.

The goals of these two systems converged later. First, with the rise of environmental and health concerns and recognition of sustainability as a new goal, farming systems gained more attention than in the productivity period. More recently, ecological practices began to be recognized as a means to transform French agriculture towards a more sustainable model. The Agroecological Project for France launched in 2014 recognized the value of farmers' exchange groups. The two systems also converged in their nature, with organic farming R&D becoming part of the governmental R&D program with full access to its funding. The organic farming R&D system institutionalized itself through its own momentum.

However, on a closer inspection, these convergences are incomplete. Conventional agriculture transformation still relies on technical progress, as the analysis of the results of the recent plans have shown (Gafsi et al. 2006). The sustainability of agriculture is defined in economic and environmental, but not social terms. By contrast, organic farming R&D is more focused on systemic design and farming system change. Although research is carried out to setup new techniques, much of this activity is embedded in a farming system frame that shapes the use of these new techniques which are part of a larger picture. The attention organic farming received from the government in terms of R&D is not balanced if the real weight of organic farming in the French Agriculture is taken into account. If research is probably better balanced, with probably more than 200 researchers dedicating a significant part of their

activity to organic farming, over 2000 researchers or 10%. Instead, over the 15 institutes, one is dedicated to organic farming, with 24 members over more than 1400 in the 15 IT, or 2%.

Institutionalization as an opportunity for organic farming?

Today, the French R&D system for organic farming has joined the older designed R&D system for agriculture, but both have their strengths and weaknesses. The system dedicated to conventional agriculture is highly specialized, which makes the systemic perspective of farming systems difficult. It is also aligned with the vision and goals of agro-industry, the promotion of single technical packages, yet another hindrance to the systemic view deemed necessary by the farmers and the transition to sustainability. But it is efficiently organized for management and one-way technology transfer. It also has the capacity to reach a large number of farmers. On the other hand, the R&D system dedicated to organic farming has long been trapped in a niche and faces the challenge to tackle a systems approach for farming systems design with limited support and means. But it is efficiently organized for a management and support of farmers' initiatives, and managed closely with farmers.

However, the systems view and local management that used to be a liability—because it was not recognized as part of the tools of the wider R&D system—is today becoming an asset. Indeed, the French government has recognized that the transitions to sustainability will need ecological practices designed at the farming systems level. Information and knowledge exchanges among farmers as well as between farmers and the R&D system is a valuable tool that need to be developed. Therefore, the experience and organization of the organic farming R&D system fits the current goals assigned to all agriculture.

Moreover, the organic farming R&D system continues to integrate research to farmers, both at the national and European level. Research, development and education are engaged in building a strategy to address the whole system. The organic farming R&D system is at a crossroads. It could choose to remain self-concerned and somewhat isolated from the whole agricultural R&D system. On the contrary, it should choose to assume its leadership in the agroecological transitions that are requested, building on its recent institutionalization. Organic farming would therefore become the true prototype for the future of agriculture, allowing for the wider development that France has difficulty to achieve.

References

Agence Bio. 2015. "Brève histoire de la Bio." http://www.agencebio.org/breve-histoire-de-la-bio.

Bustarret J. 1959. "La recherche agronomique." *Économie Rurale* 39-40:179-183.

FNAB, 2013. "Histoire de la Bio." http://www.fnab.org/index.php/un-reseau-des-valeurs-des-hommes/historique/2-lhistoire-de-lagriculture-biologique-a-travers-quelques-ouvrages-.

Gafsi, M., Legagneux, P., Nguyen G., and P. Robin. 2006. "Towards sustainable farming systems: Effectiveness and deficiency of the French procedure of sustainable agriculture." *Agricultural Systems* 90: 226-242.

Hill, S. B. and R. J. MacRae. 1995. Conceptual framework for the transition from conventional to sustainable agriculture. *J. Sustain. Agric.* 7, 81-87.

Matson, P. A., Parton, W. J., Power, A. G., and M. J. Swift. 1997. "Agricultural intensification and ecosystem properties." *Science* 277, 504-509.

Rolland, L. 1984. "L'histoire de la vulgarisation agricole en France avant 1966." *Économie Rurale* 159: 11-16.