



# Sustainability transitions: Insights on processes of niche-regime interaction and regime reconfiguration in agri-food systems



S. Bui<sup>a,\*</sup>, A. Cardona<sup>a</sup>, C. Lamine<sup>a</sup>, M. Cerf<sup>b</sup>

<sup>a</sup> INRA Ecodéveloppement, 228 route de l'aérodrome, CS 40509, Domaine St Paul - Site Agroparc, 84914 Avignon, France

<sup>b</sup> Université Paris-Est Marne-la-Vallée, Cité Descartes, 5 boulevard Descartes, Champs-sur-Marne, 77454 Marne-la-Vallée Cedex 02, France

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## ABSTRACT

Changing farming practices is a major issue for sustainability. Such change is difficult to bring about because of strong lock-in effects within the agri-food system. Scholars have mobilized diverse approaches to address the issue of changes in agriculture, including the multi-level perspective (MLP). However, the mechanisms through which “niches” can contribute to regime reconfiguration are still unclear. In this article, we combine the diachronic and systemic approach from the MLP with insights from French pragmatic sociology and from the Alternative Food Networks literature. We analyse the trajectories of four initiatives, which can be considered as niches, as they associate various actors and develop radical innovations. Comparing their trajectories allows us to identify a generic pattern in niche development and niche-regime interactions. We identify regime reconfiguration mechanisms common to all four case studies. Niche activities and the enrolment of new actors lead to a gradual reconfiguration of the regime: first, through the construction of shared visions of agri-food issues and of the associated network of relevant actors; second, through their embedding in local policies and public action.

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## 1. Introduction

Conventional farming<sup>1</sup> as a dominant model is increasingly being challenged. Laws on water or pesticide use and policies to encourage more sustainable farming systems have been gradually implemented in response to criticism. In 2008, for example, the French Ministry of Agriculture released the action plan Ecophyto 2018, aiming for a 50% reduction in pesticide use by 2018 “if possible”, and in 2009 the EU Parliament adopted the “Pesticide package” which requires all Member States to set up action plans to encourage the widespread adoption of technical alternatives to the use of pesticides. However, these measures have only had marginal effects and seem unable to trigger deep change in French and European agriculture. Previous studies have revealed how agriculture is trapped in a lock-in situation, as the whole sociotechnical system is organized around high-input farming systems (e.g. Cowan and

Gunby, 1996; Stassart and Jamar, 2009; Vanloqueren and Baret, 2008). This explains why changes in farming practices are contingent on a profound reconfiguration of the whole agri-food system, i.e. change in the practices and modes of coordination of all incumbent actors – farmers, processors, distributors, consumers, public policies, research and extension services (Lamine et al., 2012).

At the same time, diverse types of alternative food networks (AFN) are being implemented by multi-actor networks that have received a lot of attention from scholars. These networks are spaces where local actors develop new modes of coordination to contribute to reconnecting consumers and producers and challenge some of the characteristics of the conventional food and farming regime<sup>2</sup> (Deverre and Lamine, 2010). As such, they generate bottom-up solutions to break down some of the barriers limiting the adoption of alternative farming practices and show some potential to overcome the lock-in effects involved in the conventional regime. Previous studies on alternative food networks have explored their transformative potential (for a review, see Tregear, 2011; Goodman et al., 2011). Some authors have analysed their

\* Corresponding author. Université Catholique de Louvain-la-Neuve, Centre for Philosophy of Law (CPDR), SSH/JURI/PJTD – L2.07.01, Collège Thomas More, Place Montesquieu 2 (box 15), B-1348 Louvain-la-Neuve, Belgium.

E-mail addresses: [sibylle.bui@uclouvain.be](mailto:sibylle.bui@uclouvain.be) (S. Bui), [acardona@paca.inra.fr](mailto:acardona@paca.inra.fr) (A. Cardona), [clamine@paca.inra.fr](mailto:clamine@paca.inra.fr) (C. Lamine), [cerf@agroparistech.fr](mailto:cerf@agroparistech.fr) (M. Cerf).

<sup>1</sup> I.e. farming systems dependent on chemical pesticides and fertilizers.

<sup>2</sup> Which is based on farming systems dependent on pesticide use, standardized food and long-distance trade.

repertoires of arguments and action, such as consumer education, the implementation of alternative forms of trade and consumer mobilization for protest campaigns. They have highlighted the difficulties faced by these organizations to articulate political action and economic commitment (Dubuisson-Quellier et al., 2011). Others have analysed how in some alternative food networks, values gradually become anchored in everyday practices: through membership in a GAS (Italian for Solidarity-based Purchase Groups), consumers are changing their attitude and adapting their purchasing and consumption routines (Brunori et al., 2012). However, the way such initiatives can shake up the conventional regime is still an open research question (Deverre and Lamine, 2010; Goodman et al., 2011). Moreover, since change in farming practices depends not only on the way supply chains are organized but also, more broadly, on the functioning of the whole agri-food system, more diverse alternative networks – not only those focused on food issues – may be necessary for a regime reconfiguration to take place.

In this paper, we analyse the processes through which alternative networks can contribute to such a regime reconfiguration. To do so, we combine alternative food network approaches with a multi-level perspective (Geels, 2002), which we articulate with some input from French pragmatic sociology.

The multi-level perspective (MLP) is a heuristic framework used to analyse transitions defined as processes of profound regime reconfiguration resulting in a shift from one sociotechnical system (in our case, the conventional agri-food system) to another. It distinguishes between three analytical levels: the niche level where radical innovations and associated sociotechnical practices and rules are developed; the regime level where established practices and rules stabilise existing sociotechnical systems (i.e. the conventional agri-food system in our case); and the landscape level, which represents the exogenous economic, political and cultural context beyond the influence of niche and regime actors (Rip and Kemp, 1998; Geels, 2002, 2011).

Niches are spaces where small networks of actors develop radical innovations on the margins of the regime (Geels and Schot, 2007). The concept of niche is very congruent with the definition of alternative food networks, except that it is not restricted to food networks. In fact, the concept of niche originates from evolutionary economics which analyses technological evolution. It is therefore primarily interested in the fact that alternative networks support new technology: in the MLP, niches are “breeding spaces” protected from market selection (Kemp et al., 1998) where learning processes allow actors to develop new rules and practices around new technology. They are therefore innovative sociotechnical configurations and are considered as the seeds for systemic regime change (Wiskerke and Van der Ploeg, 2004; Geels, 2011). In this paper, we will consider that niches are initiatives in which new rules and practices (i.e. rules and practices representing a breakthrough in relation to the rules in force and the practices carried out in the conventional regime) are developed by a network of diverse actors of the agri-food system.

Niche development is necessary but not sufficient to trigger a regime shift (Berkhout et al., 2011). Niche-regime interaction is another key process in transitions, as through this particular process new rules and practices are integrated within the regime, bringing about further, more profound regime reconfiguration. Although this process is identified by the MLP authors as crucial in transition dynamics, a “theory of linking” is still lacking (Smith, 2007). In other words, the way social actors can gain a grip on sociotechnical developments is still a weak area of the sustainability transition literature (Genus and Coles, 2008). Elzen et al. (2012) have analysed the constituent elements of the regime through which niche-regime linking may occur, and have identified

three forms of “anchoring” (technological, network and institutional) to characterize the nature of this interaction. However, the mechanisms whereby these links are built and whereby they contribute to a regime reconfiguration remain a blind spot that we wish to shed light on in this article.

In order to do so, we combine a pragmatist approach with the diachronic and systemic focus of the MLP – which Diaz et al. (2013) have proven to be fruitful to understand the dynamics involved in building links. The pragmatist approach allows focusing on enrolment processes contributing to the creation of new interactions, on the breaking of alliances, and on the alignment of the actors' interests, concerns and visions (Callon, 1981; Callon and Law, 1982). As we will demonstrate, this allows us to describe precisely both the mechanisms of niche-regime linking, and the mechanisms of change at the regime level.

In this article we analyse four case studies corresponding to different types of niches (not only alternative food networks). As transitions can only be assessed retrospectively, our aim is not to ascertain whether these niches trigger a sociotechnical transition as defined by the MLP (i.e. a profound regime reconfiguration); it is to provide a better understanding of niche-regime interactions by analysing the mechanisms of link construction and how they lead to some regime reconfiguration. In order to analyse niche-regime interactions, we offer a parallel study of these niches' trajectories over time and of their impact on the agri-food regime through the lenses of pragmatist sociology. We analyse the reconfiguration of the actions and visions of both niche and regime actors. We analyse this at a local level, and consider that a regime reconfiguration is occurring if the actions and visions of regime actors become aligned with those built by niche actors.

This article is organized in five sections. In the next section, we present the four case studies and the method used to analyse how these niches unfolded. In Section 3, we describe the four niches' trajectories, including their interactions with the regime. In Section 4, we show that these trajectories follow a generic pattern that leads to effective niche-regime linking and regime reconfiguration at the local level. In Section 5, we identify and discuss the mechanisms of niche development, linking with the regime and regime reconfiguration that our analysis highlights. In conclusion, we summarize these new insights and put them into perspective with the literature, in Section 6.

## 2. Presentation of the case studies

Our analysis is based on the comparison of four case studies: a community procurement platform, a farm incubator, an AMAP<sup>3</sup> and a community organization mobilized for the preservation of water quality. As will be shown in section 3, these initiatives gradually enrolled diverse actors of the agri-food system and lead to the construction of rules and practices that differ radically from those of the conventional regime: in other words, they offer four cases of “niches”. We chose these initiatives because they are cases of “niches” acting on different components of the local agri-food system (here, particularly supply chains, land access and farming practices). We also deliberately chose cases from different contexts (demographics, institutional dynamics and farming activity) in order to obtain some generalisability.

The two first cases are located in the Drôme valley, a mountainous rural area in Southeast France, located between the Alp

<sup>3</sup> Association pour le Maintien de l'Agriculture Paysanne (AMAP). AMAPs are Community Supported Agriculture (CSA) initiatives where consumers enter into medium-term contracts (often six months) with one or more producers who undertake to supply them with a weekly box of fresh organic farm produce.

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