The transition of the socio-technical systems in agriculture

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Summary

Il presente lavoro intende contribuire alla costruzione di un quadro conoscitivo il più possibile esauriente – anche se ovviamente non esaustivo - rispetto alle iniziative volte a ricondurre il prodotto alimentare al suo luogo di origine e a ridare visibilità ai produttori agricoli. Da qualche anno ormai è maturata la consapevolezza che i processi di diversificazione e di rilocalizzazione della produzione alimentare e del consumo *contano*: la ricerca relativa a questi temi ha mostrato il ruolo rilevante che tali processi rivestono nel contrastare la standardizzazione e delocalizzazione, espressione del sistema agro-alimentare convenzionale, portando a quella che è stata definita la "svolta della qualità" (Goodman, 2003); gli studi in materia si sono mossi molto al di là delle pure relazioni commerciali, e hanno cominciato ad esplorare la comunicazione e lo scambio di significati e valori generati intorno al cibo (Guthman 2002, Dixon 1997, Goodman 2002), così come le implicazioni del ruolo che la natura svolge nella costruzione della qualità del cibo (Goodman 1999 Murdoch 2000).
Le considerazioni che verranno proposte in questo lavoro rappresentano l'esito di un intreccio di stimoli conoscitivi maturati durante la collaborazione in alcune ricerche incentrate sullo studio del "cibo" e sulle narrative intorno ai circuiti alternativi di produzione e consumo, osservate in Toscana ma anche in altre realtà europee; alle "spalle" di questa riflessione vi è, dunque, un lungo cammino di ricerca avviato da tempo all'interno della Sezione di Economia Agraria dell'Università di Pisa. L'idea che ha guidato la realizzazione del disegno di ricerca è stata quella tanto controversa quanto irrinunciabile, di indagare la complessità dei fenomeni di rilocalizzazione della produzione e del consumo alimentare attraverso l'utilizzo di apparati concettuali e metodologici coerenti con la loro interpretazione, e nel contempo, di elaborare indicatori fruibili nei processi di indagine di tale realtà. Piuttosto che indugiare sulla loro insita capacità di potere evocativo – di suggerire, cioè, immagini molto spesso approssimative di idillio rurale –, particolare attenzione viene posta alla lettura dei processi relazionali, istituzionali ed organizzativi e delle dinamiche di coesione strutturale; la "posta in gioco" è la valutazione delle effettive potenzialità di crescita delle iniziative alternative di produzione e consumo e della loro predisposizione ad essere accolti come il volano per un prossimo mutamento di paradigma del sistema agro-alimentare.

Il presente lavoro è dedicato all'approfondimento del dibattito teorico che si è sviluppato attorno alle iniziative di rilocalizzazione della produzione e del consumo alimentare. Tra le molteplici chiavi interpretative, si è scelto di concentrare l'attenzione sui fecondi filoni di ricerca che si sono sviluppati nell'ambito della

letteratura economica sull'innovazione. Nei recenti contributi teorici sullo sviluppo economico, l'enfasi sulle determinanti di crescita di un'area si è progressivamente spostata dall'analisi di processi caratterizzati da una sequenza lineare tra acquisizione di conoscenze scientifiche, diffusione delle innovazioni e cambiamento del paradigma produttivo (secondo il modello fordista), verso una concezione più ampia di innovazione, in grado di cogliere anche le dinamiche endogene di crescita, sulla base dello studio delle complesse interazioni tra attori e sistemi socio-tecnologici in cui essi sono inseriti (Dosi, 1990, Geels, 2004). In particolare, Geels (2004) sottolinea l'importanza delle relazioni tra gli attori sociali e l'ambiente circostante - artefatti, conoscenze diffuse sul territorio, capitali, significati culturali ed istituzioni - nel spiegare la creazione e la diffusione delle innovazioni.
Nel caso delle iniziative alternative di produzione e consumo nel campo del cibo non è chiaro ancora se si possa parlare di un vero e proprio cambiamento di paradigma, nel senso di Kuhn, ma sicuramente rappresentano l'espressione della mobilizzazione di una molteplicità di soggetti diversi intorno a valori, principi, significati, risorse e visioni strategiche diversi, e quindi, in un certo senso, innovativi rispetto al "regime dominante" (Renting et al. 2003). In questo capitolo, viene, dunque, approfondita l'analisi multidimensionale con cui vengono interpretate le dinamiche del cambiamenti socio–tecnologici, in grado di contemplare l'interdipendenza dei di tre diversi livelli relazionali identificabili tra attori, tecnologia e regole istituzionali: quello della nicchia, del regime ed del "landscape" (R.Kemp, A. Rip and J. Schot 1998). L'adozione di tale quadro teorico di riferimento appare particolarmente promettente nello studio delle dinamiche innovative che interessano le iniziative di rilocalizzazione della produzione e del consumo di cibo al fine di comprenderne le effettive potenzialità di sviluppo.

Entrando nel merito delle dinamiche evolutive che interessano le "nicchie", una parte cospicua del lavoro viene dedicata all'esposizione di una prospettiva metodologica particolarmente efficace per svelare i processi di dialettica tra nicchia e regime, basata sulla rappresentazione delle interazioni tra gli attori e il contesto – economico, sociale e tecnologico. Tale prospettiva metodologica implica l'integrazione di più livelli di analisi: il modo in cui le azioni degli attori creano la struttura relazionale – la nicchia- il modo con cui la struttura sociale, una volta creata, vincoli gli individui e l'azione collettiva o il modo con cui tale struttura (o network) si manifesta e si relaziona con altre nicchie e con il regime dominante. Attingendo al vasto patrimonio di riflessioni prodotte negli ultimi anni, è, possibile sostenere che la sostenibilità/stabilità nel tempo delle nicchie è condizionata dall'attivazione di processi endogeni di consolidamento, conseguibili attraverso

meccanismi che danno forma, stabilità e coerenza alle regole e alle relazioni sociali[1]. Nella fase attuale di sviluppo degli studi in ambito sociologico l'attenzione è stata concentrata sull'accumulazione capitale sociale come risorsa incardinata nelle reti relazionali. Del resto, anche la presenza di legami deboli, facendo riferimento all'articolo forse più citato in tutta la tradizione dell'analisi delle reti, cioè quello di Granovetter, o l'occupazione di "vuoti strutturali" mostrano interessanti implicazioni nel campo delle iniziative alternative di produzione e consumo del cibo.

Infine un capitolo finale è dedicato alla dimensione empirica delle teorie sopra formalizzate. Vengono esposti in profondità alcuni casi di studio (l'esperienza della carne biologica attivata dalla cooperativa agricola di Firenzuola ed un'analoga esperienza in Francia, l'iniziativa di vendita collettiva diretta di carne biologica in Emilia Romagna, l'iniziativa di valorizzazione del Pecorino a latte crudo delle Montagne Pistoiesi ed i mercati contadini in Toscana e in California) esplicativi della difficile e molto spesso non pacifica evoluzione della nicchia. Nell'analisi verranno messe in luce le relazioni esistenti tra tutti gli elementi che caratterizzano la nicchia. Inoltre, vengono valutate alcune implicazioni in termini di sostenibilità nel tempo delle iniziative oggetto di studio dalle stime di densità di reti formali ed informali attivate a livello interno al gruppo e di livello di coordinamento rispetto ad altre nicchie esterne e al regime dominante.

[1] Le "scatole nere", così come definite da Latour, implicano il conseguimento di norme, valori, linguaggi e regole di interazione fortemente condivise e capitalizzate, nonché un evoluzione delle routines produttive e relazionali (Latour, 1987).

Introduction

There is a growing consensus that food production-consumption patterns are undergoing processes of deep change.

On one hand, there is a general trend of liberalisation and globalisation of food markets, accompanied by an increasing disconnection between farming and food, producers and consumers. Producers of commodities in different geographic locations become interchangeable within retailer's strategies of "global sourcing" (Marsden et al. 2000a; Halweil 2002). Larger retail chains increasingly become the "gate-keepers" to attractive consumer markets. It is not quite a golden age for farmers, resulting in downward pressures on farm-gate prices, in declining market shares of producers, and in the need to meet specific quality standards to retain or get access to markets.

On the other hand, in many developed countries food supply chains have experienced processes of diversification and re-localisation of food, in contrast to the trend towards standardisation and de-localisation (see for instance, Arce and Mardsen, 1993; Watts and Goodman, 1997; Whatmore and Thorne, 1997; Murdoch et al., 2000; Hinrichs, 2000 and 2003; Renting and Ploeg, 2000; Hendrickson and Hefferman, 2002; Renting et al., 2003; Sage, 2003; Winter, 2003, Watts et al, 2005; Roep and Wiskerke, 2006).

One way of defining these kind of food initiatives is as an alternative space which offers a challenge to the dominance of the productivist agriculture nexus. They can thus seen as a space in which producers and consumers can circumvent the consumption spaces constructed by powerful actors in the food chain. The term alternative food networks (AFNs) is here used as a broad embracing term to cover newly emerging networks of producers, consumers, and other actors that embody alternatives to the more standardised industrial mode of food supply (Murdoch et al, 2000).

Alternative food initiatives have been replicated elsewhere over the last decades. In order to explain the current vigour of these alternative food chains the term of "rural renaissance" movement has been coined. But, often the relevance of these initiatives does not certainly rely on their economic dimension (as in many cases it is absolutely not very significant). Rather the changes at issue here are related to their intense growth rate, their spontaneous and autonomous nature and,

especially, their intrinsic innovative potential. Alternative farming patterns potentially provide an answer to some main challenges, i.e. representing viable strategies for farmers to improve the marketing of their products and sustain their livelihoods or means to mobilize new knowledge, skills and human capital. Further, alternative food supply chains also provide societal benefits that go beyond the scope of these direct economic advantages for producers involved. There is ample empirical evidence that alternative initiatives retain value added at farm level and within rural areas (i.e. through synergies and multiplier effects), thereby facilitating pathways of sustainable rural development and opening new ways to valorise multifunctional forms of agriculture (Van der Ploeg et al. 2003; Knickel and Renting 2000). Also, frequently adopting a strategy of quality differentiation means to meet new societal needs and responding to changing consumer demands especially in areas of food quality, safety and traceability (Marsden and Arce 1997; Ilbery and Kneafsey 1998).

Further, one of the goals and expected impacts of the 2003 CAP Reform is that producers will be guided less by subsidy systems to engage in the production of certain agricultural commodities. This will presumably result in a more market-oriented behaviour of farmers, make farm enterprises less dependent of production subsidies, and it also may lead towards a more pronounced quality orientation in production and marketing. The reference made to “good farming practices” in the new CAP support measures may further enhance this trend and serve as a starting point for farmers to increase the specificity of their produce, and to integrate distinctive quality attributes into their marketing strategies in order to command premium prices (Shapiro 1983).

The theoretical debate that has arisen since the early 1990s on these alternative processes is as much well known. It can be pointed out the studies on the transition of contemporary agricultural regimes from a “productivist” to a “post-productivist” era (Marsden et al., 1993; Wilson and Rigg, 2003); on the emergence of a new model of rural development, based on principles of sustainability, multifunctionality and valorisation of endogenous resources, along with the becoming apparent, both in practice and policy, of a “new rural development paradigm”, which is replacing the dominant modernisation paradigm (Ploeg et al., 2000); on a “turn to quality” in agro-food system and, within it, on the potential of re-localisation strategies to create new economic spaces capable of withstanding globalization and corporate power (Goodman, 2003); on the role played by cultural studies for a new understanding of rurality and rural policies (Cloke, 1997; Morris and Evans 2004); on the active “political role” that consumers may play in the food system arena, able to affect the shaping of the agro-food system (Tovey, 1997;

Lockie, 2002; Goodman and DuPuis, 2002; Lockie and Kitto, 2000; Allen and Kovach, 2000); on the need to create conditions of food-democracy and the consequent need to organize food-governance systems (Sonnino and Marsden., 2007), that is participatory and democratic systems of interaction on food production-consumption issues.

In addition, alternative food movements have drawn from the more recently articulated environmentalist notion of bioregionalism (Sale 1985; Kloppenberg, Henrickson, and Stevenson 1996). The appropriation of the idea of "food sheds" (see Stegner 1953) is to draw attention to seasonality and other agronomic constraints, which, if followed, presumably would put less pressure on land and other elements of nature. Locally scaled distribution networks might also substantially reduce the number of “food miles” necessary for trading food, leading to a dramatic savings of fossil fuel energy. Insofar as the globalization of food distribution has turned on overcoming obstacles of distance and durability (Friedmann 1994), bioregionalist notions also intersect with a critique of globalization.

While the possible contribution of sustainable agricultural development and the provision of safe and quality food therefore is promising, several important issues still remain to be clarified and resolved. In recent years a considerable number of alternative marketing initiatives have emerged throughout the European countryside, some being outstanding success stories while others after an initial take-off have stagnated or even declined. Moreover, existing alternative marketing initiatives represent a wide range and diversity, both between countries and between different types of quality definitions and conventions that are articulated (Renting et al. 2003). These range from organic food and PDO/PGI to animal welfare and regional traceability, while also some initiatives market their produce through short supply chain (direct sales) at local/regional level and others engage more clearly in mainstream marketing channels (large retailer chains).

In short, alternative food movements seek the implementation of novel ways of interaction throughout food production and consumption, involving a variety of actors (farmers and consumers, social organizations, public bodies) around a broader set of values, meanings and/or objectives, on the basis of different conventions and rules (for instance, qualitative attributes of products, relation with territorial resources, knowledge embodied in production processes, organizational patterns and communication practices) (Lee, 1996; Thorne, 1996; Whatmore and Thorne, 1997; Offer, 1997; Dixon, 1999; Hinrichs, 2000; Goodman and DuPuis 2002; Marsden et al., 2000; Sage, 2003; Renting et al., 2003; Kirwan, 2004; Ilbery

and Maye, 2005; Watts et al., 2005; Kirwan et al., forthcoming). Thus, alternative food movements represent interesting innovative experiences, early concrete manifestations of the development of a new discourse about food. As such, they may currently constitute an alternative to the mainstream organisation of the agro-food system, sustainable and suitable for many rural areas, but also, potentially, they may constitute early experiences of a more important transition towards the "post-productive agro-food regime".

Injecting the micro level component into the post-productivism shift

Broadly speaking, the post-productivism representation suggests that there are several elements of incoherence and uncertainness. The main concern refers to the magnitude of shift required to justify the presence of a new regime. What is clear is that transitions to new regimes happen in times of contradictions and the process is not immediate nor linear. Several scholars suggest the need to better understand the micro dynamics of these processes[2]. Marsden et al (1993, 20), for instance, recognize that the dimensions of the transition from productivism to post-productivism has been largely defined through exogenous forces of agricultural change and this tend "to retain excessive structuralist assumptions about the nature of change". Philo, Long and van der Ploeg (1994, 62) suggest that conceptualizations of post-productivism have traditionally paid insufficient attention to local action (see also Morris and Evans 1999). Similarly, Marsden et al (1993) advocated a better understanding of rural changes through the analysis of "action-in-context", including investigations into the different actor networks affecting post-productivist rural spaces (e.g. Murdoch and Marsden 1995; Marsden 1999) (e.g. Halfacree, 1997a, 1997b).

Understanding the dynamics of socio-technical systems – or the micro-dynamics between actors, rules and resources (see the above discussion) - may offer useful insights for explaining the possible shift from the productivist to the post-productivist agriculture. The recognition of when a new regime emerges imply the establishment of different rules systems, actor-networks and resources and the new

[2] As well known, actors may belong to different networks, and their identity, values, norms and actual behaviour are mediated by these belongings. Belonging to different networks, actors may be exposed to different regimes, that imply different ways of behaving and thinking. A shift from a regime to another can be seen as a "detachment" from a network and an "attachment" to another one (Brunori et al, 2007).

rules should concur to the same objectives and goals, showing coordination and coherence between them. As it will be further explained, regimes "embody strongly held convictions and interests concerning technological practices and the best ways in which these might be improved" (Smith et al, 2005). The "productivistic agriculture", for example, has occurred along a technical trajectory in which increasing factor productivity, or in other words, increasing massively agricultural output per unit of labour, has been the main goal. The food production regime has consequently focused on mechanisation, specialisation and increased inputs of energy and chemicals.

In the meantime, alternative food initiatives, based on local and ecological criteria, have been developed as processes of radical innovation towards a new "agro-food paradigm" or post-productivism regime. As matter of fact, the evolution of the meanings and the practices of food producing and consuming might be considered as a radical innovation process, involving deep changes into knowledge and values systems, techniques and artefacts, rules, routines, organisational aspects, individual behaviours and system of relations. New needs, motivations and expectations raised from the different actors of food networks; similarly, also different practices and organisational patterns adopted have been described and analysed.

However, such alternative conceptualisations of agricultural goals has struggled to gain limited acceptance and they are like a constellation of emergent niches, which are embedded within exiting "socio-technical systems" (Rip and Kemp, 1998). Recognising this can help to explain why they are not diffusing rapidly due, for example, to overarching structures of markets, patterns of final consumer demand, institutional and regulatory systems and inadequate infrastructures for change (Berkhout, 2002). The key for successful radical change will be the coordination of resources and knowledge across specific coalition of actors, possessing the wherewithal to create alternatives. This will be built upon active processes of negotiation which can generate coherence and sufficient consent (or better, legitimisation) to put change into practice.

The main objectives of the research

The perspective of analysis of this work is to look at these alternative food initiatives for their capability to contribute to radical innovation processes. This demands better understanding of the elements and mechanisms at the basis of their alternative nature ("alterity"/"innovativity"): the conditions at the basis of their establishment (the way in which new socio-technical systems are built),

consolidation and growth (i.e. learning processes, negotiation processes), the critical aspects that may characterize these initiatives from within and the influences that may affect their establishment and development from without (i.e. the ways in which niche-actors negotiate their attitudes, values, behaviours, resources and regime-rules, as well as the way in which policy makers or other regime actors frame rules/institutions). In other words, this means to unfold the mechanisms of the niche establishment, consolidation and growth, and its contribution to drive and stabilize transitions towards new food production and consumption regimes. Niche driven innovative paths are very important for a full understanding of driving forces behind the shift toward a post productivism and in which ways they can contribute to consolidate the new regime. The transition from productivism to post-productivism may require negotiation in balancing the numerous and complex ideologies and perceptions of often competing niches and regimes interests.

The work is organised as follows. The first chapter discusses the sources of change in regimes, through a review of the concept of regime and widening the focus from technological regime to socio-technical regime. Then, I examine the problem of regime transitions in the agricultural field (and arguably in the rural society as whole) and discuss the ways in which innovative changes may be oriented and managed towards a post-productivistic regime. I then introduce (Chapter II) the conceptualisation of radical changes and the mechanisms through which reconfiguration processes come about by using the multilevel perspective. In the chapter III I will briefly describe the conditions at the basis of the niches establishment, the mechanisms of their consolidation and growth, and how their development can contribute to drive and stabilize the transition towards a new regime. In the chapter IV, the outcomes of the strategic games between niches and regime will be further explored: a heuristic typology for mapping such transition contexts, which can be used to guide the analysis of governance for regime transition, is here presented. I argue that the governance of regime transitions can address the balance of selection pressures, or condition the adaptive capacities of incumbent or competing regimes their resources for change and the interplay of expectations about change. In the chapter V, the case studies flesh out the transition perspective. The aim of the case studies is to examine not only the distinctive internal mechanisms of innovation but also how the experiences are starting to play themselves out of the protection space around the niche and the degree of co-existence, competition and resistance between niches and regimes. The heuristic typology for mapping transition contexts will be used as conceptual framework for the analysis of the case studies.

Chapter I

Insights from innovation theories: the concept of regime

Several scholars have stressed that the force of the concentration of economic power and globalisation of agro-food systems are "not immutable process with an inevitable conclusion". Whatmore and Thorne (1997) recognised that within the globalisation process "many spaces of resistance, alterity..." and creativity, in which people themselves attempt to control and shape their relationship between food and consumption, become discernible and politically meaningful. This points out a crucial question. Can alternative food systems represent "windows of opportunities" and truly transform/deviate the dominant agro-food system so that it will be more sustainable in the long term?

A way for answering the question is to look into the inside mechanisms of innovations. Trying to open up the black box of innovation implies understanding the potential of innovations to ordering and re-ordering the existing cognitive frameworks, or, in other words, to re-structuring the regulative mechanisms of the existing regime. A review of the literature suggests that such reconfiguration processes do not occur easily and the question of how transitions come about is addressed here.

Before considering the genesis of transitions we will examine the literature, paying particular attention to evolutionary economics and technology studies. This chapter discusses the evolution of the concept of regime, widening the focus from technological regime to socio-technical regime and exploring the sources of change in these socio-technical regimes.

Then, we examine the problem of socio-technological regime transitions in the agricultural field and discuss the ways in which innovative changes may be oriented and managed towards sustainability.

The evolution of the concept of regime

In the innovation literature, which is rooted in the neo-classical theories, the perspectives on the process of innovation refers to a process of "variation, selection and retention", resulting in incremental innovations which occur along existing technical trajectories (Nelson and Winter, 1977). As Geels points out (2006), a conceptual framework like this works well to understand the innovative performance of sectors and the dynamics of industry structures.

The concept of a technological framework and shared cognitive outlook of actors has been developed by Nelson and Winter (1977), and Dosi (1982) to capture a relative stable way of coordinating the behaviour of actors that are part of communities. Nelson and Winter coin the notion of a technological regime and Dosi of a technological paradigm to account for the problem-solving activities. In other words, this means that innovations can be generated by cognitive routines, shared in a community of actors. Nelson and Winter (1977) use the concept of technology regime, referring to the evidence that the activities of different actor groups are aligned to each other and co-ordinated, as they are the outcome of organisational and cognitive routines. Nelson and Winter give the example of the DC3 aircraft in the 1930s, which defined a particular technological regime: metal skin, low wing, piston powered planes. As they write: "Engineers had some strong notions regarding the potential of this regime. For more than two decades innovation in aircraft design essentially involved better exploitation of this potential; improving the engines, enlarging the planes, making them more efficient."

Dosi (1982) introduces the idea of a technological paradigm, analogous to Kuhn's concept of scientific paradigm. A technological paradigm consists of "an artefact that is to be developed and improved, and a set of ideas and beliefs about where to go, what problems to solve and what sort of knowledge to draw on".

As Kemp (1998) suggests, both the concepts of technological paradigm and technological regime imply that the existence of a core cognitive framework, shared in a community of actors and embodied in institution and infrastructure, is the starting point for looking for improvements in product and process efficiency.

The presence and the implications of the existence of a cognitive framework for guiding research activities has gained wide recognition in modern innovation theory. An approach to innovation like this explains why incremental innovation follows specific trajectories: cognitive frameworks consist not only of a set of resources but also of a structure of constraints (Kempt, 1998). They are resources as there is a reduction in time and in the effort necessary to take decisions and to act;

but meantime cognitive frames are also constraints for action because they make much more difficult to deviate from consolidated patterns of decision and behaviour. To build new cognitive frameworks can be very costly, both to "unlearn" old frames and to invest in extra learning activity (Brunori, 2007).

Yet, this approach of socio-technical change has been recognised as too limited, because its focus is too much upon cognitive aspects of problem-solving activities and too little on the interplay between the cognitive and economic frame and other social factors that may drive innovation patterns in certain directions. As Kemp (1998) notes, what is missing in these approaches is taking into account that innovative activities are embedded in larger networks, involving established practices, supplier-user relationships and consumption patterns. This wider concept implies that more social groups are taken on board. Evolutionary trajectories are not only influenced by engineers, but also by users, policy makers, societal groups, suppliers, scientists, capital banks etc. Further, regimes exist across different empirical scales[3].

Adding insights from science and technology studies to evolutionary economics, Rip and Kemp (1998) widened the concept of technological regime by defining it through the sociological category of "rules": "*the term regime refers to (...) rules. Not just rules in the form of a set of commands and requirements but also rules in the sense of roles and practices that are being established and that are not easily dissolved. Examples of such rules are the search heuristics of the engineers, the rules of the market in which firms operate, the user requirements to be accommodated at any give time, and the rules laid down by governments, investors and insurance companies. The idea behind the technological regime is that the existing complex of technology extended in social life imposes a grammar or logic for socio-technical change, in the same way that the tax regime or the regulatory regime imposes a logic on economic activities and social behaviour. Technological regimes, in the way we use the term, are a broader, socially embedded version of the technological paradigms which were used by Dosi*". A regime therefore embodies a "relatively stable configuration of institutions, techniques and artefacts, as well as rules, practices and networks that determine the normal development and use of technologies" (Rip and Kemp, 1998). While the cognitive routines of Nelson and Winter are embedded in the practices and minds of engineers, these rules introduced by Rip and Kempt are embedded more widely

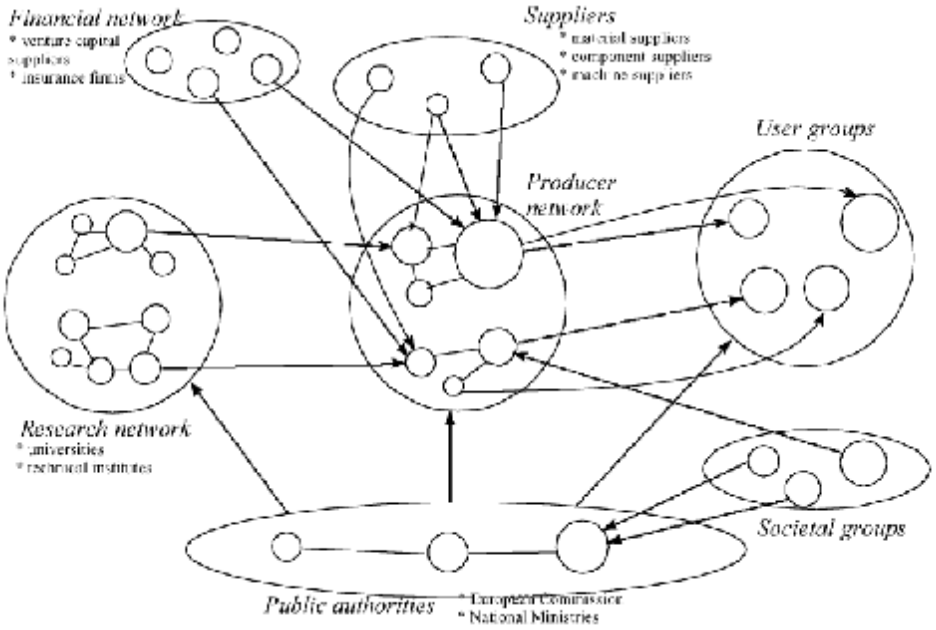
[3] In a recent paper, Geels (2004) articulates regimes into several sub-regimes, such as: consumption regimes, socio-cultural regimes, policy regimes, scientific regimes, technological regimes.

in the “knowledge, actors practices, governance structures, manufacturing processes and product characteristics”.

Scott (1995) distinguishes three kinds of rules: regulative, normative and cognitive rules. Cognitive frames are socially agreed rules of interpretation and signification of the external world. Cognitive routines may blind engineers to developments outside their focus (Nelson and Winter, 1982), so that core competencies turn into core rigidities (Leonard-Barton, 1992). As long as actors expect and believe that problems can be solved within the existing regime, they will continue along existing paths and not explore radical innovations. We have said above that definition of problems depend on cognitive frames. Collective cognitive frames concur with broader systems of rules and institutions to learning and action. They are embodied in discourses and narrative through which people make sense of their environment. New codes to read the elements of their territory and to evaluate their relevance as economic resources give rural actors the key to start a process of building development repertoires (Ray, 1999) based on cultural traditions and natural specificities, which can be mobilised into economic activities. Normative dimensions have stabilising effects, when people adapt their behaviour and lifestyles to technical systems. Furthermore, social networks are stabilised by mutual role perceptions, expectations of proper behaviour, identities and ‘sense of self’. Rose (1996) illustrates how the so-called “advanced liberal” approaches identify “communities” as subjects of social and economic policies, considering that they can be - thanks to the moral commitment of their members - effective instruments of compliance and therefore of control at a distance. At the same time, ethicisation of some economic activities such as consumption can be a lever to promote social change from below: scholars have shown that consumers can be “invisible mouths” affecting the political sphere through their choices (Lockie, 2002), and can be active players for a reconstruction of food chains re-embedded within societal values (Hinrichs, 2000). In rural development processes, ethics has shown itself as a very important mobilizing resource. The concept of “stewardship” is increasingly considered in relation to farmers’ management practices (Worrle and Appleby, 2000). Lowe (1997) illustrates how rural change has happened in Britain as a result of “moralisation of the environment”: as farmers have been increasingly blamed by society for polluting, agricultural policy networks have responded progressively by adapting agricultural practices and policies to less polluting patterns. Also Van der Ploeg (2003), Oerlemans and Hees (2002), Rahmann and Opperman (2002) show how agricultural policies in northern Europe are being increasingly affected by moral considerations, and that these turn into a questioning of the limits to the “right to produce” of the farmers. Regulative dimensions may stabilise the regime through legally binding contracts, standards,

or government subsidies that favour existing technologies (Walker, 2000). The strength laws exert upon daily activity of rural actors depends, apart from the strength of controls and of repressive activity, on the level of legitimation of the State within a network and on their consistency with moral norms of the same network. One of the most relevant examples concerns environmental and hygiene regulations. In these cases, laws define targets or constraints, but there is indeterminateness enough to allow different interpretations. Successful communication processes based on co-operation between local health authorities, producers' associations, local institutions and research bodies have improved the homogeneity of interpretation and made possible the use of techniques forbidden until now. Technical rules mediate social action with the physical world. They orient changes in the landscape as well as in the production process, and the characteristics of technical rules affect the way people organise their objectives and their labour (Busch, 2000). They affect innovation as they give shape to actor-networks related to production, excluding some elements (tools, types of knowledge, skills) and including others; they are the outcome of specific social representations (for example, technical rules concerning hygiene and safety can be inspired by rather diverse visions of the food industry (Marsden, 2001)) and produce specific languages.

Figure 1 The multi-actor network involved in a socio-technical system (from Geels, 2002)



Geels says (2004) that the nature of innovation patterns is accounted for in large part by the embedding of existing technologies in broader "socio-technical systems", including production practices and routines, consumption patterns, engineering and management belief systems, and cultural values. Because the activities of these groups are also guided by rules, Geels uses the term "socio-technical regimes" to refer to the semi-coherent set of rules carried by different social groups. The concept of socio-technical regime refers to a particular configuration of institutions/rules, actors and artefacts/resources that determine the use and development of technologies. By providing orientation and co-ordination to the activities of relevant actor groups, ST-regimes account for the stability of ST-configurations. In other words, rules give the source of regime stability. This stability is of a dynamic kind, meaning that innovation still occurs but is of an incremental nature. In evolutionary terms, ST-regimes thus function as selection and retention mechanism (deep structure). According to his model, socio-technical regimes are a result of the following dynamic interactions:

1. *Between rule-regimes and actors*

In recent decades, several conceptual approaches have been developed in order to give explicit attention to the interactions between actors and social rule systems. All these approaches identify two main mechanisms of dynamic interaction between rules-regime and actors.

The first effect, which he calls "actor structuring", refers to the outcomes of the enactment of social rules in (inter)action. Actors interact within a wide system of existing rule structures, which shapes and adjust their preferences, aims and strategies and guides their actions. In other words, members of social groups share a set of rules (or rule-regimes), which are the outcome of earlier actions. Therefore, social activities are coordinated through institutions and rules[4]; these rules not only constrain but also enable action, by providing coordination and stability.

The other effect is called "social learning" and it takes place through imitation (firms imitate routines from successful firms) or through the exchange of experiences, e.g. articulation of problem agendas and best practices at conferences, through specialised journal or professional societies and branch organisations. Indeed, social actors also creatively involved in the implementation and (re)production of rule structures in their activities and in concrete interaction

settings (local practices). Therefore, rules are not fixed, but change over time as a result of social action. Institutional economists coined the notion of "rules of the game". Regimes constitute a game, which is played out by different social actors, such as firms, public authorities, users, scientists, suppliers, etc. and each of them have their own "perceptions, preferences, aims, strategies, resources, etc". It is possible to see "the actors actions as moves in a game, of which the rules somewhat change while the game is being played". In the same way, "economic processes are embedded in sociological processes, but are not entirely determined by them" (Geels, 2004). Within rules and regimes there is plenty of room for interpretation and strategic manoeuvring. Through the effects of social learning, the shared social rule systems (e.g. perceptions of who the users are, what they want, which technical recipes work best) are maintained and changed.

According to Geels, the added value of this conceptualisation (compared to institutional economists) is that the "rules of the game" are not fixed, but may change during the game, over successive development processes.

2. *Between resources[5] and actors*

Resources can influence in substantial ways innovation patterns. On one hand, they are maintained and changed by activities of actors, on the other hand, they constitute the physical context for actions. An important insight from technology studies, in particular actor-network theory, is that actors in modern societies "do not live in a biotope, but in a technotope", as they are surrounded by technologies and material contexts, ranging from buildings, roads, appliances, etc. (Geels, 2004). As Geels highlights, "these technologies are not only neutral instruments, but also shape our perceptions, behavioural patterns and activities". On the other hand, when actors act in order to achieve their aims, they increase their resource positions, make investment decisions about R&D directions, introduce new technologies in the market, propose new scientific hypotheses, etc. In other words, these actions maintain or may change the resources structure of socio-technical systems.

The notion of "playing games" also highlights that social (inter)action in the context of systems is not necessarily harmonious. Different actors may have different power or strength, as the resources are distributed unevenly amongst different actors. Therefore, they have unequal opportunities to realise their purposes and interests,

[5] The term resources (including artefacts, technology, legitimacy or finance) replaces, in Geels' terminology, the "systems".

and influence social rules. The framework leaves room for conflict and power struggles (Geels, 2004).

3. Between resources and rule -regimes

Another insight from technology studies is that rules are not just shared in social groups but can also be embedded in resources and practices. As already explained, Rip and Kemp (1998) widened the concept of technological regime by defining it through the sociological category of "rules". While the cognitive routines of Nelson and Winter are embedded in the practices and minds of engineers, these rules introduced by Rip and Kempt are embedded more widely in the "knowledge, actors practices, governance structures, manufacturing processes and product characteristics".

Towards a new food production and consumption regime?

In recent years, there has been a vigorous debate on the notion of a possible shift from a productivist to a post-productivist agriculture regime.

It is broadly agreed that the productivism regime has been characterized mainly by the following characteristics, briefly represented:

1) the adoption of Fordist regimes in agriculture production, the so called "industrialisation of agriculture", resulting in agricultural holdings increasingly embedded in profit maximisation and in the emergence of large agribusiness often poorly rooted in local rural communities;
2) the adoption of farming practices based on techniques associated with increased mechanization and increased use of chemical inputs in order to maximize food production;
3) the strong financial state support through farm subsidies, price guarantees and interventionist policies that kept prices for agricultural products artificially inflated, giving to farmers a strong sense of security. Broadly speaking, the main policy goal was to secure national self-sufficiency for agriculture commodities, which eventually led to environmentally harmful intensification often resulting in surplus production;
4) the food consumption regime is characterized by mass consumption of agricultural commodities and the expansion of world food trade in a rapidly growing capitalist market.

If productivism has been more clearly defined in rural debates[6], post productivism is still a very contested concept. Many definitions of the latter are based on antithesis with productivism[7].

It is widely recognised that the post-productivism has been characterized by a widening of the agricultural community, with the inclusion of formerly marginal actors into the core of the policy-making process, resulting in both a weakening of the corporate relationship between agriculture ministries and the farming lobbies and newly empowered actors such as the environmental NGOs (Marsden et al 1993). This has facilitated the injection of "green" ideas into the agricultural policymaking process (Lowe et al 1986; Hart and Wilson 1998).

Of equal importance has been the social and economic restructuring of the countryside and the reconstitution of actor spaces through urban-rural migration that has brought mainly "migrants" into rural areas for lifestyle, naturalistic and security reasons (Cloke and Goodwin 1992; Lowe et al 1993). These changes to the "traditional" countryside since the 1980s have led some to argue that "migration of people to the more rural areas of the developed world . . . forms perhaps the central dynamic in the creation of any post-productivist countryside" (Halfacree and Boyle, 1998, 9). New interests and actors are coming on the scene in an attempt to create a

[6] There is a large consensus that the conceptualisation of productivism is based on the definition given by Lowe et al (1993, 221), as "*a commitment to an intensive, industrially driven and expansionist agriculture with state support based primarily on output and increased productivity*". Many characterisations of productivism emphasize its environmentally destructive nature based *on the drive to maximize food production through the application of ever more intensive farming techniques and biochemical inputs*.

[7] The concept originates in the early 1990s (e.g. Shucksmith, 1993: Ward, 1993) when the productivism regime was increasingly questioned by various state actors and academics on the basis of ideological, environmental, economic and structural problems, leading some to argue that the productivism ideology was "in disarray" (e.g. Halfacree, 1997, 1999; Marsden, 1988a; Wilson and Wilson, 1997). The very first use that we have uncovered is located within this context in a paper by Munton et al (1990) on options for change among upland family farm businesses (Munton et al, 1990: 10): "*The post-productivist [] period that agricultural policy, farmers and the food industry are now entering will mean that the margins of profitability will become tighter and the overall logic of the agricultural treadmill (involving increasing stocking levels, scale and level of subsumption) will be increasingly questioned*". Scepticism, however, set in, with some critics referring to the concept as a "myth" (Morris and Evans, 1999, p. 352) and a "false blind alley" (Evans et al., 2002, p. 328). Infact, there is no clear definition of Post-productivism, and a lack of a clear consensus as to whether the new regime of Post-productivism has fully superseded the productivism and if the Post-productivism has created a "new period of stability". In the absence of a commonly agreed upon definition of post-productivism, previous work has conceptualised Post-productivism as the antithesis with the dimensions of productivism. For instance, Bradshaw (2004) has suggested that post-productivism "*reflects the postulated reorientation of primary agriculture from meeting the singular goal of producing the greatest quantity of food at the least possible cost to meeting multiple goals such as producing quality food, maintaining rural livelihoods and landscapes and promoting environmental stewardship*".

rurality starting from their (usually urban) image of the rural (Halfacree, 1999). Farmers, therefore, face new challenges over new challenges, such as reducing on-farm pollution and environmental management practices (Ward et al 1995).

Actors
• Inclusion of formerly marginal actors at the core of the policy-making process (Cox et al 1988; Buttel et al 1990; Hart and Wilson 1998) • Weakening of corporate relationship between agriculture ministries and farming lobby (Marsden et al 1993; Lowe et al 1993) • Changing power structures in agricultural lobby (Winter 1996) • Counterurbanization: social and economic restructuring in countryside (Cloke and Goodwin 1992; Lowe et al 1993; Halfacree 1997b; Halfacree and Boyle 1998) • New role of farmers

Changes in agricultural policies since the mid 1980s in the European context are widely recognised as one of the most commonly mentioned dimensions in conceptualizations of post productivism (e.g. Fennell 1987; Whitby 1996, Marsden et al 1993; Ilbery and Bowler 1998). For example, post-productivist environmental discourses are seen to permeate policy documents starting from the "future of rural society" (e.g. CEC 1988 1996), the accompanying measures to the MacSharry Reforms (Whitby 1996; Potter 1998) and the agri-environmental package in Agenda 2000 (Bignal 1999; CEC 1999; Buller et al 2000).

Generally speaking in policy terms, the shift towards post productivism is generally seen as characterized by a reduction of state subsidies, indicative of a gradual loss of the ability of the state to influence agricultural economic performance (Marsden 1999). Further, the post productivism has been characterized by a re-regionalization of governance of rural areas (e.g. Marsden 2000; Ray 2000), and increased complexity within agricultural institutions (Munton 1995; Halfacree and Boyle 1998).

It has been, however, questioned whether these "greening of agricultural policies" should be seen as true indicators of a shift toward post-productivism. Although many have suggested that new policies that encourage sustainable environmental management on farms clearly indicate a shift toward post-productivism (e.g. Marsden et al 1993; Whitby and Lowe 1994), other scholars criticized these policies as mere different tools still aimed at farm income support rather than environmental conservation (e.g. Baldock et al 1990; Pretty 1998). Potter (1998) suggests that "most agricultural policies in the EU and USA are currently either at

the discourse stage, but rarely at the persuasion stage". For instance, the agri-environmental packages in Europe are open to doubt their eligibility as indicators of post-productivism: farmer participation is voluntary, leaving many non-participants who may continue to farm in productivist ways; land is enrolled for only a temporary period (usually 5–10 years) after which farmers may wish to revert back to productivist modes of production; different agencies have different agendas with regard to the purpose and goals of agri-environmental packages, leading to confusion in their implementation and about the goals of these policies (Buller et al 2000). Further, according to some commentators, extensification measures are primarily methods to reduce the budgetary demands of agrarian policy while conveniently paying service to extensification goals. Further, the most relevant critique concerns the fact that the implementation of extensification entails a simple reactive response from farmers. "For the majority of farmers themselves, participation in an agri-environmental scheme does little or nothing to challenge the nature of conventional (productivist) food production practices" (Morris and Potter, 1995).

Rules and institutions (agriculture policies)
• Reduced financial state support; move away from state-sustained production model (Marsden 1999) • Demise of state-supported model of agricultural development which placed overriding priority on production of food (Lowe et al 1993) • New forms of rural governance (Marsden et al 1993; Pretty 1998; Ray, 2000) • Enhancement of local planning controls (Munton 1995; Halfacree and Boyle 1998) • Encouragement for environmentally friendly farming; greening of agricultural policy (Baldock et al 1990; Clark et al 1993; Potter 1998; Wilson et al 1999) • Increased regulation of agricultural practices through voluntary agri-environmental policies (Cloke and Goodwin 1992; Ward 1993; Hart and Wilson 1998) • Move away from price guarantees; decoupling (Potter 1998; Pretty 1998) • Increasing planning regulations for agriculture (Cloke 1989; Marsden et al 1993; Lowe et al 1993) • Loss of security of property rights (Cloke 1989; Whatmore et al 1990; Marsden et al 1993)

Finally, the conceptualizations of post-productivism have also been closely linked to new types of farming techniques.

The new farming techniques are usually characterized by reduced intensity of farming and reduced use or total abandonment of chemical inputs (Morris and

Winter 1999), a move toward environmental conservation (Adams et al 1992 1994) and, more generally a gradual replacement of physical and external inputs on farms with knowledge and on-farm inputs (Winter 1997; Wilson 1997c; Winter 1999). Many commentators argue, therefore, that there is a strong conceptual link between post-productivism and the shift toward environmentally sustainable agricultural practices (Allanson et al 1995; Altieri and Rosset 1996; Pretty 1998). Examples of shifting agricultural practices in the post productivist agriculture include the shift from conventional to organic farming (i.e. Tovey 1997), changing notions of "best" agricultural practice that emphasize environmentally-friendly and extensive forms of production (Wilson and Wilson, in press) and integrated production (Edwards et al 1993; Morris and Winter 1999).

However, there is little consensus as to whether these practices should be seen as vital ingredients of the post productivism. Some, for example, see integrated production as only an easy compromise between conventional and organic farming (Schmid and Lehmann 2000), while organic farming is seen by some as a pragmatic (and arguably, therefore, even productivist) response to rapidly growing consumer demand (Buller 1999). Further, equating extensification with post-productivism also neglects that land abandonment (a particular problem in Mediterranean countries) may also lead to environmental degradation, thereby challenging the typically northern and western European assumption that necessarily leads to an improvement in the state of the environment.

Another key piece of evidence supporting the transition from productivism is the "turn to quality" in agri-food systems8. According to several commentators quality is exclusively associated with alternative and "locally orientated" food supply chains, as the antithesis of quantity. An example of this is the EU's 'certificates of special character": PDOs (Protected Designation of Origin), PGIs (Protected Geographical Indication) (Ilbery et al., 2000).

However, Evans et al. (2002) highlights how notions of quality can be appropriated in various and competing ways by different actors within the food supply chain9.

[8] The "turn to quality" arose from consumer concerns about the impact of productivist agriculture on the environment, food safety, farm animal welfare and rural economies. Second, quality foods provide to particular groups of consumers (elites) the opportunity to differentiate themselves on the basis of the cultural capital (Bell and Valentine, 1997). Third, the production of quality foods is seen as a marketing opportunity for producers and other food system actors. Fourth, the interest in quality is tied up with new approaches to supply-chain management on the part of retailers attempting to ensure market share and a competitive edge. In the light of a series of food scares, indeed, supply-chain management with quality as a focus has become a crucial insurance policy for the major food retailers.

9 They argue the reason this is problematic is related to the meaning of quality. Indeed, as Ilbery and Kneafsey (2000a: 217) argue, "quality is a complex notion, the meaning of which may vary for specific products and between individuals, regions and countries. It is socially constructed through the interplay of

Therefore, they demonstrates that it is largely meaningless to associate unproblematically quality with post-productivism, suggesting that quality exists within productivist food systems and does not necessarily represent a substitution of them. For instance, quality are being introduced into the mass food market through quality-assurance procedures (Marsden et al., 1997), such as the Hazard Analysis and Critical Control Point System, and multiple retailers establishing new supply chains based on particular quality-assurance schemes (Morris, 2000; Morris and Young, 2000). The result is a possible coexistence of quality and quantity.

Another key element used as a descriptor and theorization of post-productivism is on-farm diversification and pluriactivity (Evans and Ilbery, 1993). Diversification can be defined as "the movement to develop new sources of on-farm income generation from non-agricultural and novel agricultural enterprises" (Evans and Ilbery, 1993). According to some commentators, if farm diversification represents a central process of post-productivist agriculture, some diversification activities may lead to increased agricultural production, may be environmentally harmful, and should therefore be classified as "productivist" (Lowe et al 1993).

Farming techniques and resources
• Reduced intensity of farming (Munton et al 1990; Potter 1998) • Reduced use or total abandonment of biochemical inputs (Ward 1995; Morris and Winter 1999) • Shift toward sustainable agriculture (Pretty 1995; 1998) • Replacing physical- external inputs on farms with knowledge inputs (Winter 1997; Ward et al 1998)

Wilson (2001) suggests that this post-productivism transition may be followed by what could be termed "the multifunctional agriculture regime". That means that a broader spectrum of responses encompasses a wide variety of adjustments in farming (Halfacree, 1999). The notion of "multifunctional agriculture regime" is not a new terminology, as it has been used by many in the context of

different actors who may seek, for various reasons, to interpret, represent and regulate quality in particular ways". Thus, while producers may regard quality as a marketing opportunity, consumers may relate quality to concerns over food safety or emphasize 'subjective' indicators of quality such as taste, flavour and appearance. Regulatory institutions may be concerned with so-called 'objective' indicators of quality, such as the application of hygiene requirements, although, as Ilbery and Kneafsey (2000a: 218) go on to argue, 'the very objectivity of these indicators is socially constructed and will vary according to political and economic pressures, scientific understandings and cultural contexts.'

"multifunctional agriculture" and has been used by EU policy-makers as one of the key notions for future policies for a sustainable European countryside.

The multifunctional rural regime includes the multitude of different actor responses to the challenges of post-productivism, and better encapsulates the diversity and spatial heterogeneity that can currently be observed in modern agriculture and rural society.

If we accept that the post-productivism is multi-faceted, we can argue against a directional shift from productivism to post-productivism in agriculture. However, such alternative conceptualisations of agricultural goals are like a constellation of emergent niches, which are embedded within exiting "socio-technical systems" (Rip and Kemp, 1998). In order to explore how and if the process of regime transformation is occurring, the main focus of this work will be the analysis of several case studies which embody some of the main innovation trajectories of the post-productivism agriculture: regional products, organic farming, local circuits and farmers' markets.

Given the breadth of empirical scope, the variety of niche and regime members and the structural characteristics of niches, radical changes are likely to proceed through a complex and unique history of interrelated events. The key for successful and sustainable change is the coordination of resources and knowledge across different coalitions of actors, possessing the wherewithal to create alternatives. This will be built upon active processes of negotiation which can generate coherence and sufficient consent to put change into practice. Recognising this, we can make some generalisations about "socio-technical" regime changes using a conceptual perspective on the fundamental processes that shape regime transformation.

A re-examination of the organics development: From productivism to post- productivism … and back again?

The development of organic agriculture represents one of the most outstanding examples of the complexity and contradictories of the post productivism transition. In the face of several ethical, health and environmental concerns with the dominant food system, organic practices constitute a radical break with the mainstream food regime: "at the first glance, organic farming ostensibly incorporates and builds upon complicated natural systems, in sharp contrast to the simplification and

standardization that often characterize industrial agriculture" (Guthman, 2004)[10]. As already said in the previous section, Wilson (2001) includes organic farming as a key "indicator" of post-productivism.

Much of the previous research on the development of organic farming has implicitly or explicitly adopted an innovation diffusion approach (Ilbery et al 1999, Colman 2000). Organic farming is seen as an innovative way of envisioning and practicing agriculture. Its innovative force manifests itself in various aspects.

First, organics implies a change in the system of practices and resources (or, in other words, artefacts) as it involves the development and diffusion of more environmentally sensitive production practices as opposed to those adopted by mainstream agriculture[11].

Second, some innovation theorists have recognized organic practices are based on a "creative destruction of knowledge, rules, habits of thought...". Accordingly, in organic farming, knowledge is tied to both local practices of production and an acute sensitivity to ecosystems and natural processes. Many studies suggest how organics has utilized informational innovations more prominently than technical innovations. Therefore, the success of organic farming depends on knowledge networks, with those engaged in organics actively seeking information from others involved in organic farming and from outside of the mainstream of agriculture. The knowledge "deficit", which characterize the organic sector, paradoxically benefits the organic farmer as in seeking this knowledge they become engaged with the wider networks of organic farming and they become knowledge agents (Morgan and Murdoch, 2000). In other words, organic farmers are able to blend their local, context specific knowledge with that of the wider networks of organic information to their own benefit (Morgan and Murdoch, 2000: 168).

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[10] Many writers put much emphasis on organic farming and organic food as a way to move back towards nature or more natural food (Murdoch et al. 2000). In addition, organic farming has been connected to re-linking the producer and consumer, to reflect newer values, such as the environment and animal welfare (Tovey, 1997; Michelsen, 2001). Moreover, the organic movement supposedly puts rural livelihoods first, suggesting an attention to the social justice issues that have been shunted to the side in the interest of farm productivity and feeding the world (Guthman, 2004).

[11] According to Polany (1992) organic farming practices are those "which co-exist rather than dominate natural systems; build soil fertility and minimize pollution; ensure the ethical treatment of workers; consider wider social and ecological impacts of agriculture systems".

The ideological and cognitive frame of organics derives from a radical interpretation of the mainstream agriculture critique, first undertaken by some broadly defined social movements[12]. Each of these movements, although without

[12] *The pressure from outsiders:* It is clear that important the development of a new cognitive frame occurred through the emergence of new social movements who act as pressure groups. The first generations of organic farmers has been strongly influenced by the "green revolution" critique, raising increasing concern with the environmental impact of industrial agriculture, with the quality of life of rural population and rural employment, particularly to the extend that existing poverty was linked with environmental degradation. Further, the organic movement have embraced many of the elements of the contemporary agrarian populism, for example its concern with corporate power, the role of big science in agro-industrialisation of farming and ecological outcomes. Therefore, another key concern associated with conventional agriculture was its high dependency on technology and science (Beeman, 1995), which has been mainly captured by large scale and agribusiness interests. For many farmers, indeed, the greatest part of their relevant knowledge was carried through marketing networks of seeds, fertilisers, machinery, pesticides. In this case, innovation was produced outside the farm and of the farmer's network and farmers' learning capacities could be only linked to their speed of adaptation to change and to their capacity of making strategic alliances with the right input providers. Conversely, the new agrarianism, together with the social movement of "back to the land", see the family-owned and small scale farm as the locus of social justice and ecological sustainability. Therefore, at least during the earlier stages, organic agriculture was envisioned as a system of small scale local suppliers whose direct marketing, minimal processing and alternative forms of ownership explicitly challenged the established food system.
In addition, the organic farming movement has drawn from its connection with health food movement. From the consumer perspective, the search for "good food", liaising around health, and also encompassing safety and taste is the most often cited reason for making organic food purchasing decisions (Miele, 2001; McEachern and McClean, 2002; Kirwan, 2004). Some research has found how human, animal and environment life values exist for organic food consumers are strongly interrelated (Miele, 2001; McEachern and McClean, 2002). At least in USA, the connection between organic movement and health commitment consumers has been well explained by Guthman (2004). She traces back the origin of the interest around organic in the early 1070's, when the adherents to the "health food movement" where the first who played an important role in promoting organic farming. Meanwhile, some restaurants in California pioneered a "revolution in food taste", introducing organic and locally produced food, contributing to the diffusion of organic consumption. It is important to note that the urban component of the organic movements played a important role not only in adhering to alternative food delivery systems but also in modelling themselves and forging direct links with the countryside. More often actors that started the organic movements, were urban rather than rural. A wide range of studies have found organic farmers to have higher level of educational attainment, and more likely to come from urban background and have less farming experience (Dabbert et al 2003). The urban sources of the organic movement's growth has been detected also by Michelsen et al. (2001) who posit that organic faming is to be considered as representative of outside influences.

controversy, evaluated the dominant agriculture context as source of a problem, and started different processes of search of new cognitive frames. From this critique of mainstream agriculture, Michelsen et al. draw (2001) the conclusion that "the social organic movements created an alternative set of productions standards which forms the basis of an entire set of related but distinct institutions". Accordingly, the shift towards organic production has involved a visible transformation of the set of social relations (Guthman, 2004), as it thus lead to the creation of alternative organisations and networks of producers, processors, retailers and consumers.

However, organic agriculture has witnessed a very dynamic development in the last few years (Michelson 2001a) and it is about to move into a new phase. The market growth in organics resets on its distinction as the only form of alternative agriculture to have a substantive meaning in the marketplace. Recent studies raise concerns about a number of critical changes accompanying the growth of the organic sector, raising new opportunities, but also new questions and challenges.

First, it is not longer recognized as unitary movement with a clear and uncontested identity. In truth, the unification of social themes into an organic movement has not been without contradictions and exclusion. In fact, there has always been a tension between those who see organic agriculture as simply more ecologically benign approach to farming and those who seek a radical alternative to hegemonic food systems. Then, accompanying growth of the organic sector, the disjuncture between the discourse of organic farming and what was taking place in the fields and markets is becoming more and more significant, as according to several studies organic farming rarely meets the ideal of farming in nature's image.

Second, the "alterity" of organic has been appropriated and re-defined by the entrance of various actors, among them the agribusiness and the public realm. The debate has hinged on whether they will be forced to or whether social movement resistance and/or the strong hand of public policy might maintain the "alternative" and "transformative" potential of organics[13].

In short, social movements criticised the mainstream agricultural paths, and suggested alternatives. Thus, the social movements were an important pressure groups, demanding that regime actors pay attention to the problem. Their continued criticisms undermined the legitimacy of the existing regime, creating normative pressures on regime actors to work towards solutions.

[13] Therefore, as with post-productivism, dissenting voices have protested the innovative potential of organics. From a theoretical point of view, Guthman (2004) has voiced the most influential critique to organic farming. She suggests that three main threats loom over organic

Although organics emerged in niches, its implementation and broader diffusion has depended on these gradual transformations of the existing regime. As matter of fact, it has been recognised that the system of rules and norms[14] which has been set up has over long time allowed the growth of these experiences, as well as the entrance of new and big players within the organic sector, has affected the structure and dynamics of the organic niche.

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agriculture: a) "commandeering the label", that is organic production rules' detachment from the original values and meanings, due to a need for simplification and to ensure economic viability; b) "appropriation", that is the extraction of surplus by bigger players, based on their power along the food chain; c) "conventionalisation", that is the tendency by farmers to adopt a less restrictive approach to organic farming in face of price pressures. According to Lockie and Halpin (2005), "conventionalisation" refers to "a process through which organic agriculture comes increasingly, as its growth, to resemble in structure, practice and ideology the mainstream food sector it was established in opposition to". In other words, the processes of market growth, to some extend, has contributed to erode the innovative/alternative potentiality of organic farming, as long as the organic sector is "industrializing" and globalizing at a rapid pace. In short, what has been conceptualised as conventionalisation theory refers to a multi-faceted process, involving a range of various elements, including issues of scale (small producers vs new-comers larger farms; artisanal vs industrial), market dynamics (direct marketing vs wholesalers or large retailers), transformational value (abandonment of the initial mission and erosion of the original meanings) and quality (heterogeneity vs standardisation). In spite of the above quoted studies, there has been comparatively little debate over what conventionalisation actually is (Lockie and Halpin, 2005).

[14] In response to increased pressures, important cognitive changes occurred in the public discourses and narrative. Direct support to organic and converting producers was seen as a means to meet increasing consumers demand as well transfer income to farmers for environment and other benefits. Generally speaking, we can say that the implementation of organic farming was accompanied by many cognitive, normative and regulative changes in the regime, as Guthman (2004) says: "the evolution of organic farming is inseparable from that of the infrastructure that supports them. The market growth in organics (...) stems directly from the nature of its institutional support. As a part of a broader wave of social movement institutionalization that began in the early 1970s loose associations of organic growers gradually turned into trade organizations and certifying agencies, taking the lead in an otherwise multiconstituent movement. After considerable debate, these organizations began to define "organically grown" specifically as a production standard for farmers (and later processors). Thereafter, the movement evolved into a drive for institutional legitimacy and regulation of the term organically grown in the interest of trade... This codification arose from multiple intentions, but its greatest success was to open up markets. As such, the drive fro regulatory legislation effectively subsumed much of the organic movement into an organic industry".

According to some commentators, this process of codification entailed a rationalisation and simplification of the original organic meanings. The fact that codified standards focus on production process only, has already compromised a more holistic vision of organic. On the other hand, deeper meaning of organic farming, such as social justice have not been codified in existing rules and regulations. Similarly, state involvement in Ireland's organic sector, as Tovey (1997) argues, had the effect of "disregarding, ignoring or repressing the ideological content of the movement". Rule-making processes eventually imply another effect, which is inherent to the dynamics of inclusion/exclusion in/from the organic network. There are any evidence that the patterns of certification are driven more by market consideration than by ideological convictions. Further, the direct costs of certification represents a significant barrier to entry and it favours large scale growers. Conversely, many of more marginally situated small-scale growers who sell local markets decline to certify. Some of them felt the costs of certification to be unequal to the benefits and although many actually followed certification bodies guidelines they object to supporting a certification bureaucracy for sales that are based on trust. Large-scale, in contrast, gravitate towards certification because it is the only way they can establish trust. In short, all of these evidence show that we can see that this fee structure may have contribute to the bifurcation that characterized the sector, bringing to a marginalisation of smaller organic growers from the certification system. The basic problem is that farmers face many difficulties to convert into organics and the organic regulation has not been enough supported by adequate agricultural research.

Another key piece of evidence of the changing regime is the entry of "dominant" actors from the conventional agro-food chain (agribusiness-like firms in the organic sector). In spite of the conclusion drawn by Pollan who suggests that "organic farming cannot be reconciled to the logic of corporate food chain" (2001a), recent researches have investigated a process of bifurcation between "a conventional organic sector dominated by capital intensive, specialised, vertically oriented and export oriented growers and a residual organic sector comprising smaller scale and more diverse enterprises often supplying to more localised markets and operating in different production spaces". As a result is the appropriation of the economic benefits associated with organic food production (Buck et al., 1997). It is argued that the price premiums available for organic produce have attracted the interest of larger companies. Operating at larger economies of scale, the entry of these farms has the potential both to erode price premium and to displace smaller farms as preferred suppliers to retailers and other intermediaries due to the capacity of larger farms to provide greater continuity of supply and lowered transaction costs. This process is highlighted also by Smith and Marsden (2004, p. 355) as "...a real

danger ... that retail-led organic supply chains will exhibit many of the long standing features of the conventional food chains, particularly the operation of a farm-based cost-price squeeze"[15].

[15] The entrance of "new players" within the organic sector is resulting in a process of de-radicalisation or, in other words, erosion of deep values, according to which the values and beliefs motivating newer and larger organic farmers are implemented less. Guthman (2004) argues that there is no question that the pioneering organic growers have been motivated by different values from those of conventional farmers, as they operate under a different "paradigm". It also true that smaller growers more often voice social movements ideals, while non-codified values as biodiversity, self-sufficiency, energy recycling and community building are more easily bypassed by Californian agribusiness growers. Yet, even in this case, the situation is not very clear. This not necessarily means that smaller and/or movement farmers necessarily practices a deeper form of organic agriculture. Organic practices is widely varied. Lockie and Halpin (2005), at least in the Australian organic, throw doubt on the ideological basis of the conventionalisation thesis. They find that newcomers and long-standing organic producers share the same degree of variability in terms of motivation and farm structure and scale. In addiction, according to them, there are some suggestions that larger and more rapidly expanding farms in some product sectors have implemented even more environmental management practices than smaller or former ones. It is interesting to note that several researches point out a link between marketing practices and values commitment. Direct marketing, for example, through subscription boxes and farmers' markets requires as diverse a crop mix as possible. Conversely, the agribusiness participation in the sector poses the largest threat to an ecological farming strategy.

Chapter II

The dynamics of regime reconfiguration

In the previous chapter we have explored the concept of socio-technical system in order to understand the engagement and coordination of multiple social groups involved in the production, distribution, use and regulation of technologies (Geels, 2004). From these approaches it emerges clearly that innovation is not only technological innovation, but also it involves changes in production, consumption, distribution routines ca: "a novelty is a new way of doing and thinking, a new mode that carries the potential to do better, to be superior to existing routines" (Ploeg et al 2004, p.1). In other words, any successful and radical change involves changes in the inter-relations between actors, institutions/rules and resources (Brunori et al, 2007).

Yet this framework leaves still unresolved the dynamics of radical changes, as the incremental innovations do not threaten the stability of existing regimes, nether provide spaces for "mindful deviations" from their rules. Schumpeter (1934, p. 66), introduced the concept of radical innovation as a process of breaking the existing cognitive routines (he called a mechanism of "mis-matching"), resulting in novel paths and trajectories.

Understanding incremental innovations and radical changes: a multilevel perspective

Much of the literature on technological transitions focuses upon changes from one socio-technical configuration to another, investigating the dynamics substitution of technology, as well as changes in all other elements of the socio-technical systems – actors and rules. As Geels points out (2002), "reconfiguration processes take place in all dimensions of socio-technical systems". Given these assumptions, radical innovation is mainly related to the establishment of new patterns of interaction among economic and social actors - producers, users, policy makers, scientists,

special-interest groups - and between them and tools/natural resources/artefacts and rules/regime (Bijker, 1995; Williams and Edge, 1996). In other words, radical innovation is related to the establishment of new socio-technical systems.

In the technology studies, the actor-network theory (e.g. Latour, 1991, 1993; Law and Callon, 1992) regards transitions as changes in the configurations of the linkages between technical and social elements: "innovation is described as a process of shifting assemblies of associations and substitutions, a reweaving of elements. Changes in one element in the network can trigger changes in other elements". In other words, radical innovations occur when the network of production changes its way of doing things, so that innovation is mainly related to the resulting pattern of interaction between people, tools, natural resources.

Despite all the theoretical efforts to conceptualised radical changes, it is still unclear how do these reconfiguration processes come about (and what are the mechanisms of reconfiguration). These questions reveal important implications as the policy challenge is to transform existing regimes into more sustainable configurations (Berkhout, 2002; Rotmans and Kemp, 2001, Smith et al, 2005).

It is widely recognised that there is not a sudden shift from one regime to another, but the regime reconfiguration occurs through a gradual process. "*Transitions occur through gradual regime transformation. What initially may appear as a revolution turns out to be the outcome of a series of adaptations and changes over time (Summerton, 1994). Cascade dynamics are important, meaning that changes in one elements of the regime triggers changes in other elements which, in turn, trigger further changes. Such reconfiguration processes take place on all dimensions of the socio-technical regime (e.g. markets, user groups and user practices, technologies, production networks, policies)*" (Van den Ende and Kemp, 1999). A review of the literature suggests that such reconfiguration processes do not occur easily, because the elements in a socio-technical configuration are strongly linked and aligned to each other (Geels, 2000). So that, it is clearly understandable that "*radical innovations have a hard time to break through, because regulations, infrastructures, actors networks are aligned to the existing technology. Novelties often face a mismatch with the established socio-institutional framework*" (Freeman and Perez, 1988).

To understand transitions from one system to another a multilevel perspective has been introduced with the aim to combine insights from evolutionary economics and technology studies (Kemp, 1994; Schot et al., 1994; Rip and Kemp, 1998; Kemp et al., 1998; Van den Ende and Kemp, 1999; Rip, 2000; Geels and Kemp, 2000; Kemp

et al., 2001). These insights have been synthesised in three different organisational levels: niches, socio-technical regimes, socio-technical landscape; "*the different levels are not ontological descriptions of reality, but analytical and heuristic concepts to understand the complex dynamics of socio-technical change*" (Geels, 2002). To understand regime changes interactions with two other levels are crucial (niches and socio-technical landscape).

The stability and inertia of established "socio-technical regimes" results from providing orientation and coordination to the activities of relevant actor groups. This stability is of a dynamic kind, meaning that innovation still occurs but is of an incremental nature. In evolutionary terms, socio-technical regimes thus function as "selection and retention mechanism". This notion of socio-technical regime helps to explain why most change is incremental rather than radical, as it is aimed at regime optimization rather than regime transformation. It helps to understand why radically innovations usually take time and meet resistance, even inside the organization in which they are produced.

As explained, there is a range of stabilising mechanisms that work against the reconfiguration of existing regimes. The question arisen from several scholars is: How do socio-technical regimes change? Or in other words, how do regime transitions come about? Are there particular patterns and mechanisms in transition processes?.

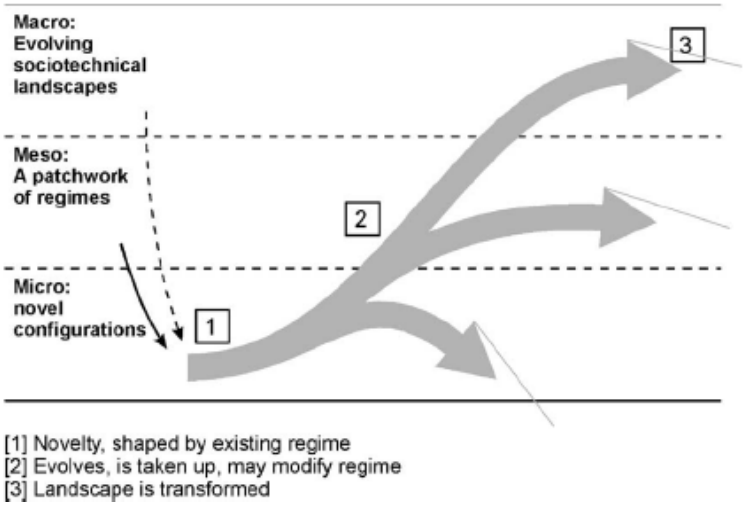
According to the multilevel perspective, while regimes refer to rules that enable and constrain activities within communities, the "socio-technical-landscape" refers to wider technology-external factors, consisting of a set of deep structural trends. The metaphor "landscape" was coined because it connotes a sort of "hardness", including institutional structures or wider socio-cultural attitudes. The landscape is an external structure or context for interactions of actors. Clearly, the landscape is even harder to change than regimes: "landscapes do change, but more slowly than regimes, but more often changes in socio-technical landscapes are important drivers for radical innovation", as the opportunities for radical innovations to escape from the niche-level are provided by changes merging from the landscape which create a "window of opportunity" (Christensen, 1997). These changes at the landscape level that may put pressures and tensions on the regime, and its stability may be weakened (Geels, 2002).

The technological transition literature suggests that, "while regimes usually generate incremental innovations, radical innovations are generated in niches" (Geels, 2002). Representing localised breaks of the existing routines, niches have

been defined as socio-technical systems governed by paradigms different from those prevailing into dominant regimes (Van der Ploeg et al., 2004, Rip and Kemp, 1998; Van Driel and Schot, 2005; Geels, 2005a,b). As Geels argues (2004), the difference in socio-technical systems developed within niches and regimes is the degree of stability, as "in niche not all rules and social networks have yet crystallised" and then, "... might stabilised as the outcome of successive learning process". Their main characteristic is that they are spaces whereby norms, rules, routines of production, distribution and consumption are looser, subject to a rapid evolution. Using Latour's (1984) concepts, in niches there are much less "black boxes" than in dominant socio-technical systems. In niches there is a large share of "tacit knowledge". Niches are networks wherein learning processes and societal embedding (capital formation, set up of distribution, dissemination of knowledge, gaining of user acceptance) processes are activated (Kemp et al 2000)[16].

[16] Several studies on rural change processes exploring the recent dynamics of rural networks have demonstrated that such niche-driven innovation paths exists. For example, alternative food networks (Goodman 2003, Marsden and Renting 2003) introduce new norms of consumption which eventually would induce retailers to change the ways they choose, distribute and communicate the products. Brunori and Rossi (2000) have illustrated these processes by analysing the development of wine routes in Tuscany as progressive aggregation and reciprocal adjustment of roles and identities between wine producers, local institutions, tourists, agri-tourist farms etc. Once consolidated into systems, wine routes can act as actors into higher level networks, for example by lobbying with regional administrations or creating networks of wine routes. As long as niches develop and consolidate, they modify the networks wherein they operate, and challenge dominant rules, actors, and artefacts by putting pressure on them. They are, therefore, incubators for radical innovation.

Figure 2 The dynamic of socio-technical change (from Geels, 2002)



In sum, Geels argues that the multilevel perspective offers an useful framework able to combine all the previous evolutionary views. Evolution as "variation and selection" is encompassed by conceptualising regimes as selection and inertia of established technologies, whereas niches are the locus where radical innovations are generated and pioneered.

In sum, niche-innovations break through in mainstream markets and replace existing systems, when several processes link up: "(a) *stabilisation of the niche-innovation in a dominant design, increasing support from powerful actors, and improving price/performance characteristics; (b) external environmental changes, which create pressure; (c) weakening and reconfiguration of the existing regime*" (Geels, 2006). In this way a successful niche can challenge the dominance of an incumbent regime (Geels, 2002a,b).

The important point of the multi-level perspective is that the further success of a novelty is not only governed by processes within the niche, but also it requires developments at the level of the existing regime and the socio-technical landscape. "*It is the alignment of developments (successful processes within the niche reinforced by changes at regime level and at the level of the socio-technical landscape) which determine if a regime shift will occur*" (Kemp et al., 2001, p. 277). Once established, a new socio-technical regime may contribute to changes on the landscape level.

In the next chapter I will briefly describe the conditions at the basis of the niches establishment, the mechanisms of their consolidation and growth, and how their development can contribute to drive and stabilize the transition towards a new regime.

Chapter III

Regime shifts to sustainability through processes of niche formation, consolidation and hybridisation

Niche driven innovative paths are very important for a full understanding of driving forces behind the shift toward a post productivism and in which ways they can contribute to consolidate new regimes. First, the way in which new socio-technical systems are built and the ways in which niche-actors negotiate their values, behaviours, resources and regime-rules are crucial in understanding transition trajectories. Second, the transition may require negotiation in balancing the numerous and complex ideologies and resources of often competing niches and regimes interests.

To better understand how niche driven paths can contribute to enact a regime reconfiguration, we need to understand the conditions at the basis of different transition trajectories. The model of regime configuration developed by Smith et al (2005) is understood as a function of the following processes:

1. shifting pressures bearing on the regime (at the basis of the niche establishment);

2. the articulation of selection pressures (at the basis of the niche consolidation) through the coordination[17] of resources/artefacts and knowledge available inside and/or outside the regime to adapt to these pressures (Berkhout et al., 2004)[18].

[17] The coordination is a function of rules-setting process

[18] Following a convention first set by Rip (1992) and Schot (1992), these processes can be coupled, as regime members adapting to selection pressures can also seek to influence the selection pressures bearing upon them. Although the articulation of selection pressure and the provision of adaptive capacity are conceptually distinct, the actors and institutional settings involved in each need not necessarily be separate empirically (hence "quasi-evolutionary"). An actor, such as an environmental regulator may simultaneously be intervening to articulate a selection pressure, while also making efforts to help coordinate the resources necessary for adaptation.

The emergence of outsiders pressures and the establishment of the niche

While neo-classical economic analysis of innovation tends to focus on pressures that operate visibly at the level of the firm (such as pricing, competition, contracts, taxes and charges, regulations, standards, liability, profitability, skills and knowledge), the analysis at the level of the socio-technical system, as above described, goes beyond this factors to consider also pressures emanating from the socio-technical landscape (Geels, 2004). Broadly speaking, tensions from landscape are those enacted from all the actors that are excluded from the regime community. Smith et al argue that the presence of such pressures bearing upon a socio-technical-regime creates the pre-conditions for any innovation development. Similarly, Van de Poel (2000, 2003) argues that regimes only transform substantially if there is pressure from outsiders: "*When regimes create negative outcomes (e.g. market failures, negative externalities), outsiders may organise themselves and engage in activities to influence regime insiders*".

Van de Poel (2000) distinguishes three outsider groups who differently act. "*First, societal pressure groups voice protest, demanding solutions for what they perceive as negative outcomes. Outside pressure groups may try to mobilise public opinion and create normative credibility pressure on regime insiders. Societal pressure groups can also lobby policy makers for tougher regulations that would push regime developments in certain directions. The second group are outside professional scientists or engineers. They may possess specialist knowledge that allows them to criticise technical details of regimes. The third group are outsider firms and entrepreneurs who develop technical alternatives and radical novelties that compete with the existing technology*". In short, debates in wider civil society serve to frame the functional reproduction and change of socio-technical regimes (Smith et al, 2005).

According to Smith et al., other pressures can derive from social change which is not targeted at any specific regime, but which can bring about selection pressures on regimes. Examples might include demographic shifts, such as ageing populations in many industrialised countries. Of course, regimes also face tangible competitive pressures from other regimes.

In short, pressures bearing on the regime can be articulated as:

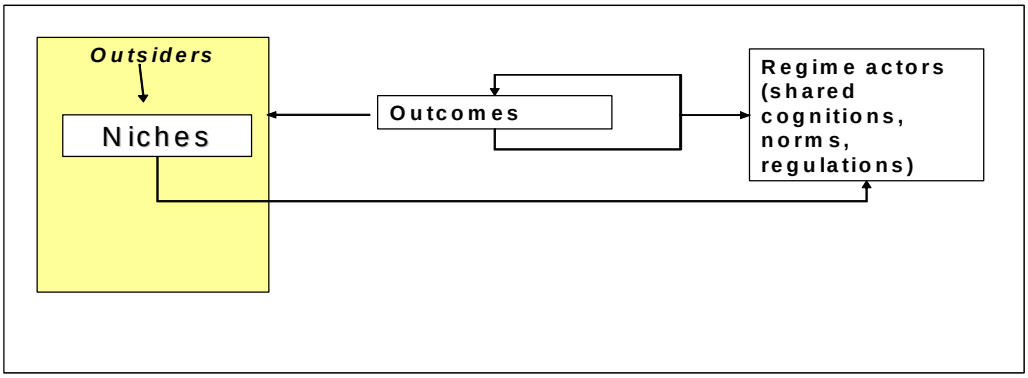
- social pressure groups
- outside professional scientists or engineers

- social change not targeted at any specific regime
- other regimes

According to the multi-level perspective, pressures are at the basis of the emergence of innovative niches, that are not yet so established and coordinated as to constitute a regime (Rotmans and Kemp, 2001; Schot et al., 1994; Kemp et al., 1998; Geels, 2002a,b; Hoogma et al., 2002). Therefore, an emergent niche corresponds in an analytical sense to a new socio-technical system, where still poorly articulated pressures meet with uncoordinated responses[19]. The lack of a clear articulation and coordination between actors is the reason of the low degree of stability of a niche, as "in niche not all rules and social networks have yet crystallised" (Geels, 2004) and there is a large share of tacit knowledge. Therefore, niches are subjected to a rapid evolution.

[19] Regarding this process, actor-network theorists introduced the concept of "problematisation": an initial state of the network, in relation to a specific context (often there is a "critical event" that acts as a catalyst), gives rise to pressures that put into question the present state of the matter, until a problem is recognized and defined. For example, the BSE crisis has emerged initially as a crisis, but the recognition and definition of the problem emerging from it is a result of a rather long process. The problem, once recognized, raises strategic questions: e.g. how to restore consumers' trust or how to maintain a minimum level of welfare in the countryside. Such questions are addressed through one or more initiatives started by actors who build alliances to carry them out. Again, to address the strategic questions raised by the BSE problem (How to stop the epidemic?; How to avoid new cases in the future?; How to restore consumers' trust?) a large number of initiatives have been taken (labelling schemes, codes of practices, regulations, new control systems, new technologies) at all levels: public, farmers' associations, farmers, NGOs, etc[19].

Figura 3 Sociological dynamics of regime transformation: the niche establishment (based on Geels, 2006 and Van de Poel, 2000: 388).



Beyond the niche level and towards its structuration: the articulation of selection pressures

Van de Poel's and Geels assume that without at least some forms of pressure it is unlikely that substantive change to the developmental trajectory of a regime will result. A further step in the process of niche consolidation and development is the coordination of these pressures. These pressures, indeed, may be weak and may act incoherently to promote different forms of response, and so may tend to conflict. Smith et al offer the example of the conflicting pressures acting on genetic modification in agriculture, as embodied in strongly positive government and industry commitments in the USA and associated exporting countries, but contrasting with intense consumer resistance and wider institutional opposition in important import markets, such as Europe (Smith et al, 2005). Yet, other times the external pressures can become stronger and more coherently articulated. Therefore, although the existence of such pressures is decisive for any given regime transformation, the technological transition scholars identify at least two main mechanisms of breaking out of radical innovations from niche to regime level: the "niche-cumulation" and the "niche hybridisation" (Geels, 2004).

According to the first mechanism, a successful closure of novelties in niches and their further development occur gradually, as it implies a gradual structuration of the new socio-technical system through progressive processes of actors alignment and coordination (definition and formalisation of a new rules system) and of articulating new and appropriate knowledge (see also Brunori et al, 2007). Regarding this process, actor-network theorists introduced the concept of "translation", which explains how an innovation is developed by the engagement of

both actors and actants[20] within that process. More specifically, actor network theorists define the "translation" as the act of translating perceived needs into an inscribed solution which is essential for the strength of intermediaries. According to Callon (1986), translation follows four stages: 1) Problematisation: an actor analyses a situation, identifies and defines the problem and proposes a solution (often there is a "critical event" that acts as a catalyst); 2) Interessement: other actors become interested in the solution proposed and change their affiliation to a group in favour of the new actor. This may be around an obligatory passage point, whereby the principal actor channels all interests in one direction, such as the need to increase productivity to certain levels; 3) Enrolment: the solution becomes accepted as a new concept and a new network of interests is generated; and finally, 4) Mobilisation: the new network becomes established and operates to implement the proposed solution. This leads to the formation of a macro-actor that acts as one entity. Thus a network is formed following translation, and in effect the network of passive agents have become subsumed by the principal actor; becoming part of that actor, and hence the term actor-network (Callon 1986, 1991; Law 1986).

Referring to Murdoch (1998), emergent niches can be assimilated with "spaces of negotiation", as they represent "spaces of fluidity, flux and variation as unstable actors come together to negotiate their memberships and affiliations" (Murdoch, 1998). Therefore, successful novelties activate the production and implementation of new "rules of the game" (Brunori et al, 2007). Rules usually have direct effects on actors actions and responses as they adjust and give coherence to their strategies, aims, preferences, affect actors resource positions, individual learning, etc. At the same time of successful novelties activate "social learning" as through the activation of learning cycles and the strengthening of new cognitive frameworks. Through the effects of social learning, the shared social rule systems are maintained and changed (see first section)[21].

Similarly, Smith et al (2005) suggest that at least two mechanisms are required during the process of transition. The first one refers to a process of pressures coordination, in order to achieve a coherence of visions, values, perceptions and strategies. The lack of pressures coordination, or, in other words the lack of a rules-structure, is preventing any regime transformations. The second mechanism that render these pressures explicit, give them coherence and translate them into a form that enables a response by the regime is a process of articulating new and

20 The actancts can be understood as material objects or artefacts

[21] Following the convention first set by Burns and Flam, 1987, and then, adapted by Geels (2004), these processes can be coupled, as the Actor-rule system dynamics (see first section)

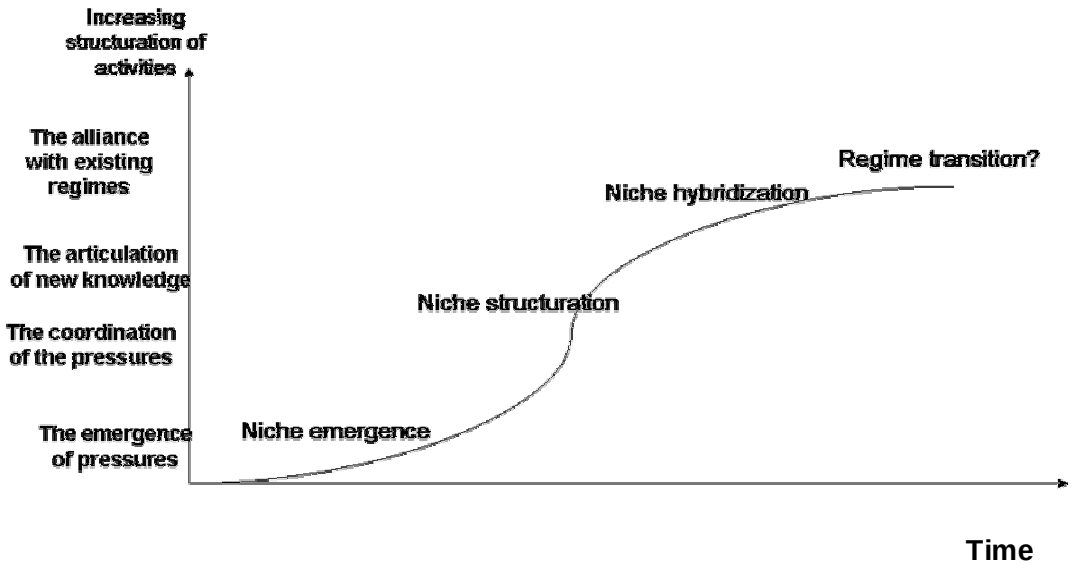
appropriate knowledge, in order to achieve an adequate level of legitimisation from the established regimes.

The concept of "niche hybridisation", which was introduced by Geels (2002), refers to the process through which niches, during their development, must link up with established regimes (in terms of actors, rules and artefacts), often to solve particular bottlenecks. Thus, "old and new socio-technical systems do not immediately compete head on, but form some sort of symbiosis". According to Geels (2002), reconfigurations occur when developments at multiple levels link up and reinforce each other.

Within the innovation literature it has been argued that coalition building in processes of change are rarely considered (Smith et al, 2005). Coalitions of niche actors seeking change have to devise values, strategies and initiatives to disrupt the existing socio-technical regime relations. On the other hand, the role of strategic competition, resistance and alliances between core regime and niche members, is, also vividly important[22].

[22] It is clear that regime membership is neither homogenous nor clearly bounded. However, in some specific contexts some regime members are more tightly interdependent and influential than others. That is, when their capacity in maintaining and reproducing regime functions (through rules coordination) is more intensive than others, and their interests and objectives tend to have a greater bearing on the direction taken by the regime. Often farmers, for instance, are "price takers", rarely engaged directly in shaping the rules and operation of the food supply regime.

Figure 4 A representation of the process from the niche emergence towards a possible regime transition



In more abstract terms, picked from the economic sociology, the process of extending the niche beyond their initial habitat involves changes in the types of social capital, which was utilised by the niche actor-network. Broadly speaking, this process involves changes from being coupled into local, socially integrated networks to establishing more loosely integrated networks across social space. Woolcock (1998) identifies the shift between two different but complementary forms (and sources) of social capital: from embeddedness towards autonomy.

In the "emergent" niches, embeddedness[23] constitutes an important source of social capital. Evan calls "embedded autonomy" in which a "coherent connected development framework emerges as a result of a concrete set of social ties which bind the state to the society and provide institutional channels for the continual negotiation and renegotiation of goals and policies".

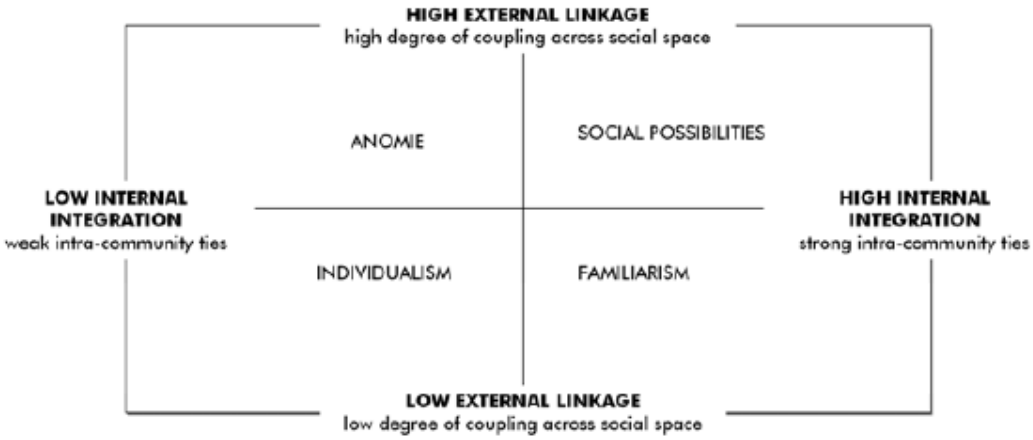
[23] Where modernisation theorists had conceptualised development as a process whereby the economy became increasingly separate from the rules and rituals governing social relations, Granovetter's main contribution (1985) was to argue that "all economic actors are inherently enmeshed in social relations and the development brings about a change not degree of social embeddedness". Embeddedness could take several forms such as social ties, cultural practice and political context.

There is a dilemma, however, related to the “excess of community” (Woolcock, 1998) when all the rules are informal, relational norms are often particularistic, procedural norms and standards are low and there are not any sanction mechanisms. Several studies have concluded that strongly cohesive group hides a dark side, as they can constitute a obstacle to innovation development (Woolcock, 1998; Schulman & Anderson, 1999). In other words, the dark side of embeddedness is that the high degree of density and network closure could (which characterized informal exchanges) implies considerable constrains on members as they attempt to make connections in larger networks coordinated by formal institutions and rules[24].

Therefore, according to Woolcock, positive outcomes are attained when actors are willing and able to drawn on social ties connecting regime resources and niches capacity networking building and knowledge.

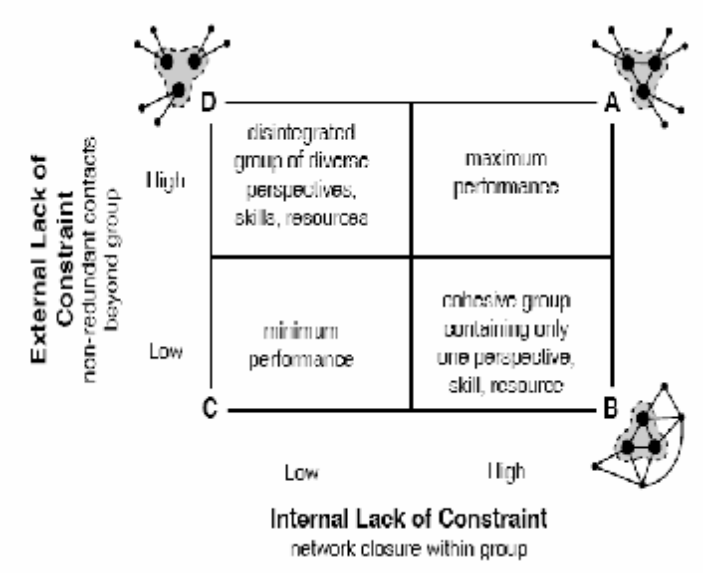
[24] One of the most quoted formulations of the distinction between two basic types of spatial organisation can be found in Murdoch's distinction between spaces of prescription and spaces of negotiation (Murdoch, 1998). Spaces of prescription are "likely to be spaces of relatively fixed coordinates and will tend to be marked out by formal and standardised sets of heterogenous relations (and could, at times, be seen as Euclidian spaces)" (Murdoch, 1998:370). Spaces of negotiation are different, as they "will be spaces of fluidity, flux and variation as unstable actors come together to negotiate their memberships and affiliations " (Murdoch, 1998:370). According to Castells, the places which make up the space of place is constantly under pressure in order to be able to couple up into the space of flows and gain access to the surplus value there. Castells make an important critical point, that as a part of this process, whole countries or parts of countries experience to be decoupled from the global grid and placed outside the important parts of the global economy. This spatial segregation process, whereby parts of a given country's territory are being decoupled from the global economy or at least face a high risk of being so, is of particular relevance when analysing the prospects for place-based development. The main point about Castells notion of space and place is that there is an inherent challenge on behalf of places to be able to couple up into wider networks which spans across various places. In relation to food networks, and in particular regarding local food networks, the challenge is profound, since production of food takes place within spaces of place or spaces of prescription, whereas processes such as consumption of food to a large degree takes place within negotiated spaces where dispositions in food selection are subject to many different forces pulling in different directions. The main challenge for alternative food networks is in this perspective to re-align processes of production and consumption within particular spatial settings, such as localities or regions.

Figure 5 Dimensions of creation of social capital on micro level (Woolcock, 1998:172)



Similarly, Burt (2000) puts into evidence how social ties can be employed to fill "structural holes", that is "potential connections between not yet connected cluster units" (Powell and Grodal 2005), or, as in the case of "redundant ties", as sources of trust, loyalty and resilience of networks. Using the relative weight of the two types of ties, he draws a classification of networks according the following grid:

Figure 6 Classification of networks according to their learning potential. (Based on Burt, 2000).



In other words, the process of extending the niche beyond their initial "habitat" (or "niche hybridisation") involves supplementing bonding social capital with bridging social capital (Paldam & Svendsen, 2000; Baerenholdt & Aarsaether, 2002; Svendsen, 2006).

In relation to the use of the innovation concept in agro-food studies, which have been significant during recent years (Murdoch, Marsden & Banks, 2000; Winter, 2003; Penker, 2006; Sonnino & Marsden, 2006; Sonnino, 2007b), many scholars probe the question whether embeddedness can be seen as an integrated part of the alterity/innovation of "alternative food networks". This question is, for instance, particularly intriguing given that a dramatic increase in the spatial extension of some of these alternative networks is detected. The growth of the market for organic food, for instance, can be attributed to the ongoing modernisation of the food market. In that sense, organic food poses a major challenge in relation to re-embedding organic food networks into well-defined spatial settings.

Some of the general conclusions across all of the empirical studies about alternative food supply chains is that external linkage is of crucial importance for the development of viable networks. Of course this does not imply, that local social integration or the forging of bonding social capital is irrelevant. Therefore, it is of crucial importance for the process of niche hybridisation combining embeddedness with autonomy.

So far, we have discussed the coalition building processes in trajectories of change, paying attention to the role of strategic alliances between core and niche members (along the so called “niche hybridisation” process). In the next section, the outcomes of these strategic games will be further explored.

Chapter IV

The outcomes of the interactions between niches and regime: towards a taxonomy of regime transitions

As above mentioned, regime transitions may require negotiation in balancing rules, perceptions, goals, interests, knowledge and resources between niche and regime members. In the previous section we have discussed the role of strategic alliances between regime and niche members (along the so called "niche hybridisation" process). But Geels (2006) argues that this perspective is far from straightforward in practice. Instead, the dynamics between niche and regime members probably take prolonged conflicts, contestations and power struggles. The transition trajectory as a whole is played out through not only networks building and coalitions, but also active contention, sometimes highly adversarial, between core regime and niche members: dissent and resistance play an important role in precipitating and modifying processes of change. Strategic games emerge around values, such as the prioritisation of different objectives, the allocation of resources and the definition of rules, norms and regulations. As matter of fact, regime actors are unlikely to change their cognitions, behavioural norms and regulations at the first occurrence of "outsider" reactions. Instead, regime insiders must have some capacity and resources to respond to the pressures bearing on them. Van de Poel's and Geels point out that at least some form external pressures discussed above "may change perceptions of regime insiders, who subsequently respond to this pressure by changing their problem agendas and practices, and reorienting development and innovation trajectories". Although niche-driven path seems an obvious outcome of novelty development, it might be possible to find other interpretations to the regime reconfiguration paths. For instance, in a recent paper Geels (2006) proposes the "regime transformation" as an alternative transition path (see also Smith et al., 2005). A perspective to novelty development like this put in light some interesting insights around regime-niche interaction. Basically, this approach puts more emphasis on the role of regime actors and their adaptive capacity to respond to external pressures (Jacobsson and Johnson, 2000). Rather then looking at them only as barriers to the novelty development as belonging to the old regimes, regime actors may be important drivers for the innovative transition. Geels argues that a transition path can be enacted also by regime actors

as they change their perceptions, goals, identities, knowledge and practices, in response to shifting pressures from "outside".

So far, we have seen that the greatest capacity for adaptation may rest in those networks of actors beyond the incumbent regime, rather then being limited to the membership of the incumbent regime (Christiansen, 1997). In other word, when the adaptive capacity of the regime is weak, the innovative niches will be exerting selection pressure, as well as generating the rules, the knowledge and the resources to respond to this pressure.

In short, the articulation of salient pressures for regime change and the build-up of effective adaptive capacity will involve actors interactions, as well as resources and knowledge flows, between niche and incumbent regime members. This framework can be understood as a combination of the two views on regime reconfiguration, suggesting that niche driven and regime transformation innovative paths are not mutually exclusive. The question of how well this process can be achieved has been addressed by Smith et al. (2005).

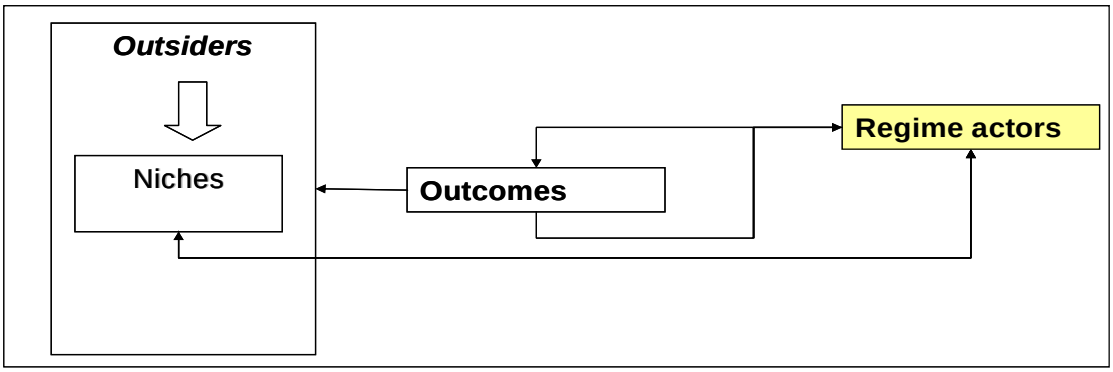
First, successful changes will require the coordination of resources across the different actors. Clearly, the resources needed to bring about a given transformation (including technology, finance, knowledge and legitimacy) will be distributed unevenly amongst different actors. Resource distribution consequently can be one mechanism for exercise of power relations in regime transformation dynamics.

Second, the enrolment of different actors into coalitions for change implies the production (and reproduction) of "guiding visions" (Rotmans and Kemp, 2001; Berkhout et al., 2004), or, in other words, the presence of shared strategic values and expectations. Sharing values stabilise innovative initiatives by serving as a common reference point for actors collaborating on their realisation; specifying who are the actors (inclusion and exclusion issues), and acting as symbols that bind together communities of interest and of practice (as a metaphor for building actor-networks). Clearly, such values are renegotiated and reshaped along though the processes of niche development and regime response. The original vision, for instance, may be relatively vague and incoherent: simply a framing of the problem, around which coalitions can begin to form. It is along the process of "niche structuration" that the vision can achieve solidity in terms of an envisaged configuration of rules, practices and resources that coherently work to deliver certain expectations. As Smith et al state, "the degree of interpretative flexibility in

storylines, and their adaptability to circumstances, can influence the cohesiveness and robustness of the coalition organised through it".

Moreover, some values and expectations will gain greater credibility and legitimacy than others. Credibility and legitimacy can derive from the influence and standing of the interests that constitute the vision. A key government department, or a large multinational corporation, for instance, might have greater chances of obtaining credibility and legitimacy for their visions than a radical vision put forward by, say, a social group. At times, when the intensity of the articulation of pressures (niche structuration) induces stress in the regime and open windows of opportunity for non-members of the regime to intervene. The greater the extent to which pressures for a particular form of change diverge from the visions and rules of the incumbent regime, the more acute become these issues of power (Smith et al, 2005). Even if the regime membership is not active in its resistance to change, the regime may nevertheless present a considerable degree of inertia that must be overcome. Impulses for change will often fail because they represent uncoordinated interactions between poorly articulated selection pressures and struggling adaptive capabilities. In other words, the niche development may be a failure when the process of structuration does not occur.

Figure 7 Sociological dynamics of regime transformation: the regime actors' reactions (based on Geels, 2006 and Van de Poel, 2000: 388).



Smith et al (2005) propose a classification of the main outcomes of transition trajectories according two main dimensions of change:

1) The first dimension measures whether change is envisaged and actively coordinated, in response to prevailing selection pressures (degree of rules coherence). The highest level of coordination is when a strong regime membership

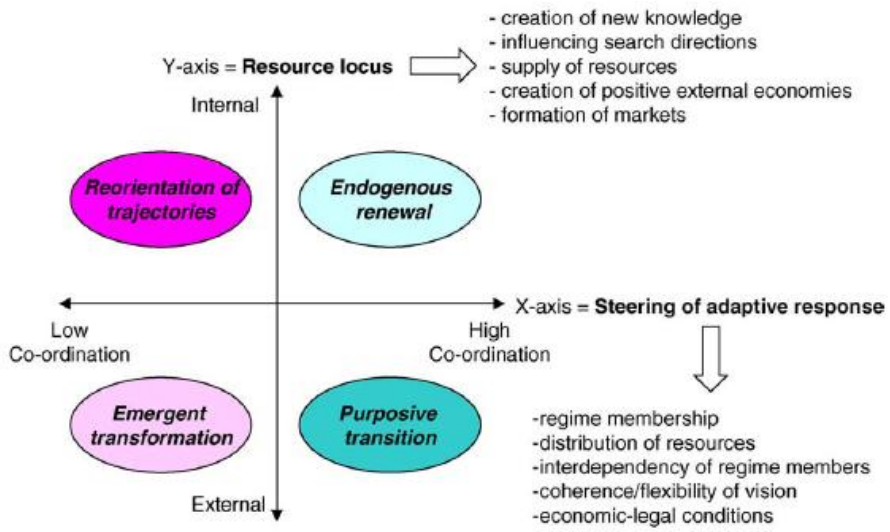
is involved and that means that the regime reconfiguration is mainly an outcome of the co-evolutionary behaviour of regime members (involving “no new radical innovations mechanisms”).

2) The second dimension concerns the degree to which responses to selection pressures are based on resources and knowledge available within the regime or whether they depend on capabilities and resources that are only available outside the regime. Also this aspect is therefore important to the understanding of the nature of the transformation process. If the resources required for transition are only available internally at the regime, for instance, then change is likely to be more incremental. Conversely, if the capacity to adapt is highly constrained by the lack of resources internally, then the likelihood of major radical change increases.

According to Smith et al., (2005) governance of regime transitions can address towards intervention in these two realms: “the balance, articulation or orientation of selection pressures that act on target regimes, or condition the adaptive capacities of incumbent or competing regimes, including the capacity to mount a coordinated response and the availability or resources (such as finance, legitimacy or competence) to support these responses. Policies intervening in the innovation system (such as R&D, environmental management systems, foresight and capital allowance grants), on the other hand, tend more towards the reshaping of regime adaptive capacity”.

The level of actor coordination/locus of knowledge and resources framework gives rise to a fourfold mapping of transition trajectories, as shown in Fig . The four quadrants produced in this framework represent stylised ideal types of resulting socio-technical regimes.

Figure 8 Towards a regime transition taxonomy as a function of degree of coordination to selection pressures and the locus of adaptive resources (from Smith et al, 2005).



Below we present the regime transitions taxonomy in a schematic way, with a description of each of the transition contexts. It is necessary to recognise that this conceptual scheme is far from straightforward in practice, as the real-world regime transformation processes present a much more higher level of complexity:

Transitions trajectories	**Coordination/locus of resources**	**Actors**	**Outcomes**
Endogenous renewal	*high coordinated response, internal adaptation – resources*	High regime membership	In this regime, the pressure to change the regime is clearly articulated and there is a high coordination of response, based on resources originating within the regime. **à** Thus, the transformation process will tend to be incremental and path following.
Re-orientation of trajectories	*uncoordinated response, internal regime resources*	These regimes are associated with discontinuities in the actors, networks and institutions involved	In these regimes, trajectories of change may be radically altered by internal processes. The stimulus for such radical re-orientations is experienced as a shock that may be exogenous to the regime. The response, however, is formed within the regime.
Emergent	*uncoordinated*	Outsiders	(Is this a regime?) Poorly

transformation	*response, external adaptation*		articulated selection pressures meet with uncoordinated responses. Resulting transitions draw on adaptive resources originating beyond the membership of the incumbent regime. The lack of clear articulation and coordination implies uncertainty over appropriate governance measures.
Purposive transitions	*coordinated response, external adaptation*	Outsiders as the key to the transition: they provide resources, capabilities and networks.	Resulting transitions draw on a negotiation between social actors from beyond the regime.

An example of endogenous renewal has been found by Smith et al in the progressive scaling up of the thermal capacity of steam-generating plant over the course of the 20th century. Constituted by a multitude of individually minor organisational and engineering innovations, the result was a radical transformation in the character of the electricity regime (Hughes, 1983). Likewise, investment in flue gas desulphurisation plant as a response to concerns over acid emissions (Boehmer-Christiansen and Skea, 1990), or the development of carbon sequestration techniques might be taken as examples of endogenous renewal. They are all responses from within the regime to external pressures for change that have led to dramatic changes in one or more measures of the regime's performance (efficiency, emissions reductions, etc.).

In the electricity sector, an example of reorientation of trajectories has been seen in the advent of wide-scale adoption of combined cycle gas turbines, especially in the UK (Islas, 1997). This radical transformation in the technical and operational characteristics of generation systems was not widely anticipated or intended, but arose through the conjunction of a series of uncoordinated technological opportunities, changes in market regulation, the availability of new and cheaper gas supplies, and obstacles facing alternatives, such as coal and nuclear generation. However, the adoption of gas turbines was managed within the dominant electricity generation regime, rather than being a development imposed from without. It also contributed in some contexts, like the UK, to improved environmental sustainability by reducing carbon emissions.

In the energy sector, long term examples of emergent transformation are provided by the series of 'energy successions' through which different primary fuels achieved

dominance running over a period of three centuries or so: from wood; through coal; to oil and gas and a partial transition to nuclear. Contemporary examples of technologies with major disruptive potential include information technology and genetic modification (GM) in the food and pharmaceuticals sectors. The impacts of these technologies have fallen across many different technological regimes. In this sense, it is incorrect to speak of a single transition, but of many parallel transitions stimulated from a common technological basis and shaped by regime specific configurations of interests and goals. It is also clear from the GM example that the environmental impacts (as known to key actors and institutions) of these emergent transitions may remain quite uncertain, even some way down the process of path creation. Likewise, it remains to be seen whether 'nanotechnology' represents a basis for applications with pervasive economic (and environmental) impacts (Wood et al., 2003).

A good example of purposive transitions is the history of civil nuclear power. This was widely regarded in the 1950s and 1960s as a critical technology with the potential to generate broad technological, economic and political benefits. A common narrative was developed, which involved a series of technological transitions from uranium fuel cycles (with the thermal reactor as the main conversion technology) to plutonium fuel cycles (with the fast reactor being the conversion technology). Scientific, political, military and industrial interests were co-opted to this vision to form a powerful grouping that was typically in strong contention with establish interests within the incumbent electricity system (Gowing, 1974).

Towards a dynamic framework to understand transition trajectories

So far, we have discussed the concepts of endogenous renewal, reorientation of trajectories, emergent transformation and purposive transition as four ideal types of regime transformation that unfold under these different transition contexts (Smith et al, 2005). On the other hand, it is interesting to consider that niche driven paths have previously been presented as guided principally by both adaptive resources and knowledge originating beyond the membership of the incumbent regime and a lack of clear coordination (on the niche level, actors in precarious networks work on radical innovations). In this sense it matches most closely what Smith et al define as an "emergent transition". Therefore, rather than considering it as an outcome of a regime transformation, we put forth the hypothesis that such a

context (or better socio-technical system), in which response to selection pressures are uncoordinated, are found predominantly within emergent niches. If you look at the same conceptual framework from this different perspective, the focus of the analysis shifts from a regimes taxonomy to a dynamic representation of the range of processes consequently improved. The processes and outcomes of a niche driven path depend upon the possible transition context (interactions with the incumbent regimes) prevailing at any give time. Therefore, applying the Smith et al conceptual framework in this way, it is possible to conceive the main outcomes of the dynamic interactions between niches and regime. In other words, the four quadrants produced in this framework represent stylised ideal types of the interferences and contrasts between the elements of each transformation contexts.

It has been argued that emergent niches are a deliberate attempt to change the regime and their internal structuration likely produce a consensus guiding vision. On the other hand, novelty transitions are also understood as changes guided principally by negotiation between actors from and beyond the regime. For instance, emergent niches may evolve into “purposive transition” when the selection pressures become highly articulated (through the formalisation of the rules-systems). Key to the “purposive transition” is the greater role afforded to external social actors, both in articulating pressure for change, and in providing the resources, capabilities and networks that condition the responses. Therefore, the purposive transition can be understood as the successful outcome of a niche-driven path.

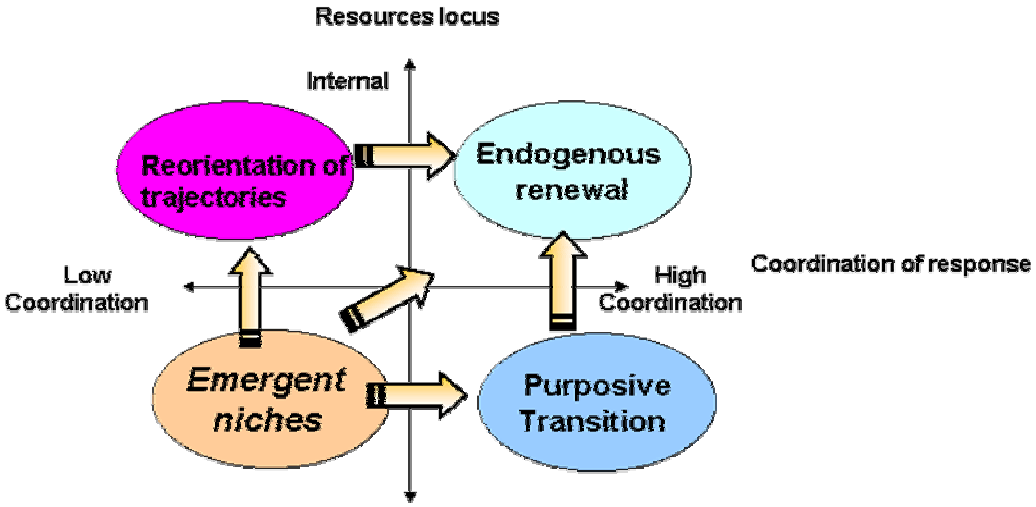
Several empirical examples suggests that the coordination of the many diverse and nascent resources involved in a radical change has, in the past, often required robust intervention by states and so, regime actors. An example of this kind of process may be found in the progressive scaling up of the organic sector. Although organics emerged in niches, its implementation and broader diffusion has depended on gradual transformation of the existing regime. The system of rules and norms which have been set up over time allowed the growth of these experiences. While the entrance of new and big players within the organic sector has affected the structure and dynamics of the organic niche. In this case, although the stimulus for such radical change may be exogenous to the regime, the resulting transition outcome can be better understood as a “re-orientation of trajectories”. A reorientation of trajectories can be appraised negatively when the incumbent regime mobilise the resources for the process of change, but where no consensus between actors exists over use of these resources.

When the pressure to change the regime is clearly articulated and there is a high coordination of response (high level of formalisation of the rules and norms governing actors relationships), mainly based on resources originating within the regime, the resulted transition trajectory can be understood as "endogenous renewal". Looking back over a long period of time, the transformation can appear as constituted by a multitude of minor organisational and production[25] innovations, shaped by prevailing regime visions and values.

The typology presented here aims to better understand and frame appropriate questions about regime transformation processes and to support policy-makers who wish to intervene in a more informed way. So far we have discussed that radical changes might be sought by a specific coalition of actors, but it will need to be carried through within networks of actors possessing the wherewithal to adapt the incumbent regime or create alternatives. Successful changes, in the meantime, will require the coordination of resources across diverse interdependent actors. As Smith et al stress "this will be built upon active processes of support and/or passive processes of acceptance in order to generate sufficient consent to put change into practice". In other words, adopting this conceptual frame will help to understand the dynamic between niche development and regime involvement as changes are the outcomes of the mediation between resources and the norms governing actors relationships. How do actors come together and find a mutual understanding of a transition context, and agree on the best course of action for a regime? The challenge here is to analyse how contrasting visions and expectations enrol actors into coalitions of support, come to define their interests, and shape the way that they seek to respond to selection pressures or shape their collective adaptive capacity.

[25] One of the of farmers' markets is how they let farmers experiment with new items to respond to consumers demands. If a farmer is not raising a particular product, requests from enough shoppers will often add it to the farmers' inventory of production. The same can be said for developing "value-added" products such as processed foods like jams and salsa that can be made on the farm.

Figure 9 A dynamic framework: the outcomes of the interactions between niches and regime.



Chapter V

Looking at the niches in action

Drawing mainly on experiences in Tuscany with some references to other contexts, the following case studies analysis flesh out the transition perspective. The aim of the case studies is to examine not only the distinctive internal mechanisms of innovation but also how the experiences are starting to play themselves out of the protection space around the niche and the degree of co-existence, competition and resistance between niches and regimes.

The methodology

The methodology of the research is a field-based approach, involving substantial case-study work and with the direct participation and interaction with relevant stakeholder groups[26].

The methodology of the analysis mirrored that learned through the direct involvement in an European project, "Marketing Sustainable Agriculture" (SUS-CHAIN).

More specifically, SUS-CHAIN has contributed to the research topic by assessing the potential role of alternative food supply chains in the enhancement of sustainable food production and rural development. The main hypothesis questioned in this project was whether the "scaling up of initiatives in the field of alternative food supply chains may change the nature of their organisation (actors-structure, rules, values, and resources) and their sustainability performance". In other words, the potentiality of such innovative initiatives to challenge the dominance of a food production and consumption incumbent regime (Geels, 2002a,b) by maintaining their original alternative values, knowledge and rules had to be explored. This has required understanding the potential of such alternative food initiatives – that they will be conceptualized as "innovative niches" - to grow

[26] The case studies, that will be presented, have been developed within the following research frames: SUS-CHAIN European project, OMIARD European project, COFAMI European project and ARSIA project. Information has been collected in the period between May 2005 and October 2007.

and to consolidate and eventually to re-structure the regulative mechanisms of the existing food production and consumption "regimes" (Geels, 2006).

To address this objective, the case studies have focused on the process of searches for new cognitive frames, actors coalitions and resources (including technology, knowledge, legitimacy or finance) which eventually might generate radical and more sustainable changes[27]. In the case study analysis the conditions at the basis of the niches establishment, the mechanisms of their consolidation and growth, and how their development can contribute to drive and stabilize the transition towards a new regime are deeply explored.

The heuristic typology before presented will be here useful in order to identify the relevance of innovative processes and orient them towards more sustainable novelty trajectories. The task of analysis then becomes one of recognising which contexts for transformation prevails, the type of transition that is underway, and which drivers offer the best leverage for guiding change in a desirable direction.

Therefore, this typology can serve not only to diagnose transition processes, but also to help prescribe appropriate governance interventions additional or different to those already pertaining. As Smith et al. state "the heuristic scheme developed may be used to guide understanding as to how best to achieve a preferred outcome. Then, the appropriate governance strategies are not those that best assist some

[27] An initial state of the food sector gives rise to pressures that put into question the present state of the matter, until a problem is recognized and defined. For example, the BSE crisis has emerged initially as a sectoral crisis; however, the recognition and definition of the problem is a result of a rather long process. Such pressures are addressed through one or more initiatives started by actors who build alliances to carry them out. The approach followed in the SUS-Chain methodology of analysis has been picked from the actor network theory. According this, the process of collective initiatives scaling up follows four stages: 1) Problematisation: an actor analyses a situation, identifies and defines the problem and proposes a solution (often there is a "critical event" that acts as a catalyst); 2) Interessement: other actors become interested in the solution proposed and change their affiliation to a group in favour of the new actor. This may be around an obligatory passage point, whereby the principal actor channels all interests in one direction, such as the need to increase productivity to certain levels; 3) Enrolment: the solution becomes accepted as a new concept and a new network of interests is generated; and finally, 4) Mobilisation: the new network becomes established and operates to implement the proposed solution. This leads to the formation of a macro-actor that acts as one entity. Thus a network is formed following translation, and in effect the network of passive agents have become subsumed by the principal actor; becoming part of that actor, and hence the term actor-network (Callon 1986, 1991; Law 1986).

prevailing process of regime change, but those which best foster an alternative transformation process oriented towards a more desirable outcome".

In the following chapters in order to explore how and if the process of regime transformation is occurring, I will analyse several case studies which embody some of the main innovation trajectories of the post-productivism agriculture: regional products, organic farming, local circuits and farmers' markets.

Given the breadth of empirical scope, the variety of niche and regime members and the structural characteristics of niches, radical changes are likely to proceed through a complex and unique history of interrelated events. The key for successful and sustainable change is the coordination of resources and knowledge across different coalitions of actors, possessing the wherewithal to create alternatives. This will be built upon active processes of negotiation which can generate coherence and sufficient consent to put change into practice. Recognising this, we can make some generalisations about "socio-technical" regime changes using a conceptual perspective on the fundamental processes that shape regime transformations.

Creating a regional alignment of interests: The Raw Milk Sheep's Cheese from the Pistoia Mountains[28]

This case illustrates how network maintenance and evolution within the broader, and not always favourable, regulatory environment play an important role in local food supply chains. In the northern areas of Tuscany, extensive sheep breeding and on-farm processing of cheese are traditional activities that are still commonly practiced. In recent years the shepherds, operating on a small scale, were obliged to comply with higher food safety standards required by European regulations, thus adding to their difficulties in surviving. These factors catalysed an initiative of legitimation and revalorisation of the traditional method of cheese production using raw milk from sheep. This initiative was made possible by aligning the interests of the producers with those of local public institutions. Through such an alignment, a traditional product, in danger of extinction, became a key resource around which a dense social network has been built. Local identity, the image of the product and of other local resources (upland pastures, cultural and gastronomic heritage) have been strengthen and communicated to the outside world. Slow Food has played a crucial role in this process, providing the necessary symbolic capital to increase the reputation of the product. At the outset Slow Food advocated the continued use of raw milk to protect the product's specificity, and later, its logo bought the product to the attention of a select target group of consumers outside the region of production.

More recently the application for a PDO registration offers possibilities of strengthening the promotion of the region and enhancing sustainable local rural development. However by allowing access to the network to new actors it also risks undermining the initial goal of retaining added value within a highly marginalised upland area.

A focal point of the analysis has been to illustrate the dynamics of this case study as a case of an innovative niche evolving towards a "purposive transition": the resulting transition trajectory has been drawn on a negotiation between social actors from and beyond the regime.

[28] A SUS-CHAIN case study

The story of Raw Milk Sheep's Cheese from the Pistoia Mountains

Pistoia Province in the mountains of Tuscany is a marginal region which faces considerable development constraints. The production of raw milk sheep's cheese in this mountainous area is a centuries-old tradition in a region where small scale and extensive livestock farming, based on a local sheep breed (Massese) is one of the main economic activities. In contrast to sheep breeding systems in other parts of Tuscany, where shepherds traditionally supply milk to cheese makers, on-farm processing of milk is commonly practiced. As a result a large number of the inhabitants of the area have extensive experience of sheep's cheese production, following long established methods based on unwritten but widely accepted rules. They produce a range of distinctive cheeses, whose specific characteristics are derived from the use of raw milk (heated to a maximum of 30-320C) and curdling with natural rennet. Total production is only 300 Kg per year and covers three different kinds of cheese: a soft one (7-20 days of ripening), the "abbucciato" (35 days of ripening) and the "asserbo" (from 2-3 months up to 1 year of ripening).

The farmers have, over a long period, adopted a strategy in which they internalise both processing and marketing activities. Through such strategies intense social networks, involving producers and local consumers in close interpersonal relations based on trust were established in the past. More recently such relationships have come to form the basis of the re-positioning of the product on high quality cheese markets, in which external consumers can perceive and appreciate its specific qualities.

The survival of the traditional system of production of raw milk sheep's cheese came under threat with the implementation of new European and national hygiene regulations for the dairy sector. Shepherds faced increasing constraints posed by the hygiene authorities, being forced to make difficult adaptations and significant changes to the structure and functioning of whole farms (including production and processing methods) in order to comply with the regulations.

At the end of 1990's a new awareness emerged among the local community and public institutions over the need to support these breeders, and particularly, those located in the more marginal areas, in facing up to the challenges facing them.

At the same time the issue local quality foods and their close links with artisanal ways of production was becoming a topic of public interest in Italy. The emergence of the Slow Food movement is an example of, and helped to instill, this new

awareness. There was a growing concern that changes to traditional production methods required to meet new hygiene regulations would lead to these unique products, representing part of Italy's rich culinary patrimony, becoming standardised and homogenised and thus losing their distinct quality.

Two institutional actors recognised the very velar need to preserve the cheese and the basic principles of its production process: the director of the local breeders association (APA) and the Slow Food local "fiduciary" (the local representative). Between them they pioneered an initiative intended to preserve the quality and characteristic of the cheese. Working through their networks they began to find ways to preserve the traditional production methods (in the face of new regulations) and to promote the cheese beyond its traditional, very localised, region of consumption (thereby valorising the product and enhancing the value added within the region). These activities necessitated initiating and fostering intense networking.

Once the importance of action to preserve the traditional method of production by shepherds was recognised, the Director of the APA started to involve the whole community and the key actors within the cheese supply chain in this crucial issue, by instigating intense interactions with the local Health Authorities, the regional administration and the University. At the same time, he started to make shepherds aware of the necessity of complying with the new rules and, to this end, the association intensified the technical assistance that it provided and paid more attention to the issue of controlling on milk quality and hygiene. This later move progressively helped change the attitude of the local Health Authorities, which had initially opposed the use of raw milk and was strongly inclined towards adopting a more restrictive approach to control.

At the national level, Slow Food was highly involved in identifying local production systems that were in danger of extinction because of the effects of standardisation. Through the Ark of Taste project, set up in 1996, the association had formally launched a programme aimed at saving traditional production systems. The project had established the Presidia, a type of collective branding, through which the association gave technical and communicative support to these production systems.

Slow Food's representative in Tuscany identified the raw milk sheep's cheese from the Pistoia Mountains as a traditional product undergoing a critical change, which fitted with the aims of the Presidia. As a result Slow Food's Fiduciary in the Pistoia Mountains made contact with the local shepherds in order to discuss the idea of creating a Slow Food Presidium.

During 2000, after a first informal meeting between the director of A.P.A. and the Slow Food fiduciary, the two associations agreed to launch a joint project to valorise the raw milk sheep's cheese from the Pistoia Mountains. This step made it possible to create a broader alignment of interests and to start developing a new network based around the following shared objectives:

adapting traditional production techniques while maintaining their basic principles;

linking up with consumers by enlarging the shepherds' marketing outlets;

linking product valorisation to sustainable local development.

These new objectives provided the guidelines around which the actors have aligned and developed a plan of action for following through with the initiative. The coming together of these two agents also created the conditions for approaching more actors and enrolling them into the network.

In 2001 the Director of the APA succeeded in drawing up technical specifications that would allow the shepherds to continue using raw milk. This involved a new formalised Code of Practices regulating the production of raw milk sheep's cheese with stricter and more formalised control procedures to ensure an adequate safety level. This step was fundamental for legitimating the traditional production techniques to the outside world and for strengthening the cohesion between the shepherds and their institutional environment.

The Code of Practices facilitated the creation of the Slow Food Presidium. This needed to find financial support, and so various public institutions were enrolled to help fund the collective brand. These included the local Chamber of Commerce which provided the most important support. At the same time the Chamber of Commerce pushed for the creation of a new organisational form in order to consolidate and facilitate the actions of the Presidium. In response to this suggestion, the Director of A.P.A. promoted the establishment of the "Consortium of the Pistoia Mountains and Valleys". Most of the shepherds (24) became members of this, together with other institutions, such as the Municipality of Cutigliano, the Pistoia Mountains Community (Comunità Montana) and the Province of Pistoia, all of whom became involved in providing some level of economic support for the Consortium's further development.

Since its creation, the Consortium has played an important role as a facilitator, supporting the shepherds in their adoption of the new Code of Practice. The

Consortium has been able to promote the exchange of knowledge and information between members and with the outside world.

This process of institutionalisation bought about other important benefits. It established a communication channel between the producers and external organisations. And, at the same time, through creating a collective brand, it provided a symbolic representation of the product and production system, reinforcing a sense of internal identity, and creating and communicating an image to the outside world.

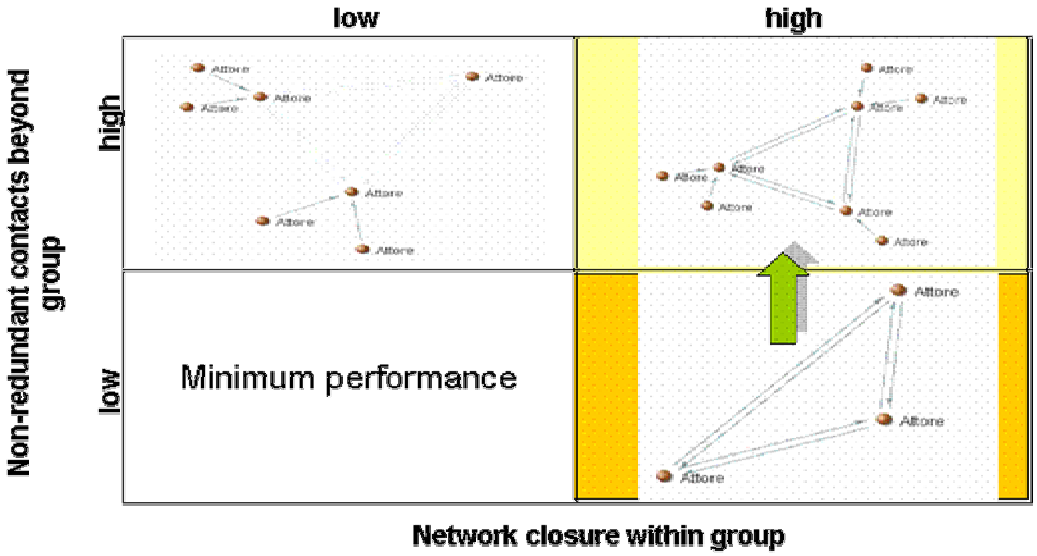
Once the organisational structure was formalised, the next step of the process was the valorising the product through marketing. As in the preceding stage, this one can also be seen as a networking activity that created an alignment of actors around the common objective of improving the commercial performance of the product. Previously the raw milk cheese had only been sold within the region of production, and local consumers thought of it as a "normal" cheese. The alliance with Slow Food was crucial in valorising the product in a wider area: it has allowed the cheese to be more widely recognised and to be sold in the well-established circuit of restaurants and markets linked to Slow Food. Slow Food's involvement also provided the necessary symbolic capital to increase the reputation of the product, to differentiate it from other kinds of sheep milk cheese, and to give it a higher profile in the outside world.

The shepherds belonging to the Consortium were also supported in their involvement in other marketing and promotional activities, being involving in local fairs (the Show of Pistoia Shepherds' Products and the Shepherds Fair, both held in Cutigliano village) as well as in Slow Food events at the national and international level, including the International Halls of Taste and of Cheese.

Such recognition made it possible to expand the traditional pattern of farm-gate direct selling and to sell the raw milk sheep's cheese to restaurants and agri-tourism businesses, and to connect local circuits with national and international market outlets. Throughout the reputation of Slow Food, the Consortium has succeeded in strengthening consumers' involvement.

The first phase of this initiative witnessed a successful process of scaling up, which, through enhancing the commercial performance and attracting crucial public support, led to a strengthening of the identity of the local production system and of its image in the wider world.

Figure 10 A representation of the evolution of the niche configurations in the case of the Raw milk sheep cheese of the Pistoia Mountains (based on Burt, 2000): from a cohesive group towards the maximum performance



Recently, the Director of the Consortium, under pressure from the Chamber of Commerce of Pistoia, which played an important role in building up the Consortium, proposed applying for a PDO registration. That would offer new opportunities, but also new threats. It would:

enlarge the territorial boundaries of the production area,

risk lowering the production standard imposed on members, as the geographical limit of the new area would extend to the whole province and thus allow the entrance of new actors (potentially including dedicated cheese making companies) and could detract from the original aim of maintaining of added value within the original production area.

An analysis of the case

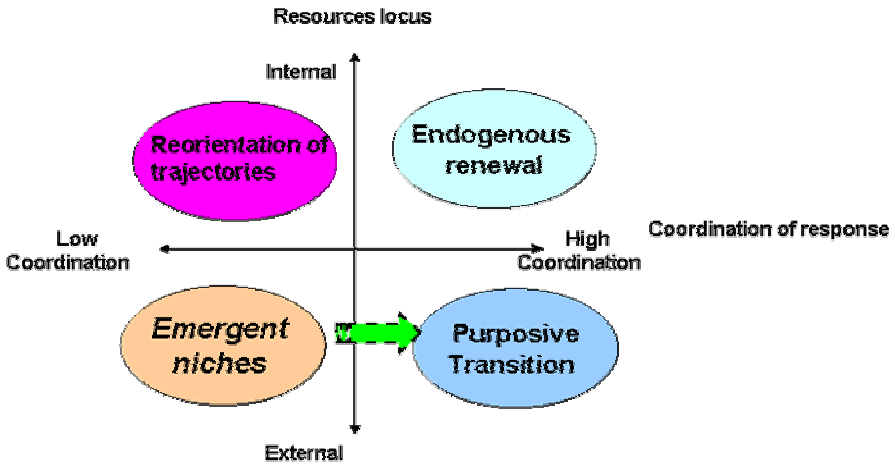
This initiative has enabled small-scale producers to develop connections with broader institutional and marketing networks. This case highlights the great potentialities of typical regional products in developing the local economy, and generating spin offs through rural tourism. The strategy of revalorising raw milk sheep's cheese has created new opportunities for capturing added value in the

region, as well as increasing the producer's share of the retail. It has positioned the product within local markets for high quality cheese and also provided new marketing outlets, attracting higher retail prices. The recent application for a PDO registration could represent a further opportunity to increase the reputation of the cheese outside of the production area. Yet the initiative, which entails the entrance of new actors into the grouping, could risk endangering the ability of the original area of production to retain added value. In this case both the production system and the valorisation process drew heavily upon local resources (the local breed of sheep, pastures, processing skills), which gave the product a strong specificity, which has subsequently been built upon to reinforce the visibility of the whole rural area, through developing synergies between direct selling, agri-tourism activities and local fairs and markets.

The Consortium has greatly improved the self-organisational capacity of the small-scale shepherds, mainly by strengthening relationships between them and increasing their participation in decision making processes. An increase in bridging capital between local producers and external consumers has occurred, due to the efforts made to increase consumer's confidence, through emphasising the traditional and the natural. The symbolic capital provided by Slow Food has increased the product's reputation among new, non-local consumers. The reputation gained by the cheese together with the success of the initiative have enhanced job satisfaction and self-esteem, which in turn may help to discourage the out migration of skilled labour, one of the main problems affecting this marginal rural area.

Analytically speaking, this example is emblematic of a niche driven process. Key to the transition project is the greater role afforded to external social actors, both in articulating pressure for change, and in providing the resources, knowledge and networks that condition the responses. Knowledge and skills have been enhanced by providing information about technical procedures, ways of complying with the new regulatory environment, and developing a broader commercial perspective.

Figure 11 The hypothesis of the transition trajectory in the case of the Raw milk sheep cheese of Pistoia Mountains



The transition trajectory has been guided principally by negotiation between social actors from and beyond the regime. In this sense it matches most closely what we define as a purposive transition. While the transition management literature gives a key role to non-state actors (cf. Kemp et al., 2001), this example suggests that the coordination of the many diverse and nascent resources involved in a radical change has, in the past, often required robust intervention by institutions. Public support has significantly contributed to both the construction of the initiative and to its achievements. The extensive networking activity of the two promoters, combined with the positive attitude of several public institutions, created synergies that proved crucial at pivotal moments in the initiative's development.

This support has been both formal and informal. During the phase of attracting interest, informal networking between different institutions created a favourable background for the further construction of the Slow Food Presidium and the Consortium: negotiations between the Director of A.P.A. and the Local Health Authorities built a significant understanding between the two institutions; the relationships between A.P.A. and the University of Florence helped focus on the technical innovations needed within the production process and the involvement of Tuscany Region provided a connection between Slow Food and the local actors. Then, public support became more formal, through the creation of Slow Food Presidium and the raw milk sheep's cheese Consortium. Financial support was provided by several regional institutions, including the Chamber of Commerce of Pistoia, the Province of Pistoia, the Mountain Association of the Pistoia Appennines and the Municipality of Cutigliano. The Province of Pistoia maintained its financial

support over a longer period of time, while the other institutions continued to collaborate without making financial contributions.

The development of the "CAF organic niche"[29]: is it a case of regime re-orientation of trajectories?"

This example concerns a group of beef producers, belonging to a well established co-operative (CAF) situated in a marginal rural area of Tuscany, who decided to turn to organic farming in the second half of 1990s. Having chosen an exclusive marketing relationship with a large retailer, the co-operative lost both the ability to retain added value within the region of production and its initial mission, which was to strengthen the autonomy of farmers in the supply chain and to use quality as a key differentiation strategy.

This case study confirms that organic labelling alone is not sufficient to create a steady market as the most premium prices for organic beef producers and it underlines the importance for the organic sector to find innovative organisational patterns in order to meet the challenges entailed with the process of scaling up while preserving the authenticity of the values embedded in a traditional production system. In this light, the case study matches what have been conceptualised as conventionalisation of organic agriculture. Several other experiences of organics[30] have shown that " the extend of appropriation is really an empirical and comparative question and "this begs the larger question of how it bears on the transformative potential of organic agriculture" (Ghutman, 2004).

Following the historical development of this specific initiative we examine on the extend to which the organics alternativeness has been embedded (or disembedded) in innovative forms of practices and knowledge (cognitive, normative and regulative frames), and how along its growth the role of regime insiders has affected the original character of the experience.

A focal point of the analysis has been to illustrate the dynamics of this case study as a case of niche evolving towards a "re-orientation of trajectories": (a) there was pressures from outsiders (mainly from social movements), at the basis of niche establishment (b) but then, regime insiders gradually responded to these pressures by mobilising their resources and knowledge. Further it is possible to identify a certain degree of dependence of this experience on the regime resources.

[29] A SUS-CHAIN case study

[30] Our review of organic farming conventionalisation is mostly based on the work of Ghutman and her colleagues which has strongly influenced our opinions and rationale

The story of the farm co-operative of Mugello[31]

The Agricultural Co-operative of Firenzuola (Cooperativa Agricola Firenzuola, CAF) was set up in 1972 by a group of breeders in the higher part of Mugello. It was established in response to the weakness of producers on local beef markets. At that time, the area had a large proportion of milk farms, and the local calves were considered as by-products of the milk production process. As a result, wholesalers preferred to buy beef cattle from the specialised and intensive livestock farming in

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31 The study area is the hilly and mountainous region of Mugello in the North-East part of Tuscany, which is characterised by two main sub-regions: a mountainous and more marginal part, and a lower and hilly part, closely connected with the city of Florence. Between 1950 and 1970 a strong depopulation process occurred in the whole territory, mainly due to the lack of employment opportunities and to the economic growth in the Florence urban area. However, starting from the 1970s, and especially during the 1980s and 1990s, the area experienced a significant repopulation trend, resulting from the urban sprawl together with the emerging needs for healthier lifestyles showed by a growing group of citizens.Today, the higher part of Mugello is characterised by a large share of very small-scale farms. In this region, 6% of the economically active population is employed in agriculture, and farmers have strong social connections. Conversely, the lower part of Mugello is characterised by larger and more modern farms, without either social or cultural interactions (Guglielmi, 2003). One of the distinguishing feature of the mainstream agricultural sector of the area is the importance played by the livestock in maintaining the competitiveness of the farm sector over time. Thus the area is home to 66.6% of the breeding stock and 83.7% of all heads of cattle in the whole Province31. However, during the last two decades, the number of livestock holdings has severely decreased. Especially the number of farms specialised in milk production has fallen dramatically from 60 at the beginning of the 1980s to 12-13 in 200331. The main reason of this negative trend has to be ascribed to the fragmented structure of the sector: most of the small-scale farms faced increasing constraints due to new and stricter hygiene rules for the dairy sector and were thus forced to make difficult adaptations and significant changes to the farm structure. As a result, some farms stopped their activities, whereas others converted to the beef production, which required lower investments (Guglielmi, 2003). Nowadays, there are 256 breeding holdings and 10,300 head of cattle31 in Mugello. The average size of a holding is about 100 heads, but there are also smaller breeders with 20-30 heads, especially those located on sloping lands (Guglielmi, 2003). Most breeders are specialised in beef production, which is traditionally extensive livestock farming, based on natural grasslands: the cattle is raised on upland pastures from spring to autumn, the calves are weaned at 6 to 8 months and are slaughtered at 18 to 20 months of age. It is worthwhile to note the large variety of bovine breeds, including Limousine, Charolais, Romagnola and Chianina (the last two are indigenous breeds). Chianina breed, which in the past was commonly used as a draught animal in this region, was replaced over time by more productive French breeds, such as Limousine. However, during the last years, the demand for Chianina has grown significantly, thanks to the strong effort by producers as well as local and regional authorities to valorise and promote it, so that it obtained the European Protected Geographical Indication (PGI) certification (Salvini, 1997; Nomisma-Coldiretti, 1999).

the North-Eastern regions of Italy. The goals of the co-operative were then to improve the strength of farmers in the supply chain, to avoid the dependence on middlemen, and to create the possibility to slaughter and directly market the local beef. Thus, the co-operative has worked to regain control over the whole meat production chain. First, the co-operative managers indicated to the farmers the abattoir where the animals were brought by the co-operative trucks. After being weighted, graded and slaughtered, the animals were transported to the co-operative to be cut and packed. In 1997, the co-operative took over a public abattoir as well as opened sales outlets in the area, where beef could be sold in a short time. Through having greater control over the supply chain, the farmers could be paid more quickly.

Since its establishment, the co-operative has focused on securing reliable and profitable outlets for its members and strengthening its reputation in the region. The volumes sold by the co-operative and the number of members involved have rapidly increased. Farmers were keen to join the co-operative, as it could ensure them a stable market, and consumers were pleased by the possibility of 'buying locally' and reacted positively to the initiative.

Increasing demand made it necessary to open new sales outlets so that today the CAF has ten outlets, some of which are located in Mugello and the rest in Florence. The co-operative now sells almost 19,200 kg of beef per year. In addition, the co-operative also setup a voluntary traceability scheme for the conventional beef, which is accredited by the Ministry of Agriculture. This voluntary labelling scheme assures consumers that the whole cycle of production is performed in the Mugello area. The beef is sold under the "CAF Le Mugellane" brand name, a regional designation that has a high reputation among local consumers. According to the co-operative's board, extensive livestock farming based on traditional grazing, the high "eating quality" of the meat and, more recently, the complete traceability of the product are all seen as very positive attributes by local consumers. These show a high degree of trust in CAF (and so, in local) beef and in the co-operative which is rooted in this rural area.

Building the "organic niche"

Starting in 1997 some members of the co-operative, from the more marginal area of Mugello, began to see the potential of organic farming, partly encouraged by the availability of direct payments from the Regional Government32. Converting to

[32] Before the official regulation of organic breeding in EU (1804/99), the Tuscany Regional Administration had approved a special regulation for organic animal production in 1995 (LR 54/95).

organic farming seemed, at the time, to imply only minor changes in their production system as they already had a low-external input breeding system.

> "First of all, to us organic farming means the maintenance of high nature value ecosystem. "The health of our environment": without putting fertilizers the soil is more healthy and the positive effects will be evident in 5-6 years" (Piero Galeotti, president of the co-operative)

> "Converting to organic has just been the formalisation of the previous farming methods. In fact, my parents had a low-impact breeding system even before the conversion; the features of our region ae not in tune with intensive systems" (Laura Trotta , organic breeder)

The original project was very ambitious: the pioneers considered it to be crucial to involve a wide range of actors. They initially hoped to convince all the members of the co-operative to convert to organic production. They thought this would further improve the image of the region, helping to draw attention to the specific characteristics of the area, such as the environment, the pastures, the traditional breeding techniques and the high quality of the meat. They had a marketing vision of promoting the Mugello area as "an organic beef valley". This would also have had the advantage of simplifying the chain and avoiding problems of coexistence between organic and local non-organic production systems. Although conventional breeders seemed very interested in the project, most of them, especially those located in the less marginal part of the region were afraid of the risks, particularly the possibility of higher production costs. Thus only twelve producers of the 138 members of the co-operative joined the original organic network.

The development of this network required addressing a range of issues. Firstly, organic certification entailed new costs, involved meeting new requirements and needed new skills. Thus the conversion to organic led to the involvement of a new actor within the farmers' network: the certification agency. In the case of CAF, especially at the beginning, auditors also played an educational role, giving free advice and facilitating the flow of information. Secondly, it gave rise to the need to re-organise the slaughterhouse, to separate the organic from the conventional beef. Clearly, this added to the organisational complexity, in terms of structures and workers' management. The presence of a new abattoir, built in 2000 with financial assistance from the "Mountain Community" (the local association of municipalities) and in compliance with new EU hygiene requirements, permitted the required separation of the two processing lines. Finally, from a marketing perspective, the high risk of competition between the "local non-organic" and the organic beef had to be resolved by the co-operative board. CAF members expressed concern about the possible competition within the region between these two competing modes of quality production. They thus sought to position the organic beef in such a way that

it would not threaten the established position of the 'local non-organic' beef on local markets.

Increased pressures from outsiders and shifts in public opinion

The BSE alarm in 1996 had showed the fragility of the conventional beef market, and there had been a dramatic decline in beef consumption at national level during the six months following the first outbreaks (Iacoponi et al., 1997). The co-operative, however, was affected by the crisis to a far lesser extend than anonymous conventional beef: the consumers' trust built in the previous years was a safety belt to all members of the co-operative. At the same time, it became clear that quality production, would be the only viable mean of keeping the industry alive.

Anyway, the initial drop in beef demand was followed by an abrupt surge, which CAF could not easily accommodate. Thus, there were not need to develop adequate marketing competencies as it was just a question to catch the market opportunity provided by BSE alarm (any specific learning processes).

In short the effects of the BSE scares in the conventional food chains have been:

Shifts in public opinion: growing concerns for ethical-organic products

Outcomes of BSE crisis (in the niche):

- initial drop in demand followed by an abrupt surge, which CAF could not easily accommodate.
- marketing competencies: opportunity provided by BSE alarm (but any specific learning processes have been activated)

Responses from regime insiders: Multiple retailer chain showed its interest in the organic productions

Since 2000, a national multiple retailer chain, Esselunga, showed its interest in the organic productions. On the other hand, from the cooperative point of view, securing a stable marketing outlet was a necessary first step in building the demand for local organic beef. At the outset the co-operative forged an alliance with Esselunga, a national retail chain. Under this agreement, their organic beef was exclusively sold in Esselunga outlets located in Florence and Milan, under the organic CAF label. The partnership with Esselunga provided a strong stimulus to the local production system: the number of slaughtered organic calves increased from less than one per week in 1998 up to 10-15 in 2003.

> "The main factor driving the growth of the co-operative has been the booming demand for organic meat from a larger retailer, soon after the BSE alarm" (Piero Galeotti, president of the co-operative).

Having chosen an exclusive relationship with a retailer, the co-operative has given up the possibility to communicate the values upon which the project was initially defined to consumers, i.e. the territory of origin and the small-scale farming reality. It was recognised that CAF had not fully exploited its reputation to improve communication to consumers. CAF organic products appeared on the shelves under the CAF label, but without any other specification than the one contained on the label, since the cooperative did not invest much in communicating the specific values of the product. In other words, Esselunga was firmly in control of the link with consumers.

Moreover, under the pressure of increasing market demand, the co-operative board took the decision to accept new members, even though most of them did not come from within the initial boundaries of the Mugello production area, and their farm-size was, on average, larger than that of the pioneer farms. Thus the choice of a unique sales outlet for organic products hid a long-term risk, as the growth in production required by the retailer started to shape the direction of the co-operative.

> "The co-operative policy has been to increase the production by including new members, even if they do not belong to the original area of production. And I don't agree because we are loosing the opportunity to valorise the local organic beef, with the risk to favour the farmers who choose production practices aimed at cost reduction rather than at improving the quality of the beef" (Adriano Borgioli, organic breeder).

The entrance of new producers into the co-operative has further reduced the possibilities of a clear local identification and made the product very similar to other organic products. As a matter of fact, opening to farmers external to the area has increased the diversity of interests and behaviours within the group, bringing two opposing strategic visions. The first organic producers of CAF were still all profoundly committed to the basic principles of organic farming; ethical issues such as environmental policy and regional development were also important, alongside their need to obtain a decent income from farming.

> First of all, to us organic farming means the maintenance of high nature value ecosystem. "The health of our environment": without putting fertilizers the soil is more healthy and the positive effects will be evident in 5-6 years" (Piero Galeotti, president of the co-operative)

The power struggle between niche-regime (a niche failure?)

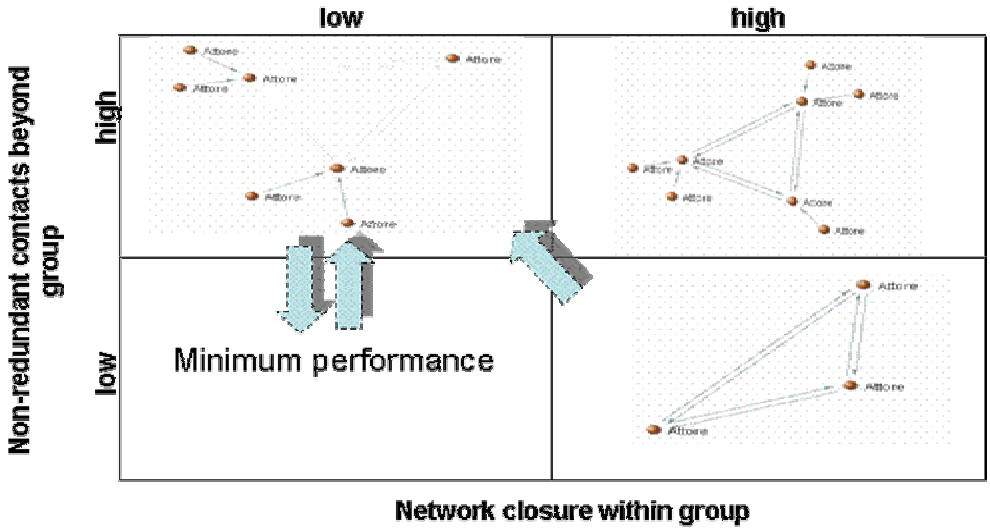
During 2003, the organic beef market had a lower performance than during the previous years due to the increase in produced quantities and to the consumers' reduced willingness to pay in a time of economic crisis. As a consequence the CAF board was obliged to reduce the prices paid to organic farmers from 1.5-1.8 €/kg in 2000-2001 – which was 25-30% more than the price paid for 'local non-organic' beef – to about 1.0 €/kg in 2003-2004 – which was more than 20% below the price for 'local non-organic'. Organic farmers strongly complained about this decision, as they claimed that the price they were receiving was below the cost of organic production, especially due to the certification costs and costs of purchasing high quality feed. In more general terms, the price-cost squeeze led farmers to seek to reduce their costs rather than to improve quality. Some of the smaller producers even considered abandoning the organic certification.

> "If the downward market trend does not change, we will forced to stop to sell our meat as certified organic. I perceive the crisis of the sector when I notice that the price paid for my cattle is constantly decreasing. However, there is a lack of coherency...because at consumers' level prices are too high. I can say that the organic business is profitable only for the retailers. In this situation, to be an organic farmer is a Calvary." (Laura Trotta, organic breeder)

> "Nowadays, the premium price we receive for organic meat is only 1 euro per kilo...Not enough to cover the higher production costs, at all!" (Valeria Bruni, organic breeder)

Other conflicts arose over direct selling. From the outset the co-operative had imposed a rule against direct selling to maintain solidarity among members in their dealings with larger buyers. Moreover, this rule helped avoid competition between organic and the non-organic traditional beef was sold at the local CAF shops. Some farmers had already expressed the need for greater autonomy, seeing the benefits of direct contact with consumers. This demand became more pronounced with the worsening of the co-operative's marketing performance.

Figure 12 A representation of the evolution of the niche configurations in the case of CAF cooperative (based on Burt, 2000): from a cohesive group containing only one "guiding vision" towards a disintegrated group of diverse perspectives and resources



Seeking new paths of valorisation and marketing

The situation worsened when in the second half of 2004 the demand for CAF organic beef fell dramatically. Consumers were less willing to pay a premium, and Esselunga lost interest in promoting organic beef, as it could no longer extract higher margins from it. As a consequence, Esselunga dropped organic beef from the shelves in its stores in Milan, and the store in Florence cut its order by 40%, before breaking its agreement with the co-operative in June 2005.

This put the organic producers within CAF in a very difficult position, and the problem of finding alternative channels became urgent. The crisis created a strategic dilemma for the organic producers: whether to further the process they pursued so far, by looking for alliances with other retail chains, or finding other ways? This uncertainty about the future strategic choices of the co-operative has led CAF organic breeders, who now form the core of the co-operative, to start thinking about possible other paths for promoting and marketing their organic beef., They appear to be moving towards partial relocalisation, seeking to avoid relying on another retailer as their sole customer. Since 2005 they have:

- tried to reach an agreement with a wholesaler for selling their products in several organic shops at national level;

- started to participate in organic fairs at the national level, setting up links with the organic producers' national network;
- planned to set up a purchase group;
- agreed on the necessity to open new direct sale points specialised in organic beef, located in urban areas, such as Florence.

Furthermore, they have started to involve various local actors, including other organic producers, local institutions, researchers and technicians, to revitalise the link with the region. Through this emerging network, the idea of creating a local outlet for selling a range of local organic produce, promoted on a territorial basis, is taking off. In the meanwhile, there is a growing consensus within CAF on the need to allow farmers to make their own direct sales arrangements. Organic farmers now recognise that their product can best be enhanced through mobilising territorial resources. Thus new factors are emerging in their search for new development trajectories. These factors include: the support offered by the local community, the environmental and cultural resources that characterise the Mugello region and the interplay between farmers and other local actors.

An analysis of the case

The case study raises concerns about the risk of the appropriation of both the economic benefits and the alternative values associated with the organic food production by a "dominant" actor within the conventional agro-food chain (Buck et al. 1997). Contemporary narratives on organic food in many other context show similar situations of "deadly embrace" (Brunori et al, 2008) between organic and retail chains, that either have, or may, accompany the growth of organics. Below a case study set in France with a similar development is presented. It was born as an organisation of active organic producers which aimed to improve the strategic marketing position of their products, but eventually was taken over by a multiple retail chain.

The BioBourgogne Viande initiative in France[33]

The BioBourgogne Viande initiative (BBV) is part of a significant and established framework for organic production in the region called BioBourgogne. This brand was registered in 1983 by four departmental organic producers' associations combined in a regional Confederation of Organic Producers. The first stimulus came from organic lamb producers seeking easier access to sales outlets, and was followed by a group of producers wishing to develop organic activity for beef cattle. However, these early efforts were unpromising, with poor marketing leading to little or no premium and even trading through conventional channels, and a rapid saturation of the direct sales market. Thus, in July 1994, the original group of 30 organic beef producers established BioBourgogne Viande on the initiative of one of the organic breeders – Philippe Cabarat with support from the Regional Council and also from SEDARB (Service d'Eco Développement Agricole et Rural de Bourgogne) managed by an organic farming advisor employed in France by a Chamber of Agriculture. Its central activity at the beginning was production and first stage marketing of finished animals, an initial step towards cooperative management of production, even though the number of producers was relatively small compared to the significant potential of the region. The original aim was to set up an organisation to collect and coordinate widely dispersed members' animals for slaughter, also ensuring that producers would retain control over the marketing of their livestock. So, from January 1995, BBV has bought three butchers' shops (at Chalon, Dijon, Nevers) and from September 1996, it develops mail order selling.

At the end of 1995, BBV reached a significant agreement involving the multiple retailer Auchan, the wholesaler SELVI (slaughterer) and the Fédération Nationale de l'Agriculture Biologique (national organic producers' union). Auchan provided organic beef with "loss leader product" status, while SELVI provided an interface

[33] This case study was carried up in the framework of the European Program OMIaRD (Organic Marketing Initiatives and Rural Development). This overall project examine all aspects of organic products marketing in Europe in order to develop strategies that both satisfy environmentally and ethically conscious consumers, support the development of new jobs and improve incomes in rural communities. The project focuses on the impact of what we name Organic Marketing Initiative (O.M.I) on rural development, especially in Less Favoured Areas (L.F.A). An OMI is an organisation of actors (privately or co-operatively owned) involving participation of organic producers which aims to improve the strategic marketing position of the products by adding value to the raw product through processing or marketing

and quality assurance (in particular, traceability), although this precluded direct contact between Auchan and the breeders. A fixed price grid ensured good returns to producers and healthy margins for the initiative. These conditions allowed BBV to develop and handle 70 per cent of its tonnage through this channel and this three parts agreement was held up as an example at the time.

The first BSE crisis (March 1996) disrupted the development of the initiative, with an initial drop in demand followed by an abrupt surge, which BBV could not easily accommodate. The initial agreement with SELVI was replaced by an agreement with SOVIBA, one of the biggest French meat processor group with an established presence in the organic beef sector through a trade agreement to supply Auchan. The objectives of SOVIBA differ from those of BBV, as the former aims to demarcate quality in organic products. However, the economic rationale for the switch was overwhelming, even though the price grid was less favourable, being indexed to prices of the conventional animals. In the second part of its short history, BBV has to face a « growth crisis ». The current situation encourages BBV to adopt a diversified marketing policy, combining the sale to supermarkets (especially the major supermarket chain Auchan, which is critical to its future development since this channel accounts for 70 per cent of beef cattle sales), six organic butchers, one consumer cooperative (BioCoop), mail order sales, and one wholesaler, Convivial, which specialises in frozen meat. Moreover, in 2002, BBV invested in processing facilities, which together with distribution facilities will allow it to consolidate its short distribution channels, as well as increasing added value from ability to sell directly to supermarkets.

Although it is largely recognised that organics emerged in niches, its implementation and broader diffusion has depended on gradual transformations of the existing regime. As matter of fact, it has been recognised that the system of rules and norms which has been set up has over time allowed the growth of these experiences. In addition the entrance of new and big players within the organic sector has affected the structure and dynamics of the organic niche.

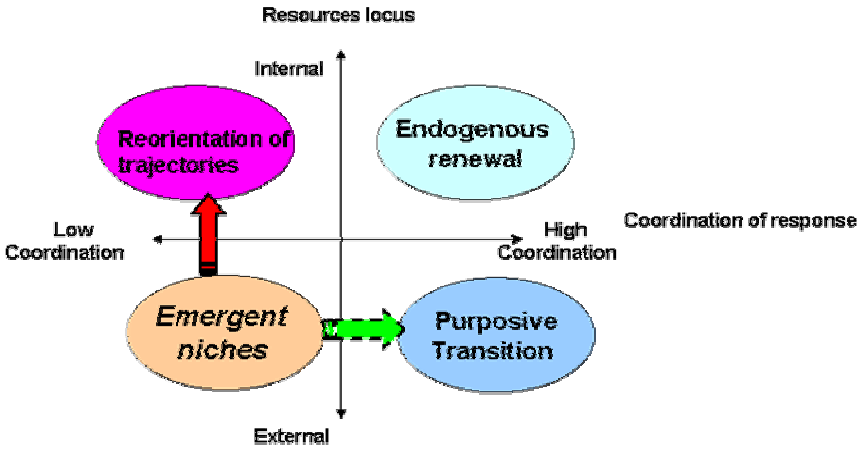
These two experiences are emblematic of the fact that the organic transition is no longer a niche driven process. One reason is that these narratives on organics are not destructive, in the sense that previous regime knowledge, values and strategies are not obsolete. Instead, the organic chains have been managed according to conventional marketing strategies, by privileged relations with commercial partners and focusing purely on economic performance. Additional knowledge and alternative values had to be developed i.e. the link with territory of origin and the small-scale farming reality. But having chosen an exclusive relationship with a

retailer, the two co-operatives have given up the possibility to communicate these values upon which the project was initially defined to consumers. In other words, multiple retailers are firmly in control of the alternative values of organics. In this sense, incumbent actors adjusted and reoriented themselves by incorporating new knowledge and values and the process of "niche structuration" or the production of a consensus "guiding vision" did not occur. The extension of the organic chain far from the local system of production and marketing, created the split-off of the organic producers community; the pragmatists, who increase the adherence to narrow economic imperatives and the purists who devote themselves to diversification strategies. The farmers interviewed face a dilemma, the need to respond to a range of different member objectives whilst retaining the high level of loyalty and commitment to the initiative, a particularly important factor of success in the original phase. Furthermore, the fact that the growth in organic selling depended on only one form of retailing has increased the vulnerability of the organic network. The retailer has been able to remain a powerful actor in the chain through its capacity to influence marketing choices at all levels of the chain, and in particular through retaining control of the communication of the products' values.

In other words, the outcomes of the process of extending the niche beyond their initial "habitat" can be seen as a progressive dis-embedding (or erosion of bonding social capital), not accompanied by an increase in the level of bridging capital.

Analytically speaking, the two examples suggest that under situations in which niche actors lost their strategic game versus the core regime members, the transition trajectories are most associated with the re-orientation of trajectories.

Figure 13 The hypothesis of the transition trajectory in the case of the CAF cooperative



First, regime members have gained the control of the resources needed to bring about a given transformation (including knowledge, legitimacy, premium price and symbolical capital). Second, along through this process the alternative values, around which the project was built, lost their solidity in terms of an envisaged configuration of artefacts, practices and resources that coherently work to deliver certain expectations.

Where, a reorientation of trajectories is appraised negatively, governance faces a problem in which the incumbent regime is equipped with the resources for committed processes of change, but where no consensus exists over values (or means). To build an agro-food network compatible with the values they want to transmit, a broader approach has been taken. This broader approach is based on understanding the role that other actors can play in the construction and communication of quality, as well as the synergies between organic beef production and other local resources that can be mobilised to enhance social cohesion. This implies the involvement of consumers as well as integration between the production activities and the local community, on the basis of a more stable and intense local network.

Mangiocarnebio – an organic local beef circuit[34]

Mangiacarnebio represents one of the most innovative examples of organic locally-oriented collective marketing initiatives. This initiative has been launched by PROBER[35], the organic producers' association of the Emilia-Romagna Region, to

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34 The case study was carried up in the framework of the European Program COFAMI (Encouraging Collective Farmers Marketing Initiatives). "*This project aims to strengthen the role of Collective Farmers Marketing Initiatives (COFAMIs) in rural development by identifying the social, economic, cultural and political factors that limit/enable their development. Additionally, it seeks to formulate viable strategies and support measures to enhance their performance, dissemination and continuity*". The criteria set out to identify the COFAMI initiatives have been on the basis of the following criteria: collectivity, farmers involvement, marketing orientation and innovativeness.

The case study of Mangiacarnebio is based on the following sources of information: analysis of secondary data, literature/internet, internal documents (statutes and regulations, code of practices), local newspapers and specialised magazines. In-depth interviews with significant stakeholders and others subjects involved were used to reconstruct the timeline of the initiative and to qualitatively evaluate the performance of it (in terms of impacts on capital assets). The selection of the stakeholders to be interviewed has been conducted according to the proposed guidelines. They can be grouped into:1) members of the organisation; 2) market partners downstream the supply chain 3) external stakeholders who are not involved in COFAMI activities, but whose point of view are important to provide a complete overview of its development and dynamic. The following persons have been interviewed: a) the director of the COFAMI (PROBER – Emilia Romagna Organic Producers Organisation (Associazione dei Produttori Biologici e Biodinamici dell'Emilia Romagna); b) 3 Technicians who are in charge of developing and managing of the COFAMI idea; c) 5 Organic farmers in the Bologna mountains, who are directly involved in COFAMI activities. Further interviews have been conducted to achieve the goals of the project: a) 3 purchasing groups: Solidarity Purchasing Groups of Consumers (Gruppi d'Acquisto Solidali) one located in Bologna and two "more rural embedded" Groups in Bazzano and Borgo Panigale; b) 1 Farmer who is less involved in the initiatives promoted by the COFAMI.

[35] PROBER is a producers' organisation of organic farmers founded in 1998 with the objective to enhance the production, transformation, promotion and marketing of organic products. The main aim of the organisation is to offer extension services and research activities and promote marketing initiatives. In particular, the mission of the organisation is: 1) to promote and valorise organic products produced by the members through the management of traceability and quality certification schemes; 2) to offer its members technical support and extension services for the implementation of product certification schemes and traceability systems (traceability procedures, Code of practices).

plug a gap clearly emerging in the regional organic beef market[36]. The financial situation of local organic farmers were not promising, as the integration in long food supply chains did not create a satisfying remuneration for officially certified organic beef. The network that has been developed into the Mangiacarnebio initiative can be traced back to 2004, when the PROBER staff became aware of the need to support its farmer members. As one of the fasted growing segments of the food system after the BSE scandal, organic livestock is growingly identified as an opportunity for struggling small-scale farmers, and a strategy to increase the competitiveness of marginal regions. On the other hands, there is a growing consensus about the fact that organic marketing has been treated as an "odd" to conventional marketing. In this context, Mangiocarnebio has been launched to plug a gap clearly emerging in the regional organic beef market.

The brandname, which stands for "eat organic beef" and the slogan " in your city, the beef of your countryside" ("nella tua città la carne della tua campagna"), embodies the mission of the initiative: production according to sustainable methods and locality identification. The success of the Mangiacarnebio initiative has to been found in the formalisation of an innovative organizational model for direct marketing of organic produces. Farmers are keen to join the collective initiative, as it could ensure them a stable market, and consumers are pleased by the possibility of 'buying locally' and react positively to the initiative. On the one hand, the PROBER association provides a good price premium to organic farmers. On the other hand, it creates a direct producer-consumer circuit through collectively managed box-schemes. The case study shows an high potential of scaling up, in terms of replication in many other contexts, and as such it represents a feasible option for countering the loss of organic breeders' bargaining power, that has occurred in recent years.

Similarly to the previous case study, following the historical development of this specific initiative allows us to explore on the extend to which the organics alternativeness has been embedded (or disembedded) in innovative forms of practices and knowledge (which are, in this case, linked to local and short selling circuits) and how the role of regime insiders has affected the growth of this experience.

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[36] The initiative was set up in a mountainous rural area around Bologna. The livestock farmers are very dispersed over a huge part of Emilian Apennines[36], where an extensive cattle grazing, and low-external input system, has been practised already for a long time.

A focal point of the analysis has been to illustrate the dynamics of this case study as an innovative initiative which emerges as a "re-orientation of trajectories": (a) there was pressures from organic breeders who raised a pressing collective problem to solve – the valorisation of their organic beef-; (b) but then, regime insiders responded to these (uncoordinated) pressures by mobilising their resources (both humans and financials) and activating suitable knowledge.

The story of Mangiocarnebio box scheme initiative

2004, "The beginning": Addressing the problem of organic breeders empowerment on the agenda

The beef production in the Bologna mountains was highly fragmented and the local organic sector did not have stable supply chain structures. The situation started to get worsen when in the second half of 2003, the demand for organic beef dropped dramatically. At that time, the organic farmers in this area sporadically supplied the Agricultural Co-operative of Firenzuola (Cooperativa Agricola Firenzuola, CAF), which gave them the possibility to slaughter and market the local beef. But, during 2003, the organic beef market had a lower economic performance than during the previous years. Consumers were less willing to pay a premium, and the long chain lost interest in promoting organic beef. The integration in long food supply chain did not create a satisfying remuneration for officially certified organic. This put the organic producers in a very difficult position, and the problem of finding alternative channels became urgent.

> *"...during these years, our way to support "our organic farmers" was offering to them extension services...but we felt that this was not enough; we felt the need to find an appropriate economic retribution to their organic produces...and our idea to set up Mangiocarnebio mainly come from listening and collecting farmers' suggestions" (a PROBER technical advisor)*

In this marginal region farmers had a relatively long experience in organic farming, since most farmers had converted to the organic production system during the late 1990s, in particular after the approval of the EU Regulation 1804/99 governing organic livestock production. For the cattle farmers in the Eastern part of the mountains of the province Bologna have caught this regulation as an opportunity to differentiate their milk and beef production in an effort to create extra value added and income[37]. The dairy cattle farmers started to produce organic milk for the

[37] In the western part of the province of Bologna, on the left bank of the river Reno, cattle farmers are operating within the production area of Parmigiano-Reggiano cheese. The need to follow a strategy to increase income in order to maintain the economic viability of the farm has

Granarolo plant in Bologna, but for beef an immediate remunerative market outlet could not be found.

It is evident, in fact, from the case-study findings that despite their efforts they did not find a solid market for the organic beef produced and often were forced to sell their organically produced calves and cull cows on the market of conventional beef . The economic viability of organic livestock farming depended too heavily on subsidies. Furthermore, the integration in a long food supply chain did not create a satisfying remuneration for officially certified organic beef. This may be best illustrated through a quotation of an organic breeder who joins the Mangiocarnebio initiative:

> *"If the downward market trend does not change, we will forced to stop to sell our meat as certified organic beef. I perceive the crisis of the sector when I notice that the price paid for my cattle is constantly decreasing. ... Not enough to cover the higher production costs, at all!".*

PROBER, the regional organic producers' association in Emilia-Romagna became aware of the need to support the local organic breeders, particularly those located in mountainous area, as their weakness of bargaining power often resulted in lower prices and general uncertainty throughout the food chain. The network that has been developed into the Mangiacarnebio initiative can be traced back to 2004, when the PROBER staff began to consider all the requests raised from its members. They believed in the high quality of organic beef and wanted to find ways to realise the potential benefits associated with local organic beef consumption within Emilia-Romagna Region. The findings of the survey show that the motivations for those farmers to be involved in the Mangiocarnebio project mainly come from a need to find an adequate market outlet for the organic beef, which would be able to remunerate the higher productive costs.

Farmers who wanted to join the initiative represent a large heterogeneity of organic farms regarding farm size, marketing strategies and cattle breeds used. The average farmed land is around 96 ha, ranging from more than 100 ha to only 30-60 ha, and the average cattle herd size is around 73 heads. There are many farms that combine multiple income strategies. Some of them focus mainly on dairy production as the dominant income strategy, and calves are considered as sort of by-products, and a marginal part of the total income. Other farms have chosen as strategy to specialise in beef production, focusing on enhancing the beef quality. These different types of farms require livestock breeds with different characteristics. Most of the farms who

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been felt less in this area, as these cattle farmers can enjoy the higher milk price related to the valorisation of Parmigiano-Reggiano cheese. These farmers deliver their milk to cooperative cheese dairies which have been established some decades ago.

combine beef and dairy productions, use Friesian Holstein or Simmenthal dairy cattle as the dominant breed or dairy-beef crossbreeds. Those farms who are specialised in beef production mainly raise Limousine beef cattle. A smaller group of farms is focused on autochthonous breeds cattle like Romagnola or Chianina.

Despite these different breeding strategies, shared empathetic values circulate within this group of cattle farmers. These values involve producing through organic farming methods and traditional production techniques, privileging the use of on-farms feed, and having direct relationship with end/local consumers. Often, farmers who are actively engaged in direct selling and more traditional (and historically rooted) local marketing circuits, including butcheries and local consumers have succeeded in squeezing out of the market. In this case, the added value of the product is more created through the intrinsic value lent by the personal mutual trust than to organic certification.

The definition of a code of practice.

Once the importance of preserving local organic breeders was acknowledged, the first step of the initiative was the formalisation of a Code of Practice regulating the organic beef production. To be enrolled within the network, farmers would have to comply with a new Code of Practice with stricter standards then those of EU legislation. Of course, the extension service offered by the association has supported farmers in adopting the new Code of Practices. Specific requirements have been laid down concerning the feed ration of the beef cattle and the origin of the cattle which should be born and raised on the farm. Another condition which has been taken in consideration is the selection of farmers with high communicative and relational skills, which in turn may contribute to increase consumers' confidence and increase the product's reputation among non-local consumers.

The initiative currently includes 15 cattle breeders producing according to the organic production specification. According to the criteria of selection set up by the association:

> *"the members of the initiative should be already member of PROBER, should be certified as organic and they should demonstrate high competences and skills in livestock production. Another condition which has been taken in consideration to select farmers has been their communicative and relational skills, which in turn may contribute to increase consumers' confidence and increase the product's reputation among non-local consumers" (from the PROBER association web-site).*

Christmas 2004, the innovative ideas in actions.

The first topic that the project has addressed was to understand how the organic beef market works and how to cut, process and sell organic beef in order to better valorise it. Their innovative idea was to reach directly the final consumers by delivering boxes of locally produced organic beef. According to this idea, the box schemes should be run and managed by the PROBER association who buys organic cattle from the members and distributes it through the preparation of boxes[38].

During the Christmas period, the PROBER staff after having tasted different beef cuts, has chosen the box sizes and their composition, with the aim to reach a compromise between price and logistic needs. At the beginning, the beef was available in 20 kg boxes and a box contained a selection of steaks, diced, stir fry, minced meat etc. Cuts were derived from both fore- and hindquarters. Prices have been pitched around conventional supermarket prices.

In that period the number of consumers of the organic beef promoted by the association increased considerably. The box system involves customers who were informed by word of mouth. The first consumers were relatives and friends of the association staff.

The second activity undertaken by PROBER was the creation of a logistic system, which should be adequate and sustainable for a local producers-consumers network. Building a direct relationship with final consumers has complex consequences for the logistic management. The study took about six months and involved local butchers and organisations. They concluded that the best option was to create a new way of collective direct selling. A box system could offer a good chance, but the growth in customer numbers needed to be well managed. For this, a waiting list was organised to put on additional potential customers. This provided a comforting safety net if the number of customers decreases or increases. An immediate concern was to organise the transport and delivery system. Transport could be a significant cost factor, particularly in rural areas. Planning routes and organising multiple 'drop-off' points helped to reduce these costs. After an unsuccessful experience with a private forwarding agent, resulting too much expensive they decided to buy an own delivery van, with a freeze facility. Much of

[38] Prices paid to breeders are related to the beef/cattle quality value. More specifically, prices can range from 5 to 5,50 €/kg. Limousine cattle are privileged by the association (and hence they are paid more), due to its higher yields and higher "eating quality". In fact, there is a general agreement within PROBER association that the dairy breeds or crossbreeds do not allow to reach the same level of 'eating quality' as the more "specialised beef breed", such as Limousine, can achieve.

the efforts have been addressed towards the setting up of an efficient logistics planning of the initiative, in order to be able to cope with an increasing demand and a limited supply.

The next step was the creation of the common label and the website, allowing for a better recognition of their products. The resulting label, Mangiocarnebio, which has been chosen by PROBER staff, combines two consumers demands: organic and origin. Through the website (www.mangiocarnebio.it) marketing is done more regularly, and it represents a good way of keeping in touch with the customers as well as publicising the organic beef system.

How does the website work:

consumers have to apply for the registration

in a few days after the application form, every requests has been responded by the association

consumers receive user name and password

consumers can book the box

when a significant number of requests have been reached, the beef calf is slaughtered and an e-mail is sent to the consumers with the written date of delivery and the characteristics of the animal

home-delivery is made on a specific day

In order to face consumers' demand, the association has developed a range of box sizes, offering the customers the opportunity of choosing the contents (composition) and the price of their box.

The difficult partnership with local consumers.

At this time, the association is looking for new local consumers/partners to broaden and stabilize their alliance. Furthermore, delivery was obviously easier if a central drop off point could be organised. The possibility of selling to a GAS ("gruppo di acquisto solidale", "organic buying group") has firstly been explored. PROBER technical staff had contacts with three local GAS (one located in Bologna and two "more rural embedded" Groups in Bazzano and Borgo Panigale), but unfortunately they discovered a very disorganised structure, without any collective purchasing organisations. However, there was also evidence of divergence between the

PROBER and the GAS perspectives. A consumer belonging to GasBo, for example, explained that she has not ever been engaged in Mangiacarnebio, as their Gas is not oriented in the collective purchasing of beef.

Similarly, among some of the consumers belonging to another Gas there was a sense that the Mangiocarnebio would not provide sufficient promotion and communication to warrant their active participation:

"I did purchase through Mangiacarnebio, I was pretty satisfied...and I really enjoyed to talk with the guy who delivered the beef. But my wife, was more diffident about the meat quality characteristics. Anyway I tried to convince other people to buy the beef, but without doing any pressures" (A Gas consumer, male, Bologna).

Until now PROBER did not succeed in creating a real and stable partnership for commercialising at local level organic meat. Finally, PROBER is actively looking for local shops and post offices as drop off points which can generate huge benefits by attracting additional customs and may provide a more flexible way for collection. Also the possibility of selling through supermarkets is now explored.

Starting from 2006, several initiatives were taken by the association in order to promote broad awareness on the initiative. These include: the launch of the website, promotion campaigns with articles in regional newspapers. Then, the association board is taking part in food exhibitions and fairs on national and international level that contributes towards the promotion of the initiative (such as, SANA in Italy and BioFach in Germany). In 2006 PROBER launched a strong promotion campaign with articles in regional and national newspapers. Unfortunately, the feed back was very scarce.

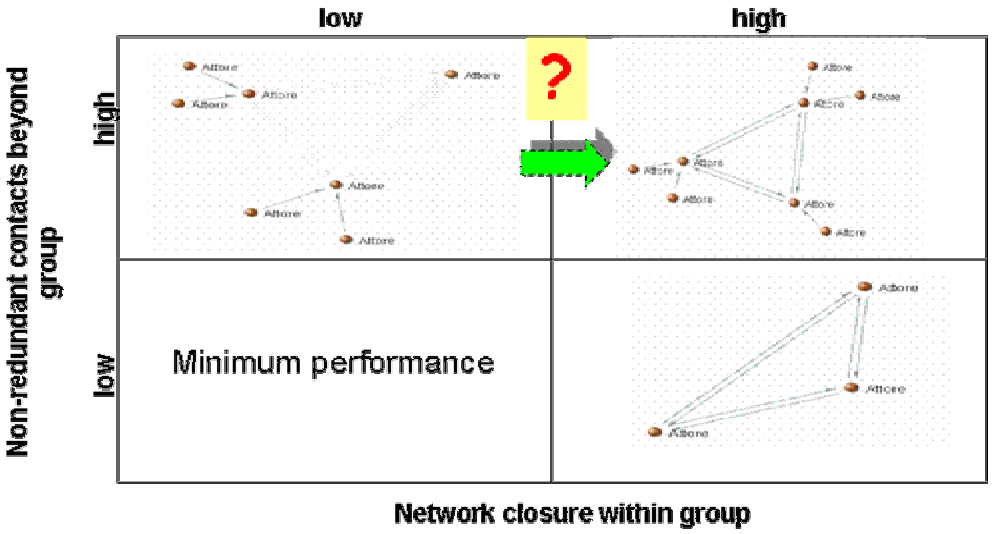
Recently, the lack of a critical mass of organic beef demand through box-scheme appears to be a pivotal issue in the development of the initiative. It becomes a particular dilemma within a network where farmers are potentially competing for selling the beef. It is apparent, indeed, that income disparities are emerging. Some breeders, for example, explained that Mangiacarnebio would not provide sufficient financial benefits to sustain their businesses. Instead, Mangiacarnebio still represents only a very marginal part of farm income. They also criticized it for the lack of regularity in the supply. In this way, they said that they are obliged to keep the cattle unsold until when they have found new buyers, getting very low prices as the cattle is already over size. Similarly, another farmer complained about the efforts they have face to comply with the requirements of PROBER, in terms of weight and age of the cattle:

> *"PROBER requires an average weigh of 550 kg; reaching this weight requires a lot of efforts. I'm not saying that I wouldn't try to do it, as they (PROBER) provide a good incentive for us. But I think that if they (PROBER)*

were going to ensure a more stable market for my beef, it would be better for me!"

Despite the criticism, PROBER prefers to buy regularly cattle heads from those farmers who are able to guarantee for high quality produces. Therefore, in order to achieve more competitiveness, farmers are moving towards beef specialization, while keeping extensive breeding systems. The exclusion from the decisions making might be recognized as one of the main reasons of a gradual loss of interest showed by some weaker producers in taking part in the initiative.

Figure 14 A representation of the evolution of the niche configurations in the case of Mangiacarnebio (based on Burt, 2000): the hypothesis from a disintegrated group of diverse perspectives and resources towards the maximum performance



An analysis of the case

The central innovative issue in the Mangiocarnebio case study has been the setting up of a new organizational form for organic marketing based on a collective management of box schemes.

Analytically speaking, this example suggests that under situations in which pressures were poorly articulated, the trajectories of change have radically altered by innovative processes without being associated with discontinuities in the actors, networks and institutions involved in the regime. As already stressed,

Mangiacarnebio initiative was set up in response to the difficult economic situation of the organic livestock sector in the Bologna mountains. At that time the organic sector was highly fragmented and did not have stable supply chain structures; consumers were less willing to pay a premium, and multiple chains lost their interest in promoting organic beef. This put the organic producers in a very difficult position, and the problem of finding alternative channels became urgent.

The response, however, was formed within the regime. The existence of "institutional initiators", PROBER association- and a pressing collective problem to solve - valorising the organic beef, have been the precondition for the development of Mangiocarnebio initiative. The PROBER association has always played a crucial role in the coordination of actors around the innovative project and in providing the necessary resources (human and financial resources) and knowledge to change. On one hand, PROBER was responsible for the selection of the farmers, according to the criteria and rules which have been defined in the code of practices, and it started to look for adhesions among local consumers. Further, the enrolment of different actors into coalitions for change has implied the production of a "guiding vision" around the values of organics and locality.

On the other hands, we have seen that PROBER has provided the resources and the knowledge necessary to change.
First: financial resources. The foundation of Mangiacarnebio was possible thanks to the funding of the PROBER association. Farmers pay an annual subscription, in accordance with the farm size and technical services assistance. One of key actions implemented through Mangiocarnebio to date has been the guarantee of a premium price to organic farmers, which is the most competitive compared to other market outlets[39]. The price that the association is paying to the farmers is about 5-5,50 €/kg, which corresponds to more than 30% than conventional beef. Furthermore, some costs related to production and marketing (logistics, supplies, advertising) are reduced and paid by the association.

Second: physical resources. The relevance of physical resources mobilized through Mangiocarnebio is rather difficult to estimate. However, the challenge of Mangiacarnebio has been mainly related to further reduce distance between production and consumption, by providing a well-developed consumers linkage

[39] Of interest is that 72% of the finale price is retained by the farmers, 5% is related to the costs of logistics 8% for administration, 4% to the slaughterhouses and 11% for meat cutting activities. Premium price (+): a significant premium price to breeders is granted by the initiatives. The prices that the association pays to farmers is about 5-6 €/kg (over 30% more that the conventional beef). This means that the valued added retained by farmers corresponds around the 72% of the final prices.

(the web-site and the logistic planning). Further, like in many other remote areas, processors plants which are in compliance with the EU hygienic requirements are very few and very dispersed. Hence one of its key actions to date has been the engagement in the project of a slaughterhouse and two meat cutting plants located in the area.

Third: human resources. PROBER has always put a strong emphasis on transferring knowledge on organic methods, providing a very good level of extension services. However, most of the farmer members have no particular skills in processing and marketing their produces, as over time, they have mainly focused on improving the agronomic techniques and breeding methods. In addition, many farmers are often not skilled in working with computers and internet. There is greater value for such farmers to join the Mangiocarnebio network, as it provides all the logistic and marketing instruments as an interface with the market. Currently, many farmers are glad to delegate to PROBER marketing tasks as they want to focus more and more attention to their farming activities. Where farmers already have established well developed marketing channels, this may equally be an incentive to participate in the initiative.

In other words, the coordination of resources and knowledge across specific coalition of actors has been built upon active processes of institutional support. An institutional actor has created the precondition for the emergence of an innovative niche, by creating a "protected space" from the mainstream market selection. The protection has been provided in terms of resources and the knowledge needed for the process of structuration of this innovative niche.

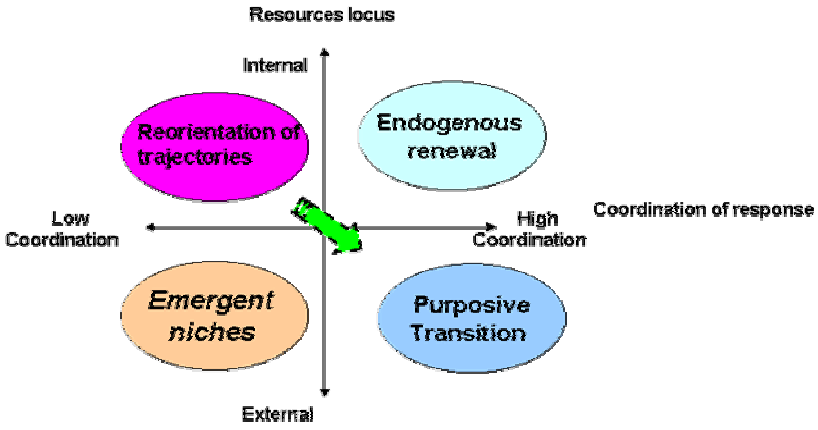
However, even incorporating the potential for collective action, a social structure still lacking in the project. First, "horizontal" ways of integration and coordination between producers members are rare. Despite the shared experiences of organic farming, several farmers described only little contacts with other farmers involved in the initiative, and even, they do not know each other. Asked which kinds of connectivity is established among members, a farmer explained:

> *"I know some other farmers who are involved in Mangiocarnebio, but only because they were already friends of mine...even before that...I have never met the others*" (A farmer, male, Loiano).

In short, the top down political intervention in facilitating the formation of business network has the risk to create a lack of internal cohesion among the participants to the initiative. The potential of previous and informal social structures may easily be overstretched.

Further, because the market for selling organic beef through a box-scheme is still too small, Mangiocarnebio has functioned only sporadically as a platform for collective action of the direct participants. For several farmer members selling through Mangiacarnebio still represents only a marginal part of farm income. Surprising is how a relatively small number of farmers had been involved in the collective branding and marketing. They are more focused on the production and do not have time to build up the skills to be involved in a collective marketing strategy. In moving towards more sustained forms of cooperation, collective initiatives face the lack of farmers' participation in decision making processes.

Figure 15 The hypothesis of the transition trajectory in the case of the Mangiacarnebio



The Mangiocarnebio case study highlights that intervention by external agencies (in this case, PROBER organic association) have to work to facilitate and support local business networks, which, if ignored, may jeopardise the latent social structures for future collective actions. This poses an ongoing challenge for developing the self-organizational capacity of small-scale local breeders. According to Woolcock (1998), positive outcomes are attained when forging and sustaining social relations connecting regime resources and niches capacity building and knowledge.

The Farmers' markets in Tuscany and in California

Drawing on experiences from Tuscany and in California, we explore the innovative potential of farmers' markets: analysis of the specificity of the socio-technical system embraced by farmer' markets and of the level of its structuration; and the inside mechanisms of transition through the analysis of the tensions emerging from the interactions between niches and regimes that are emerging during the process of institutionalization of some initiatives by public bodies.

The farmers' markets in Tuscany[40]

The case study aims to illustrate pioneering farmers' markets in Tuscany[41] as emblematic examples of "emergent niches" and explore the specificity of their

[40] This case study was carried out within the frame of the ARSIA (Regional Agency for Innovation in Agriculture in Tuscany) project. ARSIA has promoted research aimed at defining a complete and detailed picture of local circuits in the region including their characters and dynamics.

[41] Tuscany constitutes a significant area for observing, analysing and testing the specific ways local food circuits; such as organics, farmers' markets, direct selling through individually or collectively managed boxes-scheme, direct selling on farms, develop. The first thing to consider is the development dynamics of its agro-food system and of its rural and food policies (the "Tuscan model"). Tuscany has been characterised for a long time by the presence of production systems strongly linked to the territory (wine, olive oil, etc.) and such territorial identity underpins the distinctiveness of its products on the global markets. A steadfast dedication to the valorisation of qualitative attributes of products and a remarkable weight of local dimension in the commercialisation of products characterise the regional agriculture. In general, rural development policies have been strongly oriented to support small to medium sized farms and to promote multifunctionality and sustainability. In this context, there is a rising interest in the re-localisation of food production-consumption circuits. Which appears to be a new, important strategic attribute (in addition to the valorisation of typical products), able to generate an innovative, sustainable and suitable development trajectory of the regional agro-food system and to create synergies with the other goals of the government's policy on agriculture, food, biodiversity and environment. Moreover, Tuscany is a sort of laboratory in which new patterns of governance in the management of local development processes are implemented and put to the test (in particular, great importance is given to the process of institutional decentralisation and to the participatory methods of governing). Thus, new initiatives built at the local level on a basis of self-organisation and, potentially, on innovative institutional arrangements constitute an interesting experience and challenge. Actually, the Regional Government has recently officially expressed its interest in the initiatives of re-localisation and launched a project aimed at supporting their development. At the same time, its technical agency (ARSIA - Regional

socio-technical system, which is governed by rules and paradigms different from those prevailing into dominant food regimes

Moreover, recently their increasing popularity have roused a general interest which has involved also public bodies, intending to support these initiatives. This policy involvement has fostered two important processes: an internal niche structuration and the development of new dynamics between the niche and the policy regime. That is inevitably entailing both frictions and conflicts about values as fundamental constituents of the socio-technical system and uncertainty about resources and norms governing actors relationships. A key analytical perspective has been to illustrate the dynamics of this case study as a case of niche evolving towards a "purposive transition": the regime transformation is guided principally by negotiation between actors from beyond the regime. Key to the transition is the greater role afforded to external social actors, both in articulating pressure for change – as they deliberate attempt to change the regime according to a consensus guiding values and developing new knowledge - and in providing the resources, capabilities and networks that condition the responses. This example suggests that the coordination of the many diverse and nascent resources involved in a radical change often required intervention by policy realm.

The emergence of the niche: the pioneering farmers' markets

The story of farmers' markets in Tuscany can be traced back to the beginning of the 1970s. At that time, the social movement of "going back to the land" emerged as expression of the "peasant rural culture" renaissance. The beginning of the story has a great symbolic meaning: small scale food producers claimed that something needed to be done to prompt changes in the mainstream food system and to secure their livelihoods and, with them, the survival of the different forms of agriculture that they embodied. In the early 1980s, a group of pioneer producers and citizen-consumers shared the idea to bring the past back to the present epoch, by promoting the re-institution of an historic farmers' market (called "Rificolona") which was held in Florence since the middle age[42]. The first "Fierucola of the bread" (the new name means "small fair") took place in a central square of the town

Agency for Innovation in Agriculture) has promoted research aimed at defining a complete and detailed picture of these processes in the region including their characters and dynamics. The participatory evaluation of the draft documents (the regional project and the related criteria for financially supporting the initiatives, and the findings of ARSIA research) illustrated the difference in vision held by public institutions versus those held by the actors-promoters of these initiatives (and sometimes within the latter group).

[42] The "Fierucolona" was shout down at the beginning of XIX century because of the fall in interest due to the start of industrialization age.

in 1984[43] and it was aimed at selling ecologic products made by small farmers and included bread in the title as a symbol of essential needs. Since then it has significantly grown in number of participant producers and gradually in popularity. Yet, recently changes in ethical, health and environmental concerns, organisational arrangements, relationships with institutions and consumers have occurred. Since this first experience, the number of markets promoted by farmers has been increasing[44], giving space to the small and variegated producers present everywhere in the region[45].

During this process of growth, social movements, such as small size producers' associations (ASCI - Associazione di Solidarietà per la Campagna Italiana, Foro Contadino) and regional organic farmers' organizations (CTPB - Coordinamento Toscano Produttori Biologici) have played a key role in setting up new farmers' markets and in giving cohesion to the gradual enlargement of the farmers' network. Within this network, "new farmers" and "new-rurals", in spite of their urban roots, have shown a strong awareness for the need to move from an industrial agriculture towards a more sustainable and multifunctional agriculture that re-connects with consumers. Together with farmers and social movements, consumers have played a key role by looking for a more direct contact with producers. The search for "good food", with reference to safety and taste, in many cases added to the will to support small size producers and environmentally sounds production appear the main motivations for attending farmers' markets (Miele, 2001; McEachern and McClean, 2002; Kirwan, 2004). Proximity is widely considered a route to actors' behaving with trust, reciprocity and kindness. The personal, face-to-face connection at the farmers' markets is of paramount importance for all.

For a long time, the social network around farmers' markets has been an underground movement, while regime actors (institutions) were blind to this development. The pioneering farmers' markets in Tuscany can be described as networks that involved farmers spontaneously setting up and managing these initiatives. One of the consequences of this substantial invisibility is that most of farmers' markets in Tuscany have been run by actors who have a low representation in the public sphere, or in other words, a low level of regime membership.

Sharing cognitive frames

[43] From that experience, nowadays this farmers' market is carried out every month and every year, in September, there is a greater, special edition of the same fair.
[44] The *Fierucola delle Bigonce* in Prato; the *Zucca Barucca* in Pistoia; the *farmers' markets* in Pisa, Arezzo and Fiesole; the *organic markets* in Livorno and Cecina; the *Pagliaio* in Greve in Chianti.
[45] Among these producers it is possible to identify also a great number of non-professional (hobbyist) farmers, as well as part-time farmers.

For a long time, most of farmers' markets in Tuscany have been run on the basis of rules and criteria not yet codified in any formal way, but merely based on the code of running embodied in the shared values. The small farmers' organisations and social movements have always been key actors in the construction of the informal language or values shared by farmers and consumers. The findings of the survey show that the motivations for "local food communities" (farmers, related social movements, consumers) to be involved in the farmers' market projects mainly come from a deep commitment to social, economic and environmental sustainability of food production-consumption. These shared empathetic values which circulate among them involve producing through organic-biodynamic farming methods and traditional production techniques, safeguarding biodiversity (privileging the use of local plants varieties and animal breeds) and having direct relationships with the end consumers. Often, farmers who are actively engaged in direct selling, have been squeezed out of the market because of the modernization logics. Perhaps the most pervasive value shaping this farmers' network is that of helping each other. Indeed, some farmers stressed the need for cooperation as means to survive and prosper for small size farms.

In the pioneering farmers' markets, there are no clear role relationships, norms on market participatory and regulative rules. First, there is some uncertainty there may be uncertainty about the best design decision making process – Who are engaged in setting the rules? When some critical events emerge, rules are re-negotiated and re-defined through participatory decision making processes, directly involving producers (on a voluntary base). In addiction, there may be uncertainty about the networks around farmers' markets - Who has to be involved? Who has to be included in/excluded from the market? How important is the distance of supply? What rules have to be established for selling produce at the farmers' markets?. There is widespread agreement among farmers that allowing allows vendors, usually referred to as peddlers, to sell products can be detrimental to both the value of the market for farmers and to the quality of the market experience for consumers. The sale of produce by those who did not raise it defeats the idea of a "farmers" market, is deceptive for consumers who may not realize the distinction, and creates unfair competition for local farmers at the market. For this reason, the majority of the pioneering farmers' markets in the Tuscany are "producer only." Because farmers' markets are essentially designed to create markets for local farmers, one issue that can arise is how to define or limit the trade area – or region – from which producers are eligible. What seems to emerge is a shift in the meaning of the term "local" in the feelings of the actors who are playing the game. In some farmers' markets, "local" does not strictly define geographical boundaries, indeed, some producers come even from adjacent regions. It more often and

generally refers to the meaning lent to the food by the direct contact with producers; a perception that is getting common as other empirical evidence shows (Tregear talks of "direct produce food" (Tregear, 2007)). "Local", thus, may be best described as an "emotional reach" (Jones et al, 2004) from the perspective of consumers who recently have been motivated by loosely, un-reflexive meanings well spread by the media, rather than by a deeper motivation.

Moreover, a weakness of the system of shared, informal rules sometimes emerges, namely, a common lack of coordination in the management of consumer prices. For example, prices are not always displayed, the same produce can have disparate prices depending on the vendor, sometimes prices are fixed at a flat rate or are disproportionately high. Because the prices embodies the meanings of solidarity, fairness, and transparency, one fundamental issue to be addressed is the decision of how prices are defined.

During the process of experimentation, the actors involved in those pioneering farmers' markets actively and deliberately engage in drawing upon or reacting against elements of the existing regimes rules[46]. To this regard, findings from this study suggest that farmers' markets face at least two key challenges, which are related to the importance in these experiences of the face-to-face commitment. First, in order to avoid the high costs related to official certification for organic farming, pioneering farmers' markets provide space for privileging self-certification and experimenting control systems based on participatory models and collective involvement. Second, farmers' markets look as an arena of fight over hygienic regulations for food production and selling. The EU regulations on healthy and food safety have been credited by many farmer pioneers as putting an end to small scale food production systems, due to the high hygienic standards required by the EU. Hygienic rules followed by farmers indeed refer to contextual knowledge and are much more embedded in traditional practices than in formal regulations. "Hygienic standards for small scale production systems should be different from those for agro-industry, and only in the first case it is possible to achieve higher organoleptic attributes of quality"[47]. Moreover, because of the financial constrains that characterize many small farms, often compliance costs of production processes and handling facilities are not affordable.

The mobilisation of internal resources and artefacts

[46] Indeed, recognising farmers' markets as niche of innovations means that they might provide space where it is possible to deviate from the regime rules (Garud and Karnoe, 2001; Geels, 2004).

[47] Ventanni di fierucola del pane, 2003.

Despite the financial constraints that characterize most of the small farms, farmers' markets are funded by the producers themselves (through refund for organizational expense). In this context, the market equipment is self-arranged with the associated pros and cons: attractivity and variety versus precariousness and inadequacy. In addition, due to the fact that they are not considered as commercial activities but still as "cultural events", they usually take place in central squares of historic centres and not on spaces normally used for daily or weekly markets. On one hand, this gives them a greater visibility and, in many cases, enriches their image with symbolic value, on the other hand, it creates several problems because this space usually does not have the facilities required for a market (such as, toilets and parking spots).

The evolution of the socio-technical system of farmers' markets in Tuscany (towards a purposive transition?)

The growth of farmers' markets and their increasing popularity have roused a general interest, which has involved public bodies, both at the regional and the local level (the Regional Government and Provincial and Municipal administrations), intent on supporting these initiatives. This interest has resulted, on the one hand, in research actions aimed at analysing the phenomenon, and on the other hand, in projects aimed at experimenting with new markets. This policy involvement has fostered two important processes: an internal niche structuration and the development of new dynamics between the niche and the policy regime. That inevitably entail both frictions/conflicts about values as fundamental constituents of the socio-technical system and uncertainty about networking and related rules building processes.

This section examines some of the underlying incoherence of the process, the tensions and the changes emerging. How do actors come together and find a mutual understanding of a transition context, and agree over the best course of action for a regime? The challenge here is to analyse how contrasting visions and expectations enrol actors into coalitions of support, come to define their interests, and shape the way that they seek to respond to selection pressures (articulating new knowledge) or shape their collective adaptive capacity (mobilising resources).

"New actors making moves the game"[48] Pilot projects or efforts to institutionalize farmers' markets constitute a deliberate attempt to develop these practices through a political engagement. Organized through a partnership between public and private actors, the first pilot project of farmers' markets promoted in Tuscany was represented by the "Mercatali". This experience started in 2005 in a small town in

[48] (Geels, 2004)

the province of Arezzo, (Montevarchi) and, since then, this model has been replicated in two other villages (Bibbiena and San Sepolcro) located in the same province. Since the beginning, the Mercatali project was promoted and funded by the Regional Government, ARSIA and Slow Food, with the goal of involving various groups, participating in diverse forms of action, such as town and provincial administrations, farmers' unions (the three Italian unions: Confederazione Italiana Agricoltori, Coldiretti, Confagricoltura), and agencies involved in territory promotion.

Moreover, other market initiatives have been drawn on by several Town Councils. Among them: an organic market in Siena, Colori e Sapori in Vicchio and Primizie in Valdarno, a mobile market that takes place, once per month, in four different municipalities in the Valdarno area.

The enlargement of the network[49] around farmers' markets has significant implications, as it became the arena in which a struggle over values took place: new actors are a divisive element that misrepresent the original values of farmers' markets. From a policy makers perspective, these spaces represent an important opportunity to support rural development processes at the local level and to implement territorial marketing strategies. To accomplish these broader interest and goals, Mercatali and the other markets set up by local public bodies have rules defining the eligibility of products and producers that can participate in the market. Rather than involving only small-scale producers, they typically also allow the participation of medium to large scale farmers as well as retailers and food processors[50]. In some cases, use of organic-biodynamic methods of production are also not essential.

Changes in the rules

As already stressed, pioneering farmers' markets are run and managed directly by farmers, informal procedures of regulation are shared among participants and decisions are taken by informal committees. However, in the last few years, the

[49] As Geels states (2004), the different social groups each have their own perceptions, preferences, aims, strategies, resources, etc: rules system and artefacts (physical and symbolic characteristics, values, representations and meanings) constitute two dimension that exist in relation to the single actors and to groups of actors (e.g. producers, suppliers, public authorities, users, scientists, etc).

[50] It's important to underline that, in *Mercatali*, the admission of non-agricultural participants (butchers, bakers, delicatessen retailers, etc) is strictly bound to under condition of retailing local produces also in their sale points.

interests showed by the public realm (at regional and national levels[51]) around these initiatives might be recognised as an incentive to the structuring of the niche.

For instance, in Mercatali, a large management committee, promoted by the town council and representing different actors - town and provincial administrators, Slow Food, producers, processors, retailers - is in charge of running and administrating the market. In this context, wherein non-aligned actors are involved, sharing informal values and rules have been gradually substituted by a formal system of rules and regulations. In such a system, some farmer participants feel excluded. The exclusion from the decisions making might indeed be recognised as one of the main reasons for a gradual loss of interest showed by producers in taking part to the markets. This is happening in many different contexts. In Arezzo, for instance, the establishment of a new Mercatale has failed because of a producers' defection to a new farmers' market. Another example is provided by the market "Primizie in Valdarno" which is facing a big challenge because of the lack of producers. Further, the project of establishing a new farmers' market which was run by the Provincial Administration of Pisa, failed because the farmers refused to join.

However, "progressive" public participation may create new negotiation spaces, wherein it is possible to integrate and coordinate meanings, aims, and strategic actions. In the contemporary situation, two issues appear emblematic. First is the certification system for organic production methods. Official certifications are required in those markets promoted by public bodies, in order to guarantee the quality and the traceability of the produce. Conversely, a restructuring of the meaning of the word "organic" is emphasized in the pioneering farmers' markets, as they look on certified organics as a barrier to local, small-scale, ethical producers, and do not give priority to certification over personal reassurance. Recently, awareness of this barrier for small scale enterprises has grown and steps are being taken by organic certification bodies at national level. The "participatory certification" model, which is being fine-tuned in developing countries, appears to be a possible solution, because it is based on direct involvement of farmers and on trust relationships among producers, consumers and certification bodies.

The second space of negotiation is emerging around hygienic regulations, through building new alliances between farmers and institutions. For instance, the Mercatali project provides training to farmers in food-related skills. In turn, the trainers work to apply current regulations in a more feasible and adequate way in order to preserve traditional production methods, by negotiating with the local

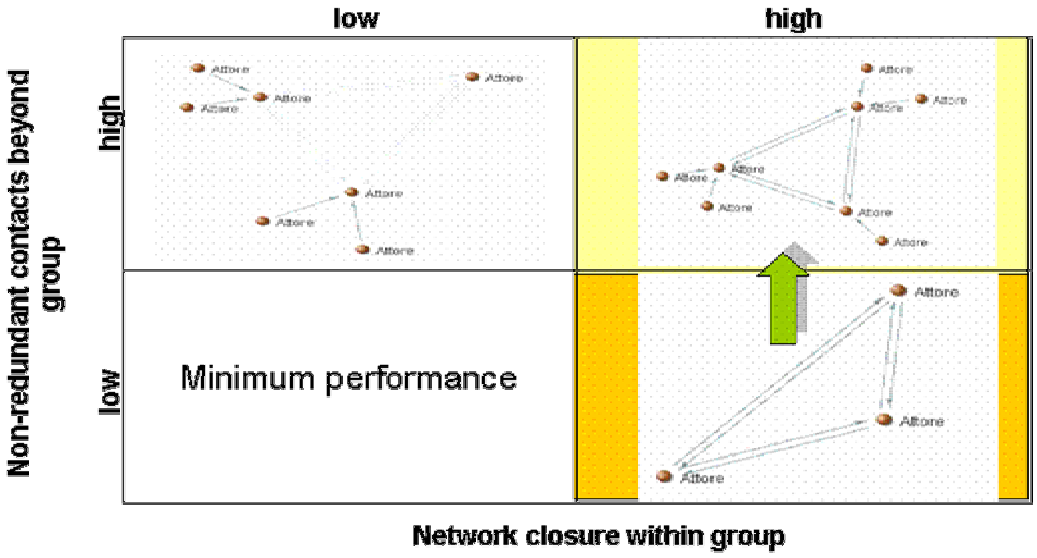
[51] In the first case through the project launched by the Regional Governement, in the second one through the Financial Law promulgated by Ministry of Agriculture (see the introduction).

health authorities. At a higher institutional level (Regional Departments of Agriculture and of Health), these processes seem to bring about a certain will to work for a relaxation of some of hygienic regulations in order to meet the needs of small scale production.

Adjustments in the control over resources

If the public strategy is to support the establishment of new farmers' markets financial support will be crucial. Indeed, policy makers involved in farmers' markets think that some outside funding is absolutely necessary to allow farmer participation. Funds typically come from regional or local sources. The Mercatali project, for instance, supplies many grants for providing stalls, organizing cultural events and widely promoting the market[52]. Conversely, pioneer farmers' markets refused to accept any external funds.

Figure 16 A representation of the evolution of the niche configurations in the case of the farmers' markets in Tuscany (based on Burt, 2000): the hypothesis from a cohesive group towards the maximum performance



[52] In the last edition of *International Hall of Taste* in Turin (October 2006), the most important cultural event organized by Slow Food, the Tuscan Region provided the *Mercatali* market with a chance to be present in a special, dedicated space and a great communication support.

An analysis of the case

The above analysis suggests that pioneer farmers' markets in Tuscany can be seen as an emergent niche that embraces a socio-technical system governed by rules and paradigms different from those prevailing into dominant food regimes (Rip and Kempt, 1998). We uncovered some of the main innovative elements from such socio-technical system, such as the system of values and meanings shared within the network of the actors involved, the connections between tradition and innovation in the system of knowledge, the rules and criteria not codified in any formal ways, leaving the markets' management directly in producers' hands. If over long time this latter aspect has allowed the growth of these experiences, only recently, it seems to give a certain instability to the niche, creating the space to new changes.

Analytically speaking, the development of farmers markets in Tuscany matches most closely what has been defined as an "emergent niche". A new socio-technical system, which embrace novelties, initially emerged in a niche. But the story of farmers' markets is evolving rapidly. Tuscany has been a significant area for observing. Regional and local policy makers have recently expressed their interest in such initiatives of re-localisation, lunching several programs aimed at supporting their development. What once was marginal and invisible, now become of strategic importance for political and ideological reasons. Yet, the engagement of the politics in the arena upsets the processes ongoing, in particular fostering new processes of negotiation between niche members and institutional actors around values, rules and resources.

First: values. In pioneer farmers' markets, core values and principles are still jealously preserved by the promoters and strongly shared among the participants. Conversely, the Mercatali project focuses on promoting a broader concept of local/regional food and sustainable ways of production. The public involvement often brings about an increasing adherence to narrow economic imperatives. Outside, the stress on the symbolic value may give rise to a rural idyll image (using a farmers expression: "the farmers' markets will become like a Christmas nativity"), which might be far from the reality of local food systems.

Third: resources. New actors involved have begun thinking about how to institutionalise and to support direct selling through adequate policies. If the public strategy is to support the establishment of new farmers' markets financial support will be crucial: not only in the successful planning of specific markets, but also as a resource in influencing the substance and direction of any innovative

transformation. In this regard, a further type of resource is embodied in the command of legitimacy and credibility, such as a competence in developing regulations and legislations, or in implementing them. Examples here might include the negotiation process emerging around hygienic regulations, through building new alliances between farmers and institutions.

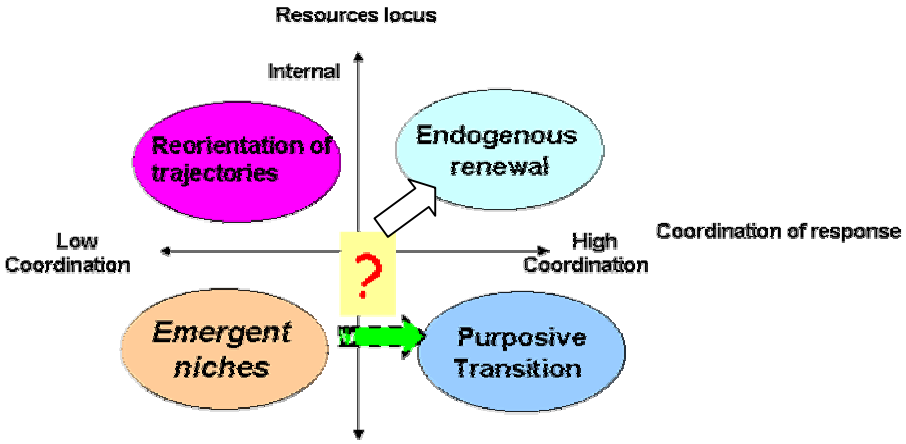
Second: rules. The interest showed by public realm might constitute an incentive for the stabilisation of the niche. Nevertheless, the entrance of the public realm makes the participation for farmers less attractive: an increasing number of farmers feels excluded from the decision-making processes and do not accept to adhere to a formal, exogenous system of regulations.

Along this process, the role of regime insiders and of their interactions with niche members looks crucial. The process of "niche hybridisation" has been presented as guided principally by negotiation between actors from and beyond the regime. In other words, it is the space where the various and spontaneous initiatives interact with the more general and formal rules system. In this specific case, the emergent niche may evolve into "purposive transition" when the selection pressures become highly articulated (formalisation of the rules-systems), according to a consensus guiding vision. However, key to the purposive transition should be the greater role afforded to external social actors, both in articulating pressure for change, and in providing the resources, knowledge and actors networks that condition the responses. We found that progressive public participation may create new negotiation spaces, wherein to integrate values, resources and strategic actions[53]. The governance challenge rests on fostering a greater coherence in visions and values, so that it will be possible to achieve a formalisation of the rules-systems (according to guiding visions). This refers to the importance to create suitable governance conditions, that are found in participatory and democratic systems of interaction on food production-consumption issues.

[53] To this regard, it is also emblematic the role that rural scientists can play. Rural scientists can contribute to influence the cognitive regime dimension and thus favour those cognitive changes needed to transition, by stabilizing niche through activating appropriate knowledge and driving integration processes between regime and niches. For instance, we have experienced this role as researchers-actors during the field survey and the following feedback moments on the related findings, as well as consultants in negotiation contexts. In the light of the emerging critical elements identified, our role has been the creation of an "intellectual/learning space" that helped local food system partnerships to find a common language in order to interact and to reach a "compromise" on most crucial features. In particular, we provided public bodies with the additional knowledge needed to deal with the process of growth of the farmers' markets initiatives and to appropriately support them without eroding their innovative potential.

On the other hands, if the future trajectories warrant enhancement of internal regime adaptive capacities and resources, then the situation moves towards endogenous renewal. Here, transformation towards sustainability will tend to become more incremental. The case study of the farmers' markets in California closely matches this potential transition trajectory.

Figure 17 The hypothesis of transition in the case of farmers' markets in Tuscany



The farmers' markets in California[54]

The case study aims to illustrate farmers' markets in California as emblematic examples of "endogenous renewal": the pressure to change the regime is clearly articulated and there is a high coordination of response (high level of formalisation of the rules and norms governing actors relationships), mainly based on resources originating within the regime. Looking back over a long period of time, the transformation can appear radical, but it will have come about through an alignment of changes shaped by prevailing visions and values. Constituted by a multitude of minor organisational and production[55] innovations, the result was a

54 This case study has been developed as a personal interest. For this study, rules from a farmers' market currently operating in Palo Alto (California) were examined in order to determine the most common provisions and to understand how markets are typically administered. Further, two market managers and 10 farmers were interviewed.

55 One of the of farmers' markets is how they let farmers experiment with new items to respond to consumers demands. If a farmer is not raising a particular product, requests from enough shoppers will often add it to the farmers' inventory of production. The same can be said for

radical transformation in the character of the food production and consumption regime.

Strong regime membership

First of all, farmers' markets in the United States[56] involve actively the public realm, as they are recognised as great dynamic social and economic forces: "talk with any public official interested in providing fresh nutritious food to inner city residents, and farmers' markets will be mentioned" (Hamilton, 2002). The involvement of the institutions around farmers' markets entails a formalisation of the farmer's market values, giving to them an extreme coherence of visions and values. From a policy maker perspective, farmers' markets are important because they give local farmers the chance to sell food they raise directly to customers; they allow consumers to buy fresh food from the farmers who raise it; they help create new farms and food businesses. In addition to creating new opportunities for farmers and consumers, they are important economic and social development tools for communities. In some communities successful downtown farmers' markets have helped revitalize whole neighbourhoods and led to critical economic and social transformations in communities. The success of some downtown markets have been the catalyst sparking interest in creating permanent year-round public market spaces.

One group of people with a special affinity for the farmers markets are the chefs. As more chefs can appreciate the value of locally-grown food, regional specialties, and seasonal produce, they are finding that farmers' market are an invaluable source of high quality ingredients for their menus. As a result, in many cities local chefs are among the biggest proponents and supporters of the markets. Many markets have built on the chef-farmer connection by showing cooking demonstrations. Several cook books are based on the high quality seasonal produce available at farmers markets.

Further, a number of social and non-profit organizations involved with food issues, such as the Slow Food movement are other important allies for the farmers' market.

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developing "value-added" products such as processed foods like jams and salsa that can be made on the farm.

[56] The 2000 USDA survey of farmers' markets shows there were over 2,800 farmers' markets in the U.S., and the number is probably well over 3,000 now. USDA surveys show that as many as 19,000 farmers use the markets as their main source of marketing. It is estimated that over $1 billion of food and farm products are sold annually at farmers' markets. www.ams.usda.gov/farmersmarkets

Often, the public associations create and manage these initiatives. The farmers' market in Palo Alto (California avenue), for instance, was created by Urban Village Farmers' Market Association, a non-profit Mutual Benefit Corporation, which was formed in 1997 to provide the best possible opportunity for small farmers, other non agricultural operators, and community members to preserve, enhance, and enjoy regional fresh foods. The main mission of the association is "to promote the family farm; help protect the local environment by sustaining and restoring surrounding greenbelt areas; and to help build real community by fostering economic and social ties between producers and consumers".

High level of coordination: the rules formalisation

Farmers' markets in California are run on the basis of rules and criteria strongly codified. In California we may find the highest level of rules formalisation: a national law designates the "certified farmers' markets," and it regulates the place where farmers can sell what they produce and requires the inspections and the certification of farmers to become vendors[57]. According to this rule, farmers' markets are "locations approved by the county agricultural commissioner of that county where agricultural products are sold by producers or certified producers directly to consumers. A certified farmers' market may be operated by one or more certified producers, by a nonprofit organization, or by a local government agency".

The rules which regulate the functioning of the farmers' market in Palo Alto are defined by a committee. The committee is composed of the representatives of certified producers, the farmers' market manager, the representatives from the major state direct marketing associations, some public members, and the members of the county agricultural commissioners.

Like in many American farmers' markets, the person who runs the market on a day-to-day basis is the "market manager," a person designated or employed by the market organizers to be responsible for making the operational decisions. The responsibilities of the manager are set out in the market's rules, and the job of market manager typically includes: selecting and registering both seasonal and daily vendors; assigning spaces at the market; collecting the seasonal and weekly fees for market spaces; handling day-to-day administrative issues which arise; enforcing market regulations and administering penalties, which may mean imposing fines on vendors; making sure the market complies with applicable local, state and federal regulations; dealing with local officials, other businesses, and the

[57] In contrast to the situation in California where use of the term "farmers' market" is defined by law, in other states such as Pennsylvania, the term can be used by anyone.

organizers of the market. In situations when the rules do not provide an answer, the market manager will have to decide.

According to the national rule, also in the farmers' market of Palo Alto all the farmers involved are "certified". This means that they are authorized by the county agricultural commissioner to sell certified agricultural products, produced by practice of the agricultural arts upon land which the certified producer controls, directly to consumers at the farmers' market.

One of the most fundamental issues which is addressed through the market regulation is the decision of whether products to be sold will be limited to only those produced by the farmers selling at the market. In spite of the fact that the majority of farmers' markets in the United States are "producer only" (Hemilton, 2002), the farmers' market in Palo Alto allows also other vendors to sell products purchased at wholesale, even some exported food specialities (i.e typical cheeses from France). According to the market manager, allowing the sale of other products is good for the market because it increases the variety of products available and thereby increases the economic value of the markets for all vendors. Further, it is not perceived as detrimental the value of the market for farmers, as there is a clear distinction between the local farmers and the other kinds of vendors at the market.

In addition to allowing farmers to sell the products, the market in Palo Alto also allows vendors to sell limited amounts of produce raised by other local farmers. This issue is typically referred to as "carrying," and the basic goal is to give vendors the opportunity to expand the range of products they sell and to increase the products available for consumers. The ability to carry also allows additional producers to use the market as a sales outlet, especially producers who may have only a short run of products, such as those who specialize in one crop.

Because farmers' markets are essentially designed to create markets for local farmers, one issue that can arise from the regulation is how to define or limit the trade area – or region – from which producers are eligible. Some markets address this issue by listing the counties or the regions from which producers are eligible. The rules for the market in Palo Alto do not contain this provision. All markets vary in size (number of vendors) and more important it is about creating a diverse market place and not having to much of a single product. The trade area from which producers are eligible is not defined or limited by rules, but it is up to the vendors discretion to trade within the market place. Some farmers interviewed, said that their were selling their produces in some other farmers' markets located in the same county of their land, others were attending markets in all the Bay area. According to them, consumers seem to be concerned about locality only for vegetables, while for other processed products their main concern is about the

nutritional facts (that is why is it possible to find so many "sugar free" products, such as jams, and different kind of baked goods).

In the farmers' market in Palo Alto there are strict rules defining how selling produces, regulating namely food safety and sampling with specific rules for handling and storing different types of foods, and with guidelines for processing and sampling if allowed. Meat, poultry, eggs and dairy products are the categories of food that seem to raise the most concerns in the operation of many farmers' markets. The concern relates primarily to issues such as how the animal was processed, was it state or federally inspected, and what food safety and health rules apply for storage, handling and sale. The rules typically require the vendors to know and comply with any applicable inspection and licensing requirements. For example, the Palo Alto market rules refers to the provisions contained in the county Health and Safety code[58].

This market has also some form of rules on labelling. These rules set guidelines for how products can be advertised, with the main concern being that the information be truthful and valuable to shoppers, using legal scales, accepting nutrition checks, and farm visits. Further, as this market allows the sale also of wholesale items, the rules concern the use of the terms such as "locally grown", "organic" production or other forms of reduced chemical use. The market allows vendors to label their products as organically grown only if they can provide the certification for their farm. The new federal rules on organic production standards and labels, and the increasing importance of state sponsored certification programs – together with increasing consumer awareness and demand – will make the organic label even more prevalent.

Even it is not defined by rules, there is a strong of coordination in the management of prices to consumers. Prices are always displayed, and even though prices are decided by the vendors themselves, "price gouging" is not allowed. In Palo Alto farmers' market, the market manager has the responsibility to keep prices within 0,25 $ of its nearest competitor.

Farmers' Market Rules
Organizer or sponsor – identifies who runs the market and sets out the philosophy and purpose of the market.
Market manager - identifies who makes the decisions on day-to-day operation.

[58] In many states there are special rules for "home food establishments" which allow farmers' to be licensed to process certain types of non-hazardous food products at home.

Defining key terms – explains what key terms, such as vendor, farmers, allowable products, categories of products, etc., will mean in context.
Approval of vendors and products - defines who can sell (farmer/non-farmer distinction), and what can be sold (produce-craft-food distinctions).
Categories of products – rules for items such as baked goods, nursery plants, eggs, cheeses, meat, and processed foods, commonly related to inspections and handling.
Carrying rules – may allow farm vendors to sell products raised by other farmers.
Application fees – sets the amount and payment of fees, and allocates market spaces and locations.
Necessary documents and permits – lists the various documents and licenses required to participate, including tax permits, health inspection and other licenses. A market may require information such as organic certification.
Enforcement process – sets the procedures for rule enforcement, including reporting violations, notice, penalties, suspension or removal.
Food safety and sampling – specific rules for handling and storing different types of foods, with guidelines for sampling if allowed.
Other provisions – labelling, posting farm name, using legal scales, accepting nutrition checks and pricing guidelines, and farm visits
Non defined
Criteria for selecting vendors – establishes any priorities or preferences, and the basis for them, and allocates market spaces.

The coordination of the resources

There are many valuable financial programs operated by the state and federal governments helping expand the number and value of farmers' markets. At the federal level, the USDA, through its Agricultural Marketing Service, provides information and support for farmers' markets, including an on-line directory and periodic inventories of all the markets in the country. The USDA has provided valuable financial support to many market programs across the country through the Federal State Market Improvement Program (FSMIP), which provides grants to states to support farm marketing initiatives.

In the 2002 farm bill, Congress authorized a new Farmers' Market Promotion Program for USDA to award grants to organizations operating and supporting farmer's markets. The goal of the program is to "increase domestic consumption of agricultural commodities by improving and expanding, or assisting in the improvement and expansion of, domestic farmers' market, roadside stands, community-supported agriculture programs, and other direct producer-to-consumer market opportunities." As part of the new initiative, the law requires the

Secretary of Agriculture to carry out a program for developing farmers' markets. Under this program, the Secretary is to: "work with the Governor of a State, and a State agency designated by the governor, to develop programs to train managers of farmers' markets; develop opportunities to share information among managers of farmers markets; establish a program to train cooperative extension service employees in the development of direct marketing techniques; and work with producers to develop farmers' markets".

The most important federal programs helping make farmers' markets valuable sources of fresh food for low income citizens and valuable markets for farmers are two nutrition coupon programs Congress has created for USDA to support. The programs are the Women Infants and Children's Farmers' Market Nutrition Program (FMNP), created almost twenty years ago, and the new Seniors' FMNP. Under these programs, eligible participants (low income mothers and their children or seniors), who live in participating states, can apply and receive special coupons that can be used at farmers' markets to buy locally-grown fruits and vegetables[59].

At the state level, most departments of agriculture have someone on the staff who is responsible for helping advise and support the network of farmers' markets in the state. Some states, such as California, have very extensive programs to support the creation and operation of markets.

In Palo Alto, as well as in many other cities, farmers' markets are directed sponsored by the local government. The hosting city provides space for a market free-of-charge and it also help promote special events and festivals that draw customers both to the market and to shops in the vicinity. The city is also willing to construct shelters to give vendors and customers protection from rain and sun.

The purpose of the market is often directly related to who sponsors or creates it. In these situations the markets are a way to increase the entertainment and social activities available for local residents. Markets are also used frequently to help revitalize downtowns or neighbourhoods going through economic rehabilitation.

[59] Over 30 states now participate in each program, and tens of thousands of low-income shoppers have the chance to add fresh locally-grown produce to their diets. Close to 15,000 farmers take part in the programs as vendors. For 2002, Congress appropriated over $40 million to the USDA to provide grants to states and tribal nations to fund these two valuable programs. In addition to being the basis for these two special farmers' market nutrition coupon programs, vendors at many markets also contribute to the nation's nutrition efforts by participating in the federal food stamp program.

An analysis of the case

The farmers' markets in California are emblematic examples of "endogenous renewal": there is a high coordination of response (in terms of the high level of formalisation of the rules and norms governing actors relationships), mainly based on resources originating within the regime. In other words, the coordination of resources and knowledge across specific coalition of actors has been built upon active processes of institutional support. But, the question addressed here is if any risks may threaten the farmers' markets further developments?

First, markets can decline by loosing the institutional support. In some cities, there have been instances where popular farmers' markets lost the support of city officials due to complaints from neighbouring businesses about unfair competition or traffic congestion.

Second, markets can also decline by losing their original "guiding values" as a true farmers' market – a place where shoppers can buy fresh produce from farmers – and instead become more focused on entertainment, prepared food and a festival atmosphere. Markets can also suffer from their own success – as when the crowds become so large that some shoppers decide it is not worth the effort to try to attend. Market managers are faced with an important issue of how to balance the mix of activities at a market – such as ready-to-eat foods, entertainment, and other attractions – with the actual sales by farmers. Markets across the country have added a range of activities, such as cooking demonstrations, music, and children's entertainment, to help attract crowds, but sometimes these additions can detract from the value of the markets for the farmers. Adding too many non-farm vendors can change the dynamic and meaning of the market and at some point can become more of a festival than a market.

Concluding, the role of strategic competition among core members of a regime, and between core and peripheral members, is vividly illustrated in the field of farmers' markets. Here, the initiatives are dependent on the public institutions and consumers' needs as key components in the incumbent socio-technical regime. The operation and development of this niche, depends on the effective interplay of these interdependencies. The case in Tuscany shows very well how the development of the niche as a whole is played out through active contention, sometimes highly adversarial, between core regime members like local institutions and niche actors, like farmers. The case in California shows the hidden risks of loosing the external resources and the guiding values.

The point here is that the nature and orientation of regime transformations may often be better understood in terms of differential patterns of access and control in the resources and on the role of “guiding visions” (Rotmans and Kemp, 2001; Berkhout et al., 2004), acting as symbols that bind together communities of interest and of practice.

Conclusions

Coming back to the question I raised at the beginning of the work over the role of local ecological food systems: can they represent "windows of opportunities" and truly change the dominant agro-food regimes so that it will be more sustainable in the long term. This is a key question, which the present work has sought to address.

The above analysis suggests that changes might be sought by a specific coalition of actors, but it will need to be carried through within networks of actors possessing the wherewithal to adapt the incumbent regime or create alternatives. Successful change will require the coordination of resources across diverse interdependent actors, and the articulation of new knowledge in order to generate sufficient consent to put change into practice. Based on the work of Smith et al, (2005), I have discussed the concepts of endogenous renewal, reorientation of trajectories, emergent transformation and purposive transition as four ideal types of regime transformation that unfold under these different transition contexts. However, rather than considering them as different outcomes of regime transformation paths, the focus of the analysis was to consider them as a dynamic representation of the range of processes consequently improved. The processes and outcomes of a niche driven path depend upon the possible transition context (interactions with the incumbent regimes) prevailing at any give time. Therefore, applying the Smith et al conceptual framework in this way, it was possible to conceive the main outcomes of the dynamic interactions between niches and regime. For instance, it has been argued that emergent niches are a deliberate attempt to change the regime and their internal structuration likely produce a consensus guiding vision. An example of this kind of on going process was found in the progressive scaling up of the farmers' markets in Tuscany. There is a dilemma, however, related to the "excess of community" (Woolcock, 1998) when all the rules are informal, relational norms are often particularistic, procedural norms and standards are low and there are not any sanction mechanisms. In other words, the dark side of embeddedness is that the high degree of density and network closure could (which characterized informal exchanges) implies considerable constrains on members as they attempt to make connections in larger networks coordinated by formal institutions and rules.

On the other hand, novelty transitions are also understood as changes guided principally by negotiation between actors from and beyond the regime. Emergent niches may evolve into "purposive transition" when the pressures to change become highly articulated (through a high level of coordination across different actors based

on the formalisation of the rules-systems). Key to the "purposive transition" is the greater role afforded to external social actors, both in articulating the pressures for change, and in providing the resources, capabilities and networks that condition the responses. Therefore, the purposive transition can be understood as the successful outcome of a niche-driven path. An example of this kind of regime change has been seen in the initiative of valorisation of the raw milk sheep cheese in the Pistoia Mountains. This kind of transformation arose through the evolution of the niche configurations from a cohesive group towards connections in larger networks coordinated by formal institutions and rules (i.e. Slow Food circuits). In other words, the process of extending the niche beyond their initial "habitat" (or "niche hybridisation") involves supplementing bonding social capital with bridging social capital (Paldam & Svendsen, 2000; Baerenholdt & Aarsaether, 2002; Svendsen, 2006).

The progressive scaling up of the organic sector suggests that the coordination of the many diverse and nascent resources involved in a radical change has often required robust intervention by regime actors. Although organics emerged in niches, its implementation and broader diffusion has depended on gradual transformation of the existing regime. The system of rules and norms which have been set up over time allowed the growth of these experiences. While the entrance of new and big players within the organic sector has affected the structure and dynamics of the organic niche. In this case, although the stimulus for such radical change may be exogenous to the regime, the resulting transition outcome can be better understood as a "re-orientation of trajectories". A reorientation of trajectories can be appraised negatively when the incumbent regime mobilise the resources for the process of change, but where no consensus between actors exists over use of these resources.

Finally, when the pressure to change the regime is clearly articulated and there is a high coordination of response (high level of formalisation of the rules and norms governing actors relationships), mainly based on resources originating within the regime, like in the case of the farmers' markets in California, the resulted transition trajectory can be understood as an "endogenous renewal". Looking back over a long period of time, the transformation can appear as constituted by a multitude of minor organisational and production innovations, shaped by prevailing regime visions and values.

In short, the typology presented here aims to better frame appropriate questions about regime transformation processes and to support policy-makers who wish to intervene in a more informed way. In other words, adopting this conceptual frame

will help to understand the dynamic between niche development and regime involvement as changes are the outcomes of the mediation between resources and norms governing actors relationships. How do actors “come together and find a mutual understanding of a transition context, and agree on the best course of action for a regime” (Smith et al., 2005)? The challenge here is to analyse how contrasting visions and expectations enrol actors into coalitions of support, come to define their interests, and shape the way that they seek to respond to pressures to change or shape their collective adaptive capacity.

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