

# ***Linkage processes between niche and regime: an analysis of Learning and Innovation Networks for Sustainable Agriculture across Europe***

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**Abstract:** This paper aims to reveal, and contribute to an understanding of, the linkage processes that connect innovation networks in sustainable agriculture to elements of the mainstream agricultural regime. It draws on findings from analysis of 17 Learning and Innovation Networks for Sustainable Agriculture (LINSA) analysed within the EU research project SOLINSA (Support of Learning and Innovation Networks for Sustainable Agriculture). The LINSA examined represent networks of actors engaged in: agricultural food production, alternative food marketing, urban food systems, care farming and farm energy production. The notion of compatibility and linkage at the macro level structures provides a framework in which to examine the linkage processes that enable LINSA (as niche projects) to adapt and the regime to accommodate them. Five modes of interaction are distinguished based on the level of LINSA compatibility with the regime; these are labelled: Compatible; Complementary; Emergent; Divergent; and Oppositional. The study reveals the dynamic and complex nature of both the LINSA and the regime entities and their interactions and the range of linkage processes that enable LINSA to adapt and the regime to accommodate them. In conclusion, although the challenges of transition to a more sustainable agriculture are often articulated at a macro level, this study shows that at a sub-niche or project level multiple linkage processes are operating which can help to bring about a transition to sustainability.

**Keywords:** innovation, learning, sustainable agriculture, networks, niche, regime, linkage processes, LINSA

## **Introduction**

It is increasingly acknowledged that meeting the sustainability challenge in the agri-food system will require system innovation (Elzen et al., 2004) or transition (Hargreaves et al., 2013)<sup>1</sup>. Transforming systems of food production and consumption poses considerable challenges, particularly as changes in regimes tend to be incremental and path dependent (Seyfang and Smith, 2007). In agriculture, the notion of transition applies to a shift from the mainstream ‘productivist regime’, characterised as having the goal of increasing productivity and modernisation driving production growth, high yields, and input intensification, to a regime built around the principles of sustainable production (Brunori et al., 2013). Innovation is key to transition but agricultural institutions, such as Agricultural Knowledge Systems (AKS), that are charged with fostering innovation, are often locked into old approaches or trajectories of the incumbent regime and are commonly market-based (Knickel et al., 2009).

However, alternative and innovative approaches to agriculture, developing around the principles of sustainable agriculture and rural development, are emerging. These innovations are almost invariably responding to concerns about the environment and rural communities and tend to challenge mainstream agriculture. They often occur in the form of networks of individuals and/or

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<sup>1</sup> “A transition is said to have occurred when there is a major change in the way in which particular societal functions (e.g., energy, water, or food) are fulfilled or, in other words, when there has been a shift of regime”. (Hargreaves et al., 2013, p403). In normal circumstances, regimes change incrementally to become more efficient, however, occasionally, fundamental regime change can occur.

organisations experimenting with new solutions that form innovative niche practices on the margins of the mainstream agriculture regime. These can be bottom-up networks emerging in a self-organising fashion and coordinated by farmers and rural actors themselves, coalition networks with regime actors, or emanating from within the regime itself (Knickel et al., 2009).

Systems innovation and transition theory considers alternative approaches (or niche initiatives) as sources of innovation which can seed a sustainable regime transformation (Kemp, 1998; Smith, 2006). The theory proposes that regime transformation occurs through an accumulation of projects or novelties in niche spaces which allow (through learning and experimentation) radical practices, such as alternative networks, to develop (Geels and Scot, 2007).

Development of niches, however, is limited by their compatibility with external constraints, actors, rules and artefacts, components of the mainstream regime (Knickel et al., 2009; Seyfang and Haxeltine, 2012). Such challenges and barriers have been described for sustainable agricultural networks and niches (Flinterman et al., 2012; Brunori et al., 2013). In particular they face issues of making effective links and networks with actors and organisations in the incumbent regime, and diffusing oppositional ideas (Seyfang and Smith, 2007; see also Seyfang, 2009; Smith, 2006; 2007).

These challenges have been articulated at the macro level in terms of the interaction between the niche and the regime, particularly with respect to compatibility. However, whilst such macro level analysis is useful for understanding major forces in socio-technical change in agriculture, it is argued that it does not reveal the *processes* involved in support of such change (Klerlx., et al 2010). This paper aims to contribute to an understanding of the linkage processes that connect innovation networks in sustainable agriculture to elements of the mainstream agricultural regime. It frames the analysis using the notion of niche-regime compatibility. Seventeen Learning and Innovation Networks for Sustainable Agriculture (LINSAs) are examined. These were identified within the EU research project SOLINSA<sup>2</sup> and are defined as: *networks of producers, customers, experts, NGOs, SMEs, local administrations, as well as official researchers and extensionists, that are mutually engaged with common goals for sustainable agriculture and rural development - cooperating, sharing resources and co-producing new knowledge by creating conditions for communication* (Brunori et al., 2013,p 4) (see Table 1).

## **Conceptualising LINSAs and linkage processes**

### **LINSAs operating in niche spaces**

LINSAs cannot be classified as ‘complete niches’ or novelties. Instead they can be considered as constituent ‘niche projects’ which are developing in a value space distinct from the mainstream agricultural regime. These multiple and diverse networks of actors experimenting with new practices and ways of doing things operate in established sustainable agriculture/rural development niche spaces (agricultural food production, alternative food marketing, farm energy production, organic farming, care farming, low-input farming, sustainable and urban food systems). LINSAs are varied in scale, temporality, constituency, level of ambition, level of learning, level of external support, perspectives on sustainable agriculture, value systems, and nature and extent of divergence from the mainstream food system (Ingram et al, 2013a,b).

Although characterised as a monolithic entity, described as the industrialized food regime, for example (e.g. Smith, 2007; Brunori et al., 2013), the mainstream agriculture regime is heteroge-

neous and has multiple elements and actors who can potentially interact with sub niche entities (Klerkx et al., 2010). The structure that have most interaction with LINSAs is the AKS, the formal set of institutes and actors charged with fostering innovation, which itself comprises a number of different and changing elements and actors. Understanding LINSAs as diverse and dynamic sub-niche entities acknowledges that there can be multiple interactions with the many layers of the regime and its associated AKS.

## **Niche-regime interactions**

### *Niche-regime compatibility*

The nature of the interaction between the regime and the niche provides a useful framework for clustering the 17 LINSAs studied. Transitions are conventionally seen as resulting from external ‘landscape’ pressures exerting pressure upon incumbent regimes to open up ‘windows of opportunity’ that might be filled by novel, radical, innovations developed in ‘niche’ spaces (Geels and Schot, 2007). At the macro level, transformative changes depends both on internal tension within the regime and on the niche adapting (Smith, 2006). The niche can stimulate transformation by ‘linking up’ with tensions in the incumbent regime and linkages can be across any one of a number of socio-technical dimensions (Smith, 2006). In agriculture, tensions in the incumbent conventional regime (including growing awareness of the environment by consumers and producers, as well as pressures from government through policy) can provide opportunities for the niche to provide solutions and thus assist niche development.

This linking potential is largely governed by niche compatibility with the regime and its socio-technical dimensions. As such, it is argued that successful niches should not be too radically distinct from the incumbent regime; that good compatibility with the assumptions, practices and rules of existing regimes facilitates rapid niche growth enabling it to develop and diffuse (Smith, 2006). Where compatibility with the regime is limited, for example where a (radical) niche is motivated by visions and very different goals to those in incumbent regimes, there is more likely to be poor growth and linking potential. However, understanding innovation as an adaptation process that is confined by structures within the existing mainstream regime, means that such ‘value chasms’ can be closed either by the niche adapting to become more accessible to mainstream audiences or by the regime accommodating niche ideas, perhaps through regulation, or by the intervention of a mediating actor (Smith, 2006; 2007; Seyfang, 2009). Pressure on the regime to become more sustainable makes the diffusion into the mainstream easier (Smith, 2006). This emphasises the interactive nature of the niche-regime relationship

### *Linkage processes*

Scholars have introduced several concepts to analyse the development processes of innovations that involve interaction with the regime (see Seyfang and Haxeltine, 2012). In studies of niche emergence and development, analysis focuses upon the social networks, learning processes, expectations and enrolment of actors and resources and collaborating with powerful groups (Kemp et al., 1998; Hoogma et al., 2002; Roep et al., 2003; Geels and Schot, 2007). Creating influential actor networks is seen as a key process in regime-niche interactions; prime moving actors may facilitate their innovation journey by mobilising expertise to verify and legitimise their story (Klerkx et al., 2010). Approaches to understanding processes operating in niche-regime space in particular tend to stress that innovation and transformation are complex and recursive processes, characterised by negotiations, uncertainty and unexpected obstacles. In particular they reveal that processes linking niche and regime are active and involve translation; they are not a matter of simply transferring socio-technical practices from a niche to a regime or vice versa (Smith, 2007;

Elzen et al., 2012). This paper aims to reveal and understand the linkage processes that operate in the LINSAs-regime space. It frames the analysis using the notion of niche-regime compatibility, exploring the extent to which the linking potential is influenced by LINSAs compatibility.

## **Methods**

Seventeen Learning and Innovation Networks for Sustainable Agriculture (LINSAs) were selected for analysis (Table 1) to represent a diverse range of operational arrangements. Details of selection are available in Ingram et al. (2013a,b). The SOLINSAs was underpinned by a transdisciplinary research methodology. Each partner used five participatory workshops with their respective LINSAs and a number exercises including joint visioning, story-telling, rich pictures, participatory mapping, as appropriate to this approach. Workshops were complemented by face to face semi structured interviews, focus groups and document analysis. Drawing on data from these activities partners prepared reports for each LINSAs for each of the following analytical characteristics identified in the conceptual phase of the project as important: origin and function, scale, network integration, level of innovation, level of learning and governance. These are synthesised in Ingram et al. (2013b) and provide the source material for this paper.

The notion of compatibility and linkage at the macro level structures provides a framework in which to examine the linkage processes that enable LINSAs (niche projects) to adapt to the regime, and enable the regime to accommodate them. The 17 LINSAs can be clustered into five modes of interaction based on the level of LINSAs compatibility with the regime: *Compatible*; *Complementary*; *Emergent*; *Divergent*; and *Oppositional*. Moving from Compatible to Oppositional there is increasing divergence from mainstream agriculture with respect to values, assumptions, practices and rules. Each mode can also characterised by the nature of the tension in the regime, the network actors and actor configurations and links with the AKS (Table 2). These are not discrete modes but this framework can be used to capture interaction tendencies and provide a structure for analysis of the linkage processes.

Table 1: List of LINSAs studied

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| <p><b>Brighton and Hove Food Partnership, England (E B&amp;H)</b> was established to create a network of organisations, businesses and residents with a mission to improve the patterns of food consumption and production in a large urban area.</p>  |
| <p><b>Permaculture Community (Permaculture Association and the Land Project), England (E Perm)</b> comprises: the project Leaning And Network Demonstration (LAND), its parent body The Permaculture Association (PA), and the wider community of Permaculture practitioners in England.</p> |
| <p><b>The European Organic Data network (EU Organ)</b> consists of a core project members project, and stakeholders, who are involved with organic market data in Europe.</p>  |
| <p><b>Réseau Agriculture Durable– Network for a Sustainable Agriculture, France (F RAD)</b> is an informal network of farmers groups, aiming to improving the effectiveness of the systems regarding ecological, social and economic issues.</p>   |
| <p><b>Charter of Good Agricultural Practices in Livestock production, France (F Charter)</b> promotes standards in practices (traceability, herd's health, food, milk quality, animal welfare and environment)</p>   |
| <p><b>Bavarian Rural Women's Association, Germany (G Women)</b> carries out diversified educational work based on topics of direct relevance to farm women.</p>  |
| <p><b>German Agricultural Association, Germany (G DLG)</b> collects, discusses, and rearranges information and innovations related to agriculture and disseminates them among its members.</p>   |
| <p><b>G7 (Local Food Council of Gödöllő), Hungary (H G7)</b> is an informal network (voluntary partnership) of local organisations, entrepreneurs and citizens in Gödöllő and aims to achieve a more sustainable and healthy food system for the city.</p>                                   |
| <p><b>The NATURAMA Alliance, Hungary (H Nat)</b> is a loose, informal network of networks of 9 Hungarian LEADER Local Action Groups (LAGs).</p>  |
| <p><b>Consorzio Vacche Rosse, Italy (CVR)</b> is a cooperative dairy that produces Parmigiano Reggiano (P-R) cheese from milk of Reggiana breed cows delivered by its members.</p>   |
| <p><b>Association for Solidary Economy Crisoperla, Italy (I Crisop)</b> aims to create an alternative system of knowledge and practices around sustainable production and consumption of food in two regions..</p>   |
| <p><b>Biogas Production Network, Latvia (L Biogas)</b> was formed to develop on-farm biogas, in response to renewable energy policy goals and subsidies.</p>   |
| <p><b>Fruit Growing Network, Latvia (L- Fruit)</b> has the goal of developing integrated fruit-growing in Latvia.</p>  |
| <p><b>Cooperative Boer en Zorg: Care Farmers in the Netherlands (N Care)</b> currently connects over 130 care farmers in the Mid-Eastern part of the Netherlands.</p>  |
| <p><b>Sustainable Dairy Farming, Netherlands (N Dairy)</b> is a regional network of dairy farmers experimenting low external input farming practices.</p>  |
| <p><b>Association for the development of fodder production, Switzerland (S ACDF)</b> aims to foster fodder production and conservation on Swiss farms.</p>   |
| <p><b>Naturli Co-operative Cheese marketing platform, Switzerland (S Naturli)</b> has evolved around the regional trademark "Naturli"</p>  |

## Results

The Interaction Modes are characterised in each of the sections below and all the LINSAs within the Mode are listed. Each is exemplified with details of one LINSAs case study. This analysis synthesises data from the LINSAs reports described in the methods section. Table 2 presents the defining characteristics of the Interaction Modes. It has been constructed with reference to the key points emerging from the review above concerning linkage processes between niche and regime. The interaction modes are intended to be indicative of LINSAs tendencies rather than discrete types.

### ***Compatible (LINSAs: F Charter, L Fruit, S ACDF, I CVR, G Women, G DLG)***

In this mode the level of compatibility between LINSAs and regime is high and links are strong as LINSAs guiding principles (assumptions, practices) are commensurate with many of those of the incumbent regime. They aim to achieve sustainable food production according to the rules of the regime, that is, by also ensuring farmers' commercial viability. LINSAs emerge within the regime and therefore are successfully adopted and incorporated. There are translations of problems (problems in the regime inform the guiding principles creating the niche). LINSAs develop incrementally utilising existing AKS structures and traditional actors and organisations. LINSAs tend to have the political support of the regime and have well developed and historical links with the AKS.

#### *The Charter for Good Agricultural Practices in Livestock production in France (F Charter)*

The Charter emerged within the mainstream regime in a response to problems following the BSE crisis (a context of mistrust between food production and society). It is supported by the state and a food chain organisation and uses the extension service to roll out the scheme. The Charter aims at slowly and progressively supporting French cattle farmers to improve their practices. The intention is for every farmer to follow the shift, and not only an elite or a few motivated people. This approach has been criticised by founding actors as remaining within the productive paradigm. Translation that emerges within and adapts to the regime therefore brings some tensions. The regime and LINSAs show adaptation, the standards are re-negotiated, and translated as they move into the regime, the LINSAs and the regime are both re-configured.

### ***Complementary (LINSAs: N Dairy, F RAD, EU organ)***

In this mode the level of compatibility between LINSAs and regime is moderately high with links between LINSAs and regime enhanced by shared guiding principles to some extent (assumptions, routines) with respect to making commercial farming businesses sustainable, although the values, practices and rules are being challenged. These LINSAs co-evolve with the regime, they involve traditional actors, albeit in new roles and ways of interacting. They are emerging on the fringes of the regime in response to sustainability issues in mainstream agriculture such as resource efficiency and water quality. With respect to translation the LINSAs have aspirations to make a difference to the regime rather than be absorbed, adapt to it, or insert practices into it. Also there is some flexibility in the practices to allow them to be interpreted favourably against regime socio-technical criteria.

#### *Sustainable Dairy Farming, Netherlands (N Dairy)*

This LINSAs is challenging conventional practice and the existing rules of dairy farming. The most contested element of the low-external input farming has to do with surface spreading of

manure (instead of the legally required manure injection). This has survived outside the official regulations as farmer experiment and operate in protected space for learning and experimentation. Gaining legitimacy in the policy making process has been a very important goal for the farmers involved. The network includes a number of researchers who work to prove the effectiveness of the approach. Through the calculation of mineral flows through the farm and the certification of the low external input farming approach, actors in the network have tried to formalise their working method. Tensions in the mainstream regime (water quality concerns with high input dairying) have framed LINSAs development.

Table 2: LINSAs-regime Modes of interaction and associated linkage processes

| <b>Interaction Mode</b>                               | <b>Compatible</b>  | <b>Complementary</b>  | <b>Emergent</b>  | <b>Divergent</b>  | <b>Oppositional</b>  |
|---|--|---|--|---|--|
| <b>Compatibility</b>                                  |  |   |  |   |  |
| Links between niche and regime                        | Strong Political support and recognition from regime   | Moderately strong Some shared guiding principles  | Operating at the intersection of two regimes –some links to both   | Moderately weak Limited sharing of guiding principles   | Weak:No shared guiding principles; different value system  |
| Actors/network configurations                         | Traditional actors   | Traditional actors in new arrangements plus new facilitators  | New actors and new networks  | Traditional actors in new roles, new actors and new networks  | New actors and new networks  |
| Tension in regime (pressures in landscape)            | Tension – consumers and policy and regulations farm economic livelihood  | Tension – environmental policy and farm economic livelihood   | Tensions - policy and economic in both regimes (health/ energy and agriculture)  | Tensions in regime – consumer awareness, farm economic livelihood   | Tensions in regime – consumer awareness, health, community concerns  |
| <b>Linkage Processes</b>                              |  |   |  |   |  |
| Adaptation<br>Absorption<br>Translation<br>Networking | Growing within or adapting to the regime/AKS integration/absorption LINSAs practices are sufficiently flexible to be interpreted favourably against regime socio-technical criteria Regime accommodation | Co-evolving with regime/AKS aspirations to make a difference to the regime although some adaptation to regime problems Looking for recognition and legitimacy Some regime accommodation | Develop in a complementary manner to the agriculture regime, make use of the existing structures when appropriate Mutual adaptation Alignment of rules and routines plus new rules created | Some adaptation of LINSAs through certification Translations that adapt lessons Extensive networking Mutual adaptation Regime actors accommodate, new actor roles | No linkage to traditional regime actors or institutions Little adaptation or regime accommodation Extensive Networking |
| LINSAs  | F Charter, L Fruit, S ACDF, I CVR, G Women, G DLG  | N Dairy, F RAD, EU organ  | L Biogas, N Care   | I Crisop, S Naturli   | E B&H, E perm, H G7, H Nat   |

### ***Emergent (LINSA: L Biogas, N Care)***

In this mode the LINSA (L Biogas and N Care)) are founded on the basis of agricultural sustainability but operate at the intersection of agriculture with the energy and health sectors respectively. They make use of the existing structures when appropriate but they also build up new socio-economic spaces with new actors, rules and artefacts and new networks, rules and regulations. LINSA have emerged in response to changes at the landscape level which in turn have resulted in tensions at the regime level and led individual entrepreneurs to diversify and create niche projects. Both LINSA adapt daily farming routines to new health care and energy rules and practices; they also develop new rule sets.

#### *The Biogas Production Network, Latvia (L Biogas)*

Biogas production in Latvia was politically initiated based on the principles of combining energy production and agricultural sustainability. Quotas meant the government created a secure and exclusive niche market. However throughout the network development, business interests and sustainability issues clashed. The ability of traditional actors in the AKS to meet producers' needs is quite limited. The role of foreign research companies, technological advice providers, investors and knowledge brokers is notable. The barriers between LINSA and the AKS include: differing foci of interest; different value systems; organisational barriers.

### ***Divergent (LINSA: I Crisop, S Naturli)***

This interaction is characterised by weak links between niche and regime with few practices, rules or guiding principles in common. The networks are relatively small in scale, they have emerged on the margins of the regime both in response to farmers' economic needs and their desire to promote products grown in environmentally sustainable way to consumers and civic society in general. The networks are therefore responding to different tensions within the regime. LINSA goals are diverging from those of the regime and the practices are not sufficiently flexible to be integrated into it. New networks have emerged with a diversified composition bringing actors together who otherwise would not have collaborated. These networks develop new marketing channels, however in using some certification they are translations that adapt lessons, reinterpret elements of LINSA practices and insert them into regime settings. They build up specific new socio-economic space with new actors, rules and artefacts, and new interactions.

#### *Association for Solidary Economy Crisoperla in Italy (I Crisop)*

The Association can be seen to link to the regime yet break the rules in three ways. Agronomists from the AKS are involved but in non-traditional roles. They acted as facilitators, not as technicians, when initially enabling knowledge exchange between farmers and now act as brokers. Secondly the President, has joined the steering committee of an organisation representing organic farmers nationwide. Thirdly the relationship with consumers means that non-conventional marketing channels have developed. Some of the network members have created a new cooperative to enhance the commercialisation of products using a certified brand, thus there is translation which involves some adaptation to the regime.

### ***Oppositional (LINSA: E B&H, E perm, H G7, H Nat)***

In this mode compatibility between LINSA and the regime is low, links are weak as they do not share the same rules, practices or values. LINSA include non-regime actors and networks (municipalities, NGOs, activists, volunteers etc) who are concerned with food and social innovations. Actors' motivations are ideological, they have aspirations for systemic change in the incumbent regime's food system and a very distinct set of values which are characterized as being in opposition to those of the regime. They are responding to tensions in the regime with respect to food



quality, food justice and health concerns. LINSAs tend to be hybrid, diffuse networks of networks with multiple actors. There is little evidence of adaptation to the regime or of the regime accommodating the LINSAs.

### *Brighton and Hove Food Partnership in England (E B&H)*

The City Council is supportive but they are very conservative about the use of their farms because they generate revenue from the land. There are very few connections (either formal or informal) with mainstream agriculture as the B&H FP does not see itself as part of the agricultural system. Actors in the LINSAs regard farming as too insular not just in terms of its working practices (capital intensive and labour scarce) but also in terms of being isolated from its markets. People join the LINSAs through the community route via environmentalism or green politics, rather than through land holdings. The knowledge base is more about networks, holistic sustainability, co-operation, health and waste management than the technology of food production per se and therefore the conventional agricultural knowledge system has little to contribute. Networking, linking in influential actors is a key process. Transformative change is very localised.

### **Discussion and conclusions**

LINSAs have diverse approaches to adapting to the regime. LINSAs actors make alliances and partnerships with regime actors and draw on, or contribute to, different elements of the regime according to their strategies and ambitions for the LINSAs. In this adaptation LINSAs actors are pragmatic as they compromise, make mutual adjustments and deal with unexpected developments and internal tensions, as recognised by Smith (2007) and Klerkx et al. (2010). Elements and actors in the regime respond and there is an interplay between LINSAs adaptation and the regime's accommodation. Ideas, practices and events in LINSAs are translated into ideas and practices in the regime to varying extents. In some cases this is restricted to transferring practices such as nutrient efficient farming techniques, while for others it involves aligning practices and rules to those in the regime and in some cases mutual adaptations or negotiations. This depends on the level of integration and whether LINSAs guiding principles, assumptions and routines are commensurate with those of the regime; and on the degree of change being deliberated. However, LINSAs practices are rarely simply adopted, instead they are subject to change and translation.

The regime accommodates LINSAs by providing support, participating in networks and partnerships and forming new alliances. It adapts or substitutes some of its rules or routines to accommodate LINSAs practices, as demonstrated for a number of examples. In particular the AKS dimension of the regime responds to LINSAs, AKS actors are involved in new collaborations and partnerships with LINSAs actors, and take on new roles. The regime also offers legitimacy through research channels; scientific authority is used to corroborate and support the vision and feasibility of some LINSAs (F RAD, N Dairy). Pressure on the regime to become more sustainable makes linkage and diffusion into the mainstream easier (Smith, 2007). This is apparent in the L Biogas and N Dairy where regime policy instruments make space for LINSAs to develop. However, some LINSAs created outside the regime co-evolve with the regime, and in some cases become empowered through their own institutionalisation and professionalisation (e.g. N Care). Certification is key device for inserting practices into the mainstream, it legitimises LINSAs and ensures some form of anchoring or embedding in the incumbent regime. Networking is important for diffusing and consolidating ideas in LINSAs where traditional regime actors and structures are irrelevant or not accessible.

As expected the level of LINSAs-regime compatibility influences the extent of LINSAs diffusion. However, the situation can be more complex than this simple relationship would suggest. For example, tensions can arise in some LINSAs where practices are absorbed easily by the regime and rapid diffusion occurs, as compromises are made and principles are diluted. In other cases only some elements of LINSAs are appropriated by the regime. Clearly the process of interaction

internally within modes can be heterogeneous, hence the general framework only attempts to capture interaction propensities not define discrete types.

In conclusion this study of different LINSAs across Europe shows that these niche projects can be potential sources of innovative ideas, even if they are not developed, or ambitious, enough to lead to regime change. The challenges of transition to a more sustainable agriculture are often articulated and conceptualised at a macro level; however, this study shows that directing analysis at the sub-niche or project level reveals dynamic, diverse and irregular interaction in the ‘fuzzy’ space between niche and regime where multiple linkage processes are operating. Thus, the transition to sustainable agriculture might be understood as a complex of interactive processes leading to a series of adaptive changes, rather a regime change.

## References

- Brunori, G., et al. (2013). CAP Reform and Innovation: The Role of Learning and Innovation Networks. *Eurochoices* 12 (2): 27–33.
- Elzen, B., et al. (2004). *System Innovation and the Transition to Sustainability: Theory, Evidence and Policy*. Cheltenham, UK, Edward Elgar.
- Flinterman F., J., Roep, D. Luijter, A.. (2012) Bridging incompatible regimes: how the formation of intermediary regimes drives system innovation. In: M. Barbier & B. Elzen, *System Innovations, Knowledge Regimes, and Design Practices towards Transitions for Sustainable Agriculture*. INRA - Science for Action and Development, E-book, Paris: p.86-100. Accessible at: <http://www.inra-ifris.org/activites/open-science/system-innovations-knowledge-regimes-and-design-practices-towards-transitions-for-sustainable.html>
- Hargreaves, H., Longhurst, N. and Seyfang, G. (2013). Up, down, round and round: connecting regimes and practices in innovation for sustainability *Environment and Planning A* 45: 402 – 420
- Hoogma, R., R. Kemp, J. Schot, and B. Truffer(2002). *Experimenting for sustainable transport: the approach of strategic niche management*. Spon Press, London, UK.
- Ingram, J., Curry, N., Kirwan, J., Maye, D. and Kubinakova, K. 2013a. WP4 Synthesis Report. SOLINSA project Deliverable 4.2a, October 2013. Available at [www.solinsa.net](http://www.solinsa.net)
- Ingram, J., Curry, N., Kirwan, J., Maye, D. and Kubinakova, K (2013b). WP4 Analytical Characteristics Report. SOLINSA project Deliverable 4.2b, October 2013. Available at [www.solinsa.net](http://www.solinsa.net)
- Geels, F. W. and J. Schot (2007). Typology of sociotechnical transition pathways. *Research Policy* 36: 399-417
- Kemp, R., et al. (1998). *Technology Analysis and Strategic Management* 10: 175
- Klerkx, L., et al. (2010). Adaptive management in agricultural innovation systems: The interactions between innovation networks and their environment. *Agricultural Systems* 103(6): 390-400.
- Knickel, K., et al. (2009). Towards a Better Conceptual Framework for Innovation Processes in Agriculture and Rural Development: From Linear Models to Systemic Approaches. *The Journal of Agricultural Education and Extension* 15(2): 131-146.
- Roep, D., van der Ploeg, J. D., and Wiskerke, J. S. C. (2003). Managing technical institutional design processes: Some strategic lessons from environmental

cooperatives in the Netherlands. *Wageningen Journal of Life Sciences* 51:195–217.

Seyfang, G. (2009). *The New Economics of Sustainable Consumption: Seeds of Change*. Palgrave Macmillan, Basingstoke, Hants.

Seyfang, G. and Smith, A. (2007). Grassroots innovations for sustainable development: towards a new research and policy agenda. *Environmental Politics* 16: 584–603.

Smith, A. (2006). Governance lessons from green niches: the case of eco-housing. *Framing the Present, Shaping the Future: contemporary Governance of Sustainable Technologies* J. Murphy. London, Earthscan

Smith, A. (2007). Translating Sustainabilities between Green Niches and Socio-Technical Regimes *Technology Analysis & Strategic Management* Vol. 19 (4): 427–450.

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