



SOLINSA
Support of Learning and Innovation
Networks for Sustainable Agriculture

Agricultural Knowledge Systems In Transition:
Towards a more effective and efficient support of Learning
and Innovation Networks for Sustainable Agriculture

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Show Case Summary Report

WP4 Task 4.3

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November 2013

Project Number: 266306
FP7 – KBBE – 2010 –4



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Project funded under the Seventh Research Framework Programme of the European Union		
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1 INTRODUCTION

1.1 Background

This report brings together summaries from seven show case reports prepared by members of the SOLINSA project expert panel. The show case analysis contributed to Work Package 4 (WP4) of SOLINSA, specifically to Task 4.3. In WP4 seventeen Learning and Innovation Networks for Sustainable Agriculture (LINSA) were selected for analysis to represent a diverse range of operational arrangements and thematic fields. The WP4 Objectives were:

- To enhance the understanding of constraints, opportunities and needs for support for successful LINSA.
- To enhance understanding about mechanisms of network development, learning and innovation processes and connections with the formal AKS systems
- To enhance understanding tasks, roles and emerging quality needs for the knowledge and skills of actors and institutions and consequences for education and training, in particular for professional advisory systems.
- To collect empirical evidence on policy principles, policy instruments and financial arrangements for successful LINSA in different national and regional contexts.
- To develop evaluation criteria on effectiveness and cost efficiency of support arrangements exploited by LINSA and to evaluate such arrangements
- To enhance understanding learning approaches, methods and tools used in LINSA, why they are used and if they are useful in the applied context.
- To develop operational tools for AKS actors, summarising the findings of exploration of LINSA

These are addressed in the SOLINSA WP4 Synthesis Report Deliverable 4.2a and WP4 Synthesis Report Deliverable 4.2a and WP4 Analytical Characteristics Report Deliverable 4.2b. The purpose of Task 4.3 was to contribute to meeting these objectives by providing additional insights about networks from countries outside the consortium. Specifically the analysis aimed to ‘show-case’ or ‘shine a light’ on the development and operation of learning and innovation networks in particular contexts. This report brings together the summaries of the reports and provides an overview of the analysis. The individual show case reports are available on www.solinsa.net.

1.2 Method

Show cases were selected according to the following criteria:

- The show case should be a LINSAs or have some LINSAs characteristics, i.e. it should:
 - be a learning network that has developed either with links to, or outside, the main AKS;
 - be innovative either in the way it operates or in its intended or actual outcomes;
 - include diverse players such as (but not exclusively) farmers, food producers, consumers, NGOs, advisors, experts and local administrations who are looking for alternative ways to produce food/contribute to sustainable development; and
 - operate on the principle of knowledge and information sharing and learning.

Selection was also on the basis on what the show case can reveal about one or more of the analytical characteristics (Box 1), for example, a show case might be selected because it demonstrates effective governance or because it has successfully developed outside of the mainstream AKS.

Experts proposed potential show cases, these were reviewed by the SOLINSAs show case discussion forum and seven show cases were selected for detailed analysis as follows:

- Networks in animal husbandry in the Netherlands
- Knowledge and innovation networks in raisin production: Kapanci Village, Turkey
- Allmende Kontor at the former Tempelhof airport: urban gardening in Berlin, Germany
- LINSAs emergence around the Neretva Mandarin Geographical Indication (GI), Croatia
- South Tyrol Apple Production, Italy
- LINSAs and pesticide reduction in the French vine production, France
- Plant health clinics in Kenya

A common template and guidance for analysis was provided to all experts. The analysis was framed around the analytical characteristics identified in WP4. These are explained in detail in the SOLINSAs report Analytical Characteristics Deliverable WP4.2b and summarised in Box 1. Individual specifications and research questions were prepared for each show case with reference to relevant analytical characteristics.

Box 1 Analytical characteristics

Degree of network integration

- Network emergence and development –stimuli, incentives, and drivers (role of the market)
- Network structure –network diversity operation and linkages, level of actor cooperation
- Network formalisation and legitimisation, level of institutionalization, role of the market (e.g. food assurance adding value)
- Balance between new and existing relationships (strong ties/weak ties)
- Boundary activity/ different social worlds meeting
- Brokering activity and leadership skills/attributes

Level of innovation

- Evidence of effective incremental innovation
- Evidence of effective radical innovation/breaking the rules
- Evidence of small bottom up groups that change the AKS
- Social and/or technical dimensions emphasised
- Trajectories of innovation – technical or social or both
- Change of regime

Level of learning

- Actors display good knowledge and skills
- Institutions display good/appropriate knowledge capacity e.g. extension service has good mechanisms for assuring good quality advisor knowledge and skills, professional development.
- Effective learning approaches, methods and tools used (training, workshops, internet etc)

Governance

- Power relations affect the operation of the LINSAs (are some groups not represented?)
- Effective top down innovation (with strong government support)
- Effective bottom up innovation
- Clear processes (communication, decision making, problem solving, dynamics) that enable or hinder the operation of the network
- LINSAs are structured like a knowledge system (communication patterns, communication infrastructures, memories, access to and retrieval of information, intellectual property rules, validation of information)

Efficiency and Effectiveness of Support

- Effective and cost efficient supportive arrangements exploited by LINSAs
- Effective funding arrangement / policy instruments
- Well developed evaluation criteria on effectiveness and cost efficiency
- Effective private support/market driven (in absence of public support)

Links between AKS and LINSAs

- Connections with the formal AKS system (formal/informal; power relations; presence and role of a boundary organization; relations between LINSAs and other regime actors)
- Poor contact with AKS (eg research and extension institutions)
- Good contacts and engagement with AKS, LINSAs supported by the government, advisors
- Good links to research (research provides input to LINSAs)
- Effectiveness/quality of support, extension services, advisors
- Constraints, opportunities and needs for support for the LINSAs

1.3 Overview

There is considerable diversity across the show cases, in that they have developed in different contexts in response to different drivers. The nature of the innovation in the show cases (social, technical and environmental) is shaped by the context (time and place) and by the motivations which encompass both commercial and ideological goals. Show case networks have access to different resources and operate within different knowledge systems. Some rely on the AKS to some extent to support new innovative programmes (Kenya, Netherlands), or to support more mature systems (Italy); others operate entirely outside the AKS (Germany). The networks are also at different stages of development, some are just emerging and growing (Turkey, Croatia) others are long established (Italy). Furthermore the structure and complexity and scale of the networks varies from simple local farmer learning networks (Turkey) to complex multi stakeholder networks (Italy, Croatia). Given this range of differences it is difficult to draw out common themes between the show cases. They have however all emerged, or are emerging, in response to a perceived need for change and an intention to improve the sustainability of food supply chains in some way.

Rather than compare show cases, this analysis contributes to the overall findings of WP4 by focusing in on particular analytical characteristics: governance and support (Germany); facilitation (Netherlands); network development and integration (Croatia, Italy); level of learning (Turkey, Netherlands); links to AKS (Kenya, Turkey, France, Netherlands); extent of innovation (France). These are explored in depth in the individual show case reports. The key messages from this analysis described below reveal the diversity of learning and networking processes involved in innovation for sustainable agriculture.

The Dutch show case studied innovation and learning processes within 129 networks which were part of the Dutch Networks in Animal Husbandry

programme (2004–07). This programme is looking at ways of facilitating new and existing networks of farmers and other stakeholders to become more sustainable in animal production. The show case reveals **the importance of facilitation**, that a facilitator with the right technical knowledge and skills, is objective and has the trust of the network members, can play an important role in helping the network to take the right steps required within the innovation process. Facilitation of, and subsidies for, networking have become important policy measures and knowledge tools. The programme has led to a breakthrough in the Dutch agricultural knowledge system (AKS). These findings support those from analysis of Network for a Sustainable Agriculture in France and Sustainable Dairy Farming in the Netherlands, where facilitation of farmer groups was shown to be a key element of LINSAs function and effectiveness.

The network for raisin production in Kapanci Village in Turkey is an early stage LINSAs. This study examines **how LINSAs can potentially develop and emerge outside the conventional AKS**, where structures and patterns of knowledge exchange in raisin production are formalised, heavily centralised and top down. It focuses on the communication of local knowledge within producer groups and explores the opportunities and constraints for developing learning and networking within these groups. Low production costs and the need for better quality raisin production are strengthening collaborations and networks for knowledge sharing in the village. Strong communication among producers in the village occurs with skills sharing, meetings and group discussions and personal contacts. The producers meet with each other and with traders, advisors, etc. in the local coffee houses where information exchange and commercial agreements typically occur. This show case shows how a market-orientated and pluralistic network is emerging in the absence of appropriate knowledge from the AKS.

The Allmende Kontor show case focused on the **governance and support arrangements in a learning network developing outside the formal AKS**. Allmende Kontor is urban gardening initiative with a particular emphasis on sustainability and a strong network linking it with other urban gardens in Berlin. It aims to show the benefits of participative sustainable urban development that brings together civil society, policy actors, administrators and NGOs. It supports learning and innovation for sustainable agriculture principally through informal conversations between gardeners and activists, seminars, online platforms, billboards, plenary meetings and working groups, operating on the principle of knowledge and information sharing, and learning. It has a participatory governance approach and diverse network of actors. The analysis reveals that, although recognised as an excellent sustainability initiative, Allmende Kontor has an over reliance on volunteer input and a lack of financial support; a lack of acknowledgement by public administrations of the services provided by urban gardens; and a general lack of legal structures to define the rights and duties of urban gardeners. Support needs include: financial support for core staff to enable continuity; investment in infrastructure (such as the establishment of a coordination centre or information hub); and assistance for educational activities.

The show case in Croatia looks at LINSAs emergence around Neretva Mandarin Geographical Indication (GI) in the context of EU accession and GI process development. The show case **examines the constraints to, and opportunities for, networking and development of the LINSAs** (Agri Chamber Advisory Service; Association of fruit growers; Organic IPM GI; Packers - Agrofructus plus others); and critically examines the role of GI in enabling LINSAs development. The analysis shows how innovation in a value chain organisation, the marketing practices and the husbandry techniques are initiated and influenced by the process of the registration and management of a GI. It shows that the GI registration can play a key role in bringing the value chain stakeholders together, independently of the market. However it concludes that, in the absence of regulation enforcement by the government and support in regards to innovation and changes of practice, the LINSAs might never fully emerge and develop.

The South Tyrol Apple Production show case in Northern Italy looks at factors that influenced the **development of this mature network and how the linkages and collaboration between stakeholders have evolved and developed**. Stakeholder collaboration in apple production and marketing is well established in this region. They have organised themselves in a sophisticated and adaptive network involving producers, their co-operatives and associations; research; agricultural advisory services; and other public and private actors. The apple producers' cooperatives are characterised by their strict adherence to the basic principles of self-help, self-administration, self-responsibility and members' promotion. Human relationships, trust and a common vision are important. The study reveals the importance of context for network building. Historically, socially and culturally, the nature of the province and of its inhabitants fostered the creation of a geographical cluster where people and institutions had to co-evolve and collaborate to survive and succeed.

The French show case examined **how different types of LINSAs (with different levels of innovation) emerged, evolved and co-existed** with the aim of reducing the use of pesticide in the French wine industry. LINSAs developing integrated viticulture emerged through top-down initiatives from the AKS, promoting incremental innovations. LINSAs promoting organic viticulture emerged outside the AKS as a radical bottom-up opposition to the conventional technical regime, and have been developed through a growing demand by consumers. Analysis found that the co-existence of LINSAs is the key of the innovation process, each kind of LINSAs playing a complementary role. LINSAs oriented to organic viticulture have introduced a radical perspective in the wine industry and have pushed the AKS to react, while LINSAs promoting integrated viticulture, allowed the dissemination of advice and environmental concerns to a large number of organizations and farms.

The Plant clinics show case in Kenya **demonstrates the value of bringing actors together to exchange ideas and in creating new roles for extension officers**. The plant clinics which are held in local meeting places, such as markets, provide advice on demand; trained 'plant doctors' diagnose farmers'

crop diseases and offers solution. The flexibility and simplicity of the clinics means that they can respond to farmers' immediate needs, but within the boundaries of extension service. The study shows how innovative network of plant clinics can help extension providers provide better support to farmers, through increased access to quality advice and regular delivery of services, with stronger, more reliable links to research and technical support. Plant clinic clusters, regular meetings and stakeholder meetings have all increased the contact between extension, research and extension and helped to professionalise the service.

2 NETWORKS IN ANIMAL HUSBANDRY IN THE NETHERLANDS

Floor Geerling-Eiff and Wim Zaalmink, LEI Wageningen UR

This show case focuses on the innovation and learning processes of the 129 networks which were part of the Dutch Networks in Animal Husbandry programme (2004–07). This programme had two aims:

- To stimulate innovation for sustainable animal husbandry
- To empower entrepreneurship in animal husbandry by improving the match between knowledge supply and demand

The programme was set up as an experiment to establish whether knowledge would lead to more innovation as a result of improving co-creation through networks. The networks were supported for one or two years through facilitation. The prerequisite for a network receiving assistance was that the farmers themselves had to take the initiative.

The Networks in Animal Husbandry programme is interesting as a (SO)LINSA case because it supported entrepreneurial learning networks that:

- focused on realising innovation for sustainable Dutch animal husbandry;
- combined diverse cooperating partners such as farmers, chain partners, consumers, citizens, NGOs and policymakers;
- were facilitated in their knowledge acquisition by advisors, researchers and other knowledge experts so that knowledge and information sharing and learning for innovation could be optimised to achieve sustainable animal husbandry; and
- made a significant contribution to further developing the Dutch AKS.

The participating actors and parties experienced the network approach as successful. The success and the lessons learnt from the analytical monitoring and evaluation studies contributed to the adoption of networks as an instrument to better match knowledge supply to knowledge demand from farmers, knowledge workers (research, and agricultural advice and education) and policymakers. The following influences of the network activities on the AKS were observed:

- Awareness that rather than just tapping the right knowledge source to realise the network's goals, more self-organisation, own activity and learning is required.
- Network activities lower thresholds, making it easier for both network members and knowledge facilitators to make and maintain contacts.
- The step from becoming a user of knowledge to a gainer of knowledge or fellow researcher is the farmer's own responsibility.

- Entrepreneurs became aware that their experience and network activities are valuable to others, and that cooperation and sharing knowledge leads to a return on investment.
- Knowledge co-creation between farmers (entrepreneurs) and researchers/advisors is more important than unilateral knowledge transfer – although there is a lot of very useful knowledge already on the shelf.
- Connectivity between farmers, other parties involved in and around the agricultural chain, NGOs, consumers and citizens is important to improve sustainable animal husbandry in dialogue with its societal environment.

The programme showed that a ‘free actor’ as a facilitator who has the right technical knowledge and skills, is objective and has the trust of the network members, plays an important role in helping the network to take the right steps required within the innovation process. Facilitation of, and subsidies for, networking have become important policy measures and knowledge tools. The programme led to a breakthrough in the Dutch AKS.

Specific barriers that the programme faced were the balance between the give-and-take of knowledge by the various participants, the acceptance of this relatively new way of working with knowledge and the cooperation with competitive advisors, and the limited involvement of agricultural (vocational) education. Specific barriers that the networks faced were: finding a good balance between the benefits for the group as a whole and for sustainable husbandry, and the benefits for individual network members themselves; late involvement of essential parties like policymakers and banks that were necessary to achieve the networks’ goals; and reduced priority for the network among the network members. Most barriers were overcome.

3 KNOWLEDGE AND INNOVATION NETWORKS IN RAISIN PRODUCTION: KAPANCI VILLAGE, TURKEY

Murat Boyaci, Ege University Agricultural Faculty, Department of Agricultural Economic, Bornova Izmir, Turkey

The knowledge and innovation network for raisin production in Kapanci Village (Salihli County, Manisa Province, Turkey) was examined in this show case. The aim of the show case is to examine knowledge exchange in relation to raisin production in the village. Kapanci Village started to grow grapes for raisin production in 1952. The inputs of the 'green revolution' were used extensively after the 1970s. There are now 360 grape growers and approximately 800 hectares of vineyards in the village.

Farmers in the village have high problem solving skills. Respondents view market opportunities, needs, plant production, competition and crises (e.g. lack of water, energy sources) as drivers in learning and innovation. While soft technologies (methods) were more easily adopted up to 15 years ago, increases in production costs have accelerated the adoption tendencies of hard technologies (materials, equipment, etc.) in the village. Gaining more money, improving product quality and decreasing production costs increases the value of innovations.

The village has a well-developed LINSAs, through strong communication among farmers and evidence of openly sharing experiences with others in terms of field days, seminars, skills sharing, meetings and group discussions. Observing and comparing the results of applications to facilitate adoption of innovations were also assessed. Farmers frequently visit vineyards in the village to observe what others do in the fields. Individual methods such as visits, interviews, and phone calls are commonly used for learning in the region. Face-to-face communications are carried out in the coffee houses and input sellers' stores. In recent years, the importance of the internet and cell phones has increased as a tool to learn about innovations and to receive weather reports for the village. Meeting softens occur in coffee houses, important socio-cultural centers in rural areas in Turkey.

The most effective actors in the raisin production network appear to be input sellers and private companies. Other innovation sources noted were private consultants (for conventional and organic production), the internet, other farmers, public advisors and researchers. There are weak linkages between farmers and more formal AKS components, such as research stations, the local university, and public extension organizations. The University and Chamber of Agriculture extension services have limited roles in terms of providing information. Indeed, local / tacit knowledge is typically converted into extension advice and research studies in the region. According to surveyed farmers, extension advice is usually theoretical and not applicable in the field because of limited economic validation.

Surveyed farmers do not believe that their priorities and problems are sufficiently considered in the research and extension agenda in the region. Farmers view their links with public extension services as generally weak. While decreasing production costs is the first priority of farmers it is not given sufficient priority within research and extension agendas. Farmers are more sensitive to environmental and health issues if they earn money (i.e., if there is financial incentive).

Economic expectation is accepted as an opportunity for empowering the networks in the village. Low production costs and better quality raisin production are strengthening collaborations and networks in the village. The LINSAs can thus be defined as market-orientated and pluralistic, with weak links with the formal AKS and reliance instead upon bottom-up innovation/information exchange between farmers and others in the village.

4 ALLMENDE KONTOR AT THE FORMER TEMPELHOF AIRPORT: URBAN GARDENING IN BERLIN, GERMANY

Stephanie Wunder, Ecologic, Germany

Over the last decade, Berlin has become the international capital of urban gardening, wherein there are now more than 100 urban gardens in the city. Key amongst these is the Allmende Kontor, situated on the former Berlin-Tempelhof airport, with a particular emphasis on sustainability and a strong network linking it with other urban gardens. Developed in 2011, it now involves more than 900 gardeners on 5000 m². The key motivations for participation at an individual level, include: that it requires physical work, a connection with nature, sharing knowledge about how food is grown and what to eat, and the provision of an important social meeting place. At a community level, it can help influence the quality of life in the neighbourhood, help provide a low-cost alternative to buying cheap food by enabling those involved to grow their own, and provide a context for educational exchange and new friendships.

Allmende Kontor is a learning network that has developed outside the main agricultural knowledge system, intent on being an information hub for all new and existing urban gardening initiatives in Berlin. It also wants to prove that participative sustainable urban development that brings together civil society, policy actors, administrators and NGOs is possible. It supports learning and innovation for sustainable agriculture principally through informal conversations between gardeners and activists, seminars, online platforms, billboards, plenary meetings and working groups, operating on the principle of knowledge and information sharing, and learning. Currently there are approaches to combine formal with informal learning, through an exchange of apprenticeships, traineeships and outreach to those interested in urban gardening. A participatory governance approach and diverse network of actors further generates an exchange of knowledge.

Allmende Kontor has been formally recognised as being 'an excellent sustainability initiative', with urban gardening initiatives in Berlin seen as having catalysed discussions about the development and use of fallow land and unused spaces in urban areas as either temporary or permanent use forms. Nevertheless, there are also a number of identified barriers to their further development. These include that: many of the gardens are planned on land that can only be used temporarily (which may make it easier to obtain a permit, but at the same time create a sense of uncertainty); there is an over reliance on volunteer input and a lack of financial support; a lack of acknowledgement by public administrations of the services provided by urban gardens; and a general lack of legal structures to define the rights and duties of urban gardeners. The main areas where funds are needed for urban gardening projects are: financial support for core staff to enable continuity; investment in infrastructure (such as

the establishment of a coordination centre or information hub); and assistance for educational activities.

5 LINSА EMERGENCE AROUND THE NERETVA MANDARINE GEOGRAPHICAL INDICATION (GI), CROATIA

Pascal Bernardoni, REDD, Switzerland

The Republic of Croatia has acceded to the European Union (EU), becoming one of the 28 EU member states on 1 July 2013. Accession in a longer term requires Croatia to be able to meet all EU requirements and be compliant with EU legislation. This show case - *LINSА emergence around Neretva Mandarinе Geographical Indication* takes into consideration the EU accession and Geographical Indication (GI) process development and looks at different scenarios of LINSА evolution in regard to GI registration and meeting subsequent requirements.

The lower Neretva region has around 12,000 ha of arable land, most of which is reclaimed swamp, dried out and ameliorated since the 1960s, starting with a project coordinated by UN FAO. In the region there are 3 municipalities (Ploce, Opuzen and Metkovic) in which many of the inhabitants are active in agriculture and especially mandarine production.

The idea of Protected Designation of Origin (PDO) protection of Neretva Mandarines was initiated in 2008. The GI process, led by Agrofructus a subsidiary of the largest companies in Croatia, has favoured a number of new partnerships within the value chain. The challenges faced by value chain stakeholders for the management of the GI once enforced have compelled them to discuss and jointly prepare tools for traceability and quality control. The Association of the Neretva Fruit Growers, funded in the late 90s, but non-operational until recently, has been actively involved since 2011 in the GI process and submitted the application for the registration in 2013. The Association being the body responsible to implement and manage the GI should become a catalytic element of the emerging LINSА replacing Agrofructus.

The main findings of the show case analyses are as follows:

- GI registration can play a key role in bringing the value chain stakeholders together, independently of the market.
- The pre-condition for this to happen is the GI to be envisaged by the producers and by the authority as a quality approach (EU concept) and not as a simple intellectual property tool (Ex-EU concept).
- Without enforcement and the constraint of GI implementation nothing is expected that little will change after the official registration. In the absence of regulation enforcement by the government and support in regards to innovation and changes of practices, the LINSА might never fully emerge and develop.

- Agrofructus has been an asset in making available information on export market and financial resources to perform tasks needed to drive the GI registration, also in mobilising key local players. However, its position as the dominant player has hindered, and could be a threat to, the development of the Association of fruit growers in that many growers perceive it as a tool for the main packers rather than “their” organisation.

Measures to support LINSAs establishment and development include:

- Enforcing laws and regulations to encourage producers and packers to implement the GI, respect the code of practice, and set up a traceability system.
- Steering the GI should towards other type of standards (GlobalGAP; retailers standards) where the ownership over the standard and the whole process by the value chain stakeholders contribute to empower the network
- Extensive support to the Association of fruit growers to reinforce the position of growers and enhance its operational capacity.

Support should encompass:

- Review organisational structure of the Association of fruit growers and establish committees where different type of growers and packers are represented
- Set up and train members of commissions for quality, promotion, etc.
- Establish funding mechanisms that will ensure the association independency

6 SOUTH TYROL APPLE PRODUCTION, ITALY

Julien de Meyer, FAO Office of Knowledge Exchange, Italy

In Northern Italy, the autonomous province of South Tyrol is the biggest single producing area of apple trees in Europe. The 20,000 ha of apple production area in South Tyrol contributes to up to 50% of the local Italian apple market, 15% of the European and 2% of the global apple market. Apple production has been able to flourish and has consistently responded to market demands and competition in the European and global markets.

Since the end of the Second World War until today, the various stakeholders involved in apple production and marketing have organised themselves in an efficient and effective Learning and Innovation Network for Sustainable Agriculture (LINSA). It is a highly sophisticated and adaptive network involving producers, their co-operatives and associations; research; agricultural advisory services; and other public and private actors, all collaborating in a network of linkages that function due to the high level of understanding and co-operation amongst all stakeholders. The most important components of the LINSA are the apple producers cooperatives and their strict adherence to the basic principles of self-help, self-administration, self-responsibility and member's promotion.

The other factors that influenced the nature of this system are numerous. Historically, socially and culturally, the nature of the province and of its inhabitants fostered the creation of a geographical cluster where people and institutions had to co-evolve and innovate to survive and succeed. In recent decades, the province has had a stable political landscape with a strong pro-agriculture policy that complemented the national government policies and the Common Agriculture Policy of the European Union providing a good enabling environment for innovation. Economically, the diversification of income of the 8,000 family farms belonging to this LINSA contributed to the resilience of this innovation system.

The network development was influenced by formal and informal mechanisms with a strong social learning component. Formal mechanisms can be found at policy, institutional and individual levels. Social learning aspects permeate the system. Learning in South Tyrol is linked to an outside and inside dynamic, both at individual and at collective level. The social capital created in this geographical cluster allows the development of the system by absorbing existing knowledge from others and creating knowledge.

The Agriculture Knowledge System accompanied and supported the LINSA. The research and extension system as well as the education system, have evolved and supported the innovation process with capacity development initiatives, with the provision of rural advisory services or by inventing or adapting technologies relevant for the producers. The apple producers in South Tyrol have created a LINSA guided by human relationships, trust, common

vision and interest where information and knowledge are transferred easily and fast and collective action for innovation is a rule.

7 LINSAs AND PESTICIDE REDUCTION IN THE FRENCH VINE PRODUCTION, FRANCE

Jean-Marc Touzard INRA (Institut National de la Recherche Agronomique), France; Marie-Josèphe Pull, Master student, SUPAGRO Montpellier, France

The study characterises the LINSAs that have emerged in the French Vineyards in order to reduce the use of pesticide. Using the SOLINSA analytical framework a two steps methodology has been followed: i) a national overview of the diversity of LINSAs, describing 72 LINSAs through expert interviews; ii) an in-depth analysis of one of the LINSAs – the Perrier Spring project- through interviews of 12 actors who participate in the successful development of organic viticulture around the spring.

Among the 72 LINSAs, different levels of innovation are identified, referring to incremental innovations (evolving conventional, integrated viticulture) or to radical innovations (organic, biodynamic, new radical). The majority of LINSAs are specialized in one of these technical models, but 30% combine them. LINSAs promoting organic viticulture emerged as a radical bottom-up opposition to the conventional technical regime, and have been developed through a growing demand by consumers. LINSAs developing integrated viticulture emerged through top-down initiatives from the AKS, promoting incremental innovations, but also in order to combat the growing influence of organic vine growers. A recent policy initiative (Ecophyto) provides new incentive to LINSAs of integrated viticulture, to have more connection with organic growers.

The in-depth analysis of the “Perrier spring LINSAs” reveals different steps: the LINSAs emerged in 1993 through an alliance between Perrier Company (Nestlé) and the local wine cooperative, in order to preserve the spring from pollution. Between 1994 and 2000 the LINSAs developed around a local clique in which experiences are shared, without any support of the AKS. The wine coop progressively built markets for organic wine, and the LINSAs extended beyond the initial project of Perrier Spring. Since 2001, the LINSAs progressively involved actors of the AKS and captured financial support, strengthening the network (400 hectares in organic viticulture). Since 2011, the cooperative faces difficulties selling the whole production of organic wines, but a new local project emerged, involving a wider range of actors concerned with land management, support for young farmer setting-up and business diversification.

The national survey and the analysis of the Perrier Spring LINSAs show how market evolution and modifications of power relations have animated the conflictive co-existence of different types of LINSAs. This process has succeeded in reducing the number of treatments for herbicide, but not for insecticides and fungicides. The co-existence of LINSAs is the key of the innovation process, each kind of LINSAs playing a complementary role: LINSAs oriented to organic viticulture have introduced a radical perspective in the wine industry and have pushed the AKS to react, while LINSAs promoting integrated viticulture allowed the dissemination of advice and environmental concerns to a large number of organizations and farms. Two interpretations of this process are proposed according to the MLP transition theory: i) LINSAs oriented to organic viticulture

are building a new socio-technical regime with its own market and institutions; ii) Organic LINSAs are niches that will be absorbed by the main technical regime and the AKS.

Considering the current failure in radically reducing the use of fungicides and insecticides, the necessity to go further with the Ecophyto farms network is underlined by using the EIP (CAP) and GIEE (Ministry of Agriculture) initiatives in order to better connect top-down and bottom up innovations.

8 PLANT HEALTH CLINICS IN KENYA

Eric Boa, CABI, UK

In Kenya the Plantwise programme is supporting the development of plant health clinics. These clinics are usually held in public places, they are run by extension staff who act as 'plant doctors' and operate on a demand led basis diagnosing farmer's crop diseases and offering solutions. The eventual aim is for plant clinics to be part of everyday extension, supported by a national plant health system (PHS) which increases farmer access and coverage to advisory services.

A review of plant clinics and the introduction of a Plant Health System (PHS) in Kenya looked at effectiveness of operations, strength of links and ways to improve integration. Plant clinics have established a stronger role for public extension while identifying the need for effective backup and better collaborations with research, regulation and input supply. The plant clinics have been officially endorsed by the Ministry of Agriculture. This has enabled a rapid expansion to new areas though use of clinics varies. Improving extension – and measuring change – is challenging. Official endorsement of plant clinics has improved their status. The flexibility of plant clinics and their simplicity allows people to try out new ideas within defined boundaries.

Extension officers have responded well to new training opportunities and eager to serve farmers at plant clinics. The plant doctors have also discovered the difficulty of addressing farmers' unregulated demands and coping with 'any crop, any problem'. Plant clinic clusters hold regular meetings where such concerns are expressed and 'extension demand' is then passed on to sources of technical support and information. Stakeholder meetings have increased the contact between extension, research and extension. Attendance of researchers and regulators at training courses allows greater exchange of ideas and encourages integration. The professional standing of extensionists has increased in Kenya because of plant clinics.

The new, enhanced status of extension has changed the balance of power slightly, away from research and specialist knowledge. However, this not so much a threat to integration under a PHS approach than a need to think carefully about the mechanisms for strengthening collaborations and improving collaborations. Plant health is being redefined, broadening its aims from a narrow focus on phytosanitary matters (KEPHIS) and more towards a holistic approach. It is difficult to create a PHS approach when the structures, hierarchies and recognized professions do not exist. A plant doctor is not accredited and her qualifications and experience may vary. There are no 'plant hospitals' or 'nurses'.

Plant clinic networks are making a difference to the way people work and suggesting new ways of helping farmers. Caution is needed in defining farmer and system impacts, with clear attribution of interventions established. This will be difficult though discussions within CABI and lively engagement with

stakeholders in Kenya (and elsewhere) are starting to clarify what to assess and how to measure outcomes.

Plantwise will continue working in Kenya until at least 2014. This is a rare moment for bringing about real change in the way farmers benefit from extension. More clinic operators are needed from civil society. NGOs and Community Based Organisations give access to many groups and communities that the restricted resources of extension cannot reach. With agreed procedures for running clinics, sharing results, identifying lessons and making improvements, a PHS in Kenya has much to offer sustainable agriculture and improved livelihoods

Notes

Plantwise- Plant health clinics were developed by the Global Plant Clinic alliance, managed by CABI, and networks established in 16 countries between 2003 and 2010. The Plantwise programme is building on this foundation expanding the plant clinic networks to 31 countries.

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