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# Generating space for innovations in agriculture: the AgriSpin project

Good initiatives for sustainable innovations are everywhere. The biotope selects. How can a conducive biotope be created where such initiatives will flourish and develop into successful innovations? Where can initiators easily find partners and funds to make their dreams come true? What can innovation support agencies do concretely to make a difference? These are the central questions in the European Union Horizon 2020 project AgriSpin. Here, we share our first experiences from AgriSpin, in which 15 partner organisations in 12 European regions are learning from and with each other about successful approaches to innovation brokering. Firstly, we summarise some bottlenecks that are frequently mentioned in the literature. Then the design of the project is described. A key element is the series of 'cross-visits' hosted by the partners. At the time of writing, all cross-visits have been made, and the project has entered a digestion period in which we try to make sense of what has been observed. The next step is to design action plans for each partner organisation and the key actors in the regions where they operate. So, this paper reports work in progress. Nevertheless, some interesting 'pearls' and 'puzzles' can already be reported.<sup>1</sup>

**Keywords:** innovation support services, networks, partnership, EIP-Agri

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## Introduction: innovation as an emergent process

The European Union Horizon 2020 project 'AgriSpin' (Space for Innovations in Agriculture; <http://agrispin.eu/>) runs from March 2015 to October 2017. Focusing on innovation processes, it is designed to relate concepts to practice and to enrich theory from practice through the in-depth exploration of a series of innovations at farm level with special focus on what support service providers actually do to stimulate such innovations. Of the 15 organisations in the project, which are drawn from 12 European Union (EU) Member States, twelve are farmers' organisations and farm advisory services with an intermediate role between farmers, researchers and other stakeholders, and the remaining three are scientific institutes with a focus on knowledge systems in agriculture. This paper summarises the main features of the project and presents some first 'pearls' and 'puzzles' collected so far from the perspective of the science-related members of the consortium.

AgriSpin aims to contribute to system-oriented innovation research in agriculture, complementary to the EU policy instrument European Innovation Partnership 'Agricultural Productivity and Sustainability' (EIP-Agri). The idea behind EIP-Agri is that innovation emerges from interaction between stakeholders. Following this idea, the focus of attention shifts from diffusion of innovations to ways of creating space in which interaction might lead to innovation as a co-creative process. Currently there is concern about a number of bottlenecks pertaining the generation, dissemination and use of innovation in agriculture such as (EU SCAR, 2012, 2014; WB, 2012):

- Research is insufficiently related to practice; science-driven innovations remain 'on the shelf' due to no/little dissemination activities;

- Farmers' needs are not sufficiently addressed during innovation generation, and hence innovations are not relevant (enough);
- Innovative ideas from practice are not captured and spread, i.e. local or practised generated innovations with strong potential for dissemination are not recognised or diffused;
- A shift from science-driven to innovation-driven research has not yet taken place, the institutional, methodological and behavioural changes that are required for such a shift are not yet comprehensively explored, findings and experiences are not systematically documented and assessed.

Such tasks used to be part of the mandate of state/public funded bodies aiming at bridging the gap between agronomy-science and farming practice, i.e. mainstream or 'conventional' extension. However, as, since the 1980s, public extension has been seen to suffer from a number of shortcomings, many countries have started implementing and experimenting with different approaches (decentralisation; contracting/outsourcing; public-private partnerships; privatisation etc.) to providing extension services, resulting in pluralistic advisory services (Alexopoulos *et al.*, 2009; Cristóvão *et al.*, 2012). Cristóvão *et al.* (2012, p.214) highlight the importance of a "new extension approach aiming at participatory group learning and networking with extension agents acting as facilitators" but note that facilitation is "largely underdeveloped, especially on the part of European extension organizations" (p.219). Furthermore, European Agricultural Knowledge and Information Systems (AKIS) are very diverse (Knicker *et al.*, 2009; Hermans *et al.*, 2015; Knierim *et al.*, 2015). Thus, the provision and performance of extension varies considerably.

Given such issues pertaining agricultural innovation enhancement within the EU, the EU innovation policy for rural development currently pursues the establishment of the EIP-Agri. This policy instrument relies on partnerships and 'bottom up initiatives', especially through 'Operational

<sup>1</sup> Sections of this paper were presented in the IFSA Conference in Shropshire, UK in July 2016.

Groups', in order to bridge the gap between actors across the value chain (especially between research and practice) and facilitate the co-generation of innovations through the employment of facilitators/innovation brokers (Regulation (EC) No. 1305/2013<sup>2</sup>; see also EU SCAR, 2012, 2014; Hermans *et al.*, 2015). The next section of this paper elaborates on the theories and concepts backing the authors' understanding of the 'facilitating the co-generation of innovations' through building bridges and creating spaces.

## Discourse on innovation support: an overview

During recent decades, a number of new systems of innovations (SoI) approaches have emerged in the non-agricultural literature which see innovation in a systemic and interactive way, i.e. that innovation emerges from networks of actors as a social (and institutional) as well as a technical process, a nonlinear process, and a process of interactive learning (Koutsouris, 2014). These approaches build on networks, as social processes encouraging the sharing of knowledge and, notably, as preconditions for innovation. Communities of Practice (CoPs), for instance, are described as people engaged in a process of collective learning in a shared domain of interest (Wenger *et al.*, 2002). Such concepts and approaches, therefore, focus on processes instead of the emphasis on structures. Knowledge is conceived as being constructed through social interaction – i.e. not transferred but instead continuously created and recreated. Thus, particular attention is given to (social) co-ordination and networking. Moreover, in order to avoid or to overcome gaps (cognitive, information, managerial or system) resulting in network and institutional failures (Klerkx *et al.*, 2012), growing attention is given to various types of (process) 'intermediaries or facilitators'. For example, Van Lente *et al.* (2003) distinguish 'systemic intermediaries' as actors working mainly at the system or network level to facilitate actor interactions; Haga (2009) argues for the need to orchestrate networking enablers and thus for 'mediators' or 'brokers' as 'independent players' in networks aiming at (a) acting as points of passage to external actors outside the network, bringing in experience and expertise, and (b) building internal network resources and network structure – upon which network governance and processes depend; and Shea (2011) cites Gagnon according to whom "... knowledge brokers, networks, and communities of practice are innovative ways to disseminate and facilitate the application of knowledge. Integrated exchange, involving active collaboration between researchers and knowledge users, built on trust and frequent interactions, holds particular promise". Finally, Howells (2006, p.207) prefers to employ the term 'innovation intermediary' for "[A]n organization or body that acts as an agent or broker in any aspect of the innovation process between two or more parties. Such intermediary activities include: helping to provide information about potential collaborators; brokering a transaction between two

or more parties; acting as a mediator, or go-between, bodies or organizations that are already collaborating; and helping find advice, funding and support for the innovation outcomes of such collaborations".

In agriculture, based on SoI approaches there has been a conceptual shift from the 'transfer of technology'<sup>3</sup> model to network and systems approaches such as agricultural innovation systems (AIS; see Klerkx and Leeuwis 2008a; Klerkx *et al.*, 2010). Contra Rogers (2003), these approaches claim that the process of innovation is messy and complex; new ideas are developed and implemented by people who engage in networks and make adjustments in order to achieve desired outcomes (Van de Ven *et al.*, 1999). Nowadays, innovation studies increasingly focus on learning itself, with emphasis on facilitation and the processes of human interaction from which learning emerges (Röling and Wagemakers, 1988; LEARN Group, 2000).

In this respect, intermediaries aim to assist agricultural/rural entrepreneurs in coping with challenges such as articulating their innovation needs and contracting appropriate services to support their innovation projects and successfully execute these projects. A typical AIS is constantly evolving towards adopting a multi-stakeholder learning approach to withstand global challenges and includes a wide range of actors such as scientists, farm advisory services, farmers/farmers' groups as well as innovation support services. Intermediaries thus aim at enhancing the interaction between such varieties of actors. Such intermediaries are seen to act as a bridge between the demand and supply side of agricultural knowledge infrastructure (Klerkx and Leeuwis, 2008a, 2008b); they focus on 'exploration', i.e. sharing and synthesising, and thus the creation of new knowledge (see Levinthal and March, 1993; Murray and Blackman, 2006). Their major role is that of the co-learning facilitator (usually found in literature as 'facilitators' or 'innovation brokers') aiming at the development of shared meaning and language between dialogue partners in order to stimulate change and develop solutions and innovation. The engagement of stakeholders in dialogue, despite its difficulties and its time-consuming nature (since (social) learning and change are gradual), is necessary so that critical self-inquiry and collaboration will be achieved.

Summarising, Klerkx and Leeuwis (op. cit.) identify three major functions of an innovation broker: (a) demand articulation, (b) network formation and (c) innovation process management. Nevertheless, despite the argument of Hekkert *et al.* (2007) on the important contribution of innovation brokers in innovation systems, the topic has not been extensively embraced by the agricultural academic and research community with the notable exception of the Dutch agricultural sector (e.g. Klerkx and Leeuwis, 2008b; Klerkx *et al.*, 2010; Hermans *et al.*, 2013). For example, in his study on the changing role of government in the Dutch agricultural sector, Wielinga (2001) recognised the crucial role of networks and intermediate actors who fuelled those networks in the decades in which the sector became extremely innovative, and warned that under neoliberal market conditions this

<sup>2</sup> Regulation (EU) No 1305/2013 on support for rural development by the European Agricultural Fund for Rural Development (EAFRD) and repealing Council Regulation (EC) No 1698/2005.

<sup>3</sup> Transfer of technology is the process of transferring (disseminating) technology from the places/groups it was generated to wider audiences/ places (users). Despite different interpretations, different views seem to share the basic idea of TT as "a movement of know-how, technical knowledge and/or technology from one or more sources (termed 'donors') to another entity (termed 'recipient')" (Roxas *et al.*, 2011, p.7).

function was lost and should be rehabilitated. He thus underlines that innovation emerges from networks, and no network can function well without a ‘free actor’ who has space to do whatever is necessary to keep key actors in the network connected. Additionally, a large-scale experiment with over 120 networks of farmers in animal production showed that such networks could very well become innovative, provided that the initiative was their own, and they were facilitated in a way that was appropriate for such networks. Such facilitation requires tools that differ from what is common in project management (Wielinga *et al.*, 2008).

Wellbrock and Knierim (2014) have shown that collaborations start with informal get-togethers of motivated individuals interested in a certain development trajectory in their specific area. Through these informal get-togethers, different stakeholders are given the opportunity to exchange their ideas, share their knowledge and together develop new ideas and projects. This process of joint reflexivity is arguably a crucial component of learning; it is joint reflexivity that leads to shared understanding as people learn to work together to address their development goals. The informality of the initial meetings seems important in providing a non-threatening space in which to exchange ideas and learn about each other. Such encounters can be considered to have occurred initially in an institutional void (Hajer, 2003). One could further argue that institutional voids are necessary for innovation (Wellbrock *et al.*, 2013a, 2013b), because they allow stakeholders to negotiate new, joint ways of working together and to formulate new institutions that can be agreed upon by all partners in the collaboration (Wellbrock *et al.*, 2013b; Wellbrock and Roep, 2015).

## Some features of the AgriSpin project

The project, besides management, and communication and dissemination, consists of four work packages (Box 1). The idea behind the AgriSpin approach is that all partners have their own experiences, ideas and approaches for supporting innovations at farm level, which are worth sharing with others. A ‘silver bullet’ for stimulating innovations does not exist. Every partner is working in a context that has been historically grown and that has its cultural particularities. There is a lot to learn from studying these different innovation efforts, and that is what the project intends to facilitate.

The focus is on regional innovation systems. This is because within many countries there are considerable differences in cultures, organisational structures and even policies between regions. The institutional environment has considerable influence on the capacity of a region to find new answers to emerging challenges. While we assume that good initiatives for innovations are everywhere, the thresholds for taking the necessary actions for bringing such initiatives into practice vary widely in different regions throughout Europe. Stimulating policies such as subsidies for experiments or mitigating risks can lower such thresholds, while restrictive rules, strangulating funding conditions and lack of civil acceptance make them higher. Dialogue with the ‘enabling environment’ about its role and possible measures is therefore an important component of the project as well.

## First experiences

### *The book: Stories from All Corners, To Start With*

Prior to the cross-visits, AgriSpin partners were asked to write a story of an innovation process in which they were involved. Partners were strongly stimulated to frame it as a story, telling how it started, what happened after the first initiative and how far the initiative has come. Additionally, the authors were asked to include their own analysis of what made the difference in this story. The kind of examples the partners came up with, the terminology they used, the concepts and the assumptions beyond these stories: all of these tell something about what the partners think about what matters most in innovation processes. Some interesting pearls and puzzles are listed in Box 2.

**Box 1:** AgriSpin work packages (excluding management, and communication and dissemination).

*Science:* a team of scientific partners guides the process with a conceptual framework including language to facilitate discussion about what matters, and with analysis of what is being observed in the project. The science team has a supportive role, by giving meaning to what is being harvested in the exchange between partners, and refrains from instructing partners what to do.

*Cross-visits:* with a few exceptions, all partner organisations have hosted a cross-visit of 3-5 days, in which they presented case studies of interesting innovations in which they had been involved. The visiting teams, composed on average of 7-8 colleagues from other partners, studied these cases by interviewing farmers, advisors and other relevant actors. In total, 13 cross-visits have been completed, and 58 cases have been studied, out of which 50 are being elaborated for analysis.

*Best practices:* AgriSpin focuses on collecting and generating ideas for stimulating innovations at a practical level. Therefore, best practices are being collected in practical abstracts and short videos which are made available on the project website as well as EU communication channels ([www.EIPsupport.eu](http://www.EIPsupport.eu)) and websites of the project partners.

*Institutional uptake:* some of the lessons learned about creating space for innovations refer to the institutional environment. What can policy makers and managers do to lower the threshold for good initiatives? In the fourth work package, a dialogue has started between the project partners and decision makers in the ‘Multiplier Group’.

**Box 2:** ‘Pearls’ and ‘puzzles’ arising from AgriSpin partners’ stories of innovation processes.

### **Pearls**

*Innovations can be technical, organisational and social:* all angles are valid and interesting.

*Initiators can be anywhere:* the initiative for an innovation process can come from an entrepreneur, an advisor, a researcher, a politician or anyone else. It does not seem to matter where the first idea came from, as long as the partners in the process embrace it and make it their own.

*Innovation support is about building bridges:* connecting partners who carry the initiative with those who can support the process in one way or the other: this appears to be the recurrent role in practically all stories.

### **Puzzles**

*Reflection on the dynamics is needed.* How do support agents make a difference? It appeared hard for the authors (mostly these support agents themselves) to clarify this question.

*What can be done if bridge builders are lacking?* Some stories show that intermediate structures are lacking. This does not necessarily mean that bridge builders are not there, but the threshold for doing what needs to be done is high.

*The underlying assumptions are to be clarified.* This first exercise of the project makes clear that it is not so easy for the partners to reflect on their own assumptions.



### Developing a cross-visit methodology

At the time of writing (December 2016), all 13 cross-visits have taken place. In line with our point of departure that no-one pretends to know better, we developed the method for the cross-visits on the way as well. This was not an easy thing to do. In the literature, various methods have been described for making quick assessments of agricultural knowledge and information systems, for example the RAAKS method (Engel, 1997) and its more recent variation RAAIS (Schut *et al.*, 2015). These are methods to guide a mutual learning process between major actors in an innovation system who gather around a commonly-shared problem or ambition. In AgriSpin, the objective was not to generate solutions with stakeholders, nor to describe an innovation system in detail, but to be inspired by best practices. Some challenges of a cross-visit for doing so are:

- How to focus the attention of the visitors on the most important aspects of an innovation process?
- How to create settings with optimal exchange between key actors and visitors?
- How to collect the observations made by each of the visitors?
- How to reach conclusions to share with the host and its local partners?
- How to elaborate the results in a way that is interesting for practitioners, decision makers and scientists?

During the cross-visits we identified solutions and kept on improving them. After the first few visits a manual was prepared which was constantly updated. To mention a few of these solutions:

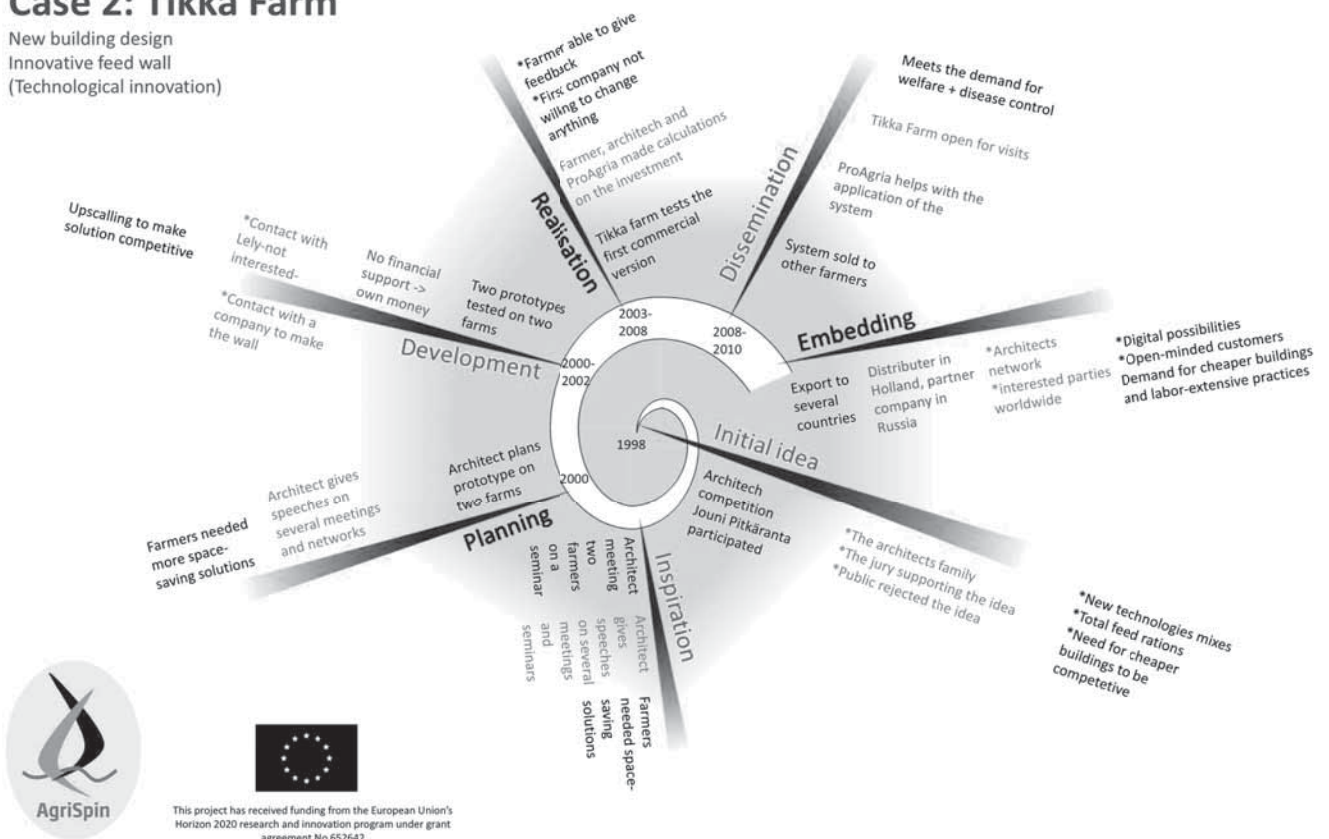
**Focus:** Based on the interests expressed in the first cross-visit, four focus areas were identified: (1) the innovation process, (2) actors and networks, (3) environment, and (4) characterisation of innovation. Later on, we distributed observation cards with eight different themes, and suggestions for questions to ask. Each visitor selected two themes to focus on. In addition to the aforementioned focus areas, there were cards on (5) innovation support, (6) critical incidents, (7) dissemination and (8) future perspectives. This aids for focussing prevented visitors from asking all kinds of technical questions they were tempted to ask since most of them were technicians themselves.

**Setting:** The ideal situation for gathering information is to split up into small groups and discuss with the farmer and other actors in parallel. When translation was necessary, splitting up was however sometimes difficult. The host should prevent the possibility of most of the time being consumed by long, formal presentations.

**Collecting observations:** This seemed difficult and time consuming. We experimented with 'rich timelines', putting all relevant observations on a large sheet, and ordering them along the innovation process in time, preferably nicely illustrated. In the ninth cross-visit, the Innovation Spiral was introduced (Figure 1). This model (Wielinga *et al.*, 2007) identifies seven stages in an innovation process, from the

## Case 2: Tikka Farm

New building design  
Innovative feed wall  
(Technological innovation)



**Figure 1:** Example of an innovation spiral prepared during an AgriSpin cross-visit.

Source: own composition

initial idea until the embedding stage of the innovation. Printed on a large sheet, this model allowed for systematically ordering the observations in these stages of the innovation process. It also stimulated analytical questions for understanding why things happened as they did. It appeared helpful, although critics were there as well: there is a risk that the model narrows down the observations to what fits in the stages and favours the presentation of complex adaptive experimentation in a linear fashion.

*Conclusions to share:* After the field visits, the visiting team drew conclusions in three categories: ‘pearls’, ‘puzzles’ and ‘proposals’. Pearls were those elements that had inspired the visitors. As the visitors, after only a few interviews, could not pretend to have seen sufficient to know better than the host, all doubts and critics were formulated as puzzles, giving room to the regional actors to adjust the picture as the visitors had understood it. Proposals were suggestions to take into consideration by the host, as well as ideas the visitors would take home.

*Elaboration:* The cases are being elaborated into ‘Learning Histories’ (Kleiner and Roth, 1997). A Learning History tells the story of a process, and consists of two components: the narrative, including all facts that mattered according to actors involved and their observers, and an analysis that explains why things happened as they did. Using different theories, observers can analyse the same fact differently. For the learning process in AgriSpin such differences are most interesting.

The hosts wrote the narratives, and the scientific partners made the analyses. We expect to generate fifty Learning Histories about innovations at farm level by the end of the project period.

## Examples of AgriSpin case studies

As the digesting phase is still ongoing, it is too early for conclusions about effective strategies and methods to stimulate innovations. To give an impression of what has been found in the cross-visits, we give two examples.

### Guadeloupe cross-visit

In Guadeloupe a policy-induced set of innovation processes was studied. Hence, there was a two-level innovation case setting: (a) the RITA (*Réseaux d'Innovation et de Transfert Agricole*) programme as such; and (b) three cases of innovative agricultural diversification measures (in citrus, yams and bee production) enhanced by the programme.

The RITA programme has enhanced the cooperation of various agricultural organisations at both the regional institutional level, so that the decision makers know each other better, and the farm level where real cooperation among the technical staff takes place. Particularly the agents of the agricultural chambers are more aware of further actors operating for the sake of farmers. Equally, greater knowledge of the work of CIRAD and INRA was gained. A further gain is the involvement of political decision makers comprising both the representatives of the national ministry of agriculture and

of the regional department council. Currently, a very important shift of responsibility is to be realised through which the RITA programme will be transformed from a national top-down and ministry-governed intervention into a regionally-anchored, EU-funded instrument. So far, RITA has been successful in building bridges among the various actors so that there is mutual knowledge about agency possibilities and limits with a specific focus on science-practice interfaces. Also, RITA has created new spaces for actors such as specific farmers' organisations to formulate their research interests and needs (e.g. in livestock production). However, given the relatively short time of the programme's existence, no concrete results can be assessed at this level of innovation process.

With regard to the problem of the citrus greening disease, three innovative strategies were explored: an individual one, a science-practice cooperation and a governmentally-supported business approach. Meaningful bridges among various actors, such as the Chamber of Agriculture, a producers' organisation and the research body CIRAD, were observed in the second case. However, there was clearly no fast and satisfying answer to the problem. So, individual actors who once relied on citrus production looked for either new fruits and crops or alternative livelihood strategies. The scientifically-promoted idea of eliminating the affected citrus trees was not at all supportive for the creation of spaces for innovation – rather the contrary!

The production of yams is important in Guadeloupe as part of the population's staple food. Although confronted with severe challenges from both ecological and market aspects, there is continuing interest among farmers to produce yams despite the fact that productive and resistant plant material is missing. A long-standing breeding line of yams from INRA has failed to achieve the expected breakthrough. Supported by RITA, a new network has been created linking a farmers' organisation with CIRAD and supporting especially one farmer in making field trials with interesting plant material (building bridges). Around these field trials a field day was organised that was successful in creating spaces for the meeting and the exchange of various actors in the sector, and also attracted new farmers who were interested in engaging in commercial yam production.

The beekeeping and queen bee breeding case of the beekeepers' organisation revealed the widest and most concrete impact. Here, the organisation was almost at the level of job creation through the production and sales of a variety of locally-bred queen bees. Moreover, the organisation had lobbied successfully within municipalities for the maintenance and the reestablishment of hedges and other naturally flourishing sites in order to provide bees with fodder sources and, in doing so, building bridges among various actors within a regional, landscape level. Also, through the establishment of a shop for beekeeping equipment and for honey and honey-related products, and through offering training courses for beekeeping, the organisation creates spaces for innovative practices.

The cross-visit aroused the attention of the local decision makers. They participated in the discussions. Following the visit, the second phase of RITA was approved.

## Toscana cross-visit

Several innovation cases were visited and studied in the Italian region of Toscana. As with innovation in Guadeloupe, a two-level innovation setting was observed: on the one hand the work of ARSIA/Toscana Region and, on the other, the specific innovative cases visited. ARSIA (The Regional Agency for Development and Innovation in Agriculture and Forestry) had been a technical and scientific agency for the region, but was abolished from 1 January 2011 and all activities were transferred to Toscana Region. ARSIA and the Region played/play a significant role in terms of (a) actively promoting policies at the regional level, (b) encouraging links between stakeholders, notably between scientists and researchers on the one hand and farmers and rural communities on the other, mainly through the setting up of round tables, (c) participating in international projects and putting together relevant regional projects, and (d) funding specific farmers' investments. These points were verified at least as far as the case studies visited in Toscana are concerned (see below). The Agency/Region were/are involved in a wide range of activities including social farming, agri-tourism, biodiversity, forestry, phytosanitary services, animal production, artisanal production, (typical) local products and products of geographical indications, marketing and training.

However, since the abolition of ARSIA the lack of advisory service and of coordination of the regional AKIS has been profound. This, in turn, seems to have resulted nowadays in a lack of structured links between actors – thus the increased importance of personal relationships, the lack of a clear vision on the part of the Region (for example, who to support: large or small-scale farmers; what to support and which innovations are appropriate for each of farmers' categories, and so on) as well as, sometimes, the lack of recognition of the Region's contribution to innovative projects and the understanding of its role as merely a funding provider.

The cases visited in Toscana concerned: (a) the Floriddia farm (the rediscovery and cultivation of ancient wheat varieties and the production of organic bread and pasta); (b) the Maremma cooperative (production of the Pecorino Toscano PDO cheese with nutraceutical properties implying the restructuring of the whole animal farming management system); (c) a winery producing high-quality wine and engaged in activities in order to valorise local varieties, control inputs and allow for traceability; and (d) the University of Pisa, actively involved and driving a social farming project. Interesting points drawn from the case studies are as follows.

- The role of ideology (organic farmers/Floriddia), ethical commitment (organic farmers; social farming) or local identity and fame/branding (wines) in the initiation/triggering of innovations;
- The commitment of the initiators to their innovation, despite in some cases of problems (economic viability of the projects, personal time and expenditure, etc.);
- The involvement of university staff in these projects, although on a personal basis (except in the social farming case in which the university is the heart of the innovation);
- The attempts in all cases to establish networks with relevant actors during innovation initiation and now-

adays to expand them. Notably: (a) in the organic farming network (related to the Floriddia case) the role of such networks in dissemination (local farmers network to cultivate the ancient cultivars; wide network comprising farmers, scientists, bakers, processors, consumers, marketers/distributors, doctors and other medical and health specialists etc. to support the case) and policy making (national law on biodiversity for which a national network played an important role and the refutation of the European Commission proposal on seeds based on the resistance of a pan-European network) should be stressed; and (b) in the case of social farming efforts that led to the national law for social farming should be also underlined;

- The need for innovations as responses to market demand (high quality wines, Pecorino cheese with nutraceutical properties), social demand and sensitisation (social farming, organic farming) or scientific progress (cheese with nutraceutical properties and the related new animal production management systems, biodiversity and the preservation of local seeds and breeds, new technologies allowing for soil, inputs and overall production management and traceability in viticulture and wine-making);
- The step-by-step introduction of innovations in cases of complex changes (new animal farming management for the production of cheese with nutraceutical properties; from quality, related concerns to environmentally-friendly cultivation techniques to high-tech precision farming and traceability system in wine production) and the adoption of the changes from younger farmers eager to experiment with the assistance of the university staff in the first case;
- The need to secure the economic viability of the businesses in all cases, the equitable distribution of costs and benefits (between the members – animal breeders, and the cheese producing cooperative), and the contribution to local, sustainable development (for example, fewer working hours in order to increase employment in Floriddia; the environmental, social and economic role of animal farming in Maremma; and the low prices of the organic social farming products in the local market).

## Reflections

The aim of AgriSpin is to learn from each other and with each other about ways to support farm-level innovations. In this respect, thus far, our work has revealed a number of interesting points worthy of further exploration.

In the first place, many examples confirm that successful innovations are often the result of synergy among three dimensions: technical, organisational and institutional; innovations are a combination of implementation of new technologies and practices (hardware), new knowledge and ways of thinking (software) and new institutions or organisation (orgware).

Additionally, it has been shown that the first spark for an innovation can arise anywhere in a knowledge system. Clearly, our stories do not support the view once commonly



held that innovation flows only from the source (research) to the end users (farmers), and that the job of innovation support consists of transferring knowledge. The multiple triggers of change (ideological, technical, market, scientific, policy etc.) should also be underlined, along with the fact that new ideas come about when actors are in a reflexive stance towards their own situation. Reflexivity implies challenging conventional thinking, problematising aspects and developing novel interpretations.

Networking has been shown to be an effective way of coordinating a shared activity and crossing boundaries, disciplines, organisations, hierarchies and scales. It can increase the number of actors (individuals and groups) who share an innovative idea and directly contribute to the formulation of projects and policies. Networks are thus spaces which bring together those involved in purpose-driven learning and knowing processes, allow for the creation of synergies and encourage (social) learning and innovation.

Therefore, the need for facilitation becomes more than obvious. Facilitation organises the learning environment and learning processes. It allows for critical discussion among participants around an activity or experience they share and in time, deeper levels of understanding, inquiry and innovation can be created within the participant network; it thus produces more effective learning in participants' domains of existence.

Clearly there is work to do for further studying and clarifying and the main issues to be further explored within AgriSpin are: (a) why some innovations become successful while others get stuck, (b) what the support service providers actually did to help farmers realise an innovation, and (c) can particular phases of an innovation process be identified and what is needed and helpful in each phase. It is also interesting to explore partners' theories-in-use and where the interaction in the project will lead to in terms of concepts and approaches.

Based on the detailed analysis of all the 13 cross-visits, the project collects best practices and will make them available to a wider public; the aim is to enable local, regional, national and European actors involved in supporting innovations at farm level to improve their practices and support services and thus to create space for innovations. Additionally, the project shall develop a toolkit of best-fit innovation practices and support services across Europe which can be used by stakeholders to strengthen their innovation capacity; it will provide new insights and ideas on how to improve innovation and demand driven research in the agri-food chain. In this respect, in the second phase of the project partner organisations will organise relevant seminars with authorities and other key actors in their region.

Finally, colleagues who meet each other several times in intensive cross-visits build up relationships which can lead to new joint activities. The start has been made, but it is still too early to predict how this will evolve. The space for a professional network that lasts after the project has ended has been created.

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## References

- Alexopoulos, G., Koutsouris, A. and Tzouramani, E. (2009): The financing of extension services: A survey among rural youth in Greece. *The Journal of Agricultural Education and Extension* **15** (2), 175-188. <https://doi.org/10.1080/13892240902909098>
- Cristóvão, A., Koutsouris, A. and Kügler, M. (2012): Extension Systems and Change Facilitation for Agricultural and Rural Development, in I. Darnhofer, D. Gibbon and B. Dedieu (eds), *Farming Systems Research into the 21st Century: The New Dynamic*. Dordrecht: Springer Science, 201-227. [https://doi.org/10.1007/978-94-007-4503-2\\_10](https://doi.org/10.1007/978-94-007-4503-2_10)
- Engel, P.G.H. (1997): *The social organization of innovation: A focus on stakeholder interaction*. Amsterdam: Royal Tropical Institute.
- EU SCAR (2012): *Agricultural Knowledge and Innovation Systems in Transition – a reflection paper*. Brussel: European Commission.
- EU SCAR (2014): *Agricultural knowledge and innovation systems towards 2020 – an orientation paper on linking innovation and research*. Brussel: European Commission.
- Haga, T. (2009): Orchestration of network instruments: a way to de-emphasize the partition between incremental change and innovation? *Artificial Intelligence and Society* **23**, 17-31. <https://doi.org/10.1007/s00146-007-0165-7>
- Hajer, M. (2003): Policy without polity? Policy analysis and the institutional void. *Policy Sciences* **36**, 175-195. <https://doi.org/10.1023/A:1024834510939>
- Hermans, F., Stuiver, M., Beers, P.J. and Kok, K. (2013): The distribution of roles and functions for upscaling and outscaling innovations in agricultural innovation systems. *Agricultural Systems* **115**, 117-128. <https://doi.org/10.1016/j.agry.2012.09.006>
- Hermans, F., Klerkx, L. and Roep, D. (2015): Structural conditions for collaboration and learning in innovation networks: Using an innovation system performance lens to analyse Agricultural Knowledge Systems. *The Journal of Agricultural Education and Extension* **21** (1), 35-54. <https://doi.org/10.1080/1389224X.2014.991113>
- Hekkert, M.P., Suurs, R.A.A., Negro, S.O., Kuhlmann, S. and Smits, R.E.H.M. (2007): Functions of innovation systems: a new approach for analysing technological change. *Technological Forecast and Social Change* **74**, 413-432. <https://doi.org/10.1016/j.techfore.2006.03.002>
- Howells, J. (2006): Intermediation and the role of intermediaries in innovation. *Research Policy* **35**, 715-728. <https://doi.org/10.1016/j.respol.2006.03.005>
- Kleiner, A. and Roth, G. (1997): *Learning History. How to make your experience your company's best teacher*. Harvard Business Review, September-October, 172-177.
- Klerkx, L. and Leeuwis, C. (2008a): Balancing multiple interests: Embedding innovation intermediation in the agricultural knowledge infrastructure. *Technovation* **28**, 364-378. <https://doi.org/10.1016/j.technovation.2007.05.005>
- Klerkx, L. and Leeuwis, C. (2008b): Matching demand and supply in the agricultural knowledge infrastructure: Experiences with innovation intermediaries. *Food Policy* **33**, 260-276. <https://doi.org/10.1016/j.foodpol.2007.10.001>
- Klerkx, L., Aarts, N. and Leeuwis, C. (2010): Adaptive management in agricultural innovation systems: The interactions between innovation networks and their environment. *Agricultural Systems* **103**, 390-400. <https://doi.org/10.1016/j.agry.2010.03.012>



- Klerkx, L., Van Mierlo, B. and Leeuwis, C. (2012): Evolution of system approaches to agricultural innovations: concepts, analysis and interventions, in I. Darnhofer, D. Gibbon and B. Dedieu (eds), *Farming Systems Research into the 21st Century: The New Dynamic*. Dordrecht: Springer Science, 457-483. [https://doi.org/10.1007/978-94-007-4503-2\\_20](https://doi.org/10.1007/978-94-007-4503-2_20)
- Knickel, K., Brunori, G., Rand, S. and Proost, J. (2009): Towards a Better Conceptual Framework for Innovation Processes in Agriculture and Rural Development: From Linear Models to Systemic Approaches. *Journal of Agricultural Education and Extension* **15** (2), 131-146. <https://doi.org/10.1080/13892240902909064>
- Knierim, A., Boenning, K., Caggiano, M., Cristóvão, A., Dirimanova, V., Koehnen, T., Labarthe, P. and Prager, K. (2015): The AKIS concept and its relevance in selected EU member states. *Outlook on Agriculture* **44** (1), 29-36. <https://doi.org/10.5367/oa.2015.0194>
- Koutsouris, A. (2014): Exploring the emerging intermediation roles (facilitation and brokerage) in agricultural extension education. *International Journal of Agricultural Extension (Special Issue)*, February, 21-37.
- LEARN Group (2000): *Cow up a Tree: Learning and Knowing Processes for Change in Agriculture; Case Studies from Industrialised Countries*. Paris: INRA Editions.
- Levinthal, D. and March, J. (1993): The myopia of learning. *Strategic Management Journal* **14**, 95-112. <https://doi.org/10.1002/smj.4250141009>
- Murray, P. and Blackman, D. (2006): Managing innovation through social architecture, learning, and competencies: A new conceptual approach. *Knowledge and Process Management* **13**, 132-143. <https://doi.org/10.1002/kpm.253>
- Rogers, E.M. (2003): *Diffusion of Innovations* (5th edition). New York: Free Press.
- Röling, N. and Wagemakers, M.A.E. (eds) (1998): *Facilitating Sustainable Agriculture: Participatory learning and adaptive management in times of environmental uncertainty*. Cambridge: Cambridge University Press.
- Roxas, S.A., Piroli, G. and Sorrentino, M. (2011): Efficiency and evaluation analysis of a network of technology transfer brokers. *Technology Analysis & Strategic Management* **23** (1), 7-24. <https://doi.org/10.1080/09537325.2011.537085>
- Shea, B. (2011): A decade of knowledge translation research - what has changed? *Journal of Clinical Epidemiology* **64**, 3-5. <https://doi.org/10.1016/j.jclinepi.2010.07.009>
- Schut, M., Klerkx, L., Rodenburg, J., Kayeke, J., Hinnou, L.C., Ra-boanarielina, C.M., Adegbola, P.Y., van Ast, A. and Bastiaans, L. (2015): RAAIS: Rapid Appraisal of Agricultural Innovation Systems (Part I). A diagnostic tool for integrated analysis of complex problems and innovation capacity, *Agricultural Systems* **132**, 1-11. <https://doi.org/10.1016/j.agsy.2014.08.009>
- Van de Ven, A.H., Polley, D.E., Garud, R. and Venkataraman, S. (1999): *The Innovation Journey*. Oxford: Oxford University Press.
- Van Lente, H., Hekkert, M., Smits, R. and Van Waveren, B. (2003): Roles of systemic intermediaries in transition processes. *International Journal of Innovation Management* **7**, 1-33. <https://doi.org/10.1142/S1363919603000817>
- Wellbrock, W. and Knierim, A. (2014): Unravelling group dynamics in institutional learning processes. *Outlook on Agriculture* **43** (3), 187-191. <https://doi.org/10.5367/oa.2014.0173>
- Wellbrock, W. and Roep, D. (2015): The Learning Rural Area Framework: A Heuristic Tool to Investigate Institutional Arrangements Supporting Collaboration in Rural Areas. *Sociologia Ruralis* **55** (1), 106-124. <https://doi.org/10.1111/soru.12049>
- Wellbrock, W., Nienaber, B., Kriszan, M., Nadler, R., Roep, D. and Frys, W. (2013a): Arranging support of collective learning and innovation in German rural regions, in C. Tamasy and J. Revilla Diez (eds), *Regional Resilience, Economy and Society*. Farnham: Ashgate, 195-212.
- Wellbrock, W., Roep, D., Mahon, M., Kairyte, E., Nienaber, B., Dominguez Garcia, L., Kriszan, M. and Farrell, M. (2013b): Arranging public support to unfold collaborative modes of governance in rural areas. *Journal of Rural Studies* **32**, 420-429. <https://doi.org/10.1016/j.jrurstud.2013.10.002>
- Wenger, E., McDermott, R. and Snyder, W. (2002): *Cultivating Communities of Practice*. Cambridge MA: Harvard Business School Press.
- Wielinga, H.E. (2001): *Networks as Living Tissue: A Study on Knowledge, Leadership and the Role of Government in Dutch Agriculture since 1945* (PhD Thesis, Wageningen University). 's-Hertogenbosch: Uilenreef Publishers.
- Wielinga, H.E., Zaalmink, B.W., Bergevoet, R.H.M., Geerling-Eiff, F.A., Holster, H., Hoogerwerf, L. and Vrolijk, M. (2008): *Networks with free actors: encouraging sustainable innovations in animal husbandry by using the FAN approach*. Wageningen: Wageningen University and Research.
- WB (2012): *Agricultural Innovation Systems: An investment source book*. Washington DC: World Bank.