



AgriSpin Deliverable 1.5

Inventory of innovation practices.

Edited by Eelke Wielinga and Sjoerd Robijn

April 2016



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 652642

Inventory of Innovation Cases

Deliverable 1.5

Eelke Wielinga, ZLTO



Stories From All Corners, To Start With

One of the first activities in the AgriSpin project has been the collection of innovation stories. Most partners in the AgriSpin consortium are engaged in activities for stimulating innovations at farm level. They were asked to write one story about an example they were proud of, or at least they found typical for their reality.

The 15 partners in AgriSpin produced 19 stories, which have been compiled in the present book “Stories from all corners, to start with”. With an introduction and a chapter on conclusions, the book counts 21 chapters.

Stories as a baseline study

The idea behind this activity was to create a baseline for the project, about the way partners think about innovation before they start to interact in the cross visits and other project activities. What do they consider as an innovation? How do they see their own role? What makes the difference in their opinion? In what terms do they describe what matters? It will be interesting to see what has changed after two years of intensively working together.

In a story something happens

Stories are not the same as scientific articles, reports or brochures, most partners were used to write. Therefore it took some time before the partners understood what was being expected. In a story someone takes an initiative and mobilises others to join. They employ activities, run into unexpected situations, have to deal with problems, and end up somewhere they might not have expected to be. Such a story tells much more about the way authors think than the more usual documents that describe what has been planned for or what is supposed to be. A story tells what actually happened and what has been learned underway. This makes it much more interesting to read, because it tells about experiences others can learn from.

The initial stories and the innovation cases for the cross visits

After the submission of the stories for the initial book, partners were asked to identify 3 or more cases, to be studied during the cross visits. These proposals were evaluated by the Science Group of AgriSpin, in order to check whether they met the criteria. Upon approval, each partner made fiches: short overviews of the cases to be visited. Altogether, the partners organise 13 cross visits, with 40 or more cases to study.

Amongst these cases there are also stories from the initial book. An overview of the cases can be found in deliverable 1.3: the Synthesis Report.



Nineteen stories about innovations from European innovation support agencies in agriculture and rural development, at the start of the AgriSpin project.

Eelke Wielinga and Sjoerd Robijn, editors

Stories From All Corners, To Start With

Eelke Wielinga and Sjoerd Robijn, editors

AgriSpin project

March 2016

Published by SEGES, Aarhus, Denmark

ISBN 978-87-93051-03-04



This project has received funding from the European Union's Horizon 2020
research and innovation programme under grant agreement No 652642

TABLE OF CONTENTS

1. EXPERIENCES IN CREATING SPACE FOR INNOVATIONS IN AGRICULTURE	7
AN INTRODUCTION TO THE AGRI SPIN PROJECT EELKE WIELINGA: ZLTO, <i>THE NETHERLANDS</i>	
2. EARLY ESTIMATION OF WINE QUALITY	15
INTRODUCTION OF AN INNOVATIVE ANALYTICAL APPROACH FOR EARLY ESTIMATION ALESSANDRA GEMITTI, REGION TUSCANY, <i>ITALY</i>	
3. JACOB VAN DEN BORNE: PRECISION FARMING	18
PIONEER AND ENTREPRENEUR GROWS POTATOES WITH PRECISION PETER PAREE, PIETER VAN HOUT EN FROUKJE KOOTER, <i>ZLTO, THE NETHERLANDS</i>	
4. REDUCING AMMONIA EMISSIONS	25
A BOTTOM UP INNOVATION ILSE GEYSKENS: INNOVATION SUPPORT CENTRE, FARMERS UNION, <i>BELGIUM</i>	
5. PRATINI FARM DISCOVERS OLD WHEAT VARIETIES	29
THE NETWORK AROUND THE DISCOVERY OF OLD VARIETIES IN THE PROVINCE OF PISA ALESSANDRA GEMMITI, TUSCANY REGION, <i>ITALY</i>	
6. ØSELUND GOAT CHEESE	33
MARKETING A DELICACY HEIDI HUNDRUP RASMUSSEN, SEGES, <i>DENMARK</i>	
7. PHYSICAL AND FINANCIAL BENCHMARKING	37
ITS VALUE IN EXTENSION TOM KELLY, TEAGASC, <i>IRELAND</i>	
8. TRUMP CARDS	45
EFFECTIVE ADVICE: FROM IDEA TO CONCEPT HEIDI HUNDRUP RASMUSSEN, SEGES, <i>DENMARK</i>	
9. PERSONAL SKILLS ARE DECISIVE	55
AHA'S STORY OF ADVANCES VOCATIONAL TRAININGS IN SOFTSKILLS FOR MULTIPLIERS IN AGRICULTURE MARIETHERES FÖRSTER AND WOLFGANG KUBUTSCH. ANDREAS HERMES AKADEMIE, <i>GERMANY</i>	
10. TRAINING YOUNG PROFESSIONALS FOR THE JOB IN THE ORGANIC SECTOR	55
A SUCCESS STORY FROM GERMANY ANN-KATHRIN SPIEGEL. FiBL, <i>GERMANY</i>	

11. IT'S NOT NECESSARILY LONESOME AT THE TOP!	61
FACILITATED EXCHANGE FOR MANAGERS OF ADVISORY ORGANISATIONS	
THOMAS FISEL, ENTRA, <i>GERMANY</i>	
12. FROM TOP DOWN TO BOTTOM UP	67
THE DOUBLE BENEFIT OF GREATER BUY-IN AND NEW IDEAS FOR INNOVATION SUPPORT PROGRAMMES	
TOM KELLY, TEAGASC, <i>IRELAND</i>	
13. INNOVATION IN RURAL AREAS WITH AGRI -FOOD COMPANIES	73
AMAIA GARRASTAZU, DAMIANA MAIZ, LURDES NAFARRETE, PILAR RIAÑO	
HAZI (AS PART OF LURSAIL), <i>BASQUE COUNTRY</i>	
14. TEAM WORK FOR FARM ADVICE	77
COPING WITH INTERNATIONAL CRISES	
KASPARS ZURINS, LLKC: LATVIAN RURAL ADVISORY AND TRAINING CENTRE, <i>LATVIA</i>	
15. UNDER THE VOLCANO	79
INNOVATION IN AGRICULTURE IN A FRENCH OVERSEAS TERRITORY	
MANUEL GERARD, ACTA & CIRAD, <i>FRANCE</i>	
16. A FARM ADVISORY BOARD IN KEMPEN	91
HOW CLIENTS BECOME PARTNERS IN MARKETING	
ILSE GEYSKENS: INNOVATION SUPPORT CENTRE, FARMERS UNION, <i>BELGIUM</i>	
17. FAMILY FARMING IN ROMANIA	95
HIGH NATURE VALUE FARMING FOR SMALLHOLDERS	
NATHANIEL PAGE AND RĂZVAN POPA, FUNDAȚIA ADEPT TRANSILVANIA, <i>ROMANIA</i>	
18. THE GREEN CREATIVE GARDEN	107
LINKING STAKEHOLDERS FROM ALL CORNERS	
HANNU HAAPALA, PROAGRIA ETELÄ-POHJANMAA, <i>SEINÄJOKI FINLAND</i>	
19. LANDSCAPE, VINES, WINES AND TOURISM	113
THE BATTLEFIELD OF INNOVATIONS IN SANTORINI ISLAND	
GEORGE VLAHOS, ALEX KOUTSOURIS AND EMI TSAKALOU	
DEPT. OF AGRICULTURAL ECONOMICS & RURAL DEVELOPMENT, AGRICULTURAL UNIVERSITY OF ATHENS, <i>GREECE</i>	
20. BEYOND AGRICULTURE: BIO-DISTRICTS	125
HOW ORGANIC FARMING MODEL PUSHES THE BOUNDARIES OF INNOVATION	
YULIA BARABANOVA, IFOAM-EU, AND SALVATORE BASILE, GENERAL SECRETARY OF THE CILENTO BIO-DISTRICT	
AND PRESIDENT OF THE INTERNATIONAL NETWORK OF ECO REGIONS, <i>ITALY</i>	
21. PEARLS AND PUZZLES	131
A BASELINE FOR THE AGRI SPIN PROJECT	
EELKE WIELINGA: ZLTO, <i>THE NETHERLANDS</i>	

1

Experiences in Creating Space for Innovations in Agriculture

An Introduction To The AgriSpin Project

Eelke Wielinga: ZLTO, *The Netherlands*

Stories at the start of a discovery journey

What can be done to create the space where initiatives for innovations can flourish? This is the Central question in the AgriSpin project, bringing fifteen partners in twelve European countries together with a shared ambition: to learn from each other and with each other. Stimulating innovations at farm level is for each of us at least part of our job. This means that we all have our experiences. Stories we are proud of. Stories with puzzles. Stories with cliff-hangers. This book is a collection of these stories at the start of a discovery journey that will take two-and-a-half years.

This book has been written by the partners themselves. During the project we will visit each other and try to understand how things work under the particular circumstances of our colleagues. From there we will inspire each other with our own experiences and together we will deepen our understanding of the role of intermediate actors in the Agricultural Knowledge and Innovation System (AKIS).

What can be done to create the space where initiatives for innovations can flourish?

Where do we stand before our interaction starts? What does each of us see as interesting innovations? How do we tell about what matters most in the process from a new insight or idea towards the implementation of new practices? How do we see our own contribution in such processes?

Each partner wrote down at least one story. The result provides a most interesting inside look at the diversity of practices in the different corners of the European Union.

In this book we first describe briefly the context of the AgriSpin project, who we are and what we intend to do during the project. The main part consists of the stories. At the end of the book we reflect on what this collection tells us about the point of departure in the project. What are we curious for? What questions will set the initial course for the discovery tour we engage in?

It will be most interesting to make a second volume of this book at the end of the project period. What stories will we collect by then? Will they be significantly different from this first volume? What will appear to be the pearls that inspired others to implement changes? For what puzzles did we find solutions? And what can be said about the contribution of this project to innovation theories?

At this point in time we cannot know where we will end up. That's what makes it so interesting.

Good initiatives for innovations are everywhere, the environment selects.

We don't have to explain that innovations are crucial for the agricultural sector as well as for society, in order to cope with the challenges of this period of time. How to ensure the supply of healthy, safe and affordable food for all? How to keep the environment clean and attractive? And how to provide livelihood for many in the countryside? Moreover, much is being asked from the system's capacity to respond to threats like climate change, demographic movements, as well as to rapid technological developments with their opportunities and also dark sides. After a period in which agricultural innovation did not get the attention it deserved in the community of international funding agencies, it is rightfully back on the agenda. The focus is on how. Where are the buttons to push on, to have effect?

There is also something happening regarding assumptions of how innovations come about. For a long time, people believed in the Transfer of Technology model and many still do so. According to this view, researchers generate new knowledge. Their publications would be picked up by advisors and educators, who repackage it into messages for end users. For new challenges, the investments should go to research for finding solutions. When innovations did not spread fast enough, the problem was framed as a gap between researchers in their ivory towers and practitioners who did not have sufficient access to new knowledge.

Most practitioners know better than that. Many farmers are experimenting themselves. Successful experiments spread through networks. Usually there are many more actors involved in an innovation than only knowledge workers such as advisors or researchers. Think of actors in the value chain like suppliers and retailers, or consumers and civil society groups, administrators, and so on. Innovations emerge from interaction between people with various background and knowledge. Those who want to invest in the innovative capacity of a system, should invest in the quality of partnerships.

Successful experiments spread through networks.

Driving forces in such partnerships are people who take initiatives, and manage to mobilise others. Such initiators can be very well farmers. But also others, such as advisors, researchers, people from civil society groups and even civil servants can bring the first spark into a group of people with the ambition to tackle a problem or to make use of new opportunities.

In practice, such good initiatives are everywhere at any time. But most of them never make it until successful implementation of a new practice. Just like seeds that spread out, the environment determines what will come up. The barriers can have many different features: high risks, difficult access to expertise which has a price, restrictive administrative rules, resistance from stakeholders, lack of social skills to keep the networking in the group healthy, and so on.

The AgriSpin project aims to detect such barriers and to develop ways to overcome them, thus creating space for good initiatives. The first step is to get an impression of the way in which the project partners are coping with these challenges at the start of the project.

The Regulation on European Innovation Partnerships (EIP)

Innovations emerge from interaction. This line of thinking has become the basis for the European Innovation Partnership "Agricultural Productivity and Sustainability" (EIP-AGRI) as set out in the Commission Communication COM(2012) 79. The European Union Regulation EU 1305/2013 supports the EIP initiative by making funds available for groups of actors who find each other around an initiative to develop an innovation that contributes to the sustainable development of the farmers' and foresters' practices. In the EIP terminology such a group is called an "Operational Group", because partners are expected to be "operational" and to 'act'. They should not only to talk together but also to work together.

A good initiative is Central. Around this initial idea a core group must be formed, engaging the most appropriate partners for the job. This core group works out an operational plan. These first steps in the process leading to an Operational Group with a project plan can already be funded. The second phase follows after the group's objectives, their composition and the project plan have been approved. Then the operational group can get funding for their work to develop the innovation. The precise result of such an innovative adventure can never be fully known. Therefore, the partners in an Operational Group are accountable for their efforts to realise their ambition, and not for products that were narrowly described beforehand. Trying something new always carries a degree of risk with it.

National or regional governments have a "Managing Authority" for their rural development programmes, where Operational Groups can apply for funding. The EU funds for EIP are channelled

through these Managing Authorities. The types of activities that are eligible for funding and guidelines for installing procedures for application are being specified in the national or regional regulation and in accompanying guidelines made up by the countries or regions according to the EU rules.

It is important to notice that the support is primarily meant for assisting the process. Payments can be made for activities, including expertise needed, facilities to meet, and to some extent making use of equipment for experimenting. "Innovation brokering" to build the group with its project during the first phase and "facilitating the project" during the second phase are also activities that can be funded under the EIP which acknowledges the importance of intermediating activities.

That the EIP programme is operational since 2014 does not mean that in all European regions people with initiatives can already find their way to this type of support. Medio 2015 most regions still have to implement the EIP by opening a counter where people with initiatives can go. As the stories in this first book show, there still is a lot to discover and to develop by the main players in the various support systems.

The AgriSpin project is another endeavour within the framework of EIP. It aims at strengthening support systems for agricultural innovations in the European Union. It is an international network project, being carried out in the period 2015-2017, bringing partners together on a specific theme. The AgriSpin project focuses on the knowledge system itself, and tries to find methods to stimulate and initiate groups to become actively engaged in innovative processes.

The AgriSpin project: learning from sharing

The idea behind the approach of AgriSpin project is that all partners have their own experiences, ideas and approaches which are worth sharing with others. Nobody pretends to know best. A golden standard or 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. But there is a lot to learn from exchanging experiences between these different systems, and that is what the project intends to facilitate.

The fifteen partners in the consortium are mainly farmer's organisations and farm advisory services, with an intermediate role between farmers, researchers and other stakeholders. Three of these partners are scientific institutes with a focus on knowledge systems in agriculture. One is an international network of regional partners in biological farming, and there is also one European network of regional partners in the German speaking area. In the next paragraph all partners present themselves in brief.

The focus is on regional systems. This is because in many countries there are considerable differences in cultures between different regions, as well as organisational structures. Often agricultural policies are a regional affair.

A core activity of the project is the cross-visit. Teams, composed of seven or eight participants from different partner organisations visit a host partner for about one week. During this week, the team meets major actors, such as innovating farmers, advisors, researchers, administrators and other relevant persons, in order to understand what is going on in this particular region. At the end of this visit, there is a meeting with the key players in the region, for feedback to the host partner. What did the visiting team find interesting? Where is room for improvements? What inspiration does anyone take home?

The scientific team contributes to the quality of the cross-visits, by providing a conceptual framework. This framework guides the participants in what aspects to touch upon during their interviews. Similar appraisals have been tried out before, and the scientific team ensures that the project profits from what earlier experiences have delivered in the form of concepts and guidelines.

Many partners have their methods, training materials and stories they are proud of. Making such materials accessible for others is another important component of the AgriSpin project. The cross-visits generate their own stories as well, which will be captured on video and made accessible.

The institutional environment has a much influence on the capacity of a region to find new answers to emerging challenges. When we assume that good initiatives for innovations are everywhere, the thresholds for taking the necessary actions for bringing such initiatives into practice vary a lot in different regions throughout Europe. Stimulating policies such as subsidies for experiments or mitigation risks can lower such thresholds, while restrictive rules 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. Here, the implementation of the EIP, and the role of "Managing Authority" to be performed by the regional government, will get serious attention.

The last two components are communication and management: necessary to make any project run smoothly. These components are in the able hands of the lead partner of AgriSpin: SEGES in Denmark.

If things work out the way we hope for, the AgriSpin project will develop a practical approach for sharing and learning about stimulating innovations at farm level, with a focus on the role of intermediate actors. This approach will not only be useful for the partners in the project. Organisations in other countries have already shown their interest, and also the Thematic Networks under the EIP H2020 programme could benefit.

Therefore, in the second part of the project period, there is space in the time schedule for collaborating with other partners and projects, and enlarging the professional network of intermediaries that has been created.

AgriSpin starts from where each of us has come before we intensify our interaction.

Stories to appreciate what is present

AgriSpin starts from where each of us has come before we intensify our interaction. We all have our stories. Achievements we are proud of. Struggles we have gone through. Pearls to share and puzzles for which we hope to find solutions. The intention of this initial book is to collect these stories as a form of baseline for the project. Reading these stories makes curious for what is behind. It sets the tune for our mutual learning process. And it enables us to register over time what difference our interaction in the project has made.

In most cases the actors figuring in the stories will be amongst the people we are going to meet during the cross-visits. We will talk with them and dig deeper into the analysis, trying to understand what is happening and why, and where there might be room for improvement. From there we will inspire each other with lessons learned, and approaches that appear to work. We will build a professional network to keep on learning together, and hopefully also to generate agency: a network that is capable of influencing conditions in the different regions for creating a conducive environment for innovating farmers.

For this initial book, the partners were asked to write a story of an innovation process in which they were involved. There was no fixed format to do so. The kind of examples they 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 their views.

Although they were free to write their chapter the way they wanted, they were strongly stimulated to frame it as a story. A story is not the same as a report, a brochure or a scientific article. For most authors this was quite different from what they were used to write. We wanted reporter stories, telling how it started, what happened after the first initiative, and how far the initiative has come.

Innovations rarely develop according to a strict plan and are often more a series of projects with trial and error. It is like the journey of the hero. He or she starts with a high ambition and a direction, friends join in, and equipment is selected. Then the group runs into all kinds of trouble: assumptions appear false, equipment not appropriate, friends disagree and drop out, dangers loom from all directions. And then, amidst the deepest crisis, there is help from an unexpected corner, and in the end the hero reaches a destination that might be different from what (s)he was heading for, but much better after all. Such a story reveals more about reality than a report about how it is supposed to be.

Additionally, the authors were asked to include their own analysis of what made the difference in this story. Was there a key intervention without which the innovation had not been successful? What was the contribution of the support agent? What were the surprises? And what is the future perspective? What will be the likely situation after a few years?

The result is nice to read. The stories differ considerably in style and scope. Some partners had valuable stories already on the shelf, because they needed them for their own communication with the outside world as well. They adapted them for this book. Others felt stimulated to go out and interview a farmer and other key actors. There are stories about innovating farmers, and also about institutional changes, creating new opportunities. Some contributions did not really become stories.

This book concludes with a chapter about pearls and puzzles. What similarities and differences can be found in these stories? What ideas do we seem to share, and where do our thoughts deviate? Especially these differences are interesting to explore further. Which different assumptions are behind? And what does this mean for our agenda of things to explore?

Partners in AgriSpin

[1] SEGES Denmark

SEGES is the lead partner in AgriSpin. SEGES, formerly KCA (Knowledge Centre for Agriculture) is the Danish national centre for agriculture bridging the gap between research and agriculture practice. It evaluates and transforms research results into new knowledge for practical use by all Danish agricultural advisers and farmers as well as monitors and communicating farmers and farm advisors' demands for new research and innovation initiatives. In that relation the centre annually performs a large number of research and innovation projects either in national or international cooperation with universities and companies or alone.

As lead partner, SEGES is responsible for the Work Packages 5 (communication) and 6 (project management)

[2] University of Hohenheim, Germany

Hohenheim's Faculty of Agricultural Science is the largest agricultural faculty in Germany and provides an excellent infrastructure for agricultural research. The Department of Rural Sociology at the Institute for Social Sciences in Agriculture focuses on the study and the enhancement of social processes in rural areas and promotes the understanding and management of innovation processes that increase the sustainability of land uses and lifestyles. Since agricultural extension became a scientific field of interest in Europe, the faculty was one of the pillars right from the start in the 70ties of the last century.

In AgriSpin Hohenheim University is responsible for Work Package 1: Scientific Support.

[3] ZLTO, The Netherlands

The "Zuidelijke Land- en Tuinbouw Organisatie" [*Southern Farmers Organisation*] represents 16.000 members in the Southern provinces of the country. Its aim is the improvement of farming conditions for its farmer-members. ZLTO plays its part in policy development, training, individual support and

counselling. Together with innovative farmers ZLTO realises projects in innovation, for example in new ways to cooperate, renewable energy, sustainable plant- and animal protection techniques, new products and innovative marketing approaches. ZLTO uses channels such as: training courses, articles in specialized magazines, symposia, excursions, a website, social media, farm advice, etc. In innovation, ZLTO works closely together with excelling SME's (small and medium sized enterprises) with new insights in machinery, ICT, bio-based products and in innovation systems. Other partners are the large companies in agri-food, universities, specialized institutes, and governments at all levels: local (Agrofood Capital) provincial (Landbouw Innovatie Noord-Brabant, LIB), national (Top Sectors) and European (Copa Cogeca).

In AgriSpin ZLTO is responsible for Work Package 2: The Cross Visits.

[4] Innovatiesteunpunt, Belgium

Innovatiesteunpunt (*Innovation Support Centre* for Agricultural and Rural Development) is an innovation support service, embedded in the farmer's organisation "Boerenbond" [*"Farmers Union"*]. The Innovation Support Centre informs and inspires farmers about new challenges and opportunities and to support them with the development and implementation of concrete projects. They are specialised in starting up multi-actor approaches & participatory processes and is therefore well known by farmers as a one stop shop for innovation. Launching an Innovation Prize, using creative approaches from other organisations/sectors, organising study visits to learn about innovations in other sectors, are just some of the tools used to trigger farmers to think out of the box.

In AgriSpin Innovatiesteunpunt is responsible for Work Package 3: Methods and Materials.

[5] Tuscany Region, Italy

Tuscany Region is an Italian Regional Government located in the centre of the country. It has direct legislative competences in the field of agriculture and is Managing Authority of the Tuscany Rural Development Programme. By acting as Managing Authority, Tuscany Region has a direct competence in allocating resources, fostering innovation and selecting innovative projects and initiatives related with rural and agricultural sectors.

In AgriSpin Tuscany Region is responsible for Work Package 4: Institutional Uptake.

[6] CIRAD, France

CIRAD ("*Centre de Coopération Internationale en Recherche Agronomique pour le Développement*": [*International Research Centre for Agriculture in Development*]) is a French scientific organisation specialised in development-oriented research. CIRAD makes recurrent use of participatory and action-research principles and approaches in its work. Through its joint research unit "Innovation and Development" with INRA (Institut National de la Recherche Agronomique: [*National Institute for Agricultural Research*]), CIRAD is actively engaged in interdisciplinary research and action dealing with both innovation systems and link between science and local knowledge in French overseas regions and developing countries.

In AgriSpin CIRAD is one of the academic partners.

[7] VLK, Germany

VLK ("*Verband der Landwirtschaftskammern*" [*Association of the chambers of agriculture*]) represents the chambers of agriculture in Germany, which are independent service providers for agriculture, forestry, horticulture, freshwater and coastal fisheries and rural areas. One of their main tasks is to give professional support and assistance to agricultural businesses in their decision-making processes. The VLK employs a variety of experts relevant to the rural economy including scientists and agricultural engineers.

In AgriSpin, four partners from the VLK association participate, to share agricultural innovation training materials, education and educational training tools. These partners are:

- **Andreas Hermes Academy** im Bildungswerk der Deutschen Landwirtschaft: *[Training Academy for the German Agricultural Sector]*;
- **FiBL Germany**: Forschungsinstitut für Biologischen Landbau *[Research Institute for Biological Agriculture]*;
- **IALB**: Internationale Akademie land- und hauswirtschaftlicher Beratungskräfte *[International Academy for Advisors in Agriculture and Home Economics]*: International Academy of Rural Advisors;
- **Entra**: Advisors in training and education.

[8] University of Athens, Greece

The Department of Agricultural Economics and Rural Development of the Agricultural University of Athens (UHA) has a long tradition of teaching and research on extension and rural knowledge management systems. Furthermore, by participating in interdisciplinary research teams on sustainability in agriculture and rural areas, for more than 25 years, the AUA team has created a wide network of contacts, especially with innovative initiatives of varying nature. Finally, interaction with stakeholders, including transdisciplinary research, has been a core part of the research and publishing of the team.

In AgriSpin UHA is one of the academic partners.

[9] Teagasc, Ireland

Teagasc's (Irish Agriculture and Food Development Authority) mission is to support science-based innovation on farms and in processing firms that will underpin their profitability, competitiveness and sustainability. In a relatively unique organisational format, agriculture and food research, education and advisory services for the sector are all provided within Teagasc and present an integrated innovation support interface for the agri-food sector. In partnership with farmers, industry partners, government and other national and international public and private stakeholders, Teagasc identifies, prioritises, develops and disseminates knowledge-based innovations to its farmer and food company client base.

[10] ACTA, France

ACTA (Association de Coordination Technique Agricole: *[Association for technical coordination in agriculture]*) is network leader for applied research in animal and plant supply chains. ACTA federates 14 technical agricultural institutes (ITA) representing the applied research in France at the interface between the oriented research and the advisory services. ACTA and the ITAs are directed by the farmers themselves and work under a goals and means contract (2014-2020) for missions of public interest in relation with the Ministry of Agriculture. The Agricultural Technical Institutes are aimed to meet the farmers' expectations in term of research in order to give them directly applicable results and solutions. Each ITA is specialized by agricultural sector whereas ACTA carries out research on transversal and cross cutting innovative themes and methods in national and international cooperation.

[11] IOFAM, EU Group

The "International Federation of Organic Agriculture Movements European Union Regional Group" is the European umbrella organisation of the organic food and farming sector. With more than 160 member organisations from all EU-28, EFTA and candidate countries covering the whole organic production chain comprising production, processing, trade, research, certification, inspection, advisory and civil society organisations, IOFAM EU represents the whole organic food and farming movement of Europe. It promotes the diffusion of knowledge, principles and practices of organic agriculture across language and cultural barriers. IOFAM EU is also the secretariat organisation

behind TP Organics, the European Technology Platform (ETP) for organic food and farming research. TP Organics integrates views of the organic sector and civil society to represent a broad perspective on research and innovation priorities that can leverage organic food and farming's potential to address contemporary challenges.

[12] ProAgria, Finland

ProAgria South Ostrobothnia is a full service business consultation and advisory service provider. ProAgria provides farmers and rural businesses with business consultation in all aspects of entrepreneurship from starting a new business to running it and selling it further and gives advice for the production process in different branches of agricultural production. ProAgria runs a wide range of research, development and innovation projects.

[13] HAZI, Spain

HAZI is the public foundation of the Basque Government for the development of the rural and marine environments and the agri-food sector. It is the public body connecting farmers and the regional government. HAZI manages the payment mechanisms. The main activities also include the permanent training for rural agents and technicians and the encouragement of the quality and the link with the origin in the agri-food products. HAZI is also a partner in an innovation brokerage consortium called Katilu, together with the research, technical and agri-food associations and Innobasque, the innovation agency of the Basque Country.

[14] ADEPT, Romania

Fundatia ADEPT Transylvania is one of the leading NGOs in Central and Eastern Europe focused on conservation of biodiversity and broader ecosystem services through farming. It has pioneered innovative farm advisory services in Romania, linking a variety of Rural Development Programme measures, and in parallel developing markets and income diversification. ADEPT also makes contributions to policy at national (Romanian) and EU levels, based on applied research and experience, and has also developed small-farmer confederations for knowledge transfer. For this innovative and joined-up approach ADEPT has won top EU awards for 3 years in succession: from DG Agriculture & Rural Development (2012 and 2013) and from DG Environment (2014).

[15] LLKC, Latvia

The Latvian Rural Advisory and Training Centre Ltd. (LLKC) is a consultancy enterprise which is owned by the state (99%) and the Latvian Farmers Federation (1%). The company was established in 1991 and consists of a Central office in Ozolnieki district, Ozolnieki and 26 branches throughout the territory of Latvia. LLKC employs consultants in 102 Latvian regions. LLKC has wide-ranging experience in the implementation and coordination of rural development measures as well as in provision of agricultural advisory in the country.

2 Early estimation of wine quality

Introduction of an innovative analytical approach for early estimation

Alessandra Gemitti, *Region Tuscany, Italy*

A need for more precise analysis

Grape quality is extremely variable: it not only depends on the grape variety and geographical location of the vineyard, but also on the climate of the year, the presence of pathogens, the harvest timing etc.

The knowledge of the quality potential of grape before starting the winemaking process is a strategic information for the winery, which can thus select similar lots, adapt and optimize the production process for obtaining a highly competitive wine (*Figure 1*).

The issue is of essential importance for cooperative wineries, receiving grapes from hundreds of associates and vineyards spread in very large areas. In this situation the availability of an objective parameter assessing the potential quality of grapes is very valuable, as it can contribute not only to increase the quality of the winery production, but also to determine in a fair way the price of grapes.

Nevertheless, analysis commonly run on grapes (sugar content, pH, visual assessment of sanitary conditions) does not provide information on some key parameters, like potential colour and phenolic profile in red wines. Methods to characterize phenolic compounds in grape were developed for experimental purposes, but they never found wide application being time and money expensive, and therefore not usable for routine control.

The laboratory ISVEA and the innovation broker VINIDEA established a collaboration with AWRI.

The goal is testing a new analytical method for determination of tannins, colour and other phenolic parameters in wine and grapes.

This "Wine Cloud" method was interesting because no sophisticated analytical equipment neither high operator expertise is required to run the phenolic analysis.

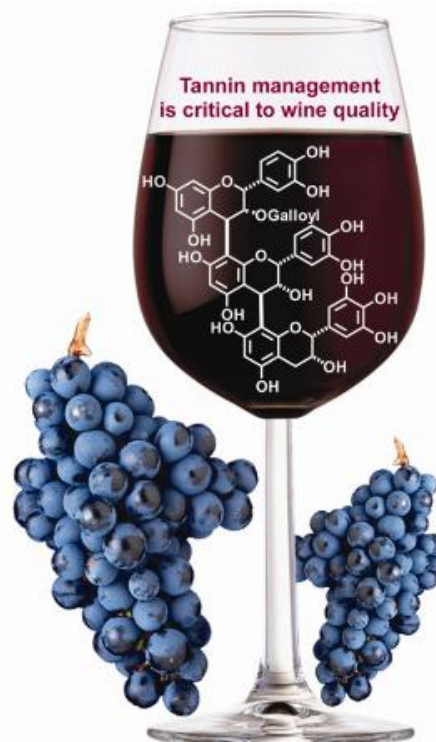


Figure 1: Chemical structure of tannin

Interactions between a winery and a laboratory lead to a new idea

The idea of the project came during interactions between an important cooperative winery (Colli Fiorentini in Montespertoli, Florence), the largest producer of Chianti DOP in Tuscany region, Italy, and a specialized laboratory that has established international collaborations on innovative topics (ISVEA).

The laboratory ISVEA, placed in Poggibonsi, Italy, within its partnership with the innovation broker VINIDEA (Ponte dell'Olio, Italy) established a collaboration with AWRI (Australian Wine Research Institute, Adelaide, South Australia) with the goal of testing and

validating in the climatic Tuscany conditions of Tuscany region (*figure 2*), a new analytical method for determination of tannins, colour and other phenolic parameters in wine and grapes. This “Wine Cloud” method (formally called “Tannin Portal”) was interesting because no sophisticated analytical equipment neither high operator expertise is required to run the phenolic analysis. The winery only has to sample grapes or wine, prepare the sample through a rather easy and fast procedure, and read it by a simple UV/VIS spectrophotometer available in most averagely equipped wineries. The absorbance readings are then uploaded in a web platform that in few seconds returns the content of anthocyanins, tannins, total phenols obtained from a calibration curve built with data of thousands of traditional analysis run over several vintages.

Time required and costs of this new approach are very reasonable, and allow the implementation of a systematic assessment plan on most of the vineyards of the associated to the cooperative winery Colli Fiorentini, with the goal of knowing in advance (ideally 15 days before harvest) the potential quality of the grapes brought to the winery, and therefore allow selection of entering lots and adaptation of the winemaking process to the grape characteristics.

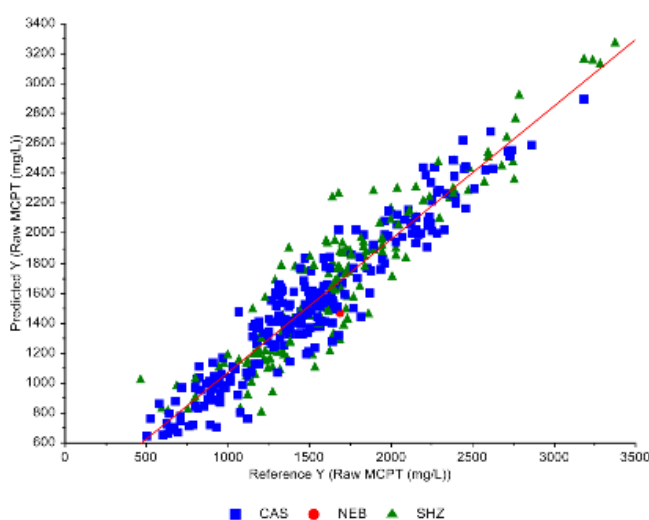


Figure 2: Tannin contents validation

A project for testing and disseminating the new method

A typical project of innovation transfer - from research to production and from Australia to Europe – called POL-TP was then proposed to Tuscany Region, and received EU funding under Measure 124 of the Social Rural Fund 2007-2013. It was implemented in the period from January 2013 to March 2015.

The project was structured in the following phases:

- 1 Five pilot vineyards were selected among the winery grape suppliers, representative of different locations and growing conditions of the variety Sangiovese, and sampled for 3-5 weeks before harvest. The influence of the sampling procedure was evaluated, in order to identify the one with the best balance between labour requirements and result accuracy. Grape samples were prepared and analysed with traditional methods in comparison with the Wine Cloud approach.
- 2 The grapes coming from the same pilot vineyards were processed in an experimental winery, by using different winemaking procedures reproducing those applied in the commercial winery. Thus, wines coming from grapes with different polyphenol profiles and produced through different maceration techniques were obtained.
- 3 In the commercial winery, the grapes coming from vineyards with similar Wine Cloud parameters were gathered in separate tanks, and processed by different maceration techniques.

The collected wines underwent a complete chemical and sensorial characterization, again comparing the Wine Cloud results with polyphenol profiles obtained by more complex but well established analytical methods.

The major difficulty encountered during the project implementation was the very atypical climate conditions of the two vintages object of the experiments. Spring 2013 in Tuscany, 2013 was extremely dry and was followed by a heavily rainy summer, resulting in uneven grape maturation and development of pathogens: this compromised the experiment in two vineyards. In 2014 the climate conditions were even worse: periodical rains during most of the ripening season hindered the implementation of the pathogen control strategy, and again the harvest was compromised in some pilot vineyards. Fortunately, the number of pilot vineyards was quite large, and the lots arriving to harvest in better conditions allowed the full implementation of the experimental plan.



Results obtained were very positive and rather conclusive:

- | | |
|----|--|
| a. | The Wine Cloud approach confirmed its convenience and its suitability to assess phenolic content of Tuscan Sangiovese grape and wine: results obtained by the new method correlated very well with data issued from established analytical procedures. |
| b. | It was identified a protocol that allows to sample grapes from a vineyard in about 20 minutes, and that presents a good repeatability in relationship with phenolic parameters, that have been found to have in grapes a much higher variability than sugar and acidity content. |
| c. | It was demonstrated that the polyphenol profile of grapes sampled two weeks before harvest is well correlated with the polyphenol profile of the wine obtained from those grapes, at least after 12 months of storage. |
| d. | The knowledge of the potential phenolic quality of grapes allows the application of adapted winemaking processes able to optimize the final quality of wine. |

The dissemination plan of the project included educational activities addressed to all stakeholders of the Tuscany region and beyond: through webinar sessions and a congress, Tuscan winemakers were updated on the most advanced results of international research on the topic of polyphenols of red wines, including first-hand information on stability over time and sensorial impact of anthocyanins and tannins. The project results were also translated in a simple protocol of practical relevance. All documents were digitalized and made available on internet to a large audience.

The project results are presently in a phase of wide application.

After the end of the project, the partners continue their action of information through participation at congresses, publication of papers on specialized press and demonstrative tastings of experimental wines.

The commercial winery is currently implementing the new technology in its harvesting and reception plan, with the goal of mapping most of the supplying vineyards on time before harvest and to organize the reception of grapes - and eventually its payment – on the basis of this additional parameter.



Figure 3: The label of ISVEA

Jacob van den Borne: Precision Farming

3 Pioneer And Entrepreneur Grows Potatoes With Precision

Peter P. de, Pieter van Hout en Froukje Kooter.

ZLTO, the Netherlands

A special combination

Front runners and pioneers: such entrepreneurs often are taken with a grain of salt by their colleagues, because they seem to focus less on the economic performance of their farms. But by doing so, these colleagues are missing the value of what these innovators have developed. Jacob van den Borne is a young potato grower. He is a pioneer in precision farming, but also a real entrepreneur with 450 hectares of potatoes: a rare combination. This opens many doors for Jacob, and gives him a special position in the network of precision agriculture.

From troublesome pupil to innovative farmer

As a student Jacob had troubles because of dyslexia. But he knew what he wanted. He insisted to go to a secondary agricultural school in the city of Breda instead of Boxtel, although this was further away. This was the better choice for arable farming, he said. After finishing this education, he succeeded to inscribe at the university of applied sciences (HAS, 's-Hertogenbosch¹). He was always in the back of the class, continuously checking his cell phone to keep an eye on what was happening at the farm back home. Bert van Sonsbeek, teacher in machine techniques, knew to inspire him for Precision Agriculture.

Front runners and pioneers: such entrepreneurs often are taken with a grain of salt by their colleagues, because they seem to focus less on the economic performance of their farms. But by doing so, these colleagues are missing the value of what these innovators have developed.

After his study, Jacob continued to work at his parent's farm. He and his brother Jan took over the family enterprise once their father made way. Both parents formally got out of the business.. Legally, each of them has his own business, but they run these enterprises together. Both parents are very much involved in the farm. Father is taking care of lease contracts with farmers in the region.

Since Jacob became successful in precision farming, he is in the spotlights and the family supports him in that.

When the brothers took over the enterprise, their business had around 300 hectares of potatoes, out of which 100 hectares were their property. When they started their business, they thought that expansion was not an option and therefore they have chosen for intensification and optimizing management by precision agriculture. The remaining lands they rent, mostly by annual lease contracts. In this, they are quite depending on a good imago, that they take good care of the rented parcels. Close to their home village Reusel there are more farmers who really need arable land. The competition is heavy. In this completion on land they want to distinguish themselves with information that they can show on the rented parcels.

¹ HAS: Agricultural University (BSc level)

From the beginning onward, each year two students from the HAS assist them in embedding and describing multiple precision agriculture techniques. Subsequently, they evaluate the added value of all these innovations, for instance: better human resource management and planning. As a result of this, the students calculate a saving of 10% on fuel use due to reducing overlap.

Jan focusses on the cultivation of the crops, whereas Jacob manages the data and the related activity planning. Both their wives have jobs outside the farm.

Precision agriculture: a hobby and a vision

Just like other farmers Jacob made the choice for working with high precision GPS (RTK), as a tool for optimising his business. On top of this, he placed sensors on his vehicles and sprayers. The data from these sensors are systematically collected and processed in computers. Jacob is able to analyse these data in a very professional manner.

Jacob is clearly a frontrunner when it comes to precision agriculture, especially regarding sensors and data integration. He gained the basic knowledge at the HAS University. This knowledge was of great value for the planning and accounting of cultivation measures in the potato, sugar beet and also maize cultures in the enterprise “VanDenBorne Aardappelen (potatoes)”. With the location- and sensor techniques he developed, he could translate the information to effective treatments. Connecting all this information was difficult, but he had to do it for the management of his large farm. With hard work he became successful, as one of the few.

With the location- and sensor techniques he developed, he could translate the information to effective treatments.

He works a lot with the tractor brand Fendt, but the technique can work with a broad range of brands. He is able to gather data and then to convert it to information and applicable knowledge. When certain data and the related map are not up to date or failing, the machine might not add the right amount of input. Jacob has always been able to solve these problems.

Moreover, he has a clear vision on what is needed to successfully incorporate precision agriculture into the daily business. He does this with a long-term approach combined with strong short-term resolving power. On the long term, his vision is that precision agriculture has to focus on the parts in the parcels with the highest potential yield.

Basic in the approach in Precision Agriculture is the annual cycle:

In every phase of cultivation new information is gathered and placed in a big database. From this database information is combined, and optimal measurements are calculated. Information is gathered in:

- Mapping of parcels
- Scanning
- Tramline planning
- Ploughing with RTK-system (2cm) GPS
- Etc. (see the figure)

Variable sowing: close to the tramline he sows his seed potatoes closer together, in the shaded parts he sows less seeds. In such, each plant receives the same amount of sunlight.

Crop protection: is done when and where necessary. He calculates when he has to spray. In drier periods he reduces the number of times he has to spray.

Irrigation: based on sensor measurements and modelling. This leads to irrigation before the plant starts to wither, so droughts stress is eliminated. Consequently, yield increases by 5%.

Fertilizer application: by combining sensors on the tractor, sensors on UAV's (drones) and satellite data he can create maps on which he relates the amount and location of fertilizer inputs.

Together with students he conducts crop measurements and test yields. Before harvest starts, they harvest a couple of square metres testing the quality and quantity of the yield. Related to actual yield and previous crop cycle management, he puts together a plan for the upcoming year. The management cycle is complete.



Figure 1: The crop cycle: measures and the information/maps that are gathered during these measures

Innovation networks as fertile area

For Jacob it is of great importance to develop precision farming further into techniques that can be used by more farmers. He does so, amongst other things, by participating in projects being initiated by various actors in the sector.

- **Project CloudFarm:** all of his gathered data for the past 7 years has been saved in one big database, where scientists can collect his data to develop new tools.

■ **Strategic Development Precision Agriculture (SOP):** *with a drone and vision technique supplier he is planning to create a new way to measure the yield and quality of his potatoes.*

■ **Practical Centre Precision Agriculture:** *a part of his land and buildings is being developed as a testing facility. New machinery, propagations and other related agricultural innovations can be tested and demonstrated here. This is different from other testing facilities, as at VanDenBorne's farm practicality is the key. He already utilizes the state-of-the-art machines, sensors and gathers all data in his CloudFarm that in turn can be used by scientist and other entrepreneurs.*

Annually, Jacob is collaborating in several, parallel projects. For example, the digital farm project, in which he makes his (business) data accessible to the crowd: colleagues, consumers.

Because of his profound knowledge and experience, Jacob has a vast network and he has direct lines with relevant technicians in related industries in the field, both tractor/machine manufacturers and ICT. He finds open doors everywhere, for instance in companies like Claas and Fendt. Through the managers, he can get in direct contact with technicians.

According to Marco Hekkert, professor in Innovation Studies at Utrecht University, Jacob is a rare combination of an innovator/pioneer and an early adopter/serious business man. He is an early adaptor. And different from other pioneers: he is being taken seriously.

Furthermore, he also has a long track record with LIB, the Agricultural Innovation Bureau (a joint agency of the farmers' organisation ZLTO and the Province of Noord Brabant. LIB, subsidises innovative projects with budgets of five to ten thousand Euro's, with quick responses and without much administrative burden

Because of his profound knowledge and experience, Jacob has a vast network and he has direct lines with relevant technicians in related industries in the field... He finds open doors everywhere.

"VandenBorne Aardappelen" does large investments in machinery. Since these machines are very innovative, they are eligible for subsidy. Jacob needs partners to apply for these funds. Right from the start he found a partner in ZLTO. Now, Peter Paree, Henny van Gurp help to make new connections and to find funding opportunities. Together with Peter, Jacob visits European conferences where he gives impressive presentations. Within the EIP Focus Group for Precision Agriculture, Jacob has been the only farmer participating. This was possible because Peter does the writing and replaces him when Jacob is too busy harvesting.

Land in property: acquisition by parcel exchange in a large network

Jacob and Jan try to acquire patches of arable land when the parcels are geographically accessible to their business. They are open in negotiating about new business opportunities, for example in a plot exchange project of ZLTO. Together they realised a plot exchange that would not be realised by more traditional associations as they think in rigid beaten tracks. ZLTO took on the challenge as a learning experiment and with success. This project successfully swapped around 150 hectares in Reusel amongst farmers themselves, and farmers and the Provincial government for nature development purposes.

Land in lease: added value of land use

Additionally, Jacob was able to show land owners that he was treating land with respect, without degrading the soil. As a result, Jan and Jacob nowadays have about 500 hectares of land in use.

Landlords grant their grounds to VanDenBorne's business, as a result of trust. Because of this, lease sums per hectare remain in balance.

They have top-of-the-bill equipment and a straight-forward honest story. Working and gaining experience in precision agriculture with GPS (straight tramlines), while also disseminating their knowledge on the topic to other farmers. Besides, it is helpful that their father is still responsible for the leasing contracts.

The market: *chips with a story*

They take quite a risk by delivering their yield to one dominant buyer: The Farm Frites company for French fries and potato chips in Lommel (Belgium). This risk, however, is incalculable as they are last minute suppliers. When there is a large last minute demand for potatoes in the factory, Van den Borne is able to supply it with a new batch of potatoes within the hour. Moreover, they also have a potato cleaning station with a capacity that is larger than the one installed at the French frie's factory in Lommel. This is a unique combination and for this reason Farm Frites also depends on Van den Borne.

All in all, it remains risky business. However, Jacob and Jan have a long-term vision on this: in the near future they want to sell their product as sustainably produced precision potatoes. Chips with a story.

Sustainability as a principle

The potato washer does not have residual flows. Everything is being processed and treated on the farm itself. For his spraying system he has a bio filter. This filter prevents droplets that stay behind in the nozzles to enter the environment. He reduces both the frequency and the dosage of crop protection use and fertilizers. Also on his irrigation system, Van den Borne uses precision management tools.

Mobilising the social environment by cooperation

Van den Borne's business is located right on the border between the Netherlands and Belgium. The enterprise is really on the outskirts of the nearby village of Reusel. Here, no broadband internet connection is available. While Jacob is gathering loads and loads of data, he is not able to upload it to the FarmCloud through high-speed access. ZLTO connected him to assisted pioneer in organising a group of locals to initiate the implementation of broadband internet in the periphery (www.kempenglas.nl). Jacob began this process by crowdfunding. Locals, without high-speed internet access, could register for €25 or €100 (business). Everyone who joined could be found on a map showing a clear overview of possible interested villagers. Jacob started a collaboration with Jo van der Pas who took care of the entire organisation and administration for setting up a cooperative. This new cooperative now enables them to hire companies and technicians to install broadband and to get everyone in the region connected. This is a model for a process that can be up-scaled to several other regions that lack broadband internet connection. A difficult process that Jacob also has taken care off.

Highlights and lows in the past years

Positive has been his personal development. He joined the programme on precision agriculture and through this programme he became well-known and acknowledged. Jacob understands that this position is temporary and that more and other people have become the representatives of the new development towards the farmers. In the meantime, he continues networking with technicians who develop the newest innovations.

Disappointments were there as well. He discovered that some sensors of the Fritzmeier brand that worked on cranes and trucks also could work in the agricultural sector. These sensors work perfectly on his farm. Loads of people in his environment were interested, so he thought making good business out of it. However, when he started importing these sensors, people started to question him if he had also interests in the enterprise. 'He had to stay independent as colleague farmer.'

Jacob knows the newest techniques and is expert in connecting them. He explains this in a language everybody understands. His perseverance, creative mind and the fact that he takes action instead of sticking to words is what make him special. For a long time, Jacob has been in the spotlight. Still he remains modest, and he is attentive enough to see if his vision and solutions are appreciated by others.

Lessons learned

With Jacob, we have a pioneer and accepted entrepreneur in one person. We must consider that this combination is rare. He is able to explain difficult subjects in simple language. We see this ability mostly in people who work in practice with these complex techniques. His growth of knowledge has started with a teacher in the University of Applied Sciences; in The Netherlands a prevailing level of education of farmers. This teacher was special: inspiring.

With Jacob, we have a pioneer and accepted entrepreneur in one person. We must consider that this combination is rare.

VandenBorneAardappelen company needed the technique for proper management of the large area of potato on many parcels, a lot of them shaped irregularly (more than 6 corners). The necessity for management was the incentive for Jacob to solve problems that others could not solve. **Excellence, because it is needed.**

We did not find a way yet to get a balance between the efforts of Jacob and a compensation by the network that has advantage of this work.

Innovation is expensive. Jacob needs some subsidy for the most risky investments. He is satisfied if only a small part of the investments is relieved by partners. We think that for a balance between the efforts of Jacob, he deserves a better compensation by the network that has advantage of this work. Subsidies have the disadvantage that they raise barriers for entrepreneurs. We look for other earning models for innovation, for example by starting a 'living lab'.

Innovation Support should be a long term connection. ZLTO and VandenBorneAardappelen made this connection eight years ago. Still it needs to be developed further, and partners go for it.

4

Reducing Ammonia Emissions

A bottom up innovation

Ilse Geyskens Innovatiesteunpunt Boerenbond
(Innovation Support Centre, Farmers Union), Belgium



Alfons Gios: a research minded pig raiser

Alfons Gios runs, together with 3 of his 6 children, a pig farm with 2000 animals. For many years Alfons has been active in the structures of the Belgian Farmers' Union 'Boerenbond'. In the past, he already participated in research projects which focused on feeders and a test case was set up on his farm.

Project Description

Ammonia is a pollutant that causes acid rain. Several studies concluded that agriculture is responsible for 93% of the ammonia emission in Flanders. Therefore, the Flemish Ministry of Agriculture decided in 2004 that every newly built pig stable should reduce 50% of the ammonia emissions compared to the reference system. Several permitted techniques that can reduce ammonia emissions are now included in the Flemish environmental legislation from which farmers can choose (eg. air scrubber, systems to separate manure).

Alfons Gios is convinced that building a shallow slurry storage in combination with adding bacteria to the slurry can reduce the ammonia emissions. As the retention time is lower in a shallow slurry storage, less ammonia is emitted.

The bacteria will interact with the slurry, changing its characteristics and properties. In addition it makes use of the nitrification-process to capture the ammonia. However, in order for this system to be included in the environmental legislation, the ammonia emissions have to be measured. This system is very interesting since it is easy to build and cheaper compared to existing technologies.

Alfons Gios is convinced that building a shallow slurry storage in combination with adding bacteria to the slurry can reduce the ammonia emissions.

Innovation process

In 2009, Alfons Gios discussed his innovative concept for building an ammonia reducing pig stable with the Innovation Support Centre for Agriculture and Rural Development. In order to show that this shallow slurry storage in combination with adding bacteria really reduces the ammonia emissions, some specific measurements were required. Therefore, the Innovation Support Centre contacted ILVO to perform these measurements. Since the measurement costs are very expensive, the Innovation Support Centre explored the different financial support mechanisms. Prodem, a financial support program from VITO was willing to support this idea, but their funding mechanism can only be used when applying the expertise of VITO. As VITO has no expertise in agriculture, a match between VITO and ILVO was set up to start the experiments. 2/3 of the experimental costs have been subsidised.

The Innovation Support Centre also looked for additional business partners who could participate in the project. EM Agriton, a supplier of bacteria-complexes was willing to participate in this research project and their product is also tested for efficacy.

The first results were clear and good: 50% emission reduction was almost reached. However, later data showed a somewhat lower reduction. Unfortunately, this system is not yet recognized by the scientific committee as an emission reducing technique.

Partners

- GVB & CO
- Peter Demeyer, ILVO
- Michel Lievens, Prodem
- Gert Otten, Vito
- Stijn Bossin, Innovation Support Centre
- Jurgen Degraeve, EM Agriton

(see: <http://ec.europa.eu/eip/agriculture/en/community/news/best-practice-bottom-solutions-cheaper-ammonia-reductions>)

Which actions made this innovation process to become a success?

The pig farmer was the inventor of this research idea and he believed in the positive outcome of his idea all along the research project. His enthusiasm had a contagious effect on the other partners involved in this process. The request of this farmer to perform measurements ensured for the first time the conduction of emission measurements at farm level for a long period. During 16 months emission data were collected on a pig farm.

The innovation advisor provided the necessary support: He convinced the research partners of the importance and the innovative character of this research project since they were sceptical at the beginning. He searched for funding since these types of measurements are quite expensive. And he did the follow up of the actions undertaken by the different partners.

Due to the intervention of the innovation advisor a collaboration between the two research institutes ILVO and VITO was established. This was the first time that both institutes collaborated in one project.

Due to the intervention of the innovation advisor a collaboration between the two research institutes ILVO and VITO was established.

What were the challenges of the innovation process for the innovation advisor?

It is important to know that stables with a low emission level receive financial investment support from the Flemish Government. But these type of stables need to be evaluated first, by means of measurements by a scientific commission before being categorized as “low emission” stable. When a

farmer is convinced that he invented a new system that could meet the requirements of a low emission stable it is important that he makes clear arrangements with both the scientific committee as an independent research institution that will carry out the measurements.

If an innovation advisor really wants to achieve a change through an innovative project, he or she should accompany this process very closely.

Also as innovation advisor you meet challenges. If an innovation advisor really wants to achieve a change in the agricultural sector through an innovative project, he or she should accompany this process very closely. This needs an intensive coaching. It takes a lot of time and goodwill of

research institutes and governments to go along with this process of change. As innovation advisors we give advice to farmers and assist them, but sometimes not long enough to bring about this change. In addition, we've noticed already that if you work too long within a particular theme, e.g. reduction of emissions, the possibility exists that you sometimes lose your open and innovative view/perspective. To counter this, it is important to create a company/organisational culture where you keep challenging yourself and your colleagues.

5

Pratini Farm Discovers Old Wheat Varieties

The Network Around the Discovery of Old Varieties in the Province of Pisa

Alessandra Gemmiti, Tuscany Region, Italy

Two farmers create a network for change

This story reports the experience of Floriddia brothers owners of the “Pratini Farm” (Peccioli, Province of Pisa, Tuscany) who have undertaken a process of rediscovery and cultivation of old varieties of wheat and, progressively, the production of bread and pasta on farm. The particularity of this experience is that Rosario and Giovanni Floriddia (the owners) “weren’t alone” in this process: the real strength of this innovation path has come from the favourable relational environment of which these entrepreneurs have become part, due to the key role played by the interactions with the other farmers and with the many other partners and networks.

We consider this experience as a radical innovation in the context of the bread supply chain because of different reasons:

- The collaborative approach in creating a network among different actors (farmers, researchers, extension agents, consumers, associations) around the same sustainability principles;
- The valorisation of peer to peer exchange of knowledge in order to share and spread sustainable farming and production practices;

The real strength of this innovation path has come from the favourable relational environment.

The impact it has not only at local community but also at a broader level, because of the involvement of national and international network working on preservation and exchange of seeds.

From conventional to organic

The initiative started from the ambition of one of the two owners of Pratini farm, Rosario Floriddia, to change his business and his personal life too.

Pratini Farm extends on a surface of 300 Ha. Main crops are cereals, legumes and fodder.

In the second half of 1990s the farm developed as a conventional cereal farm, strongly dependent on CAP subsidies and integrated in the agro-food chain. The turn to organic, in 1987, was a first manifestation of the desire to regain some control, both on the technical and the economic level.

Looking for a more profitable but also satisfactory management of the farm, in 2005 they obtained the authorization to process and sell food on farm. Initially they bought a small electric stone mill to produce their own flour. They began to make bread, and sold it to the local bakeries and directly to consumers.

Old varieties do it better

In 2006, acknowledging that the modern wheat varieties were not suitable for organic farming and traditional processing, they began to cultivate old winter wheat varieties. Thanks to the good agronomical

Modern wheat varieties are not suitable for organic farming and traditional processing.

and economical results obtained in these early years, from 2009 onwards they have been growing only old wheat varieties and landraces, implementing some innovations in the agricultural techniques too: no-till sowing; fertilization only through green manure; self-production of seeds for sowing and use of blends of different varieties. This last point is particularly significant for the farm reorganization.

This plant is now considered one of the most advanced in Tuscany, able to produce high quality flour, and it is a good example of innovative technology at a non-industrial size.

In 2010, the success of this new direction of farm activities motivated the owners to make a much greater investment consisting of: a shed for grains storage; a cutting-edge plant for seeds cleaning and selection; a professional stone mill for flour production; and a plant for pasta and baked goods production. This plant is now considered one of the most advanced in Tuscany, able to produce high

quality flour, and it is a good example of innovative technology at a non-industrial size. Its equipment and functioning have been the result of a close collaboration between the Floriddia brothers and the firm which installed it.

Support from the Regional Government

This investment was supported financially by the Rural Development Plan of Tuscany Region, specifically by Measure 121 of Rural development programme, related to the modernization of farms: the access to these Regional funds consistently helps the two farmers in the realization of their ambitions and in the achievement of their objectives for growth.

Since Floriddia started to produce flour on farm, direct sales were expanded: they sold directly on farm, to some local bakeries (400 kg of flour per week) and to local GAS (Solidarity Purchasing Groups): the last ones regularly prepare their orders through the online catalogue and the e-commerce service that is available on the website. The price is one euro per kilo, while the conventional flour is 30 cents.

Activating the on-line sales allows Floriddia to cover the whole Italian territory, the products are packed carefully and shipped via courier within 3-4 days from receipt of order. Floriddia provide a varied costumers of individual private companies that operate mainly in the catering industry, such as restaurants, pizzerias, gastropubs, shops and all those who are interested in buying organic products.

The farmers also got into contact with an expert geneticist and activated an experimental project with a children hospital in Florence to verify relationships between grain varieties and celiac disease.

The first spark: a meeting of drivers for change

The farmers' interest for the old wheat varieties started to develop in 2005, thanks to the interactions within the Tuscan Coordination of Organic Producers (CTPB: Tuscany association founded from agronomists with organic farmers to promote and disseminate organic agriculture, with the aim of achieving a sustainable farming practices from an ecological, social, economic and political point of view), of which the Pratini farm is a member.

In the belief that a special attention to the availability of proper varieties and related seeds was necessary for the success of organic farms, the President of CTPB organized a meeting with Floriddia, a geneticist, Prof. Benedettelli (Professor at the University of Florence) - and an agronomist, Cerretelli (expert of organic farming) to discuss the issue. This first interaction and the related project aimed at collecting the old varieties to be seeded

This first interaction and the related project initiated a broader process of exchange and collaboration which has progressively involved many other actors.

at Pratini farm initiated a broader process of exchange and collaboration which has progressively involved many other actors, such as the technicians and the other farmers members of the Rural Seeds Network (a second level association which supports, facilitates and promotes contact, dialogue, exchange and sharing of information and initiatives between those who claim the values of biodiversity and of peasant agriculture and oppose what generates erosion and loss of diversity and agriculture based on intensive monoculture and/or genetically modified crops) and of the WWOOF (World Wide Opportunities on Organic Farms) association, but also international networks of farmers, bakers and seed banks.

The work of plant breeding, seed conservation, reproduction and, lately, the evaluation of the biochemical components of these old grains, useful also to establish the baking performance, are the most important activities at the centre of the collaboration with the researchers of Florence University. More and more interested in the issue and committed to actively manage its genetic resources, Pratini farm has moreover started other collaborations with several research institutions (also within EU projects).

Researchers and farmers as equal partners

The success of this collaborations is strongly linked to the ways through which the researchers and the farmer interact, grounded on a tacit acknowledgment of the equal dignity of knowledge and skills, which are pooled to achieve shared goals (the conservation of biodiversity, the spreading of organic farming, the production of healthy food).

The relational activity of the network has seen an important development also on the side of the interaction with other farmers. Some of them are local farmers who have joined the network, starting to collaborate with Floriddia, because looking for alternatives and thus attracted by this different model of management and the possibility to find more satisfactory outcome. Three of them began the activity of seeds reproduction, fully espousing the cause of the retrieval of old varieties and the agro-ecological approach. Unfortunately, the activity of seeds reproduction didn't spread a lot among other farmers, so that it is considered a point of weakness for a further spread of this approach to the development of an alternative supply chain for old wheat varieties.

Together with The neighbouring farmers, Rosario assumes the role of "custodian grower", a role formally recognized to farmers committed to reproduce genetic resources at risk of extinction: this "role" was introduced in 1997 and formalised through the Law no. 64/2004, (Regional law for Protection and promotion of patrimony of local breeds and varieties of agricultural interest, livestock and forestry) strongly supported by the Regional Government of Tuscany. Indeed, Tuscany Region, within its institutional activities, promotes or co-participates in projects addressed to the

identification, characterization, conservation and enhancement of the local genetic resources, especially if at risk of extinction.

The participation in this program represents a further acknowledgment of the farmer's activity and, even more significantly, well expresses the position the Floriddia brothers acquired in their 'communities'. In other cases, this shared commitment to biodiversity conservation remains tacit, but strongly characterizes many relationships. More generally, also thanks to the opportunity offered through the milling of organic grain, Floriddia has become a reference point for many farmers in the region. As important are the relationships established with other local entrepreneurs, as bakers, small retailers, owners of restaurants and, of course, consumers.

The network has expanded beyond the borders

The interactions have developed also beyond the local scale, as in the case of the exchanges with similar experiences in other contexts, including also foreign networks. The successes of some events organised at the "Pratini" farm are illustrative in this regard. One of these is the "Participatory Plant Breeding Week" (an initiative included in the National Seed Production Plan for organic farming promoted in 2010 by the Ministry of Agriculture and by the Italian Association for Organic Agriculture (AIAB). The two editions of June 2010 and 2012 saw the participation of many farmers, technicians and researchers, exchanging information and experience about the management of the genetic resources. Another significant international event was, in June 2013, "Let's Cultivate Diversity", the second European meeting on cereal cultivation and processing, organized in Italy through the help of the Rural Seed Network.

It gave rise to an extraordinary exchange of knowledge and practices, about the characteristics of the various old varieties, techniques of cropping and bread-making, and the nutritional value of bread. For its importance the event received considerable attention by the media.

All these initiatives have been very important for the growth of this innovative experience, its capacity to communicate to outside, its impacts on the local 'communities', as well as its potential to generate broader changes. Example of this last point are the strengthening within these networks of the willingness to lobby for a change in the legislation on seeds, or the contribution to the emerging debate on the 'qualitative' properties (for health, environment) of different breads and the related production systems.

All these initiatives have been very important for the growth of this innovative experience, its capacity to communicate to outside, its impacts on the local 'communities', as well as its potential to generate broader changes.

6

Øselund Goat Cheese

Marketing a delicacy

Heidi Hundrup Rasmussen

SEGES, Denmark



Background

Barbara and Verner Sønnerby run the farm Øselund near Varde. The couple has five children aged 10 to 20 years. They operate 220 hectares, of which 75 ha are operated organically. The proportion of ecologically driven land is expanded as the need increases for feed for the goats. Verner has previously had dairy cows, and lately there have been 300 sows and a sale of finishers on the farm. Four years ago Verner began having difficulties being in the pig house, and it was decided to sell the pigs. The couple agreed that it was important for them to keep on running the farm. Consideration was given to go back to bulk commodity production and put cows back in. Barbara, however, had difficulty seeing themselves as dairy farmers, and tending of cows was not attractive. Therefore, they began to look for alternative options to operate the farm.

What is it about?

Verner and Barbara Sønnerby have developed their own Danish gourmet goat cheeses, which are sold to delicacy shops, farm shops and wholesalers.

Who took the initiative?

The children's pet goats and a family travel to New Zealand gave inspiration to start up the production of dairy goats. Today there are 300 goats on the farm, and a farm dairy with production of preliminary 4 different cheeses (a Sardo-type (hard cheese), an ordinary cheese, a Tilsit cheese type and a "Pfeta" cheese), and there are more types on their way.

At first, Verner and Barbara imagined that the milk was to be sold to a dairy, but contact with other producers made it clear that this was an unsafe way to go. Thus the idea of a dairy farm was born where milk could be processed into cheese - the idea from farm to table was important.

Who was involved?

Verner and Barbara have to a great extent made use of networks, and acquired knowledge and know-how from other growers in Denmark, Germany and especially in Holland. A dairy technician has helped with advice and guidance for building the dairy farm, and Barbara has been trained in making cheese, as well as in hygiene. Organic Denmark has provided support to a dairyman who assisted Barbara when she started up as a cheese producer. This is to a great extent a question of a pioneering company, and it has been a great challenge to get the required knowledge. The Danish advisory system is widely developed in many areas, but a niche production as this cannot find help in the established system.

The Danish advisory system is widely developed in many areas, but a niche production as this cannot find help in the established system.

Approach

Barbara and Verner say that their approach was a little naive. They have taken the plunge and have solved the challenges as they arose. The focus is on low-cost, and to rise to the challenge and gradually expand the production scale and product scope. It is a question of a learning process in which there have been many shortcuts. The background in agriculture has been an advantage, but there has still been much new ground to tread - both about tending the animals, but also in the development of the business.

Challenges and difficulties in the process

There have been many, and the feeling that it has been uphill all the time. Overall, it has been hard to find sparring partners who would engage in the project and who had the necessary knowledge. It has not been possible to find someone who has expert knowledge about feeding and tending of dairy goats, and where health is concerned, it is a challenge to find a veterinarian who knows a lot about goats.

In terms of business, it has not been easy to find help and sparring. As mentioned, the family took the plunge with both feet and made things happen without a lot of budgets and calculations. Knowledge and support within pricing, sales, marketing, etc. are called for and could be a big help in future, so that the project will be shaped in the right way.

Verner and Barbara have differing views on the future of the farm. Verner thinks big and dreams of a farm that can produce milk powder, and thus open to exports and the large market for goat's milk that exists. A farm for production of milk powder is a very big investment, and requires a large supply of milk in order to be interesting. Barbara would like to stick to the production of cheese - she is enthusiastic about this and in her mind good craftsmanship and production of a gourmet product are the most important.

Decisive incidents

They were haunted by the idea of goats, and on their trip to New Zealand, where the family was allowed to milk goats and see a farm close up, the idea got more into shape, and it became more obvious that this could be a possibility. It has also been crucial to apply and seek out the networks that have been available. In particular, it has been important to look beyond the Danish borders and seek knowledge in Germany and Holland.

Results and impacts

The first year has not contributed financially to the farm. The year 2014 ends on a breakeven and it is expected that money will be earned in the current year and that future production will contribute with a satisfying economy for the family. The production of the cheeses has meant that farming can be continued on Øselund.

Hopefully it will be possible to invest in technology or anything else that will be able to reduce the amount of manual work.

The innovation in short

What is the innovation all about?	Production of gourmet goat cheese
Who took the initiative, and why?	The family took the initiative when it was necessary to find a way of production in order to keep the farm
Which other actors got involved?	To a large extent the family has solved the challenges themselves. Networks have been applied in order to obtain knowledge
What approach did the initiators follow to realise their ambition?	The approach has been learning by doing with the wish to create something unique and practice the farm to table idea
What difficulties did they encounter?	Everything from problems with the authorities (who would do much to prevent the importation of cloven-hoofed animals from Holland to Denmark) to providing the most basic knowledge about tending of goats, producing cheese and marketing of their produce
What are the results so far?	4 gourmet cheeses have been developed and more are on their way. They have been awarded the gold medal for Øselund's Goat-Pfeta on the "Nordic Cheese Festival 2014". In 2014 the economy will break even, and it is expected to yield a profit in 2015. The family has established a production which is satisfying to them and which engages them a lot.
What can be said about the impact of the innovation?	So far the innovation has had an impact on their family life and everyday life. That anyone dares to implement a new production and develop new products will eventually have an impact on Danish agriculture and contribute both financially and in terms of image.
Suppose we are two years further: What will be visible then?	Barbara and Verner believe that in two years there are even more goats on the farm, and sales of the entire production. Hopefully it will be possible to invest in technology or anything else that will be able to reduce the amount of manual work.

7

Physical and Financial Benchmarking

Its value in extension

Tom Kelly

Teagasc, Ireland

This story is about the experience of a national agricultural development agency (Teagasc, Ireland), in the development and use of physical and financial benchmarking tools by advisors in supporting focused development programmes for farmers. Today when advisors from other countries visit Ireland they are amazed at the degree to which advisors use farmer's own data to benchmark against others and the openness of farmers to discuss their physical and financial metrics. The basic principle of benchmarking is that by measuring and comparing metrics from one farm with other similar farms facilitates identification of key points of difference affecting overall performance. By identifying these Key Performance Indicators at the farm level assists in the monitoring of progress toward the objectives of the farmer thus providing a valuable advisory tool.

Background

Teagasc is a relatively large organisation (about 1,200 staff) which is responsible to the Irish government for the delivery of national research, education and advisory programmes in agriculture and food. The dynamic of farm advisory work has changed dramatically over the last 40 years. The ability to generate data on farms, analyse it and condense it into reports has come a long way in that time. The day of the farm advisor collecting reams of data from farms, analysing it and returning to the

Today when advisors from other countries visit Ireland they are amazed at the degree to which advisors use farmers own data to benchmark against others and the openness of farmers to discuss their physical and financial metrics

farm to have a discussion about the results is almost over. Much of the data needed now is collected electronically; much of it is also live (current as opposed to historic). Data may be collected and recorded remotely by third parties for other purposes; this data can, with the farmer's permission, be harvested and analysed Centrally and made available to advisors. An example of this is how Teagasc has worked with the Irish Cattle Breeding Federation (ICBF) for over 12 years to produce easy to read reports on the performance of dairy and beef cattle. These reports allow farm advisors to devote a lot more time to interpreting the results and giving specific advice relevant to that farm rather than gathering data. Benchmarking reports are also used in group discussions where advisors facilitate peer to peer dialogue to influence change. Newer benchmarking tools have now been developed in pasture management and carbon efficiency and these support the need for advisors to use farmers own data to measure annual progress and to highlight what is possible.

Financial Benchmarking

For many, many years benchmarking has been used by advisors to track physical and financial efficiency factors. In Ireland advisors used a mainframe computer programme called DairyMIS, which started in the early 1970's. It was a paper based data collection and reporting system with data being gathered monthly from individual farms in groups of 10 to 20 organised by an advisor. These farmers received in return a monthly report for their farm and a summary report benchmarking their performance against others in the group. This process was developed and managed by Billy Fingleton researcher in rural economics at An Foras Taluntais (now Teagasc). All dairy advisors were

encouraged to run at least one group. A lot of effort was expended by farmers (collecting), advisors (checking) and clerical staff who punched every piece of data into the programme Centrally. The reports were useful to advisors who were focused on improvements in economic and technical efficiency. The use of data from the reports was always useful in one to one consultations but was even more powerful in group discussion at meetings. Advisors were proud to present their top performing farmer's data at meetings and seminars and it gave a real sense of progress where the farms who were implementing good management were also the ones with higher profit margins. In the UK a similar system was developed by ICI, a fertiliser company.

The DairyMIS system evolved and over time, farmers and advisors looked for more detail, particularly on physical performance data, other variable and fixed costs. In the mid 1990's, Teagasc introduced a whole farm analysis system called ADFA (Financial Analysis Spread-sheet) which could be used to get a better measure and comparison of farm efficiency and profitability. In 2001 funding was secured from the Information Society Fund, an Irish e-Government initiative and in the 2002 the e-Profit Monitor, a new web based system was launched as a dedicated advisory tool with the ability to look at the whole farm and its enterprise mix. Since its launch, the use of e-Profit Monitor has grown, the biggest change is happening right now as more and more data is collected automatically, giving more time for the farmer and advisor to focus on the farm management decisions to be improved, based on the e-Profit Monitor reports.

What is e-Profit Monitor now?

The Teagasc e-Profit Monitor is a farm management accounting and benchmarking tool used by 3,500 farmers and their advisors to assess farm financial performance. The concept of 'profit-monitoring' involves examining the retrospective performance of the farm business annually. Farm production efficiency is examined by creating the link between the principal financial (i.e. income received from sales of product and farm production expenses incurred) and physical (kgs of milk, cattle output, tonnes of grain or hectares of land) aspects of the business. Examining the performance of each enterprise on a 'per unit of product' basis allows easier comparison not only with Teagasc targets but also with other farms operating the same system. Financial performance is assessed on a whole farm as well as on an individual enterprise basis.

Animal Benchmarking

Dairy farmers have milk recorded individual cows for many decades, with the objectives of improving the genetics and productivity of the herd, as well as contributing to the improvement of the proven breeding sires available in the population. Beef and sheep producers also recorded individual offspring of sires and their meat production related metrics for the purposes of improving the genetic value of the population. Breeding information, although very detailed, was of little use to target herd performance and efficiency metrics on individual farms. However with the formation of ICBF, the possibility to provide individual and herd breeding indices for individual beef and dairy cows became a reality. Teagasc Dairy and Beef specialists immediately saw the benefit of co-operation; advisors would promote the participation of farmers in the recording and help ICBF design and produce meaningful analytical reports for farmers and advisors. There were huge synergies for both organisations and the biggest winners were the farmers who did not have the capacity to generate this information. More recently, data generated by ICBF, has enabled farmers and advisors complete parts of the e-Profit Monitor more accurately and with less effort.

Farm software

Farm Software packages have been used by farmers for many years to better manage their livestock and farming systems. Newer systems are web enabled and electronic data flow shifts the responsibility for collection and maintenance of data off farm. Many of the farm software systems use connections with multiple databases facilitating data flow on both the input and output sides. This flow of data is continuous, improving the accuracy and functionality for all users. Where these systems feed benchmarking there are clear advantages for live data collection and analysis.

A new era in benchmarking dawns

The typical Teagasc advisor today can see much of what's happening on clients farms remotely, deal with minor issues on the phone, prepare for visits well in advance and get support from specialists on specific issues if needed. For advisors facilitating groups, there are huge benefits from being able to compare performance and discuss the factors affecting profit with real data from clients' farms. There are data and information sensitivities and rights which advisors have to respect, however from the very start the benchmarking tools are used with the approval of the individual farmer. Farmers have responded to the need for them to be open and honest with their information and the old adage that while information has value to the individual, its value multiplies the more it is shared. Getting Farm Software to talk to other databases is now possible and more and more data is interconnected as are the various devices; farm computer, phone, veterinary surgeons hand held, A.I. technicians hand held etc..

How green is your grass?

As more and more farmers are measuring and budgeting grazed grass and using interconnected devices and systems to do this, it is important to provide a common benchmarking system for this. Teagasc has developed a grass growth database "Pasture Base" which will be used to breed more productive grasses and help farmers get more value from the cheapest feed. Software providers are seeing the opportunity to develop front end applications for farmers to interact with this database for better grassland decision support.

What's your farming footprint?

The new metric which has emerged in recent year is called the "Carbon Footprint"; this is a derived figure, based on the inputs, outputs and practices used to produce the product. Research by Teagasc has shown a strong relationship between increased productivity/efficiency and reduced carbon count per unit of product. This opens up a whole new possibility to benchmark carbon efficiency improvement over time. Teagasc has developed a tool called the "Carbon Navigator" which will be used to address carbon efficiency on Irish farms.

Leadership and change management issues

Getting farmers to engage and use financial tools is generally difficult; they often don't want to do it themselves, relying instead on their spouses or external professionals. Teagasc has deployed a number of long term strategies, the e-Profit Monitor is provided at no extra charge for clients who are fee paying members, all students in the entry level vocational training programmes are required to complete the e-Profit Monitor. More recently the Irish ministry require farmers to complete the e-Profit Monitor or equivalent if participating in some of the EU funded Rural Development Programmes, thus providing an incentive for farmers to complete the analysis. Teagasc also provides free access to the software to other advisors and private consultants for use with their customers.

The uptake generally has been disappointing with lots of speculation as to why there is not more demand from farmers.

Excuses don't add up

In general farmers are not good at using financial indicators to make decisions, they tend to use cash flow as an indicator of financial performance. Bank account balance will have more say in decisions than the impact on long-term cost or margin per unit and many routine costs are not questioned prior to commitment. In general dairy farmers are better at using the individual reports and the group reports for benchmarking. Crop farmers are the slowest to adopt, this is probably due to three factors. Firstly, on crop farms the variable costs (seed, fertiliser, crop protection, etc.) are fixed with little variation and overheads are more variable (machinery costs, land rental, etc.). Secondly, as many crop farmers compete for rented land, they don't want to disclose their costs to others. The third reason is that they tend to chase yield per hectare and scale in order to drive profit, both of these explain a lot of variation. However none of these excuses stand up and very few crop farmers can tell you the real cost of producing a ton of grain on their farm. This means that the work of the advisor is harder in terms of giving farm-specific advice and this is not the best use of advisor's time.

Advisors also have been variable in their commitment to promoting the completion of e-Profit Monitor with clients and in the time spent helping the farmer to understand and use the analysis. There is clearly a huge advantage for the advisor who is engaged with benchmarked data from farms where he/she has detailed knowledge; the lessons learned from those with good metrics can be used in the advisors work with other comparable farmers.

Ways to influence farmer demand and uptake

The participation of farmers in the animal based ICBF system has been higher and much quicker than e-Profit Monitor. Why was this? Apart from the fact that the data is easier to collect, ICBF have been clever in combining all the variables into one figure, an Economic Breeding Index (EBI). This figure is applied to each animal and averaged to arrive at the herd EBI which can be benchmarked between herds or used to set targets and monitor breeding improvement over years. In other words it is simplified for the farmer and advisor to get the big picture but still possible to interrogate the data. Recently some thought has gone into this approach and applying a similar system for dairy farmers more and more generally to farmers using a balanced scorecard approach. The Teagasc e-Profit Monitor would be a component of the scorecard and but the scorecard would more accurately reflect the performance of the whole farm business.

Teagasc is fortunate that **e-Profit Monitor has established itself as a reputable brand** and is recognised by farmers generally as a reliable dataset from which to benchmark their figures and other farmers in their groups that they interact with. By actively building on subjective perceptions among farmers of 'usefulness' and relevance of e-Profit Monitor in group exercises that encourage farmers to share their own experiences of why and how they use e-Profit Monitor assist other farmers' realisations of how e-Profit Monitor works and why it may be useful them individually.

Advisors highlight their experiences of a significant proportion of their **farmer clients as having skills deficits** in the wide-ranging data collation and analysis tasks associated with financial management. While in the context of skills deficits in financial management, an educational intervention is needed, clear/simple instructional materials and generous use of workshop exercises and homework based on "own-farm records" are crucial aspects of a successful workshop on financial management.

Promoting the role of e-Profit Monitor **in the ‘life context’ of the farmer** and his/her family stands to enhance how farmers perceive it to be useful and relevant. Financial considerations are often not only a personal issue but are often a family issue. Integrating the use of e-Profit Monitor to the family as well as broader ‘life context’ increases the relevance and usefulness of e-Profit Monitor, potentially alongside other supports such as life coaching.

In **understanding how e-Profit Monitor works**, it may not be assumed that all farmers understand the calculations that underpin it. Farmers have different levels of competence when it comes to record keeping, understanding the calculations underpinning e-Profit Monitor and interpreting the data generated by e-Profit Monitor. A US survey of farmers found “most farmers are not keeping track of enough information to make informed financial decisions. Further, many of the financial records they do prepare are being completed by others, and there is some lack of understanding of the records themselves. Of crucial importance, thus, is farmers’ active engagement with understanding and implementation of e-Profit Monitor, which may be powerfully influenced by extension.

Benchmarking systems must respond to a diversity of farmer circumstances in facilitating realisations of the relevance and **usefulness of outputs**. Diverse approaches should be used in groups comprised of diverse farmers in order to cater for diverse motivations, circumstances and preferences.

“Comparing the top, middle and bottom performing farmers in a group context doesn’t work. It’s predictable, repetitive and farmers expect nothing new. They explain away the differences and make excuses because we are not comparing like with like. Farmers learn more from comparisons with farmers in the same grouping, within the top, middle or bottom tier” (Teagasc Advisor).

Involving the spouse and other family members to increase the impact of e-Profit Monitor on farm-level decision-making: Often, the spouse, daughter, son, or another family member is involved in farm financial record-keeping and management, not the farm owner alone. In addition to data collation, when it comes to implementing decisions guided by e-Profit Monitor results, family members have significant influence. There is a strong relationship between financial management and family life and well-being. Therefore, it is often beneficial to acknowledge, encourage and include the involvement of family members. Dedicated farm discussion group meetings that include wider family members (spouses, future heirs) may be beneficial; such meetings could potentially be used to focus on e-Profit Monitor as well other issues such as succession and collaborative farming ventures.

“If the farmer’s wife comes to the meeting, there is a far better chance that something will be done about it” (Teagasc advisor)

Building esteem and pride around the use of e-Profit Monitor: Aside from the need to openly deliberate with farmers the relevance and usefulness of e-Profit Monitor, it is also possible for the advisor/facilitator to actively construct esteem (social and cultural capital) around the use of e-Profit Monitor. This is a powerful approach to make e-Profit Monitor more appealing to farmers because e-Profit Monitor becomes more responsive to and instrumental for achieving the farmers’ life values and goals, or in other words, becoming the ‘good farmer’ in a farmer’s own eyes. The extension goal is to integrate e-Profit Monitor as a crucial approach for furthering the farmer’s own objectives. It is now essential that at all farm open demonstration days the e-Profit Monitor data is used. This draws out and builds the relevance of e-Profit Monitor to these farmers’ esteem and can potentially enhance farmers’ social and cultural (as well as economic) capital. Such intuitive, practical knowledge

and expertise is present in the use of benchmarking processes in advisory services and supports the adoption and mainstreaming of such extension methodologies.

“I deliberately try to increase the sense of importance and pride associated with e-Profit Monitor in the groups” (Teagasc Advisor)

Awareness of **farmers’ financial sensitivities** is a crucial issue in the use of e-Profit Monitor as an extension tool is awareness of the sensitivity surrounding financial issues and the implications arising for social and personal esteem. While some groups – particularly those that are well established and have generated trust and a sense of social security among members – are supportive of group members’ disclosure of financial data, other groups are not. Tacit pressure on group members to disclose financial data (generated by some group members or by the facilitator) where members do not wish to or are not in a position to disclose data may cause members to withdraw from groups (even when they are benefiting from other aspects of the group) or to participate as ‘silent’ or inactive members. This reduces the potential influence on all farmers participating. To avoid this dynamic, creative approaches promoting farmers’ engagement with e-Profit Monitor must be used. One basic idea is that particularly sensitive data are not disclosed but may be discussed generally within the group, while other less sensitive data are disclosed. Another idea is that ‘partners’ within groups be assigned, where two farmers are paired and reveal to each other their data, comparing and identifying areas for improvement and building up trust between each other.

What is the future role of Teagasc?

The really high cost of developing and maintaining ICT systems, makes a case for government investment. However there are opportunities for public/private partnerships and cooperation. Scale is important and it may be necessary to look beyond organisational and national interests to fund really good systems which are of value to farmers and advisors. Co-operation between different actors, as with ICBF and Teagasc, can be difficult, where there isn’t already a good relationship.

In fostering, how inter-agency and multi-professional linkages, it is important to maintain the strong brand that is associated with the Teagasc e-Profit Monitor, and the credibility of this brand among farmers and institutions such as banks, co-operatives and farming media.

Further promotion of the use of cash flow tools which assist advisors/others in the data collation and use of e-Profit Monitor outputs is needed. With new cash flow and online budgeting tools, it may be possible to create a seamless integration of data collection, analysis and use in decision making.

Teagasc Advisors’ completion of e-Profit Monitor with the farmer (preparatory work) often involves an extension/advice element, which may have to be revisited later by the Teagasc advisor even if another professional/agency has undertaken it. It is also important to differentiate between varying degrees of farmer participation in data collation for e-Profit Monitor. Some farm households collate their own financial data in formats that are adequately comprehensive for the purposes of completing e-Profit Monitor, while other households do not actively keep records in such a format. Considering advisors’ skill-sets in extension, they are the most qualified professionals to facilitate this important learning process over time. However, if data collation services are delivered through greater inter-professional and inter-agency linkages, the emphasis must be maintained, in so far as possible, on facilitating farmers’ to take greater ownership of the data collation process over time.

In any transition towards greater inter-professional and inter-agency collaboration, advisors’ likely reactions and responses must be considered. While Teagasc advisors may be eager to leverage inter-

professional collaborations to achieve resource efficiencies, the rigour and comprehensiveness of the data collation process, on which the effective use of e-Profit Monitor as an extension tool depends, is currently a responsibility of Teagasc advisors. Teagasc advisors must have confidence in the processes and measures underpinning the development of inter-professional and inter-agency linkages henceforth.

Managing expectations

This is very important, the farmer who puts a lot of effort into getting the analysis complete may not always like or accept the result. They may not want this data shared and may prefer not to discuss it. The advisor must use benchmarking with others carefully and sensitively to ensure that at least one major issue is addressed.

For Benchmarking simple summary metrics are best provided the data is accurate, credible and is relevant, it should always allow advisers see and explain the background data.

Lessons Learned

The fundamental lesson is that benchmarking as a process is getting easier; it has been difficult to get farmers to pay attention to huge amounts of data. So, simple summary metrics are important provided the data is accurate, credible and relevant. Advisors who use benchmarking clearly work at a higher level of relevance and impact. Advisors who use benchmark results in one to one advice and in discussion groups get better buy in from farmers in collating and using the outputs.

One other lesson learned is that benchmarked data on its own – even good data, well presented, does not guarantee that good decisions can be made. It is important that the data is properly linked (financial metrics with the key physical metrics), so that the farmer and the advisers can clearly plot the course required to affect positive change. It is also important that the benchmarking analysis becomes more than a one a year task but is used right throughout the year to influence the decisions taken and to measure the impact of those decisions thereby reinforcing the hopefully positive impact in improving the farm.

The support of a strong Central agency like Teagasc, in developing these tools, making them available and creating a strong brand image with farmers and the industry generally. As the cost of developing and maintaining benchmarking systems is high there needs to be more co-operation, co-development and cost sharing between interested parties.

8

Trump Cards**Effective Advice: From Idea to Concept**

Heidi Hundrup Rasmussen

SEGES, Denmark**The history**

In 2002 the feed company KFK launched the idea that they intended to provide direct advice to the farmers and they called the advice concept "no cure no pay". If the advisers' advice did not work, the farmers were not to pay – and if they did work, they were to share the profits with KFK. This concept aroused great attention and the advisory service did not know quite what to make of it all: KFK's idea was predominantly seen as a threat. At the National Centre (as was the name of SEGES in that time), we also discussed the concept and tried to develop a "no cure - no pay" advisory model - which was difficult to construct in order to make it fair and transparent, but eventually we had a prototype ready. We interviewed a number of farmers and introduced them to the idea and the prototype, but they were not enthusiastic - they would not share their possible profit of a good advice with the advisers.

KFK never succeeded in implementing the scheme, but the idea that the advisers should commit themselves more kept haunting us, and furthermore for a period we had also struggled with the fact, how to get more of our developed knowledge implemented more effectively with farmers. Out of all this grew the project "Binding Advice" – where we worked with three local advisory centres that were interested in the impact, interdisciplinary skills and more utility value of the advice.

The idea that the advisers should commit themselves more kept haunting us.

In the project the advisers visited the farmers with a blank piece of paper. They asked him: "What are your biggest challenges - what would you like to do something about?"

In the project the advisers visited the farmers with a blank piece of paper. They asked him: "What are your biggest challenges - what would you like to do something about?" So a very open approach, and quite different from the usual approach in which the adviser has the role of the expert with all the answers and who informs the farmer how he has to improve. In cooperation with the farmer targets were set and agreements with responsible and deadlines were made - this was new to the advisers, and

many found it difficult to articulate goals, and to entrust the "control" with the farmer. Subsequently, the action plan was to be implemented, and the effect to be measured. The project was a great success because the farmers gained a lot from this approach to advice: Engagement, with presentations of goal-setting, action plans and mutual agreements. The farmers were excited, but the advisers still found it difficult, and for instance it could be difficult to get back to the office with assignments to a colleague - the handover did not always work. Furthermore, many advisers were accustomed to work on their own in relation to the farmer, and the interdisciplinary collaboration was (is) a challenge and was perceived as cumbersome. The project involved 75-100 farmers directly.

In the following years, the work continued in the same direction in other projects and campaigns. At one time (2012) SEGES wanted to examine a number of projects and try to respond to what is actually needed to make advising work and what it takes for a project to succeed. This gathered a lot of experience from many different projects, and advisers and farmers were asked when advice was successful and was of utility value. The answers were manifested in the trump cards, which together describe what it takes to succeed:

Contract	<i>Make a contract where you adjust the expectations and sets clear targets for the advising.</i>
Game Master	<i>Control and coordinate the conversation towards jointly defined objectives, ask disruptive questions that create reflection and offer new understanding and new options through the introduction of hypotheses.</i>
The good questions	<i>Situation clarifying and action-oriented questions create overview and action. Visionary and future-oriented issues create motivation of the fellow player and ownership of actions.</i>
Active listening	<i>Know the customer's picture and understand the problem.</i>
Power card	<i>Get an overview of the process: Strategy, results, behaviour, efforts.</i>
Action plan	<i>Goals and initiatives.</i>
Follow-up	<i>Will the agreed activities be reached? What is the effect?</i>

The trump cards were tested through interviews with a number of farmers: They were asked to describe a good consulting situation. Their descriptions enabled us to identify which trump card was brought into force. The test confirmed that we were on to the right cards. These stories were published in a magazine in which the trump cards were included as an insert of the cover. The shape attracted attention: The magazine was printed deliciously, beautiful pictures and exciting stories - you could take the trump cards out and quickly get an overview, hang them up and be inspired. The magazine influenced many senses, and took account of multiple learning styles, which helped to arouse interest.

The next step was to work with them: how we could teach with the trump cards - how could we implement them in best way to the advisers?

The next step was to work with them: how we could teach with the trump cards - how could we implement them in best way to the advisers? We developed a game where the advisers are together in pairs and play against three other couples. It is played using a number of cases (brief descriptions of consulting situations) where advisers must choose one of the cards, and argue why this card is the best to play in the current situation. While playing, the advisers become familiar with the cards, and they have to reflect on their choice. They also learn a lot from hearing the opponents' arguments, and they have their eyes opened of how to tackle consultancy situations. The advisers gain a language to talk about consultancy approach with each other, and in this way improve their communication skills.

The trump cards, the game and the associated theory book have become a concept that we use in the in service training for advisers, as well as company internal workshops and seminars. In the last two years we have trained 250-300 advisors and students with the trump cards. The concept can be

presented in 2 hours and upwards (multi-days' course), and you can easily play it several times - in fact it becomes better and better, and you can add more layers to the rules of the game depending on how experienced the players are. There is much learning in the play, and we have succeeded in transforming a wide and complex set of theories to something which our advisers can work with and adopt because we have adapted the contents to their practice. E.g. we have worked extensively with the language of Karl Tomm's theory of questions and questioning, and this means that we catch the advisers' interest (the language avoids being a barrier), and they will want to work with the reflective and circular questions because we call them perspective questions and future-oriented issues.

There is much learning in the play, and we have succeeded in transforming a wide and complex set of theories to something which our advisers can work with and adopt because we have adapted the contents to their practice.

It has been more than 10 years from the launching of Binding Advice till now where we have a concept to use when working with consultancy approach. During that time, it has become more "legal" to acknowledge that the adviser stands on two legs: The academic and methodological advice. Today, most advisers are able to formulate (SMART) goals and develop action plans, and it is recognised that it is important to ask good questions, listen and act as game master.

Reflections

What did it start?

The "*provocation*" from KFK gave the final push, and helped emphasising to us at SEGES that there was a need for action in the methodological advice area - and thus Binding Advice was a reality as a project, and paved the way for the next years' activities in this field.

Who took the initiative? What made it possible?

It was ordinary employees at SEGES who took the initiative and proposed the project Binding Advice. The management of SEGES dared take the chance and paved the way for a project that was not like all other projects. Here was a whole new kind of professionalism - which was then barely regarded as professionalism - not at all in line with the technical skills and competences which SEGES is known for. Employees had the skills and experience to manage the project and had the freedom to implement the project.

What was the driving force?

SEGES is farmer-owned, and they pay attention to the fact that the activities lead to utility value on the farm. Binding Advice came into being, among other things, because the management was aware that much of the developed knowledge did not totally reach the farmers and because the advisory service could do more to cooperate interdisciplinary and to follow initiated activities through (follow-up). The commencement of the activities that led to the development of Effective Advice on Trump Cards happened in a period when there from both farmers and donors was increased focus on impact and efficiency analysis. It was therefore important to identify what was needed for successfully advice and projects.

The innovation in short

What is the innovation all about?	Concept for teaching and implementation of advisory method: Trump cards, play and theory book
Who took the initiative, and why?	The commencement of the activities that led to the development of Trump Cards – Effective Advice happened in a period when there from both farmers and donors was increased focus on impact and efficiency analysis. Therefore, the proposed project on the effect of the advisory service was conducted.
Which other actors got involved?	Besides SEGES staff, farmers and advisers participated with contributions and data. Furthermore, the project leader received input from a cooperative partner Ramboll Attractor - which supplemented the theoretical knowledge.
What approach did the initiators follow to realise their ambition?	The theoretical basis is largely based on the systemic approach to learning and communication. The starting point in the work itself was that we had so much knowledge in advance, it "just" had to be systematised and disseminated in a new way.
What difficulties did they encounter?	The development of the trump cards did not cause any trouble. Maybe it was because the road was paved through Binding Advice and other projects with similar focus (consultancy approach hand in hand with the academic knowledge). The timing was perfect.
What are the results so far?	The consultancy approach has moved far higher on the agenda - the advisers now talk the same language on this topic. It is now generally accepted that it is not enough to be professionally and technically proficient; you also have to be good at identifying farmers' needs, listening, asking questions, creating ownership, creating action plans, following up etc. so that the advisory service is effective. Trump Cards – Effective Advice will be used in the dissemination and implementation part of other projects, and it is thus recognised in SEGES as the way we work in this field.
What can be said about the impact of the innovation?	Trump Cards – Effective Advice is of great importance to the quality of the advice given, and thus has a positive effect on the farmer's yield and thus his production results and economy.
Suppose we are two years further: What will be visible then?	At SEGES there is even more emphasis on learning through play, and our other projects will be inspired by Trump Cards – Effective Advice and jeu d'esprit and integrate plays into their implementation. Trump Cards – Effective Advice is a natural part of a new adviser's training, and other advisers have more focus on knowledge sharing and sparring about consultancy method to enhance their performance with customers. Farmers use "Trump Cards – Effective Advice" in a version that is about the management of the employees at the farm and increase their managerial capabilities in this way.

Link to the theory book:

http://akademiet.vfl.dk/Konsulenttydelser/Raadgiverens_roller_og_vaerktojskasse/English_trump_cards.as

9

Personal Skills Are Decisive

AHA'S Story Of Advanced Vocational Trainings (Soft Skills) For Multipliers In Agriculture

Marietheres Förster and Wolfgang Kubutsch. Andreas Hermes Akademie, Bonn, Germany

Personal skills are decisive in competition – a story of success and what is behind

Do you know that? When an entrepreneur is no longer capable to see "the forest for the trees", it can be helpful to consider its own operation from the outside. But sometimes that is not that easy. In the midst of everyday business's one has to keep the own personal and company development at a glance! But how?

Development and success – how many times have we heard, read and told, will depend tremendously on the methodological skills, the so-called soft skills. "The decisive factor is the human being." This is actually known everywhere and to everyone. But it is also known that only a small subset of entrepreneurs or multipliers perceives appropriate training opportunities. Perhaps because still few people truly recognize what is behind the so often quoted words "soft skills" and "entrepreneurial thinking and acting"?

"The decisive factor is the human being."

Personal skills for change

The challenge in our work of advanced vocational trainings is, to get people into a process of changing. And sometimes it is an innovation in every training, to find the right way for everyone to initiate his own changing process 😊.

Our points of innovation in the story of training for more success are innovations on three levels.

- first level: trainings for farmers → in order to find the own individual way
- second level: trainings for advisors → in order to be an advisor with a triple expertise as an advisor, coach and moderator, who accompanies the development process of the farmer
- third level: the mutual influence between both for further steps of success

The focus in AHA's AgriSpin project are the trainings of multipliers, who are supporting the farmer in an advisory capacity.

This may be the classic adviser just as an employee or a volunteer of agricultural associations. For simplicity, the term advisor is used hereinafter. Objectives of the trainings which are considered here, are: methodological skills – the so called soft skills – ultimately for sustainable development and strengthening of agriculture.

In order to specifically highlight the importance of soft skills or methodological skills as part of the qualification of

The focus of AHA in the AgriSpin project is the training of multipliers, who are supporting the farmer in an advisory capacity.

multipliers, let's have a look at the importance of these skills for the agricultural entrepreneurs and the first step of innovation in the AHA-trainings:

First level of innovations: Trainings for entrepreneurs – starting a process

In the late 1980s a predecessor organization of the Andreas Hermes Academy (AHA) introduced the advance vocational trainings *bus* for entrepreneurs. Mr. Gerd LOHMÖLLER, the creative and visionary head of that farmers training organization created with '*bus*' an advanced vocational training that was innovative in several points of view:

- describing the characteristics of entrepreneurial thinking and action
- a series of trainings instead of one single training
- starting a process: the trainings lead participants in a process of developing
- working on the individual strengths and weaknesses
- a developing process for themselves and their farm.

During the first 10 years of '*bus*' it was a kind of insider tip to take part in these trainings.

To describe the successful entrepreneurial thinking and acting in a simple way, it would be helpful to depict the individual steps separately. What is behind this process?

Entrepreneurial thinking and action means:

1. Visualize where you are (actual analysis).
2. Realize your own values and visions consciously.
3. Derive clear goals.
4. Draw up strategies and development plans.
5. Implement them goal-oriented.
6. Reflect again where you are: comparison between the actual situation and the target situation.
7. And if necessary: adjust the course.

Who can and should make these seven steps? First of all the entrepreneurs for themselves. With '*bus*' the participants receive the impulse to go these 7 steps and they learn how to go them. And also the advisors have to know how to go these steps and to show it to the farmers.

"There is not just one way for everyone, but for everyone a way."

As an entrepreneur in competition: I go my own way

Competition means, among others, to find your own way. Mr. Gerd LOHMÖLLER pointed the motto of the AHA training '*bus*' for agricultural entrepreneurs: **"There is not just one way for everyone, but for everyone a way."** In the '*bus*' trainings farmers are working in discrete but evolutionary trainings for several years on their personal and occupational development. A key factor for the participant's success is that the participants enter their individual developmental process.

And how can someone find his or her own way?

Entrepreneurial skills are crucial

Whether it comes to adjust the seeder, to operate the milking-robot, to sell the pigs to the slaughter companies or to trade on the exchange wheat contracts, everything can be learned. But in the background we also experience an accelerating rhythm of technological change, which outdated the knowledge in a fast way.

But on the other hand it is important to recognize which tasks are particularly important, at which time and how these tasks can be implemented most effectively and efficiently. To decide when a third party such as external advisors are called in, to set priorities and to work on the network in order to save resources.

All these are entrepreneur`s competencies. Describing it in another way: A manager at the operational level will act like "doing things right". As the opposite of this the entrepreneur`s maxim is "doing the right things".

The eight competences of success

Sustainability of agricultural enterprises increasingly depends on the people themselves and only secondarily on available resources like land, capital and other production factors. Sometimes it was focused too much on hard facts as technical know-how than to the soft factors, the soft skills. But precisely these skills are often the crucial ones. 30 years ago, it was the exciting innovation of Gerd Lohmöller and the other AHA-trainers to explain a way to success by personal competences. And it seemed to be amazing to people, that it included only eight competences. Nowadays the entrepreneurs are still working with these competences, but on the level of leadership and management topics.

The eight key-factors for success, which the AHA works with in the 'bus' trainings for agricultural entrepreneurs:

Clear targets:

1. Clear goals provide guidance and bring energy. It is good, to realize how it feels to have achieved his or her goal.

ConCentration and relaxation:

2. ConCentration brings manpower and resources. Recognizing the important tasks, doing everything always with 100% input. Relaxation "load its own batteries" will give new energy and quality of life.

Self-confidence:

3. To go your own entrepreneurial way. To try something new and maybe even doing the unusual. This requires confidence in the own abilities and possibilities. There is a direct correlation between self-worth and value.

Decisiveness:

4. You can only make decisions if you have several alternatives. Know your personal strengths and goals, than you can make good decisions easily.

Good and clear relations:

5. It's just a good relationship, when it is a clarified one. It is not clarified for example when farm succession has not been arranged, as it is the case on many farms. Clarifying relations means to express your own expectations and to have an open mind to those of the partner or customer. People who overcome inhibitions and approach the other one with a positive attitude, create good relations.

A good image:

6. Image means what others are thinking of me. It should be authentically, not contrived or fake. The self-image and the inner attitude act outwards.

Motivation:

7. The inner force, that pushes me, can only be grounded in the own enthusiasm and conviction. Other important factors are the identification with one's own goals and the recognition of their own qualities.

Courage and consistency:

8. To initiate developments, you need courage. Our own success is always beyond the personal comfort zone. To obtain this, you should consistently pursue your own objectives.

Changing conditions for agriculture? With this competences you can deal with.

Any entrepreneur who wants to benefit from changes and developments in the markets has to know the market, his company, the different resources and the people, with whom he works together. That doesn't not only include the stock market and the world market, but also the possibilities and opportunities in the own region. If farmers know what products are in demand at the supermarket and which ones are taken out of the range, they remain at the cutting edge of customer needs.

Other relevant factors and markets:

- Global markets determine as well as local sales prices
- The new communication possibilities: we are in permanent interaction via the social networks.
- Changes in the working world: Fixed working hours and classical communication hierarchies are maintained less and less. The responsibility of individuals is increasing.
- And market does also mean the so-called market acceptance. The consumer – supposing not only in Germany – is often illogical: On the one hand for example there is a growing criticism against egg factory farming; on the other hand often buy the dumping offers of eggs and poultry. How do you deal with such a consumer who apparently has conflicting desires?

Farmers and their agricultural companies high-profiled by the social criticism

Last but not least we would like to focus on one very important point for German farmers: The rising public criticism on agriculture, especially on the animal husbandry. Growing demands of society and the authorities get a huge, partly existential importance for the agricultural business. Farmers and agricultural multipliers should take into account in their strategic planning this increasing criticism of the consumer.

Back to the story of innovation: After our academy started the trainings for entrepreneurs, it emerged, that we need these soft skills as well for advisors. In the middle of the 1990s the Andreas Hermes Akademie (AHA) developed methodological trainings specifically for advisors.

The second level of innovations: methodological trainings for advisors and their new role in agriculture

Multipliers in agriculture have to include the changing conditions in their work. Examples are global markets, the higher level of information for farmers and especially the just mentioned different demands of the society to agriculture.

The advisor's role will change more and more: In the same way as the farmers work in highly complex processes, they also expect this from advisors and advisory services: They expect the same complexity and at the same time a specifically, an individually and a specialized support. The advisory role is changing: from mostly giving experts-input into assistance in development and changing processes. For this we created specific trainings for advisors. So for the first time in Germany the

Andreas Hermes Academy together with Entra we adapted the methods of coaching in agriculture and created our *training for a systemic coach* as experts for changing processes.

A new and special qualification: To assist farmers in terms of publicity

One of our latest concept of a special case of advisor's qualification is concerning the requirements on public relations and image work for agriculture. For this purpose AHA created the trainings '*coach dialogue for agriculture*'. The goal of this training is strengthening and supporting the farmers for image work. In the trainings, participants deepen their knowledge and skills in PR and communication, for example to know how to arise opinions among the general public, how media work, what interests they have and how the farmers can take an active role in the formation of the public opinion. They learn coaching methods in order to support the farmers operating in their individual decision-making and change processes, considering the public criticism.

For getting an idea how this process for a new qualification of advisors works, please have a short look at the different steps from our conceptual work:

1. Farmers needed support concerning the public criticism and image work.
2. We asked them, which kind of help they need and which kind of support they expect from their advisors.
3. We also asked the advisors for which kind of support the farmers are asking them.
4. We created the methodological training with the input of different experts – for PR, advising, coaching, dealing with critical issues, change management

And – you will already suspect – the farmers asked for these skills out from the '*coach dialogue agriculture*'.

The different innovations concerning the advanced vocational trainings for advisors are:

- to strengthen methods concerning the three competencies of consulting, coaching and accompanying the development process. To make the **advisor a triple expert** in this three levels.
- Giving tools to the multipliers, not only facts to expand their own skills.
- Last but not least the trainings for advisors will enable them to stimulate and support their farmers to create new and innovative ideas and ways to their success.

The third level of innovations: trainings for entrepreneurs and for advisors influence each other – for further steps to success

- When entrepreneurs open their minds in advanced vocational trainings one of the consequences is, that they ask for more advisor's support.
- In the next step, we could raise the qualification for advisors to new levels, like coaching or like the training for supporting the image work '*coach dialogue agriculture*'.
- After this, the step back again was that farmers asked for the skills for image work and we put them into some new trainings in the series of '*bus*'.
- And farmers make the next steps – they are asking for example for coaching tools.

So, ultimately, the trainings for entrepreneurs and for advisors and the interaction between both will place people in a position to be innovative and to initiate innovative ideas for an innovative agriculture.

10

Training young professionals for the job in the organic sector

A success story from Germany

Ann-Kathrin Spiegel. *FIBL, Germany*

How did it all start?

It probably started with the election of the socialist-green government in Germany in 2002. This government with its green minister of agriculture defined the ambitious aim to profoundly increase the area of organically farmed land in Germany up to 20% of the totally farmed area. To enable the organic sector in Germany to take the first steps on this path, the minister initiated the federal program for organic farming. This program intended to support the organic sector at very different levels, e.g. at research to improve knowledge and thus production on the field and processing, at farm level, at the level of public relations to increase demand etc.

One important aspect was, that for the conversion of a huge amount of farms, many organic advisers would be needed. These advisers should not only have a profound knowledge, they should also bring along soft skills in field such as communication. Soon, from within the organic sector, the idea was born to set up a trainee program for new organic advisers to ensure quality of advisers as well

as of converting farms. As the single organisations and farmers associations were too small to each set up a trainee program on their own, it was soon clear that the program would be supported by and offered for the whole sector together. Even more, the federal program for organic farming was, and still is up to today, co-funding the program, making the program affordable for the mostly small organisations. The first program was carried out by the Stiftung Ökologie und Landbau [*Foundation for Ecology and Agriculture*] on behalf of the Bundesanstalt für Landwirtschaft und Ernährung [*National Agency for Agriculture and Food*], which is managing the federal program for organic farming.

One important aspect was, that for the conversion toward organic farming, many organic advisers would be needed.

These advisers should not only have a profound knowledge, they should also bring with them soft skills in field such as communication.

In 2003, the first trainee class of organic adviser trainees started. 25 people were part of it, this number is still the maximum of a trainee class. The trainee program was set up to span one year: the trainee spends 11 months in the advisory service, working and receiving a training-on-the-job. Another month was reserved for training off-the-job. In this time, all the trainees, which were in their organisation scattered all across Germany came together in one place for one week in a row (four times in total) and received a profound training off the job which provided them with technical, personal/social and methodological competencies.

The project is organized and managed by a project coordinator and a part time project leader. They are responsible for the planning and management of the program. They are the contact persons for all applicants, trainees and companies and take care of the application procedure for the companies and for the trainees. There are two trainers, who are responsible for the training of the job. They are familiar with the organic sectors. Experts from the organic sectors are included as lecturers.

What's "new", what were the changes after the (first) lessons learned?

The first big change was the opening of the program for the whole organic sector. There were two main reasons for this step: the first was that the demand for new young professionals in the advisory organisations was soon satisfied. And the second was that other companies and parts of the organic sector such as processors, traders and certifiers were also suffering from a lack of young professionals. Thus the trainee program was further developed into a program for the whole sector, aiming at giving the trainees a profound understanding of the whole organic food chain. To make sure that the trainings contain what the trainees will need in their daily work live, a steering committee with representatives from the sector comes together regularly.

Since the opening of the program, the range of participating companies has become very broad and diverse. For example, a marketing agency which is working a lot in the organic sector has participated several times already. They profit a lot from making their young professionals who don't know much about agronomy or processing acquainted with the way organic products are made. At the same time, the trainees themselves are no less diverse regarding their professional backgrounds: they have studied of course agronomy and business, but also biology, marketing, oekotrophology, political sciences.

The trainee program was further developed into a program for the whole sector, aiming at giving the trainees a profound understanding of the whole organic food chain.

The program fosters building up networks, both between the trainees and between the other involved companies via the tutors.

A lot of the challenges in the organic sector can only be tackled by joint measures of the players in the food chain.

Community and networking has also become very important over the years. In general, the program networking is an important aspect. The program fosters building up networks, both between the trainees, for which this is especially important as they are just starting their careers. But it also fosters networking between the other involved companies via the tutors. A lot of the challenges in the organic sector (e.g. food safety and quality management, development of standards, animal welfare etc.) can only be tackled by joint measures of the players in the food chain. Young professionals who have passed this programme have the necessary broad perspective and the know – how to manage project and measures in this sense.

One newer aspect of the program is, that it also involves alumni in the network and also in the learning. At the last day of the off-the-job training all alumni are invited for a common lecture and for a final meeting at which the trainees present their project. Another important event, at which not only trainees, alumni and tutors come together is the annual meeting at the BioFach fair. The trainees organise an open stand party each year and thus introduce themselves and the program to a broad public within the organic sector.

In the last years, not only the participants, but also demands on the program and in the training content have changed, diversified and developed. There is a highly increasing demand for project management and quality management in the curriculum.

Fortunately, technology has developed in the last years as well, and the possibilities it offers are now used to adapt the program to the new needs. The introduction of an e-learning tool 5 years ago has opened up the possibility to change the character of the off-the-job modules profoundly. The reason is that by having the possibility to do web-based trainings, a good deal of the theoretical content does not have to be presented at the off-the-job-training, but can be done while the trainees are at their companies. This creates much more space to deepen soft skills, to discuss, ask questions and mainly to train the newly learned soft skills.

At the same time, the integration of web-based training is also a challenge for the companies. As already mentioned, most companies are rather small, which in general means that they expect the trainee to take over a relevant part of the workload. The more the trainee is involved in learning and working for the off-the-job parts of the program while he is actually sitting in his company, the more problems might arise. Sometime trainee might find themselves in a situation in which they should both work for the trainee program and do the daily work for the company. It is thus important that the tutors ensure a good balance for the trainees in which they find space to learn and to work.

This is also important, as another rather new element is part of the program: the common group project. This is a project which is realised by all trainees together over the first half of the trainee year. It not only strengthens the bond between the trainees, it also offers an important field to train working in multi-stakeholder projects, which become increasingly important in the organic sector. The trainees work at this project during their off-the-job times, but also during the on-the-job phases. They learn to tackle the challenge that all the project partners are scattered all over the country. At the same time, they have to pack the project work in their full working days. This once again requires tutors which are able to ensure that the workload stays in appropriate framework.

How does the program work from a tutor's point of view?

From a tutor's point of view, participating in the program is interesting out of several different perspectives: it is a possibility to connect with other professionals in the sector, it helps to rethink and improve one's own leadership quality, it brings in new ideas in the company and the own work and of course it helps to gain a young and motivated colleagues who will be well trained both in technical knowledge about the organic sector and in soft skills.

The first step to be taken is to apply for the program and to make it among the 25 companies which are selected every year to participate in the program. If you made it this far, the next step is to

advertise the trainee position and then select a matching person for the trainee job. In general, the idea is to find someone who is interested in a long term engagement who will in the future take over leadership responsibilities. As a tutor has several tasks and responsibilities regarding the trainee's formation, he is required to participate in a kick-off - workshop, in which he receives information about the program, his duties, the trainee's duties and gets tools for the training on the job and leadership. As the trainee has manifold tasks regarding the program, it is important the tutor understands these tasks and is able to support the trainee. This means to provide knowledge where needed, but mainly to provide enough time for the tasks, which can be a challenge in a busy working day.

How does the program work from a trainee's point of view?

From a trainee's perspective, the program paves the first steps into the organic sector. It provides the trainee both with the first points of contact for a network within the sector, and with profound knowledge about organic farming. At the same time, the trainee receives training in many soft skills he will need in the job. The off-the-job phases give him space to try out these new competencies he will afterwards use in practice in the on-the-job phase. The program is very diverse and contains many participatory elements.

Learning by doing is an important approach in the trainee program. Project management and the conduction of a project are for example not only learned in theory. The trainees conduct the above mentioned common and moreover each trainee has his own project which should be linked to his daily work in the company. The presentation of the projects at the last day of the off-the-job training has become a tradition, and the best presenter is even awarded with a price: the golden spade.

Most of the companies think that the program is helpful in gaining young professionals and in introducing them into the job, mainly because it teaches relevant competencies ("technical" and soft skills) and creates a living network.

Future of the program

In October 2015, another 25 trainees will finish the program. Their community project is already finished, an impressive explanation video about the future of organic farming and the questions and issues the sector will have to tackle in the coming years. But how will the trainee program itself go into the future? To get a clearer picture about the views and needs of the companies and thus have a basis to develop future plans, a survey for all companies who participated in the program was conducted. It showed that most of the companies worship the program. Most of the companies think that the program is helpful in gaining young

professionals and in introducing them into the job, mainly because it teaches relevant competencies ("technical" and soft skills) and creates a living network. It also eases the adjustment to the new job for the trainees. The needs and wishes for the future differ a lot among the companies: some ask for more trainee places in each year. Others wish that the time and resources that the trainees spend for the trainee project work should be reduced. The amount of time spent by the tutors for the trainee program is another point of discussion: on the one hand, some companies think that it should be reduced, on the other hand it is asked to involve the tutors and companies more in the program and to offer more possibilities for exchange between them.

Of course, changes and adaption for the future can (and at some points will) be made in these rather technical aspects. Other aspects demand rather for a strategic planning: The costs are rather high, and so is the risk that the highly qualified trainee finds another company after having finished the program. Another wish is to have the possibility for co-funding the costs for small companies. The costs are an important topic anyway. As mentioned above, the program is already co-funded by the German federal program for organic farming. This is a great support on the one hand, but it gives insecurity on the other hand, as the funding is only guaranteed for maximum four years in a row. Even more, most companies are already with the co-funding quite at the limit of what they can spend for qualifying young professionals. At the same time, most of the companies see no possibility, to replace it with own programs in a similar quality. Thus it might be a task for the whole organic sector to come up with ideas for ensuring a long term financing and thus a sound qualification of young professionals of the still growing sector.

11

It's not necessarily lonesome at the top!

Facilitated exchange for Managers of advisory organisations

Thomas Fisel

Entra, Germany

What is it all about?

To collect, spread and to transfer relevant knowledge is the core business of advisory organisations, in order to bring innovations to the farm level. On the other hand most advisory organisations are facing challenging changes themselves: Examples are: They have to create income in order to have a budget; they have to market their services actively; clients become less numerous and have more specific expectations, etcetera.

So, it is clear that intense exchange of knowledge and methods between advisory organisations has a high potential to improve the transfer of innovations to farmers. And as above described: the actual challenges are quite similar and there are a lot of small and middle sized organisations, who are dealing with it: they can learn from each other how they can manage these changes successful.

Intense exchange of knowledge and methods between advisory organisations has a high potential to improve the transfer of innovations to farmers.

In Germany and neighbouring countries such exchange of advisory methods already exists for advisors (e.g. international meetings of IALB). But there was no systematic exchange for managers of advisory organisations about management of advisory organisations and about best practices, how the above mentioned changes can be managed. When there was exchange, it was mainly between similar organisations (public, NGO, private), but not between these different types of organisations.

There are understandable reasons why this kind of exchange between managers is not so easy to establish: From which organisation can we learn? Which one is similar to ours but not a competitor? Why should we allow others to make shortcuts, while ours had a lot of “curbs” and “deviations”? Will the others appreciate our efforts and experiences? Are we providing our valuable unique selling points to others for free? Will we have sufficient “return on investment”, when we share our knowledge and experiences?

This story aims to show how such an exchange between advisory organisations can be initiated and how it was facilitated in order to create benefit and positive impact for the organisations and in the end for the farmers.

Who took the initiative and what happened?

Fifteen years ago some advisors – mainly from advisory services for organic farmers – were looking for best practices, how advisory work could become more effective and efficient. They looked at other sectors of economy and identified systemic coaching as a promising approach to improve output and impact of advisory work. Together with the Andreas Hermes Akademie, an academy owned by the German farmers association, they initiated a development project, where coaching methods for farmer groups were developed and tested in practice with 300 farmers from 2001 until

2003. They were invited to a congress in Denmark in 2003 by the National Centre of the Danish Advisory Service (DLBR). From there it started a continuous contact with the Danish colleagues with several mutual visits and a very fruitful exchange of tools and methods with the objective to learn from each other how to make advisory work more effective and efficient.

Furthermore they realised that the Danish Advisory Service had good answers for some of the challenges, which they were actually facing:

- How to manage the change from a free offer or a membership based billing system to a service related billing system?
- How to market advisory services successfully?
- How to integrate research and advisory work better and how to use the possible synergies?
- Which smart tools for strategic advice of farmers are available and how to implement them?

The Germans were surprised to see that these experiences were mostly unknown in German advisory organisations, even in the big ones. They realised that exchange between managers of advisory organisations, at the national level as well as at the international level, was quite rare, occasional and rather superficial, although they were facing a lot of similar challenges.

And so it came that some of the German advisors began to organise such an exchange, in cooperation with Andreas Hermes Akademie and ENTRa: a small private consultancy enterprise, where some of them were partners. They organised a number of activities:

They realised that exchange between managers of advisory organisations was quite rare, and rather superficial, although they were facing a lot of similar challenges.

- A first workshop on advisory management in the framework of the education programme for young advisors (Trainee-program Ökologischer Landbau) in 2003
- International Conferences on advisory management and capacity building in cooperation with Andreas Hermes Akademie in Bonn (2005, 2006, 2007).
- An international networking workshop called “Forum Beratung” organised by ENTRa in 2011

How developed it further and how was the feedback?

At the beginning, the majority of the participants in these exchange events were advisors and not managers. But from conference to conference the number of managers and leaders increased.

The managers who participated in these meetings gave a very positive feedback. They realised themselves that a lot of other organisations were working on the same questions. They received suggestions and answers to relevant questions they took along.

At first there were many lectures of experts in these meetings and conferences. From time to time we increased the participation and the share of facilitated exchange between participants. Their role became more and more active. The informal and semi-public character of these meetings gave them the opportunity to speak about difficulties and failures. They had a competent audience, where they could present organisational improvements and successes, which they had achieved.

Obviously it is often easier to accept suggestion from a stranger than from your neighbour. Presentations by managers from other branches or examples from other countries, which showed how they did overcome similar challenges in their organisation, often received the best feedback and enlarged the perspective of the participants.

Which innovative questions and ideas were discussed and exchanged?

There was not only one, but a whole bundle of possible innovations and new ideas that were exchanged.

Examples are:

- **Coaching as advisory tool:** In how far is it applicable for farmers and how can it be introduced?
- **Active marketing of paid advisory services:** How can advisors be motivated and trained for marketing their services actively and to adopt an entrepreneurial attitude?
- **Appropriate strategy advice on farms:** Which tools and procedures are suitable for reaching small and middle sized farms?
- **Designing advisory offers:** Which billing systems exist, that are attractive for the client, and also profitable and good to handle for the organisation? ("Service packages" or "fee per hour")
- **Teambuilding in advisory organisations:** In how far is team organisation promising and how can well-functioning advisory teams be achieved?

Which innovations came into practice and which is the impact?

Introduction of coaching methods in rural advisory

Coaching and its benefit for advisory work was an important issue of the exchange. The idea of coaching is meanwhile quite known in German advisory organisations. Since 10 years Andreas Hermes Akademie in cooperation with Entra and VLK (Verband der Landwirtschaftskammern [*Association of Chambers of Agriculture*]) is offering a one-year-training course on coaching for rural advisors. Since 9 years the LEL (Landesanstalt für die Entwicklung der Landwirtschaft in Baden Württemberg: [*Agency for Agricultural Development*]) is offering the same training course on coaching for rural advisors, which is partly funded by the federal government of Baden Württemberg. 180 advisors have passed these courses and use coaching tools in their advisory practice. Farmers are taking benefit, because advisory services in Germany are widening their offer and are better able to support farmers in management questions and farm development, where "soft skills" often play an important role.

Strategy advisory for small and middle sized farms

The Bioland Beratung GmbH [*Bioland Advisory Service Ltd*] took up the idea to develop appropriate strategy advisory tools from the above mentioned exchange with Denmark. Within the frame of an applied research project, Bioland, together with the Von-Thünen-Institute in Braunschweig, developed a set of tools which is called "Standortbestimmung" [*location determination*]. "Standortbestimmung" was presented several times at the above mentioned exchange meetings of advisory organisations and is meanwhile used by many advisors and advisory organisations in Germany and Austria. It is also part of the above mentioned training course on coaching. The Federal

State of Baden Württemberg is actually establishing a smart strategy advisory tool for family farms (called “Betriebscheck”: *Enterprise check*) which was derived from “Standortbestimmung”. “Betriebscheck” will be a comprehensive consulting offer for farms in Baden Württemberg which is freely available for all farms in Baden Württemberg. Especially small farms, and farmer families who are not a member or client of an advisory service, can profit from this offer.

Teamwork and cooperation of advisors

Several times “team organisation and advisor roles towards the client” and “cross selling” were important issues. Crucial point in this concept is to define roles and rules, when different advisors are working with the same client. Another objective is motivating advisors to bring the services of other colleagues and partners, under the attention of the client. The concept of “advisory teams” and “cross selling” between advisors was taken up and successfully introduced by the Landwirtschaftskammer Nordrhein – Westfalen, one of the biggest advisory organisations in Germany. Many other organisations are also working on that issue, because advisors are more and more specialised and should cooperate in order to bring the best service to the client. The idea of diverse advisor profiles with defined roles is meanwhile spread in a lot of organisations (eg. a client manager with a coach profile cares about farm development and integrates more specialised advisors in the advisory process; all being in continuous exchange and knowing from each other).

Marketing and active selling

Marketing is an uprising topic in advisory organisations in Germany. Marketing trainings for Rural Advisors become more and more usual. The concern of many advisors against active selling, which was typical in the last decades, is changing towards a positive marketing attitude. The exchange helped the managers to see the importance of marketing, and gave them ideas on the way mind-sets of advisors could be changed.

Designing of offers and billing of advisory services

There is no “magic bullet” or a single answer how advisory offers and billing systems should be designed for having satisfied clients and satisfied advisory organisations. The question is very complex and a lot of factors have to be taken in consideration. But for instance Bioland Beratung as well as Landwirtschaftskammer Nordrhein-Westfalen, who were intensely participating in the above mentioned manager exchange, are leading organisations regarding the development of paid advisory offers. Many other organisations have been visiting them and have taken over their concepts and experiences.

Which were the driving and hindering forces in this process?

The persons who initiated this exchange and networking process were very engaged and curious. They came from the advisory practice, they were really concerned on the topic and they took initiative. Behind them were organisations (Bioland, Entra, Andreas Hermes Akademie), which gave them the necessary means to care about the future and to search for best practices somewhere else. Some of them were free lancers in the framework of Entra and Andreas Hermes Academy. They had a genuine interest, and furthermore the freedom to make “products and services” from the new ideas and to spread them. On the other hand, open minded and well known organisations like Andreas Hermes Akademie and Entra had the organisational and administrative means in order to bring these ideas to the earth.

It was very helpful that some of the key persons had good connections to other branches and other countries. This was important in order to identify best practices, suggestions and inspiring experts from outside. The experts (sometimes from large enterprises like Toyota Deutschland GmbH, Audi AG, Festo AG) enjoyed also the exchange! They were in this "foreign environment" very open, spoke very freely about bad and good experiences and enjoyed this, because none of their stakeholders was in the audience.

Managers of advisory organisations and also experts from outside have little time. They will only attend in those exchange forums if they see a high benefit. They don't want only to sit and to listen, but rather ask, discuss and also to present their own ideas. Furthermore it is crucial to create an appropriate framework of conditions, and to stimulate them talking openly about good and bad things. Thorough preparation and professional facilitation are essential prerequisites in order to make it interesting and to create the necessary trust.

Although most participants took concrete purposes with them from the exchange meetings, a lot of these ideas perish in the everyday life. So, it was important to offer additional services (e.g. advisory, seminars, training) that helped them to realise the knowledge transfer and to start the intended changes.

Hindering forces and difficulties, and how we coped with it

It needed endurance to create a positive image of the exchange meetings and to make them well known in the target group. Especially in the beginning it is important that exchange events take place, although participation is not satisfying.

Especially the time of the managers is extremely scarce, and a lot of managers, who agreed to take part in the exchange, did not register at the end. We invited them often personally by telephone to give them the last kick to register.

In our case the initiative to organise the next exchange forum relied often on one or two persons. When these persons were too busy with other things, the forum didn't take place (e.g. years 2008, 2009, 2010 and also at present. It would be helpful to have an initiative group and more persons involved on the one hand side. A regular turnover and long term planning of the meetings is important.

It is not easy to make those meetings profitable or at least cost covering. A certain idealism and also some positive side effects are necessary in order to make it attractive for those who take the financial responsibility.

Future perspectives

The above described impacts of the exchange meetings are already through the "critical phase" and have good chances to be sustainable.

After a break of several years Entra is planning to continue also the exchange forums in 2016. Some of the managers actively asked the initiators when the next meetings will take place. We will

exchange with IALB and/or EUFRAS (European Forum on Rural Advisory Services), how we can combine our activities with IALB and/or EUFRAS in order to create synergies.

Several talks and discussions on occasion of an input, the author made during the IALB – Meeting in Switzerland on 15./16./17. May 2015 showed that there is a strong interest in continuation and further development of such exchange. It will help the advisory organisation to be a model for their clients regarding change management. And it will help them to use their resources as much as possible for their clients!

12

From top down to bottom up

The double benefit of greater buy-in and new ideas for innovation support programmes

Tom Kelly, Teagasc, Ireland

This story is about the experience of a national agricultural development agency (Teagasc, Ireland), in trying to influence programme development and delivery through bottom up processes where these traditionally had been top down. The objective of giving ownership to farmers and other stakeholders in return for ideas and suggestions has a double benefit. Firstly, it improved the relevance of programmed activity, and secondly, it improved the receptiveness and buy-in of the audience.

Background

Teagasc, the Irish Agriculture and Food Development Authority, is an organisation, with approximately 1,200 staff. Teagasc is responsible for the development and delivery of national research, education and advisory programmes to the agri-food sector. Traditionally, Teagasc developed its programmes using a top-down internal process, whereby proposals for new programmes/activities were approved by the Teagasc Authority (Board) and the Irish Department of Agriculture (Ministry). While the members of the Teagasc Authority represent institutional, industry and farmer stakeholders, their contribution to programme development is mostly at a strategic level rather than an operational level.

The objective of giving ownership to farmers and other stakeholders in return for ideas and suggestions has a double benefit. It first of all improves the relevance of programmed activity and secondly improves the receptiveness of the audience.

The ideas for programmes in the 1980's and 90's were generated and developed by an internal group of senior experts known as the 'Chief Advisors' in collaboration with the Heads of Teagasc Research Programmes. Programme planning was a top down process with little formal engagement with stakeholders. These were publically funded programmes and were linked to strategic industry and organisational objectives, with clear logic, justification, well defined activities, and outcomes. However, in the eyes of progressive advisers and farmers these programmes were dull, repetitive and unattractive. There were ownership issues with these programmes by Teagasc advisory staff and with farmers and the public.

The need for change

In the early 1990's, dairy co-operatives, and other stakeholders, began to establish 'Joint Dairy Industry Programmes', which were very specific programmes, with clearly defined objectives and outcomes. Farmers were actively involved in the development of these joint dairy industry programmes, which were demanding of technology and business support and better advisory methods. This was a major learning point for Teagasc particularly the advisory service who were more comfortable with top down programing and traditional advisory methods.

Initiating Change

In October 2004, Teagasc set-up **seven commodity groups** (stakeholder groups) to help develop its annual knowledge transfer programmes. This was driven by a Teagasc desire to re-launch a new Business and Technology Service and to focus advisers on providing technology and business support to their clients. In previous years, advisers were focused on servicing the scheme needs of farmers (mainly the Rural Environmental Protection Scheme) and generating an income from these services..

The setup of seven commodity teams to help the development of focused Business and Technology annual programmes.

Each commodity group was focused either on a specific enterprise (Dairy, Beef, Crops etc.), or a specific discipline (Farm Management, Environment etc.). Each commodity group was comprised of approximately 15 stakeholders representing various aspects of the enterprise or discipline. Teagasc organised and facilitated meetings with each of the commodity groups. Before the meeting, the group members were provided with the annual programme and review documents so they would be familiar with the activities and levels of achievement of previous years. Using a workshop format the group members were challenged to identify current or pending issues and actions/solutions affecting them, their farms or the industry. This was a key requirement as it challenged current thinking around our advisory practices/activities. The group then ranked the issues and actions in order of priority. The results of the groups were refined into programme objectives, activities and key performance indicators by a select group of researchers, specialist staff and advisers. These were then proposed to Teagasc Management and subsequently, they were included in the annual business plans. The commodity groups were encouraged to meet at least twice per year. The second meeting was defined as a review meeting where new issues could emerge or new actions could be proposed.

Challenges

As with any change, Teagasc was confronted with a few challenges when it first established the commodity groups. The first challenge was how to avoid these groups becoming lobby groups or assuming the role already filled by the Teagasc Authority. It would have been very convenient to ask the major farm organisations to nominate some of their elected farmer representatives to participate on the groups, however, if you asked one you would have to ask all four farmer organisations. So, it was decided to get the local Teagasc managers of the advisory service to select the farmer representatives from people who advisors already knew had an interest in development. Great care was taken in the selection of a farmer to chair each group. Regardless of their background, the leadership qualities of the individuals were important. All members of the commodity groups were offered compensation for their travel costs.

The initial commodity teams were successful in focusing the Business and Technology Service advisers on key issues of farm profitability and resource efficiency at a time when EU CAP payments were decoupled and major capital investment took place on farms. Within a short space of time, the role of the commodity groups expanded to deal with issues and activities related to research and training. Due to the success of the initial commodity groups, Teagasc had established 15 groups by 2010, including specialised horticulture groups. The groups were re-named **Stakeholder Consultative Groups** with a broad mandate to support programming in research and knowledge transfer activities.

Where did the innovation come from?

In 2002, Teagasc established an agricultural education forum, led by Mr Michael Galvin, then a Regional Director, and Mr Paddy Browne, then Head of Education. This forum was chaired by Professor John Coolahan, a former president of Maynooth University, and had a broad representative membership of academics, farmers and a student representative. The forum had a specific high level role in advising Teagasc on the education function and the complexities of linking with other education providers, student placements and progression options. Many of these issues had been identified as deficiencies in a task force report that looked at agricultural education some years previously (Report of the Task force on Agricultural Education and Training, 2000) and the Education Forum supported the incremental changes needed to comprehensively deal with these issues.

Who set up the new stakeholder groups (Commodity Groups)?

In 2004, the initial commodity groups were set up by Mr Pat Boyle, former Head of Advisory and the Advisory Leadership Team using an agreed format. The first terms of reference and operating procedure was developed by Dr Tom Kelly, Head of Farm Management along with the advisory leadership team (see Appendix 1). As the success of the original groups became apparent, the format, name, and membership, changed to reflect the internal changes in Teagasc programmes and also the needs of the stakeholders.

Leadership and change management issues

There were some concerns that these groups would be difficult to control and that they would impact negatively on the programmes. These concerns were shared across the organisation; Authority members initially felt that some of their power was being taken away; also, programme managers felt that their role in programming decisions was being diminished. Advisory staff feared being accountable to stakeholders, and that it was introducing another layer of programme accountability which was unnecessary and would only serve to make their work more difficult. However, many staff embraced the idea and made it work and it changed the programming system for the better.

New ways to influence change

During the early meetings of the commodity groups, members tended to raise issues which were clearly related to government and EU policy and, were outside the scope of the advisory service and Teagasc. It was important for Teagasc to focus the group on linking current issues to actions that could be addressed by Teagasc.

Some of the groups performed their role very effectively. In one particular case, the tillage crops commodity group set up a sub-group to make a submission to government relating to the need for their enterprises to be part of a new strategic plan for agriculture and food called *Food Harvest 2020*. In addition, the dairy commodity group were the initiators of the need for new demonstration farm called "Greenfield" which was subsequently established in 2010. This farm is very innovative in demonstrating expansion and dairy conversion possibilities (<http://www.greenfelddairy.ie/>).

The beef commodity group were also very involved in setting up a new suckler cow to beef demonstration/research unit at the Grange research farm; some of the group formed a separate support committee for this project, with regular input into the decisions on the farm.

Risks and worries, threats to power base

It was a brave move for Teagasc to open the doors and invite in stakeholders to participate in a formal decision making forum. Initial worries were not well founded as participants were, by and large, very supportive and willing to give advice freely. The real and genuine interest from stakeholders was surprising and Teagasc gave a clear message that all suggestions would be considered and that regular feedback would be given to the group. It was critical for Teagasc staff to listen attentively and to act on the issues that arose from the groups meetings. This was the key element of developing a bottom up approach.

One of the major difficulties with the groups is to get the farmers to step down from the group when their term finishes. As many of the projects within the programmes carry on for years, the members want to remain on the group to follow them through.

The small wins

In 2008 and again in 2014, prompted by its Director, Professor Gerry Boyle, Teagasc held a conference and workshop for all the stakeholders involved in the commodity groups. The conference highlighted the achievements of the groups and provided group members with an opportunity to meet and network. There was a positive and enthusiastic atmosphere at both these events with group members eager to share their positive experiences with the other groups.

Managing expectations

Managing expectations was a difficult task and it was clear that some members had expectations which were beyond the terms of reference or were very ambitious; the chairpersons of the groups played an important role in dealing with expectations and were essential in keeping the group focused.

Lessons Learned

The major lessons learned are that stakeholders are willing to give their time freely to a process when they feel they are listened to and where their views and concerns contribute to their own and the wider public good.

There is no better way to develop programmes and activity plans than by letting them emerge as ideas and grounding them in reality by discussing them within the group of stakeholders most affected.

Giving ownership of your work to others is not a threat, it is a tool to ensure that your work is more appreciated, valued and used.

The process of establishing commodity groups and stakeholder consultative groups has led to a greater appreciation of Teagasc, by stakeholders. It is now perceived to be a more relevant organisation across its breadth of operations and the value of its activities and in terms of research, advisory and education supports for food and agriculture are more appreciated.

There is no better way to develop programmes and activity plans than by letting them emerge as ideas and grounding them in reality by discussing them within the group of stakeholders most affected by them.

Appendix 1: Terms of Reference for Teagasc Commodity Groups 2004-2005

Protocol for Advisory/Research Commodity Groups 2004/5

Commodity groups will help Teagasc focus its activities and services delivering better value for money to its stakeholders. They will also challenge internal Teagasc thinking and stimulate innovation and discipline in programme planning and delivery. Improved integration of advisory and research will be achieved.

Terms of Reference

Commodity groups will act in an advisory capacity and provide feedback to Teagasc research and advisory directorates in terms of:

- Programme development
- Strategic direction
- Programme review and evaluation

There will be seven Commodity groups. Horizontal programme areas such as Adult Education, Financial Management, Soils, Animal Nutrition, Options Analysis etc. should be covered by one or more of these teams.

7 Commodity Groups:

- Dairy
- Sheep
- Cattle
- Tillage
- Environment
- Rural Development
- Farm Management

Membership

- Six to nine farmers (clients of Teagasc) will represent broad geographic areas on each group.
- Four to six industry representatives.
- Advisory and Research Directors and relevant programme managers and Head of Centre will represent Teagasc.

Total meeting size should not exceed **20**.

Administration

Each group should be chaired by a non Teagasc person who would be a champion and leader to push the group to be innovative. There should be at least 2 meetings per annum. Programme Managers / Heads of Centre should arrange for recorders / secretarial back up. A planning meeting will be held in Sept/Oct and a review (current and past year) meeting in Jan/Feb.

Facilitators

The meeting will be facilitated by the relevant programme manager/ head of centre or an outside person may facilitate the review and development process.

Presentation

Outside respected authorities and Teagasc experts may on occasion give a presentation of not more than 20 minutes at the start of a meeting to outline facts, or outline a vision of industry direction etc. as a discussion opener.

Rules

- Farmer members must be clients of Teagasc
- One quarter of membership rotates each year

- Half of the farmer membership under 35 years of age
- Farmers nominated must be agreed at Programme Manager and Head of Centre level.
- Farmers must be technically competent and capable of representing other farmers for the geographic area they represent.
- Minutes of the meeting should be made available to relevant Teagasc staff
- Expenses paid to attend meetings.

13

Innovation in Rural Areas with Agri - Food Companies

Milk Vending Machine As An Example

Amaia Garrastazu, Damiana Maiz, Lurdes Nafarrete, Pilar Riaño
HAZI (as part of Lursail), Basque Country, Spain

A network to connect enterprises to resources for innovation

ITERA_AA aims at covering the assistance and accompaniment needs of innovation in terms of products, organisation, marketing and human resources. ITERA_AA emerged as a result of a previous INTERREG SUDOE 2009-2012 project called RIDER. The project created a network for access to the innovation of rural enterprises. This network helped to assess the limitations of the transfer of innovation processes to microbusinesses and to identify their needs of assistance.

The milestones of the project:

- Maintain the added value of the agricultural production in the territories and develop "differentiated" products for the market.
- Bring the offer and the supply closer to the territorial needs.
- Start from the needs of the companies to build up trainings and paths for assistance, making existing resources more affordable.

From the Basque Country, the partner organisation was Lursail through Sergal (Advisory service), which was the official partner in the Project. Lursail, is an organisation that groups 5 advisory services of the agri-food sector and HAZI. HAZI has co-financed the 25% of the project.

In the Basque Country the initiative came with a bottom-up approach, starting from the needs of support in terms of product innovation and marketing of dairy farms that were partners of 4 advisory bodies: Sergal, Abelur, Lorra and Lurgintza.

Developed activities

The developed and implemented actions from the whole ITERA_AA consortium were the base to boost the following milestones:

- **Cooperation between partners:**
 - Disseminate the innovation between agricultural microenterprises for the structuration of the organisation of the economic branches with local added value.
 - Consolidate the methodological approaches of each partner in the construction of local governance.
- **Capitalisation:**
 - Capitalise the common results of the local testing of different SUDOE cooperation projects or others, with the aim of creating an information network and an expert led survey.

In the Basque Country the project consisted of a pilot project tracking 8 innovative dairy holdings (in terms of product and innovation) to thereby analyse the needs of farms that want to innovate and identify aspects that affect the project viability (which are positive and which negative). In addition, during the pilot, the farms received assistance during all the process of labelling of the product or the certification of the products as integrated ones.

There is not a common and crucial intervention in all the participant farms because it depends on many factors and each one has its own specificities. In this context, the technical assistance provided by the advisory bodies both in terms of advice and in terms of making existing resources more affordable, was crucial.

Lursail has participated in this project because it believes that the advice is a key tool “to promote innovation and cooperation, improve the competitiveness of the primary products and boost the development of the knowledge base in rural areas”.

Interview with one of the participant farmers: Bordaxar Farm.
Iñaki Zapirain Olaziregi.

a. Why did you decide to participate in the ITERA_AA initiative?

Actually, it was my advisor who encouraged me to participate. He explained me how from Lursail they wanted to work on a project in terms of product innovation and marketing in milk cattle farms in the Basque Country, and that it would be interesting to have my experience and vision.

Abelur and the Rural Development Agency (ADR) were those who accompanied me at the beginning of the project. The ADR helped me with everything related to licenses to install the vending machines for the direct milk selling and the Abelur Advisory Centre, assessed me throughout the process.

b. Why did you decide to start this way of commercialisation and marketing?

My farm arrived to 155 cows to find profitability and I started to have problems not only with the milk quota but also with the liquid manure management due to the characteristics of the area (high population density) where my farm is located, with the consequent problems with the neighbours.

Therefore, I had to find ways to reduce the herd of my farm to a dimension in which the above two problems were solved, but maintaining the profitability of the farm. That's why I decided to install vending machines, in order to increase the added value of a part of milk I produce, selling it directly together with the marketing of the product generated in my farm.

Right now the herd has around 88 cows and I sell 10% of my production through vending machines, this allows me to maintain and even increase the profitability while producing less milk litters.

c. You think is an innovative initiative? Why?

Yes, I think so. In the Basque Country, there wasn't any vending machine for milk selling and the 97% of the milk production of the Basque Country it's commercialised through a Centralised dairy. In addition, this new way of commercialisation has a great acceptance in the area.

d. Which were the activities developed in your farms?

Mainly investments that were used not just for the acquisition of the machines but also to buy a pasteurisation unit, refrigeration tanks, a vehicle for the transport and the refurbishment works of the facilities.

Furthermore this initiative required a reorganisation of the work to develop daily on the farm, including:

- Greater commitment of manpower (hiring a new employee).
- Daily pasteurisation of the milk to be sold in the vending machines.
- Transport and distribution of the pasteurised milk to each of the machines.
- Cleaning of the facilities both in the pasteurisation area as well as the units itself.
- Telephone service for the costumers.

e. Which difficulties you had to face during the development of the initiative?

The main difficulty was to find external financing needed to tackle the project. Don't forget that we are talking about a significant volume of investment. The grant awarded by the Basque Government was very important (40% of the total) but this aid is received once the investments are done and certified, so the whole funding for the project implementation had to be found before its start.

The beginnings were complicated due to the need to properly manage new tasks required by the initiative, unknown until then.

In addition, at the beginning, one of the vending machines had to be moved to a new location since the previous was not interesting for the customers and the results were not good.

f. Which were the results? Are you satisfied with them?

The results have been satisfactory. Even if it's true that during the first months of the implementation of the project, the results were even better than expected, the time has shown a slightly downward stabilization of the milk marketed through the machines.

But as I mentioned above, this project has allowed me to reduce the number of cows in my herd, solving two major problems for the continuity of my business and achieving sustained profitability.

g. Which is your future perspective?

Continue working in this line of commercialisation and marketing, besides studying the possibility of incorporating new products to machines, diversifying the product offered to consumers.

14

Team work for farm advice

Coping with international crises

Kaspars Zurins

LLKC: Latvian Rural Advisory and Training Centre

The dairy sector became unstable

Due to the world economic crisis in 2008, the dairy sector had become unstable and the purchase price of dairy milk has considerably decreased. It was very essential to give a helping hand to farmers, which were struggling with bank payments and farm operating costs.

A plan for helping farmers through

Latvian Rural Advisory and Training Centre (LLKC) in cooperation with Ministry of Agriculture came up with a plan to advice the farms which have faced the financial difficulties. It resulted in a Rural Network funding program, which was created to help such farms.

The target of the program was to elaborate long term production plan, based on actual situation in agriculture sector, farm potential and financial possibilities. The tasks to achieve it were:

1. Introduction with farm and gathering basic data about production;
2. Evaluation of used methods for running farm;
3. Elaboration of Cash flow, models for cash flow stabilization;
4. Development of production plan for next 3-5 year period

Implementation

Farmers could apply for the program through an open announcement on 2009 and 2010. LLKC received 140 applications from different farms from whole territory of Latvia:

- 97 dairy farms (69%)
- 31 crop farms (22%);
- 12 other farms (Goat, sheep, etc. 9%)

To provide the service, LLKC developed 8 **advisory teams** for elaboration of production plans (48 specialists involved). Teams consisted of:

- Team leader
- Specialist in economy
- Livestock advisor
- Crop advisor and
- Book-keeping advisor.

In the work process, teams followed such steps:

1. Introduction to the farm;
2. Elaboration of a production plan based of the existing farming model. Go / no go decision;
3. Elaboration of the production plan for 3-5 years (different scenarios of development have been elaborated), with cash flow, field fertilization plans, breeding plans, gross margin calculations for each sector of production;
4. Discussion with farm major creditors about the production plan until consensus decisions has been reached.

The result: very few drop-outs

As a result farms in collaboration with advisors developed production and optimization plans for 5 years. Advisors prepared a full analysis of the farm economic and operations. There was provided advice how to increase productivity and production quality in cattle breeding and crop production sectors and recommendations for further investments.

Very important part of the programme was the opportunity to convince farm creditors/banks to postpone the payments on basis of distinct calculations of current and future income. Also a huge step for some farms was the opportunity to get additional loans for finalization of the launched projects in order to optimize the farm operation.

Questionnaire done in 2011 showed effectiveness of the work done. Only 3 enterprises out of 140 have closed their business.

Lessons learned

Farmers – It is possible to operate cheaper and it is very important to weight out each investment carefully.

Banks – There is no need to react very strict on situations when farms have some operational problems, but discuss and get agreement about steps to be taken for solutions, which can be implemented in one or two year period.

Advisors – Team work give good opportunity to see farm problem from different aspects and it speeds up elaboration of future plans. There were indicated problem areas in different understanding and used economic calculation methods in different farms. Unified calculation methods and tools could help develop better understanding between farmers, advisors and bank sector.

New challenges: the sanctions for Russia

During 2014 Russian Federation laid embargo on different food products, including dairy production. As a result the markets are narrowed, competition is raising and the dairy production prices are dropping again.

The collaboration continues

Banks are willing to give or postpone the loans, but there is need for clearly comparable way of calculating the costs. In year 2014 was established working group of experts including scientists, advisors and farmers representatives to discuss and elaborate models for economic analyses in farm level. Right now the actual challenge is to provide an agreed principle on cost accounting in dairy sector. To achieve it, advisory experts from Latvian Rural Advisory and Training centre, farmers and scientists from University of Agriculture of Latvia and University of Latvia are working in united team.

Expected results

Clearly comparable system of calculation of costs for dairy farms.

15

Under the Volcano

Innovation in agriculture in a French overseas territory

Manuel Gerard
ACTA & CIRAD, France



Under the volcano

In an island setting with specific social features, Guadeloupe looks like a volcano ready to explode: exodus of youth to mainland France, pervasive unemployment, aging population, recurrent need for recognition for taking account of slavery, are the components of a genuine social eruptive magma.

In 2009, the volcano wakes up. Claims of the population, especially on the prices of raw materials (petrol, food, etc.), lead to total blockade of the island and all of the activity for more than a month. The movement spreads to other DOM² with comparable context (Martinique, La Réunion). The national Overseas Convention then leads a reflection aimed at containing this eruptive process.



The desire to develop food production for the local population gives a new impetus to the diversification of the plant and animal sectors, without upsetting the balance of traditional export crops

Figure 1: The map of Guadeloupe

For the agricultural sector still in full structuring, these events have changed minds. Therefore, the desire to develop food production for the local population gives a new impetus to the diversification of the plant and animal sectors, without upsetting the balance of traditional export crops (sugar cane and banana). The Guadeloupian population, forced to refuel directly from producers during the crisis, is waiting for an agriculture that regularly provides quality commodities. It is even more demanding because of the crisis of chlordecone®: this pesticide for banana plantations - banned in the USA since 1976 but used in the West Indies until 1993 - has left lasting traces, both in people's minds and on the health status of the population and of the environment.

² DOM : départements d'outre-mer [overseas territories.]

For Lucien Degras, 2009 is only a step in the evolution of society and Guadeloupian agriculture.

"These events have had an effect on people beyond agriculture. City dwellers have seen farmers more closely and there is a re-appropriation of the local realities, which our farmers have taken advantage of by creating local markets. 2009 was the moment to re-take traditional peasant agriculture into account. This evolution has been underground for many years. Guadeloupe is still under a lead blanket, the effect of which is that the Regions still do not have the freedom to undertake what they know is good for their development. There is a need to give weight to the local production and to draw inspiration from its production systems so as to optimize them, via the RITA between others, but this should primarily focus on listening to the people."

Early 2011, during a visit in Guadeloupe and Martinique, the President of the French Republic announced the creation of technical Institutes to support the development of local production. By chance, such institutions were already newly created.

At that time, plant and animal diversification sectors are still fragile. Professional organisations have been existing for a few years. However they do not fully play their role yet. They are developing thanks to the support of the POSEI (the European programme in favour of the outermost regions) but they still only represent a small portion of production, whereas family farming involves a large part of the agricultural population.

The Chamber of Agriculture is designated to take care of this large and diverse population, which cannot be overlooked when it comes to supplying the market. However, the internal problems that regularly shake the consular Chamber do not allow for the effective development of these small farms: in this context, sustainable developments of agriculture often come from the public services, working with some professionals at the forefront of reflections and techniques.



The Grand Temoin: Lucien Degras:

Born in Martinique 88 years ago, Lucien Degras likes to recall that he was part of the "commando" which, in 1964, was sent to Guadeloupe to create the INRA centre as a multidisciplinary research centre. With all the love he has for the traditional agriculture of the West Indies, and that we feel from his first words, that Lucien Degras brings his perspective on social events that occurred in Guadeloupe in 2009 and on the place of agriculture in this territory.

It is especially since 1967 that Lucien Degras, solicited for the Presidency of the Centre, has kept being a player of agricultural research, while working on sugarcane, forage plants, the creole garden and crop plants, including the development of Yam. In 1981, Lucien Degras published a text on the prospects of Guadeloupian agriculture in the *Caribbean Historial*. He was the disciple of Aimé Césaire and has thus contributed to a vision of policy, the aim of which is to directly affect the well-being of the population.

On the other hand, Guadeloupe is fortunate that two research centres are present on its territory: CIRAD and INRA are particularly important in terms of size, areas of action and scientific production. Unfortunately, they have difficulties to concretely impact local farmers, except for the particularly well-organised banana sector which is under a complete environmental evolution. Only a minority of structures and farmers that is able to understand and apply innovation, benefit from the results of research.

Lucien Degras underlines this lack of links between researchers and farmers: *"It's been 30 years that it is claimed that the activity of a researcher must have an impact on the concrete development. The road remains long to reach this goal: it will take time until the research activity is validated through its actual impacts on agricultural development."*

In mid-2011, this is the context in which the actors of diversification in the plant and animal sectors attend the irruption of RITA, the networks for innovation and agricultural transfer (Réseaux d'Innovation et de Transfert Agricole).

In a given territory, the RITA gather actors belonging to research, agricultural development (Chambers of Agriculture, technical institutes, professional organisations), the services of the State and local authorities. Together, they identify and select development projects consistent with the needs of farmers and the territory as a whole. They are also stakeholders in the monitoring of the implementation of the actions.

Harry Oozier-Lafontaine, Head of the INRA Antilles-Guyane centre:

"Historically, there were small tensions on the positioning of stakeholders in agricultural research. Through the same ambitions to accelerate agro-ecological transition of our agriculture, a differentiated strategy was adopted. Following the recommendations of the National Overseas Convention, CIRAD has turned to export commodities, like the dessert banana, and INRA has focused on local demand-oriented food crops in link with small-scale family agriculture, with a perspective of economic and agri-environmental sustainability".

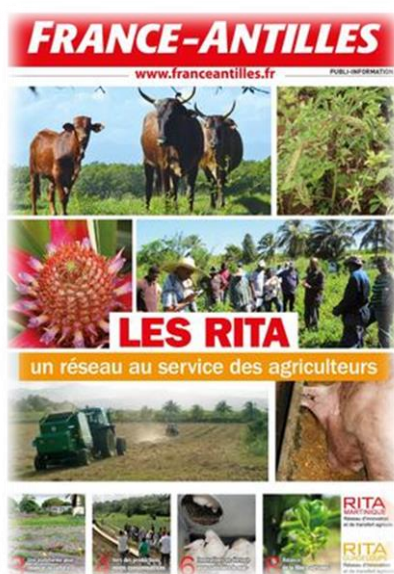


Figure 2: Newspaper, announcing the RITA programme

Technical institutes are responsible for bridging the gap between research and the production sector: experimentation, validation, change of scale and applications. In each Overseas Department, a RITA facilitator coordinates the scheme.

At national level, the RITA is coordinated by ACTA and CIRAD: in particular, they are in charge of the "transfer/replication" dimensions within each DOM as well as between DOMs: indeed, innovation without transfer would have a very limited interest.

The governance of the RITA is straightforward. It is based on a Steering Committee chaired by a representative of the State. Thus the Director of agriculture, food and forest (DAAF) of Guadeloupe introduces transparency and flexibility in the

scheme by inviting all stakeholders to discuss projects and, above all, to take joint decisions on the guidelines and the monitoring of the projects.

Some players find this advent of RITA premature, considering that farmers, as their advisors, are not ready to integrate important technical innovations while elementary and structural needs are not fulfilled (land use, access roads to farms, mechanization, transmissions of farms, etc.).

Jean-Michel Rouxel, head of the agricultural economics Service of the Directorate of agriculture, food and forest (services of the State) of Guadeloupe.

"The RITA has allowed the emergence of a new link in the drive chain between applied research and the farmers. Indeed if innovation can be carried out on an experimental plot or in the laboratory, his successful and sustainable translation in the field is a complex matter. You need to know how to communicate with all actors of the agricultural sector, after you have convinced them of the relevance of the approach; you need to keep carrying out demonstration actions unabated; you need to make sure that a convinced farmer can in his turn arouse innovation around him. It is a long-term job, which calls for further developments of the RITA in the context of the rural development programme 2014-2020. The network is now established, actors are federated, further work is underway and the identification of new issues is also achieved, always at the service of the agricultural world, always promoting sustainable agricultural practices if not agro-ecological, fitted to the hard tropical conditions"

Despite this, projects are elaborated in a hurry.

For crop diversification, the *EVA Transfer* project involves a partnership of five actors (CIRAD, INRA, IT2, Chamber of Agriculture and ASSOFWI). The objective of *EVA Transfer* is to evaluate and to transfer varietal and systems innovations for a diversified and sustainable agriculture.



Figure 3: The EVA transfer team

As for animal productions diversification, the newly created technical Institute IKARE leads the TRANS' breeding project³. TRANS 'breeding develops a set of actions to move towards the improvement of the productivity of farms including partners of research, development and training. This is reflected e.g. by projects on the feeding of pigs base on local raw materials, characterization of Guadeloupe honeys in order to develop Protected Geographical Indications (PGI), or experimentation on the constitution of cattle feed stocks (sugar cane, sorghum).

³ IKARE is specialised in animal productions. It is active in the 3 French Departments of Americas, i.e. Guadeloupe, Martinique, Guyane



Frédéric GALAN – CEO of IKARE (Technical Institute for animal productions)

How did you perceive the launching of the RITA in 2012?

For a structure like IKARE, the seed was ready and the RITA allowed it to germinate. We had already considered the projects that our Institute should lead on the three departments. We have shared themes between them; then came the RITA, which enabled the implementation of these projects. All this preparatory work could have remained without sequel without the RITA to turn it into practical developments.

How did the mobilisation of IKARE within the RITA take place?

We brought elements of method through an organization and a project management: even though IKARE managed all the projects of the livestock sector, it has networked all stakeholders from the various animal sectors. We have implemented technical committees to validate protocols and discuss the results, to end up with wrap up field livestock technical days and technical brochures. Those embodying the committees are IKARE members: everybody must be around the table to create a consensus. These committees are discussion places that didn't exist before. There is nothing revolutionary, but this was just inexistent. This is in itself an innovation.

In addition, we wanted to establish a strong presence in the field through the realization of experimental trials at breeding farms level. We have well split our work between experiments in controlled environment (agricultural high school) and among operators.

Are you satisfied with this first phase of the RITA, between 2012 and 2014?

Our Institute did what it had planned. But is it enough? Everything depends on the objective. As a technical Institute, we did our job but for the RITA, I am not sure that the end result is effective enough in terms of development of animal production sectors. A link misses in the chain. It would require teams to be more in contact with producers, otherwise it cannot work.

IKARE carries out extension (videos, technical documents, etc.). However, a stronger assistance to producers is still needed so that they implement what we recommend. Additional resources are required to fill this gap.

On the other hand, I believe that our approaches are still too top-down oriented. Territorial approaches for outreach activities tailored to the field remain needed. Our job is to find rational and pragmatic solutions with economic monitoring, in a perspective of optimization and ownership.

What did the RITA bring to IKARE and to your projects?

We were already working in network and the RITA brought kind of quality insurance. The advantages of the RITA are significant: they enable us to gain a visibility at national level that we don't have the means to achieve by ourselves. Indeed, our priority is devoted to local and inter-DOM action in the three French Departments of Americas where we are present.

What difficulties did you encounter for the implementation of your projects within the RITA?

I have the feeling that our teams have been a bit too innovative. One of the weaknesses in this system is that we have worked separately with the heads of the structures (Directors and Presidents) on one side, and field technicians for the expression of needs on the other. We don't want to interfere with the priorities of these structures. Our scheme allows to confront and often to reinforce our views; however the gap remains wide between ambitions and actual fieldwork. We are not sufficiently efficient. The current management of the Professional Organisations should manage to pool resources to free their technicians from time consuming tasks, so that they have more field time.

The RITA were therefore positive for your structure but must be improved?

There was a demand and expectations impossible to meet in so little time. Even though the entire transfer process has not been optimal, we led our projects as planned at start-up. We only have a 3-year experience with actually insufficient means. Some projects deserve to continue. It is time to shift gear and not to hide difficulties. The momentum must not be broken. However it has greatly suffered in 2015. Solutions must be shared with the entire network.

For some fragile structures, the RITA represents a windfall. It helps to recruit additional staff, and develop valuable projects directly from the concerned farmers. Indeed, in the scheme as it was set-up, CIRAD provides financial engineering, and structures that implement projects benefit from pre-financing on future funding to calmly carry out their work.

Lucien Degras situates the evolution of the Agriculture in Guadeloupe in connection with RITA. He can easily speak about it as he participated in certain activities of the yam platform of "EVA Transfer" project. For him, *this platform is adequate but a device a bit prisoner of a "western" approach. For example, "in parallel to the varietal selection, it should integrate experimentation on associations*



Figure 4: Demonstration activities

with other plants or on staking. This is what farmers are already implementing at home and that's why the RITA needs to better take into consideration the social aspect with farmers". It's the responsibility of the researcher to know how a scientific question should be translated into experimentation; and then the farmers judge if they were right! However to reach this objective, researchers need to work more in the field and on monitoring. The RITA is a good way to work because there are the elements to make this liaison and

transfer in both directions. This is a huge improvement. But the lack of strong professional organizations for our food and vegetable crops is a serious handicap. "In general, he underlines that there is no one good system but several systems available according to the realities of the landscape and that's why we need an important effort of coordination between all actors.

The reconciliation between producers and researchers allowed actors of “EVA transfer” to take into consideration during the program and with constant funding, the huge problem of “Citrus Greening” disease, newly arrived on the territory of Guadeloupe in 2012 and destroying all citrus of the island. The evolution of the system is largely dependent on the commitment and dynamism of the structures and the people who make it live.

Laure Roffignac, CEO of Assofwi (fruit and christophines growers association of Guadeloupe): the RITA Guadeloupe in the consideration of the newly emerging disease, the Citrus Greening.



How the work on Citrus Greening were they integrated by the RITA?

Citrus Greening was discovered in Guadeloupe in 2012 and producers as our association were in a stalemate. But thanks to the flexibility of the RITA scheme, we could be reactive. The EVA Transfer project consists of works on targeted themes and arrangements could have been put in place to fight Citrus Greening. Thanks to the partnerships of the network, we were also able to quickly reflect together on an action plan.

Why did ASSOFWI engaged in this scheme and why the professionals did not decide to move towards the development of other productions?

Our flagship products are citrus fruits. So we were the most concerned and the most competent on certain points of the multi-partner system implemented (creation of plants, experimental tests, extension - transfer, etc.). We want to maintain this production, commercially, economically and culturally is the most interesting for our region.

Who took the initiative to integrate this specific issue in the RITA?

This was done naturally over reflections and meetings in the framework of partnership works. We started to think our action plan locally and we went on mission in Corsica Island and the Reunion Island to validate what we had thought. This allowed us to fully validate all the stages of our action plan and to know the flexibility to put the plan in place.

What is this innovative approach?

First by building an action plan in partnership. And then all the steps of the action plan are also innovative locally. They integrate and require many skills.

When you look back, what are the moments and crucial stages of the innovation?

For us, the most important is the validation of the creation of healthy plants and not to lose local varieties that are not found anywhere else, through research and conservation of endemic varieties. This step took place in consultation with the farmers themselves who have identified 35 samples of different varieties of which 17 have been characterized and ultimately stored in the Biological Resource Centre (BRC) of tropical plants. The West Indies and Guadeloupe are a secondary reservoir of citrus genetic resources, so we are helping to fuel it.

In addition, experimental tests that could lead to training on specifications for replanting are very important.

But beyond this system, the important step but also the most difficult is sanitation, for the destruction of all citrus trees in Guadeloupe. This milestone is also the one that took the most time to start as we begin grubbing after 3 years: financial compensation for the uprooting took a long time to be implemented.

This reflects that the RITA partners are involved and can quickly implement solutions that sometimes arrive faster than policy decisions.

Is innovation sufficiently spread?

The plans to establish healthy pattern was broadcast, but not at the national and at the regional level, so there are still people who are not aware of. We must carry on the communication for at least five years and pay attention to the messages. We must involve producers and show that whatever is done is done for producers.

How can you keep hope and energy to face such a catastrophe for farmers?

There has been a lot of hard knocks. Having healthy plants available soon and having managed together to put this action plan in place is positive, while in the early 2000s we didn't succeed. The federation of the actors and in particular IT2 (Technical Institute for Tropical Crops), CIRAD, the FREDON (Regional Federation of Protection against Harmful Organisms) and the Chamber of Agriculture, and the mutual encouragement helped to face this problem. And then, very recently, we are pleased to be able to implement, within the RITA, new trials with new varieties.

A dubious bet on the players but a sure bet...

While taking stock of the results of this first phase of RITA (2011 - 2014), we can stand that it allowed everyone to find its place in a multi innovative partnership system. Connections among all local agriculture stakeholders were too fragile or non-existent until then: the scheme made it possible to establish them. The stakeholder relationship - complex, diverse and unstable in the Guadeloupean agricultural context - allowed working in a coordinated manner to carry out projects that affect or will affect the practices and the development of local agriculture, while relying on the key role of pioneers and some proactive, dynamic and motivated key players.

Ascertained technical added-value but long-term impacts still difficult to grasp...

Even if it's difficult to measure the real impact of the actions of the RITA today, some technical outcomes have to be put forward:

- Selection of new anthracnose-resistant yam varieties ,
- Achievement of sugarcane silage sites, a valuable practice to store feed supplies in prevision of drought,
- Successful experimentations to feed the pigs with local raw materials (sugar cane juice)
- Mulching as a solution against weeds,
- Etc.

Franck SOUPRAYEN - Farmer at Goyave - elected member of the Chamber of Agriculture of Guadeloupe – stakeholder of the « EVA Transfer » project and of the « Yam platform » through provision of on-farm test plots.

What is your point of view on the RITA, their arrival in the agricultural environment of Guadeloupe?

The Rita is a good force of proposals and actions to improve the current situation and to prepare the future of the farmers. They allow actors of the agricultural sector who want to collectively - and effectively - contribute to the development of agriculture to seek solutions adapted to our context. The RITA should always have the final objective to consolidate, maintain or improve the income of farmers by relevant projects. We face the small size of farms and a lack of young persons to take up farming. The agricultural population is aging and we must talk of the future for young people. The RITA must take ownership of this framework. They have to propose alternatives that maximize both the potential of production and natural resources through a well-controlled circular economy.

In the midst of Agro-ecological transition, the RITA facilitates exchanges and adaptations to design new systems in a tropical insular environment. They should allow solutions taking into account the objectives of farmers and of their representatives.

As a participant in the EVA Transfer project, what did you consider the most interesting in this approach?

The exchanges between all actors are the key of the success of this project. As well as the fact that requests from farmers and from the agricultural sector in general are taken into account. The participatory form is adapted and allows fruitful exchanges between research, professional organizations and farmers. We are still in the infancy of the RITA; but for instance, the Yam “platform” is a very suitable framework within the *EVA Transfer* project.

On the other hand, as an elected person, and when it comes to take stock of the RITA, I have a mixed perception. Some projects have not met the objectives while others have been able to be very reactive and effective. A positive example is the approach of *Citrus Greening*⁴ carried out by the RITA: awareness and technical information were properly made about this scourge.

What lessons do you draw from your participation in the tests within the Yam platform?

To participate in the Yam platform is my way to contribute to the challenge of increasing food production of my territory. All farmers participating in these trials are representative of the territory. It is important to test different varieties at different places in Guadeloupe. In addition, the farmer can give its opinion. Technicians follow up the test, the farmer continues to implement its practices: we are actors of the scheme under the actual conditions of our profession. It's practical. This requires an investment from our side; at the end of the day, it tells a lot to us, farmers.

What is your feeling about the transfer of the results to stem from these trials?

⁴ Citrus greening: a disease destroying all citrus trees.

We need workshops on the propagation of new varieties. This is planned in the second phase of the RITA. We have lost many varieties in recent years. It is necessary that our experiments take place continuously. We need to propose research and solutions on other varieties.

In Guadeloupe, we have a potential of 15, 000 tons of Yam production. It could satisfy the market. Today, we produce 5,000 tons. There is a big potential for development. The chlordecone issue strongly penalized the production. Farmers now take consumers' health issues into account. Now, there's a need for a new impetus to revitalize the sector, along with communication actions, in parallel with the work of the RITA. The Yam belongs to our culinary habits. It is cultural and healthy. The tuber has a low glycaemic index, which can meet part of the important problems of cardiovascular diseases we meet in Guadeloupe. It's up to us to make our production trendy. And to imagine new marketing approaches.

In the first phase of the RITA, there was much talk of innovation. For RITA2, we should not neglect transfer. We should approach it and approach it in creative way.

How do you see the evolution of the RITA?

Our potential for development is on small farms. The RITA has to contribute to this. It is necessary to strengthen the agricultural sector through its better professionalization. The RITA should provide tools and results to fuel the actions of the Chamber of Agriculture towards farmers: they want to move forward. Farmers in organized structures have a small margin of progress because they are already technically developed. On the other hand, the smaller farmers have a strong margin of progression. They just need to be accompanied: investment, organization.

We must pay attention to the small farmers: work with them, search for synergy and complementarity for territorial development.

Using and promoting local production for the benefit of local entities (e.g. closer links between producers and local canteens), will help a lot, favouring local self-sufficiency for food. The RITA must continue to act as an interface between research and development. The Chamber of Agriculture will keep contributing through its activities of advice to farmers and professional structures.

To ensure sustainable impacts, the transfer to farms remains a key success factor. RITA made it the backbone of phase 2 of the scheme, which starts in 2015.

Diversification of the scheme, the social opening.

In three years, RITA was structured and became well known. The actors have found their place and RITA are expected to reach other sectors in 2015. Small Scale Farming will not be forgotten.

Harry Ozier-Lafontaine, President of the Centre INRA Antilles-Guyana:

The Small Scale Farming (SSF) is taken into account by the future Law on agriculture, food and forestry passed in 2014. It is even a priority target because it addresses 60 to 70% of farms in Guadeloupe. The measure 6.3 of the future Rural Development Program (RDP) 2014-2020 in Guadeloupe is dedicated to this audience. To address this issue, we must organize a large-scale approach, combined with a multi-partnership dimension. We have made a participatory workshop in

February 2015 - TRANS'ACT - which brought together all stakeholders in the agricultural sector of which half were farmers. The RITA was represented on the Steering Committee. It is a challenge to keep farmers on small areas and with a perspective of profitability and agro-ecological reproducibility. This requires a well-designed permanent mobilization to organize the SSF, for the time on the sidelines of subsidies systems, and place it in the regional chessboard including interprofessional and professional organizations, which currently do not cover this sector. When we think about “innovation”, we must not retreat into a frame; it must be appropriated and sometimes trigger a break for it happening. This is what we intend to conduct and support as part of the ecological modernization of agriculture Guadeloupe.

We need a collective maturation and the RITA must be an instrument in the dynamic and committed approach. The RITA has its place in such a transition, beyond the projects that we will put up with the Chamber of Agriculture and other partners. Participatory governance must identify the needs and expectations. There will be contradictions and conflicts of actors that networks will certainly help to solve. As such, the RITA is unavoidable. The network dynamics are important and the critical mass of partners it represents will allow better educating and advancing faster. In addition, we need the transfer dynamics already set-up by the RITA...otherwise ...It should have been created.

Caution...

We should not declare victory too soon. RITA evolves together with its component structures. Three years of existence is a very short period! We must always keep an eye on the volcano, to ensure that the RITA scheme does not go up in smoke...

« The farmer is down to earth and if give him information, he will know what to keep and what will work».

Lucien Degras

INRA:	French National Institute for Agricultural Research
Assofwi:	Growers association oriented towards crops diversification in horticulture
CIRAD:	International Centre of Agricultural Research for development
DAAF:	Direction of Agriculture, Food and Forestry – Ministry of Agriculture, Food and Forestry
RUP:	Outermost Region
POSEI:	Special Options Program to Remoteness and Insularity
RITA:	Network for Innovation and Agricultural Transfer
IKARE:	Caribbean and Amazonian Technical Institute for Livestock
IT2:	Technical Institute for Tropical crops
PAF :	Small Scale Farming (SSF)

16

A Farm Advisory Board in Kempen

How Clients Become Partners In Marketing

Ilse Geyskens: Innovatiesteunpunt Boerenbond
(Innovation Support Centre, Farmers Union), Belgium

Company information

Paul and Veerle D'haene – Minsaert run a goat farm of 600 goats. Approximately 60 % of the goat milk is processed to produce a variety of products (e.g. cheese, ice cream). The products are sold on their farm, on local markets and in catering establishments.

Paul takes care of the goats and Veerle takes, together with 3 employees, the sale of the products on the farm for her account.



Figure 1: Paul and Veerle D'haene-Minsaert (left)

Recently, they won 2 golden medals in the Italian 'Concorso per i migliori formaggi', an organisation of the Roman Chamber of Commerce. One medal for the best goat cheese and one for the best foreign contribution.

Project description

Paul and Veerle had some doubts about the different possibilities for their business. Should they reduce or enlarge their broad product range? Should they respond more to the opportunities of tourism in the area? Should they split the goat farm from the processing unit? What would be the financial impact on the farm? Too many unanswered questions. As they did not have a management education, they lacked some specific knowledge. Therefore they were interested to implement an Advisory Board.

The first year of the Advisory Board was started with the execution of a SWOT analysis and a determination of the mission of the goat farm Polle. Paul & Veerle sat together with the Innovation Support Centre to make a detailed analysis of the strengths, weaknesses, opportunities and threats, and to clearly determine what the farm was standing for and what they wanted to achieve. The exercise was done prior to the first meeting with the external advisors. An agreement which outlines the roles and responsibilities within the Advisory Board was signed by all parties in the Advisory Board. Based on this analysis, the first meeting with the advisors was scheduled to determine the issues that the Advisory Board would tackle in its first year.

Paul and Veerle had some doubts about the different possibilities for their business. Too many unanswered questions. Therefore they were interested to implement an Advisory Board.

Four key topics where determined:

- 1) finding a better bank,
- 2) improving the pricing of the product,
- 3) improving the production planning with regards to personnel,
- 4) improving the product flow in the cheese production.

For each of these topics, one of the external advisors had some specific knowledge that could be brought into the discussion.

As Paul and Veerle increased their management knowledge via discussions with the experts and Innovatiesteunpunt, they became also interested in the logistic project within the European Fish and Chips project. As a result they are now one of the participating farmers in the regional distribution project in the Kempen.

Innovation process

The idea of an Advisory Board was suggested by the Innovation Support Centre as a possibility to deal with the different questions they had about their farm.

Paul and Veerle were interested to implement this on their farm. Innovation Support Centre sat together with them to explain the concept of an Advisory Board and to discuss what would work the best for their organization. Based on the initial SWOT analysis, a discussion took place about potential candidates to participate in the Advisory Board. Finally it was decided to work with 3 external experts (a CEO of a biscuit factory, a manager of a hospital, a retired CEO of a cheese factory).

The idea of an Advisory Board was suggested by the Innovation Support Centre as a possibility to deal with the different questions they had about their farm.

Innovation Support Centre was present in all meetings during the first year as a moderator, but also to guide the process as all participants were getting familiar with how an Advisory Board works. The main work was to support Paul and Veerle and to guide them on the necessary steps.

The support of Innovation Support Centre in the process was still required in the following year. However, the level of involvement slowly reduced, as the Advisory Board became something that works independently, with a meeting twice a year. Paul and Veerle are taking things in their own hands and are capable to make the planning themselves.

Partners

- Paul & Veerle D'haene
- Patrick Pasgang, Innovation Support Centre for agricultural and rural development
- Advisory -Board

Which actions made this innovation process to become a success?

A success factor for this innovation is the availability of a mature network of volunteers that wants to share their expertise for free. "For free" is not a must, but a nice to have for the farmer. But eventually, the farmer always expresses his gratitude by giving the external experts a set of agricultural products.

A success factor for this innovation is the availability of a mature network of volunteers that wants to share their expertise for free.

Since the importance of a mature network, it is also important as process mediator / facilitator to invest time in elaborating a broad network of people that are willing to share knowledge and experience with farmers. If you can't count on such a network, you lose a lot of time in finding the right people that are willing to join such an advisory board. The external experts should have a generic knowledge.

To find volunteers to participate in this particular advisory board, we have addressed the Cera network (Cooperative society for prosperity and well-being) and the network of Unizo (= Union of independent entrepreneurs).

What were the challenges of the innovation process?

The purpose of an advisory board is to perform a permanent evaluation of a company. An advisory board is not meant to be an acute problem-solving tool. This is crucial to detect by the innovation advisor in the initial interview with the farmer and to make this clear to the farmer. Because farmers do not always have the ambition to evaluate their business permanently.

If an advisory board would only be for solving an acute problem, the advisory task/board would only last for a short time (3 sessions).

When the purpose is a permanent evaluation, the advisor will become a confident of the farmer to whom he can rely on.

Permanent points for improvement are often commercial professionalization, internal process optimization, staff costs.

The role of the innovation advisor in this process is being a moderator to prepare and lead the meetings between the farmer and the external experts of the Advisory Board during 1 year. During that year the farmer must learn from us so he/she can take over this moderation function in the future. It's a challenge to prepare the farmer to take over this function. It's not always that easy.

In this case, the purpose of an advisory board is to perform a permanent evaluation, the advisor will then become a confident of the farmer to whom he can rely on.

17

Family Farming in Romania

High Nature Value Farming For Smallholders

Nathaniel Page and Răzvan Popa

Fundația ADEPT Transilvania, Romania



Figure 1: A typical farm household in Transylvania (Photo Bob Gibbons)

Small Family Farm households are essential for the future of Romania

There are 3.9 million farm holdings in Romania, the majority of which are Family Farms of extensive semi-natural grassland pastoral systems and mixed farming systems. These semi-natural small-sale farmed landscapes are of significant economic importance. For example, the 1 million holdings between 1-10 ha (3.1 m ha, 20% of Romania's agricultural area), are classed as semi-subsistence farms producing for home consumption, local sales and for their extended families. Yet these farms are estimated to produce 25-30% of national food consumption. They also provide rural vitality, as compared to the largest farms which are associated with rural poverty.

Their importance is not only economic. They are providers of many public goods: sustainable land use; biodiversity conservation; other environmental, social, cultural and economic benefits. The associated concept of High Nature Value (HNV) farmland is used by the Romanian Government as the basis for the main agri-environment measure supporting small-scale farmed landscapes in Romania. The HNV farming concept also offers the basis for the further sustainable development

The semi-natural small-sale farmed landscapes are of significant economic importance. These farms are estimated to produce 25-30% of national food consumption. They also provide rural vitality and many public goods.

of rural areas through promotion of traditional food products, and diversification through sustainable tourism.

However, these small-scale farmed landscapes, strongly associated with family farming, are under increasing pressure due to loss of economic viability, failure to provide adequate living conditions for young farmers, and resulting abandonment. The importance of Family Farmed landscapes in their provision of public goods merits policy support for the small-scale farming communities which maintain them. Romania is rich in family farms.

We hope in this paper to show that the large number of small-scale holdings and family farms is an important source of economic, cultural, social, and natural strength for Romania, and to demonstrate how innovation can be combined with tradition in order to use HNV landscapes as a means of achieving rural prosperity.

The Romanian Agricultural Context

Although family farms are found in great numbers all over Romania, they are found in their highest numbers, and in the most typical traditional small-scale farmed landscapes, in the northern and Central parts of Romania. This smallholding-based production has persisted, especially in Romanian mountain and upland regions. However, livestock numbers have fallen since 1990, initially as a result of the dissolution of state and co-operative farms, and later due to rises in input costs and loss of market share, as a result of cheap imports after Romania's accession to the EU in January 2007.

The persistence of the fragmented land structure of Romania through the last 20 years, despite the expectations of many land consolidation experts, is largely due to the important role subsistence and semi-subsistence farming plays in providing livelihoods where pension and welfare payments are extremely low, food prices are similar to that of Western Europe, and access to credit is difficult. Romania's National Rural Development Programme (NRDP, 2008) states that *'by providing livelihood to vulnerable groups, subsistence holdings play an essential socio-economic function'*.

In these traditional areas of fragmented mosaic land ownership, arable land and hay meadows are usually owned by individual farmers in small parcels, while pastures are owned by the municipality and rented out partly to village grazing associations for common cattle grazing, and partly to shepherds who have their own flocks and usually also manage small-scale farmers' sheep for the 6 summer months.

There are over 1 million holdings between 1-10 ha, regarded as semi-subsistence farms and eligible for area-

The small-scale farmed landscapes, strongly associated with family farming, are under increasing pressure. ...

We hope in this paper to show that the large number of small-scale holdings is an important source of economic, cultural, social, and natural strength for Romania.

This preponderance of small-scale family farms has until now has been seen as a weakness in Romania's agriculture, a barrier to competitiveness that needs to be rectified. However, recently there has been a re-appraisal of the social and economic value of small-scale farming.

based payments. They account for 3.1m ha, 21.2% of Utilisable Agricultural Area (UAA), and mostly produce primary products for home consumption. These farms are estimated (Otiman 2013) as producing 25-30% of national food consumption.

Romania is therefore **rich in family farms**. The large number of small-scale family farms is a source of strength in the national economy, culture, society, and sustainability of agriculture. This preponderance of small-scale family farms as until now has been seen as a weakness in Romania's agriculture, a barrier to competitiveness that needs to be rectified. However, recently there has been a re-appraisal of the social and economic value of small-scale farming.

Description of Romania's family farms

Romania's Family Farms are centred in villages and communities. The traditional farmhouses and courtyards are gathered into villages. Crops are grown on the arable valley floors, and the valley slopes are given over to hay-meadows and large expanses of communal grazing land, for both sheep and cattle which are managed separately.

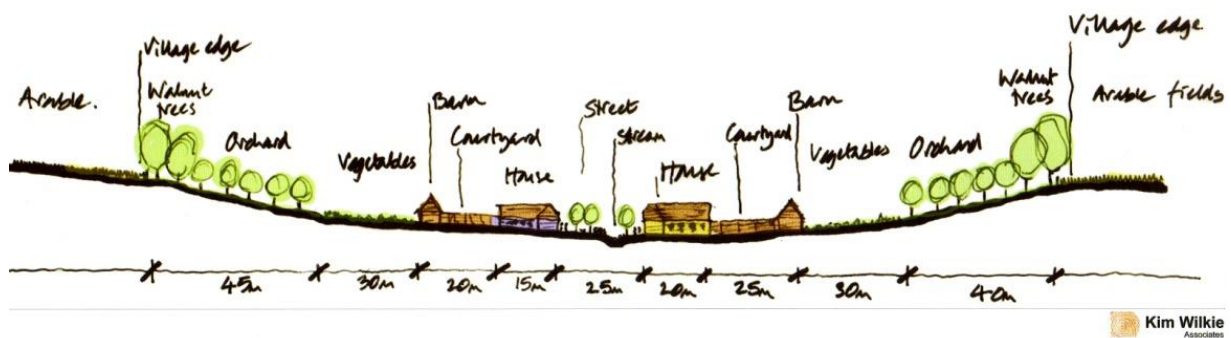


Figure 2: cross-section of typical Romanian farming village street showing family farm structure. Kim Wilkie, 2002

The typical family farm consists of a farmhouse, barns and sheds for cattle, sheep, pigs, chickens and hay; a vegetable patch for household use, and an apple, plum and pear orchard. Family farmland is usually divided into small parcels of arable land and hay meadow, often no more than 0.3 ha in size, near the village. Further from the village are the common grazing pastures and forests which are a source of wood for cooking and heating.



Figure 3: typical layout of a small-scale family farming community. Photo: Kim Wilkie

Hay-meadows.

The lower, more level hayfields are typically cut twice a year, in June and July, and again in September. The steeper upland meadows, difficult to cut by machine, are cut once a year by scythe, in July or August. After drying in the fields, hay is brought in to the villages by horse and cart or tractor. After mowing, owners put their own cattle on to their parcels of land for aftermath grazing. Local farmers regard this rich flora as beneficial for their cows' milk production and general health.



Figure 4: "One hay-cart for each leg" – one cow is said to eat 4 cartloads of hay over the winter. (Photo Bob Gibbons)



Figure 5: Communal grazing land (Photo Bob Gibbons)

Pasture

About 25% of the land is communal grazing land divided between cattle and sheep. Usually the land nearer the village, lower down and with richer grass, is reserved for the cattle since they return to the villages every evening for milking. The sheep remain on the upper pastures for the whole summer. This grazing land is owned by the Town Halls and the right to graze is rented out each year to the villages and to outsiders.



Figure 6: Milking sheep (Photo Bob Gibbons)

Sheep systems

Sheep are kept on communal pastures, in large flocks managed by locally elected shepherds. Sheep pastures are usually located a few kilometres from the village, on the higher ground. Sheep are taken up to the pasture in early May or before, and returned to their neighbours in November. Flocks vary in size between 200 and 700

head, a mixture of villagers' and the shepherd's own sheep.

Sheep are valued in Romania more for their milk than for their meat. The sheep are hand-milked three times a day, at dawn, midday and late evening. Grazing intensity is approximately 4–6 sheep/ha, although this varies over the pasture due to the grazing regime. Pasture quality and grazing intensity is monitored by a town hall 'pasture committee', responsible for ensuring that pasture is grazed within acceptable limits. Photo: Bob Gibbons.

Cow systems

The cattle are let out for daily grazing from early May. Each villager milks his cow or cows, and pushes them out of his gate at first light. The cowherd, a villager elected by the owners according to his terms and his reputation, drives the herd out of the village and grazes them in communal pastures until evening. Towards dusk, the cowherd brings the herd back to the village. Each cow knows the way into its own yard, where it is milked again by hand. Milk is taken twice a day in buckets or churns to the village milk collection points, each with a bulk storage tank.



Figure 7: Grazing cows (Photo: Cornel Stanciu)

Family farm economy

Family farm income is derived mostly from sale of sheep cheese and milk, and cow milk, to milk-processing companies. Small-scale dairy production is the key to the survival of small-scale family farmers, who depend mainly on cow or ewe milk or milk products for their income. Small producers all deliver to one or two milk collection points in villages, from which the processors take delivery. It is key to survival of the smaller family farms that these milk collection points remain in profitable operation.

The contribution of smaller Family farms to local, wider family and national economies should not be underestimated. It should be noted that the 1 million holdings between 1-10 ha, are estimated (Otiman 2013) as producing 25-30% of national food consumption.

It has long been supposed that large-scale farm businesses, which are highly automated and employ few people, are poor contributors to the local, community economy. Work by Otiman (2013) has demonstrated the role of smaller-scale family farms in providing economic vitality in rural areas. He has shown that the four severest poverty pockets in Romania are found precisely

Large farms are associated with local poverty, this should lead us to question the widely accepted opinion that larger farms, leading to economies of size and efficiency through automation, are more competitive on the global market, and are greater producers of wealth.

in the areas with the highest land cover by very large farms.

If such large farms are associated with local poverty, this should lead us to question the widely accepted opinion that larger farms, leading to economies of size and efficiency through automation, are more competitive on the global market, and are greater producers of wealth. One must ask, for whom is this wealth produced? Furthermore, family farms, with a longer term vision and intention to leave farms in good heart for future generations, may well be better managers of land in terms of sustainability.

An additional factor is the impact of CAP payments on local communities. A large commercial farm is likely to receive investment payments, and spend them on specialist technology/equipment outside the area. Profits of commercial farm activities are also likely to be distributed to investors outside the local area, even outside the country. However, in the case of small-scale farmers, support payments received (direct payments, agri-environment payments, investment payments), and profits, will probably be spent locally, providing a stimulating trickle-down effect among local farming communities.

Threats to family farms

The small-scale family farmers of Romania face many problems including:

1. Market failures. Lack of markets for the goods they produce, owing to cheap imports and tighter regulations on informal sale of smallholder produce. Small-scale farmers cannot make an income that meets expectations of the next generation of farmers.
2. Markets and profitability of local small-scale production are further damaged by the imposition of unrealistic hygiene standards on small producers. This is a problem at the level of Member State's implementation of EU Directives: flexibility is shown in Romania in some areas, but not in other areas. Clear national guidance for flexibility towards small-scale family farmers is important.
3. The European Commission's package of seed regulations, as it is currently proposed, is a threat to agro-biodiversity, and to traditional farm management by small-scale family farmers. Clear guidance for Member States is required to avoid unintended consequences such as economic losses for family farmers and losses of local varieties
4. Breakdown of the common grazing system: until recently, grazing was effectively managed by village grazing committees, with pasture/meadow distinctions honoured. This system is increasingly abused and mayors do not have the power or incentive to take action.
5. Lack of a common voice, at national scale, and lack of access to information - the many agencies which they need to contact for variety of assistance measures are poorly coordinated and hard to access.
6. Diversification of income is poorly developed because of lack of opportunities. Support measures, such as investment measures in the Rural Development programme, are not easily accessible to the smaller family farmers.

Opportunities for the future

How can these complex farming systems be supported? What opportunities do they have?

The preponderance of small-scale farms in Romania has been seen as a weakness in Romania's agriculture until now. However, there has been a re-appraisal of the social and economic value of small-scale family farming systems, both at national and EU levels. This will lead to increasing support from policy-makers, and from the public, as consumers. Specific opportunities include:

- Amendment of CAP rules so that farmers currently excluded can benefit from support payments: this could include eligibility of grassland with trees and rocks, higher area payments, or minimum payments under simplified schemes, for smaller farms.
- The survival of on-farm food processing and the link between the products and regional identity provide opportunities for effective marketing; 41% of Romanian family farms process their own farm products, compared to an average of 8% in the EU27.
- Stimulating the association between small farmers and small producers, to create effective and efficient local food chains, bringing broad benefits to the local economy. The Cooperation Measure and European Innovation Partnership under the new CAP will be important contributors to this process, and we hope that Romania will include the Cooperation Measure in its Rural Development Programme
- Traditional farming landscapes can also bring income to farming communities through rural tourism.
- Improved advisory services. Young Entrants/successors to family farms will see a better future in farming if there is help to improve markets for local products, and to diversify their income sources.

Innovative solutions carried out so far in the area

HNV farming offers a series of economic possibilities for the development of regions, through employment and economic growth. However, to achieve this, there is a need to nurture new skills and to bring innovation and diversification to these regions. These areas are not suited to intensification; the social and environmental cost would be high, with little increase in production on the long term. But just maintaining the status quo would trap people in poverty. Maintenance of HNV farmed landscapes requires continued management by the farming communities who created them, and this will not be achieved by preventing change, but by combining innovation with tradition. Fundatia ADEPT has implemented various innovative projects which have demonstrated how these traditional farming systems can become economically viable, without losing their important High Nature Value characteristics.

1. Improved Advisory services and agri-environment payments

In 2005-6, ADEPT Farm Advisory Services (FAS) carried out Romania's only pilot agri-environment programme. After a year's campaign, and practical help with form completion and with transport to deliver the forms, there were 100 applicants in 1,000 ha, whom the FAS helped with a very complex application process. As a result of lessons learned under the pilot project, the Romanian Ministry of Agriculture simplified the application process for the national-level grassland agri-environment scheme launched in 2008 (after accession to the EU in 2007), under which farmers receive funding under an HNV grassland agri-environment package, a significant additional cash income for them. In the period 2008-13, as a direct result of continued ADEPT assistance, participation of Târnava Mare area farmers in the agri-

environment package was five times higher than national average. Impact: in the 8 communes of the area, 1.390 small farmers on 17,641 ha are receiving a total of over €2.5 m / year through access to agri-environment schemes.

2. Innovative sheepfold



Starting in 2014, funded by Innovation Norway, we have been developing innovative sheepfolds in order to make hill sheep-farming and sheep-milking more environmentally sustainable (reducing local damage to grasslands and waterways), and more acceptable in terms of living standards. Items include easily movable design for sheepfolds (which need to be moved periodically in

the summer to prevent local damage), solar panels for powering mobile phones, electric lights, electric fencing, and bore holes for clean water.

3. Innovative Mountain Bike trails

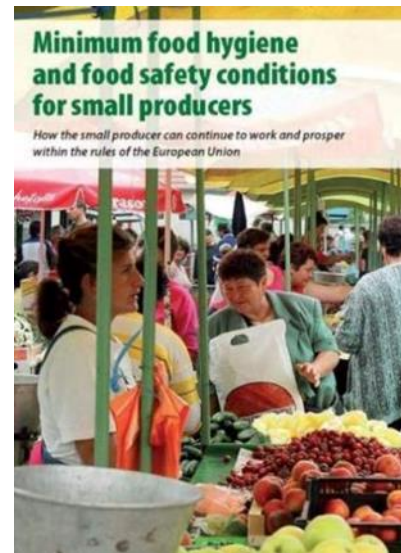
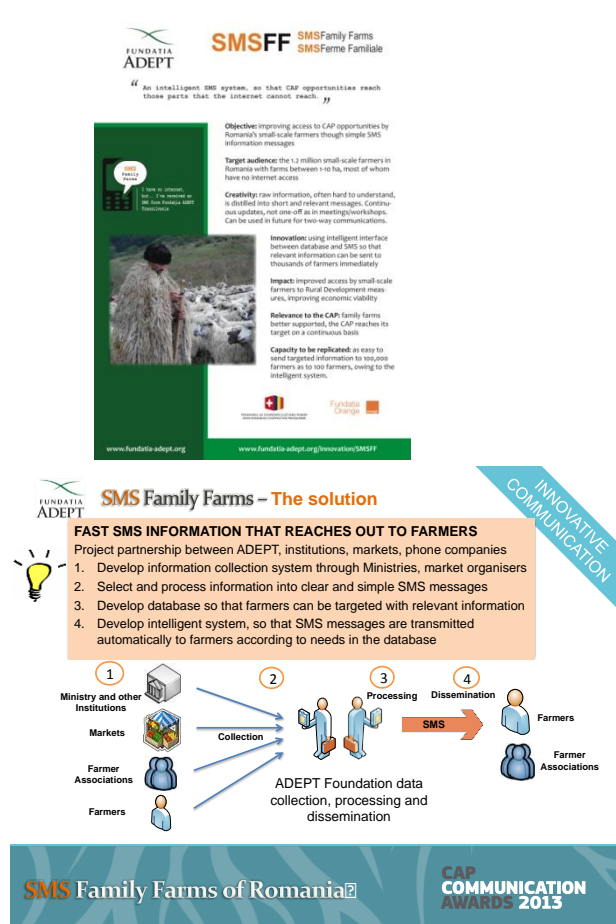


Starting in 2013, funded by Swiss-Romanian Cooperation programme, we have built over 100km of mountain bike trail. The trail is an all-weather track, built with local materials and local labour, the only one in Romania. It is the longest trail in a lowland farming area in Romania. It links 8 villages and has catalysed a network of guesthouses and guiding services. One of the Town Halls has banned motorised recreational off-road driving, recognising the fact that mountain-bike trail users are less

destructive, and they stay in and bring additional income to the area.

4. Innovative information networks

We took first steps in creating an Information Network, by establishing an intelligent SMS information system for farmers. For this ADEPT won top prize for Innovative Communication with Farmers, at CAP@50 awards, in 2013.

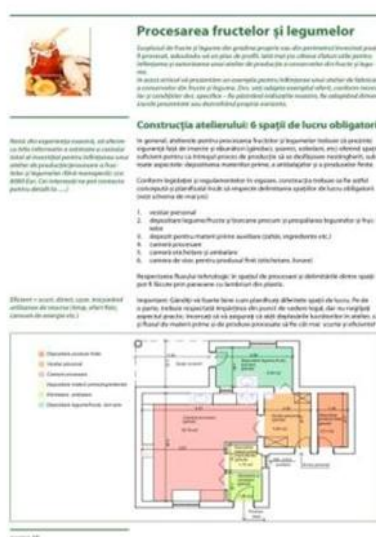


5. Innovative Marketing of local products

After accession to the EU, there was a crisis among small producers since food hygiene regulations were applied unsuitably strictly: industrial standards applied by the authorities to micro-enterprises, rendered the micro-enterprises unprofitable.

ADEPT carried out a campaign, acting as middle-man between producers and authorities, in order to clarify EU guidelines on flexibility, so that authorities have the confidence to apply flexible approach to small-scale producers. ADEPT produced a booklet (in English, Romanian and Hungarian language versions) with clear information for farmers, producers and for food inspectors: this is now used by hygiene authorities as a standard document in Romania.

ADEPT also developed a model processing unit meeting minimum hygiene conditions for small-scale producers: this involved considerable negotiation with the hygiene authorities. Based on this experience, once the processing unit was approved, ADEPT produced a booklet with plans and instructions in simple terms on how to build such a unit. This plan is freely available and can be used by micro-producers, helping them complete their processing units with minimum cost. These are already being replicated in nearby areas. This has produced better links between hygiene authorities and small-scale producers. Also, small-



scale producers can continue to operate under more flexible approach from hygiene inspectors.

In addition to helping small-scale farmers produce high-quality products, ADEPT also develops routes to niche markets. ADEPT identified 20 producers of cheese, jam and pickles who were interested in participating in the marketing project. ADEPT trained producers to maintain consistent quality, developed a local brand and labelling, and promoted farmers' markets as well as the tourist information centre as places to sell their products. Sales and associated skills have now increased to a point where the original 20 producers travel to farmers' markets without assistance from ADEPT. The producers are now commercially sustainable, and ADEPT is encouraging more farmers and farmers' wives to join the informal producer group, the Târnavă Mare Producers Association. ADEPT helped establish markets in Bucharest and Brasov in 2009, which are both highly successful. We are now developing other markets nearer the project area. Impact: **€43,661 extra income in 2009 for 25 producers**, in direct sales and sales through the Tourist Information Centre. 15 trained women and over 100 Roma are seasonally employed.

6. Milk collection points

Small-scale dairy production is key to the survival of these HNV landscapes. About 80% of producers have fewer than 5 cows. The small-scale farmers, who have created these landscapes, depend mainly on milk sales for their income. Small producers all deliver to one or two milk collection points in villages, from which the processors take delivery. In 2009, milk processors suddenly stopped collecting milk from these community-use milk collection points, since milk quality and quantity was not sufficient.

The sudden loss of market for milk threatened the economic survival of these communities. Surveys showed a reduction of cow numbers by 25% in one year alone, in 2010. In period 2011-2012, ADEPT responded by helping 8 villages to improve their milk collection points, as well as carrying out other actions to improve hygiene, and to improve discipline at the communal milk collection points, through workshops with farmers, discussions with village dairy associations, and negotiations with processors to complete the link to the buyers. Impact: within 12 months, 8 villages have had their milk collection reinstated, giving income again to 170 small-scale farmers, and reversing the fall in cow numbers. The price given per litre by the milk processors increased by 25% as the quality was better. In the villages with new milk collection points, the number of cows and number of owners supplying the points rose from 2012, once a profit motive had been restored. The turnover and profitability of the milk collection points are also expected to increase. We have allowed for growth by installing larger tanks than immediately registered: milk quantity can double without further investment.

7. Brielmaier

With the support of the designer / manufacturer Martin Brielmaier, we have been using innovative Brielmaier mowers on the hilly grasslands of the Tarnava Mare area. Abandoned hay meadows have been brought back into good management. The mowers are operated by a driver on foot:



they have a low impact on the ground, and are suitable for sloping land not accessible to tractors. They also have a much lower fuel use than a tractor, and they have a scissor-like cutting action that is better for the wildlife: the grasses and flower species recover quicker, and the slow pace of the mower means that ground-nesting birds and other grassland animals can escape the mower. Hundreds of hectares of abandoned hay meadows have been brought back under good management. Under another Innovation Norway project, ADEPT has held a competition among farmer associations, and the two associations selected as the most suitable will receive a Brielmaier mower and training in maintenance.

These examples above show how innovation can be combined with tradition in High Nature Value landscapes and small-scale farming communities, to give these unique and important areas an economic future.

Selected bibliography

- National Rural Development Plan (NRDP) for Romania 2007 – 2013, 8 February 2008, CCI nr 2007RO06RPO001
- Page, N., Balan, A., Huband, S., Popa, R., Rakosy, L., Laura Sutcliffe, L. , Romania pp. 346-357, in *High Nature Value Farming in Europe*”, edited by Rainer Oppermann, Guy Beaufoy and Gwyn Jones, Verlag Regionalkultur, Ubstadt-Weiher (2012)
- Otiman, P., Romania’s present agrarian structure, Romanian Academy Bucharest, 2013
- Akeroyd, J. R. & Page N. (2006) The Saxon Villages of Southern Transylvania: Conserving biodiversity in a historic landscape. In: Gafta, D. & Akeroyd, J. R. (Eds.) *Nature conservation: concepts and practice*. Springer, Heidelberg, pp. 199–210.
- Jones, A. (2007): The challenge of High Nature Value grassland conservation in Transylvania. *Transylvanian Review of Systematical and Ecological Research* 4: 73-82.
- Cooper, T., Hart, K. and Baldock, D. (2009) *The Provision of Public Goods Through Agriculture in the European Union*, Report Prepared for DG Agriculture and Rural Development, Contract No 30-CE-0233091/00-28, Institute for European Environmental Policy: London.
- National Strategic Framework for Sustainable Development of Agriculture and Food Sector and of the Rural Areas during the Period 2014-2020-2030, Presidential Commission for Public Policies for Agricultural Development In Romania, 2013
- Page, N. (2010). The Role of Subsistence and Semi-Subsistence Farms in the Delivery of Public Goods in Romania. In *Semi-subsistence farming in the EU: current situation and future prospects*, European Network for Rural Development, 2010.
- Akeroyd, J. R. & Page, N. (2011). Conservation of High Nature Value (HNV) Grassland in a Farmed Landscape in Transylvania, Romania. *Contribuții Botanice* – 2011, XLVI: 57-71, Grădina Botanică “Alexandru Borza” Cluj-Napoca
- Page, N. (2011). In *EU Rural Review no. 7: Public Goods and Rural Development*, Editor Rob Peters, European Network for Rural Development,
- Page, N., Barbu, R., and Papp, T. (2008), Minimum Food Hygiene and Food Safety Conditions for Small Producers, pub. Fundatia ADEPT.
- ADEPT / EFNCP HNV Grasslands and Public Goods Conference, September 2010. www.fundatia-adept.org/bin/file/con-ference2010/HNV_conference_brochure1.pdf

18

The Green Creative Garden

Linking Stakeholders From All Corners

Hannu Haapala, ProAgria Etelä-Pohjanmaa
Seinäjoki Finland

Green Creative Garden (GCG) is the name for the recently established innovation platform of the Seinäjoki Region, Western Finland. Support services of innovation had a crucial role on the success to initiate it, but recent developments threaten its future, mainly because of funding.

The idea behind the Green Creative Garden platform is to combine innovations and urban development in an area. In order to do so, Seinäjoki chose agro-bioeconomy and food systems as its specialization. Related specializations were found in other areas of the country so that they started to work together. The result is that there are now forest-based bioeconomy and energy-oriented bioeconomy locations as well.

The idea behind the Green Creative Garden platform is to combine innovations and urban development in an area.

How did it all begin?

The key individuals in action tell that the process that eventually led to the formation of the GCG was preceded by several related developments. These developments first lead to the formation of a new local brand, **the Food Province of Finland**. It is important to understand that the platform was not based on a short idea-based process but had a long background.

There were individuals who had the vision of special local strength in the food sector. They worked in different positions in local agriculture, food-processing industry, R&D, manufacturers of agricultural engineering machinery, education, advisory, and sales. As the formation of the Food Province brand began, there was already a strong shared feeling hanging in the air that something in the area of food should and could be initiated. It was only a matter of luck that all the pieces got together.

To begin with, these individuals met in different constellations. A talk in coffee table led to an informal meeting where they shared their thoughts and found out that, actually, they had been working towards almost the same vision. There was a vision of strong **agricultural and rural RDI and educational centre** and a vision of a local version of **'Food Valley'** concept. There were also ideas of interdisciplinary research and development around the food theme. The local industries in agricultural machinery and food processing had also the will to grow. The farmers had been active in the development of **Agro Living Lab** so that there were around 200 farms in a usability-testing network run by the local development company Frami Ltd and Seamk University of Applied Sciences.

The next phase was brainstorming. Workshops were invited by active individuals such as *Dr. Hannu Haapala* as the director of **Seamk RDI services** at the local University (Seinäjoki University of Applied Sciences) and *dir. Jukka Lähteenkorva* who acted as the coordinator of the national **Food Cluster** who happened to work at the local consulting company Foodwest Ltd. *Dr. Sami Kurki*, the director of **Ruralia**, the centre of rural studies at the University of Helsinki, was a key person as a facilitator in the process. He also had the most experience on previous development processes in the Seinäjoki area. The above mentioned three started to put their ideas together and invited others to join the planning. 'The enthusiasm of individuals was the starting point of development. The idea of

innovations in the borders of professions and businesses was the core of innovative thinking that empowered the process', says Sami Kurki.

It was quite easy to activate people because the Seinäjoki area has a long and successful history on developing the needed activities together. Success stories of previous developments included the establishment of **Seinäjoki University Consortium** with 20 professorships in locally selected subjects. The local technology park, **Frami**, with its over 70 companies, six Universities and hundreds of employees, had also been created through a similar process. It was a tradition to create together. 'There are virtually no obstacles of communication between stakeholders. People are very equal so that anyone can start a new development. It is a great difference as compared to other areas in Finland, especially the capital area of Helsinki where I lived for 25 years before moving here 8 years ago', says Hannu Haapala.

The Food Province brand work gathered enthusiastic people into meetings and workshops. The Green Creative Garden idea was presented to the local authorities and City of Seinäjoki. As the Finnish government started the Innovative Cities programme, an intensive preparation of funding application began. The process was then taken to the lead of City of Seinäjoki. The application phase included brainstorming, seminars and meetings. The participation was wide, from practitioners and local policy makers to research, development, manufacturers, commerce and education.



Figure 1. A GCG idea session. Intermediates and other stakeholders, including users, created ideas on how to combine different views and create a working innovation environment.

The resulting GCG is in open co-operation with companies, public sector (state, region, city) and universities together with the local residents. The areas included in GCG are the vital parts of a food system (Figure 2).

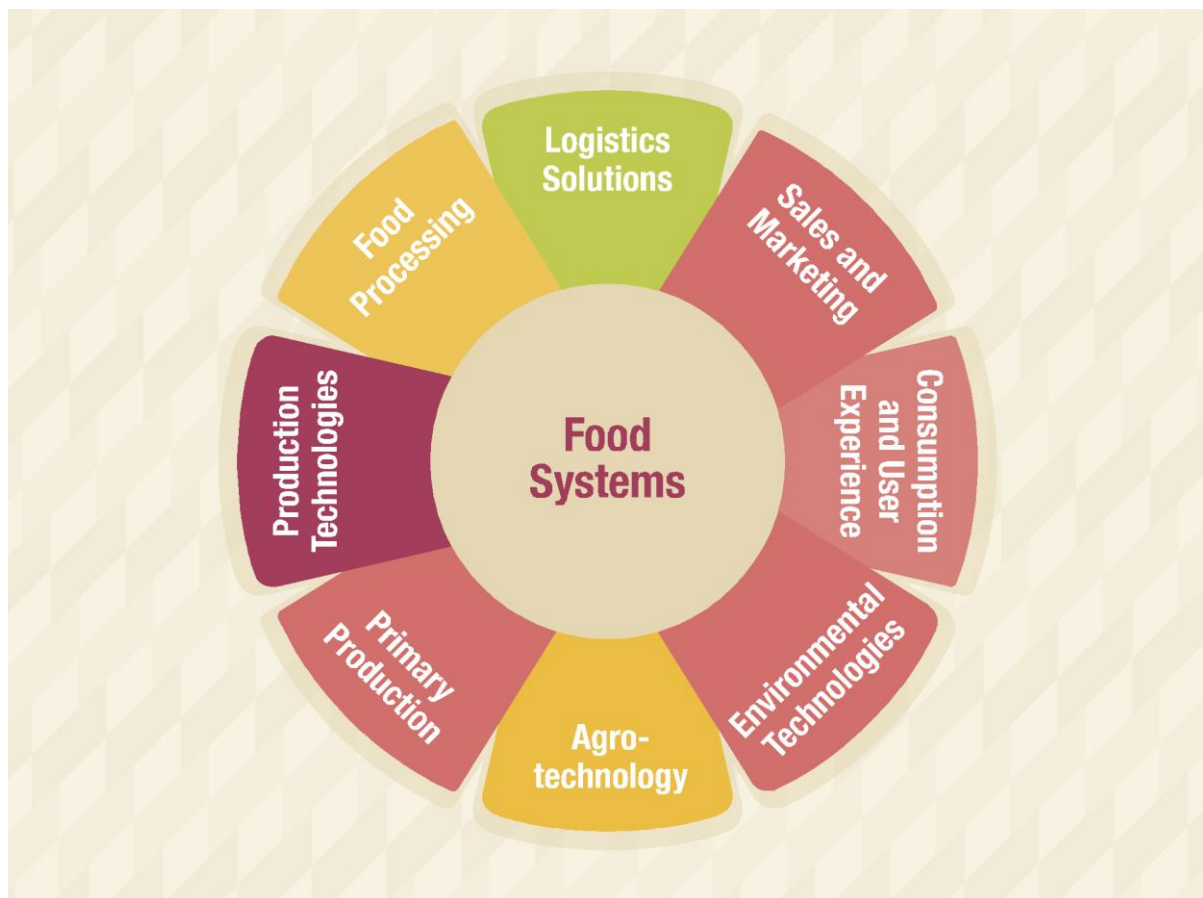


Figure 2. Parts of the Green Creative Garden Seinäjoki, Finland.

As GCG was launched in the beginning of 2014, the relevant operations in the area of agro-bioeconomy were included. There were different kinds of developments to improve each part of food systems. Research, development, education and innovation activities were collected and coordinated.

Agriculture is present in several parts of GCG. Primary production, agro and environmental technologies are the main parts that include agricultural innovations. Each part has interconnections so that traditional value-chain thinking was omitted and a decision was made that the situation is best described by the flower-shaped system above.

Special Food Systems Platforms and User Networks were included:

- **Consumer Research Platform** (a testbed with user network of over 17.000 consumers)
- **Agro Living Lab** (agro technology testbed with user network of over 200 farms and farmers) (Fig 3.)
- **Sport & Wellness Testing Platform** (technology testbed with user network of over 4.000 active athletes)
- **Food Lab & Pilot Factory** (research laboratory and factory scale production facilities)
- **Food World of the Future** (research restaurant and shop, 2014 ->)
- **Log Lab** (green logistic solutions testbed, 2015 ->)



Figure 3. A usability test at a combine. The Agro Living Lab worked as a testbed for new developments. The users were observed and interviewed. As a result, the R&D process was quicker and the products were better suited for their users.



Figure 4. The odour annoyance was reduced on a pig farm by using the latest technologies of manure cooling and biological treatment. The farmer (to the right) was in the centre of the tests as he invested in the equipment and participated actively in the R&D.

Related research groups, each led by a professor, were identified:

- Consumer behaviour in food markets
- Economic impact assessment of food markets
- Logistics systems research - industrial management
- Food development and molecular gastronomy
- Automation in agro technology
- Rural entrepreneurship
- Food chains and food security

It has to be mentioned that the starting point to establish the research groups was quite easy since there were already 20 professorships of related subjects in the area. The goal is to activate international individuals to take part in these groups and to attract the best experts in the area.

The main challenge in GCG is how to organize the practical innovation processes so that each needed individual gives his or hers best input. The whole idea is interdisciplinary innovation, as you may see in the selected platforms and research groups. Different methods of innovation, including innovation camps, innovation arenas, etc. have been used with variable success.

The main challenge in GCG is how to organize the practical innovation processes so that each needed individual gives his or hers best input.

The goal is also to produce efficient facilities and supporting services for innovation. These are to be tried and developed in GCG to get the best available results. The investments included are significant and related risks are high. Therefore it is valuable to exchange experiences with relevant European colleagues.

The investments included are significant and related risks are high. Therefore it is valuable to exchange experiences with relevant European colleagues.

As time goes by the GCG evolves according to the needs of its users, the companies, researchers, advisors, authorities, etc. The best (minimal) management of the whole platform is yet to be found so that benchmarking of best practices from related operations is welcome.

The GCG aims to speed up innovation and to increase the accuracy of product and service development in its focus areas. Agricultural innovation is an important part.

Advisory services, such as those provided by ProAgria Etelä-Pohjanmaa, are working as a catalyst of agricultural innovation in GCG. To be effective in this process, we expect to learn a lot from the AgriSpin. The goal is, of course, also to give our European colleagues useful information on our own findings as we operate the GCG platform.

As this text is written the future of Innovative Cities Programme funding is being threatened. Even if this will not happen, there is the need to arrange the included innovation processes to continue as a stand-alone operation. **Commitment of the actors is needed and new innovative ways of managing the process is required. AgriSpin is a possibility to boost the continuing activities.**

19

Landscape, Vines, Wines and Tourism

The battlefield of innovations in Santorini Island

George Vlahos, Alex Koutsouris and Emi Tsakalou

Dept. of Agricultural Economics & Rural Development, Agricultural University of Athens, Greece

Bottom up innovation is not a smooth path

In this piece of work we explore the complexity of the introduction and acceptance of innovation(s) in the case of the Santorini Island, a worldwide famous tourism destination owing to its distinctive landscape. The vineyards of the island are an integrated element of this landscape due to the application of specific cultivation techniques, a result of the island's specific agro-environmental conditions. Following, we describe the endeavours of 'newcomers' to establish themselves as wine making entrepreneurs targeting high quality products for the global market and the respective challenges concerning both themselves and the local vine growers (including the local cooperative, involved in wine making too). Given the two 'common goods' present at the island (landscape and product/wine fame) the challenges, synergies and trade-offs between a wide range of factors, i.e. policies, markets, local actors and their cooperation (or the lack of it), landscape, vine cultivation and wine production, and tourism development, as well as the resulting changes are dealt with. We thus show that the **bottom up process of innovation** generation, dissemination and use, which in our case includes the 'redefinition' of the island's 'collective goods', is far from being a simple and neutral process; conflicts arise, more or less, in every step of innovations' formation and acceptance.

The bottom up process of innovation generation, dissemination and use, which in our case includes the 'redefinition' of the island's 'collective goods', is far from being a simple and neutral process; conflicts arise, more or less, in every step of innovations' formation and acceptance.



Landscape quality versus product fame

There is a long archaic tradition of winemaking on the volcanic island of Santorini, at the Southern part of the Aegean archipelago. Tourism has been the island's main industry for the last 30 years; nevertheless, a considerable, although declining, part of the island is still covered by vineyards, i.e. approximately 1,500 ha. in comparison to 4,500 ha. at the beginning of the 20th century.

Wine, although of good quality, owing to the coincidence of natural

Figure 1: Santorini, an island of the Cyclades, Greece

circumstances and long adaptation (“domestication”) of the variety under cultivation, used to be traded in bulk. It was either used for blending by major players in the national wine market or sold directly to final consumers, through networks of emigrants in urban areas mainly Athens (a considerable number of wine traders originating from Santorini have been established in Piraeus, the port of Athens).

Greek winemakers’ long time strive to enter the global market for quality wine, only recently met some success, with Santorini wines as the spearhead of such efforts. The latter could be also attributed to the fact that Santorini, especially after the 1980s, entered the global tourism market and it is now considered as an outstanding destination, not only for European but for global travellers as well. A significant part of the attractiveness of the island for tourists is its landscape owing to its unique volcanic geomorphology, an integral part of which is its agricultural landscape.



Figure 2: Santorini and Thirasia islands

This island’s landscape has been the result of millennia of human agricultural activity on the island interacting with a rather unfavourable, for agriculture, environment. Traditionally, farmers in Santorini (Thira) and Thirasia, a smaller island nearby, on their small-sized plots, prune their vine stocks low, very close to the ground, in a circular-reversed conical way, in order to protect the grapes from the wind and, taking advantage of the volcanic soils, gather the nocturnal dew. Furthermore vines are self-propagated through layering in a disorderly manner in space. This is obviously a system adapted to the climatic and soil conditions (dry and hot summers, strong winds and volcanic soil) that resulted in the specific landscape currently at stake. Historically, this was taking place in times of abundant, relatively low cost, skilled labour supply. These practices, today, not only increase pruning cost, since a greater amount of skilled labour is required, but also make mechanisation impossible.

The coincidence of (mass) tourism development in the last three decades with the production of quality wine using the particular agricultural practices, on a small area – island, has been proven a very powerful combination.

By the end of the 1980’s/ early 90’s, a number of initiatives was undertaken towards creating synergies in order to exploit the opportunities arising by this triple coincidence. The first concise EC rural development regulation (EEC/797/85) launched in the mid ‘80s and implemented in Greece by

the end of the 1980s, made available incentives for processors willing to invest on the consolidation and modernisation of their plants. Hence, advanced technological innovations, such as metallic containers, decanters, enzyme technology, etc. otherwise forbiddingly expensive, especially for small size winemakers in remote areas, have been made available at a reasonable i.e. affordable investment cost. In this sense, the EC support through investment aids has been crucial for the transformation of the local wine production towards a high quality oriented produce, especially since the 1990s (Vlahos and Louloudis, 2011, Darrot et al., 2014).

As a result, nowadays, a Protected Denomination of Origin (PDO) wine label substitutes for the previous three superior quality wines (VQPRD after the French acronym) related to the specific variety Assyrtico produced on the islands of Santorini (Thira) and Thirasia. In parallel, two broader (regional) Protected Geographical Indications (PGI) labels for wine, i.e. Cyclades and Aegean Sea wines, have been developed; however, the established wine producers of Santorini do not seem favourable towards them. The attachment of the protected denomination to the specific space (the island) rather than to the vine variety along with the reluctance for their wine to be classified under a broader label signify a further appropriation on the part of local wine producers of the fame accompanying the high quality of Santorini wines. The regional classification creates the risk of diluting the common good and hence the need to protect it from degradation. On the other hand, the striving towards quality gives rise to a number of issues concerning the specific techniques used, which will be referred to later.

The innovation (we would rather use the term ‘challenge’) we examine here is the attempt (through innovative co-ordination mechanisms) for a collective (and not individual) joint (and not separate) management of the two “public” – “common” goods related with wine making. These goods are namely:

A. Landscape quality (a public good);

B. Product fame (common good).

What we are suggesting here is that public/common goods cannot be efficiently managed on an individual basis and that synergies can be achieved through their joint management. On the other hand, a Centrally organized (quasi obligatory) co-ordination system cannot be implemented; such a system is not deemed to be resilient, the reasons being, among others, that (a) such a Centralised, rather rigid system does not easily endorse innovation (re: risk averting behaviour) (b) multi-objective planning is a rather new, and difficult for such a system concept and (c) its inability to adapt and respond to rapidly changing external circumstances.

The challenge is the attempt for a collective joint management of the two “public” – “common” goods related with wine making.

The triggering point

The whole process examined started in the late 1980s-early 1990s, by an individual winemaker, well established elsewhere in Greece (being one of the main wine producers/ distributors) – with a presence in the whole country but not quite significant on the island. This winery established appropriate facilities and started receiving organized visits offering a “complete” wine experience,

including presentations, small videos and landscape/marine-scape viewing opportunities while tasting the firm's products. This initiative was followed by new Entrants in viticulture and wine-making who took up a similar effort, concurrently enriching it with other locally specific characteristics as the use of canaves, cave houses constructed by digging in the volcanic soils to be used for wine cellars. In some cases new canaves have been dug and conditioned for visits by interested visitors.

Nevertheless, the core part of the investments made, especially in the 1990's, has been on the modernization of the infrastructure and equipment of wine-making units. New developments in wine making, processing and storage technology made such technology available, easily transferable and transportable - hence accessible to smaller producers, especially in the island, where the small size of the winemaking businesses was accompanied by accessibility problems aggravated during the fall-winter period, which nonetheless is crucial for the wine industry. At the same time, those willing to invest on modern equipment, facilities and infrastructure were further assisted in their efforts through financial support schemes available in both the national and the EU development policy frameworks. A series of development schemes provided for a significant proportion of the investment - to be given as a grant, along with a generously subsidised reduction of the interest rates. The national support was in particular aiming at the relatively larger businesses while a significant part of the support provided for processing in the EU Rural Development Programmes, especially during the 1994-2000 period, has been directed towards the modernization of the existing and the construction of new wine making installations.

Public/common goods cannot be efficiently managed on an individual basis and that synergies can be achieved through their joint management. On the other hand, a Centrally organized (quasi obligatory) co-ordination system cannot be implemented.



Figure 3: View of Oia, Santorini

The emergence of new winemakers

Although the whole process was initiated by an established winemaker, it was taken on by other actors, both individual and collective.

The “new” winemakers were mostly individuals, born in or with family origins from Santorini. They decided to return or settle on the island, after having spent some years studying and/or working in urban centres and/or abroad. Indeed, business opportunities in the tourism sector were abundant on the island. However, competition was fierce as well with investors particularly in the hotel sector investing large amounts of capital; on the other hand, ‘newcomers’, highly experienced in the food and entertainment business, were successfully engaged in such businesses, since they did not require any land - whose value was rapidly rising. Hence, the ones coming from the island, based on existing assets (mainly land) and, for some of them, family tradition, made the rational decision to make a fresh start in terms of a business that was taking advantage of their assets (land and tradition), that is, viniculture and wine making. Nevertheless, the existence of such assets, although necessary, was not adequate to ensure the successful establishment of these businesses; in this respect, their experiences gained during their living and working elsewhere which, in turn, implied business know-how and contacts/networks, proved of paramount importance. The latter (know-how and networking) have thus been their additional advantages offering them a competitive edge for the realisation of the window of opportunity opened to them by the rapid increase of the number of visitors and the raise in the global interest on quality wine, therefore the flourishing of the respective market.

The local co-op (established since 1947 and occupied with wine making and marketing) also got involved in this process and started its own efforts towards quality production and amenity service provision. In 1992, the co-op moved to its new modern wine making installations, opening at the same time a wine tasting centre offering wine tasting, specialized shopping and guided tours including wedding services, which is a rising, quite successful segment of the tourism sector on the island.

In parallel, tourism agencies started organizing special wine tours; this was streamlined with the cruise ships arriving almost daily to the island, beginning in mid-spring and ending in mid-autumn. Currently, nearly all local winemakers have their installations accessible to visitors and at least five travel agencies offer guided wine tours. Wine touring and tasting has been successfully established as part of the ‘Santorini experience’ for tourists, visitors and cruise passengers, resulting to a successful extrovert economy. According to local winemakers a significant part, more than 60%, of their produce is “exported” without them leaving the island, through such direct sales.

One can deduce that a first wave of innovations, mainly consisting of the use of new technological and biological means in the first place, in order to improve and stabilise the quality of the wine produced as well as to diversify towards amenity and direct sales has been successfully completed. Many individual efforts striving towards the same goal increased the competitiveness of their products, with the rational utilisation of their common assets, i.e. the natural conditions and the exceptional landscape.



Figure 4: Sunset at Oia, Santorini

Pressures and constraints

Nevertheless, the actors involved face certain constraints which may be classified according to the driving forces initiating and/or reinforcing them as well as their focus.

Although it's favourable role in the flourishing of the wine business, tourism has, at the same time, acted as an important driving force towards land use change.

The first type of pressures identified, namely tourism, is driven by forces external to wine making. Despite its favourable role in the flourishing of the wine business on the island is indisputable, tourism has, at the same time, acted as an important driving force towards land use change. Indeed, the years of tourism development have left indelible traces on the island's landscape. Construction along the main roads and beaches and the expansion of urban construction around the main settlements, a great part of which is illegal, has created an urban continuum on a large part of the island on the

detriment of the particular landscape. Disperse construction outside this continuum has also contributed to the degradation of the landscape. Therefore, on the one hand, the vineyard landscape has been affected while, on the other hand, the distinctive volcanic landscape of the island, including its built landscape, has deteriorated with the construction of large, off-scale buildings. On top of this, the expansion of secondary holiday residences, which accompanied the considerably long period (1981-2009) of relative economic affluence in Greece and Europe, represent a second wave of threats, especially after the realisation on the part of the tourism industry of the risks created by such an excessive and out of scale development; such a realisation also resulted in the moderation of development ambitions.

Attempts to avoid these abrupt and drastic changes in a critical element of the competitiveness of Santorini have thus been undertaken. An example of such attempts, through regulatory policies, has been the long standing land use change restrictions proposals. An integrated land development plan has been prepared by the competent authorities and awaits consensus, approval and official establishment since 1995. Although seemingly supported by the totality of local stakeholders, in practice it has been proved, by the long delay, as rather unpopular among them and hence the process of its establishment has been, thus far, proved fruitless. Instead, two land use zoning regulations have been issued by the Ministry of Environment, in an attempt to limit the damage, mainly concerning those areas which are most directly and severely affected by uncontrolled expansion of commercial and urban land uses.

An integrated land development plan awaits consensus, approval and official establishment since 1995.

Although seemingly supported by the totality of local stakeholders, in practice it has been proved fruitless.

The lack of co-ordination among winemakers as well as across the chain seems to have resulted to a further debilitation of their position in the land use regulation policy arena.

However, when forces have been joint, positive outcomes have emerged in the policy field.

The lack of co-ordination among winemakers as well as across the chain (i.e. between vine growers and wine-makers), seem to have resulted to a further debilitation of their position in the land use regulation policy arena. However, when forces have been joint, positive outcomes have emerged in the policy field. An indicative example for the potential benefits of co-ordination is the response to a policy measure, most probably detrimental for the island, if implemented. As a part of the 2007 reform of the Common Market Organisation for wine, the grubbing up of vines was promoted; but the breadth of its implementation was left at the discretion of the Member State. A co-ordinated effort of the Co-op, individual wine makers and the local authorities, annulled the application of the specific policy provision in the island, alleging that

vineyards are a scarce economic and environmental resource that has to be protected. On the other hand, a rural development policy measure implemented in the area, has been quite supportive to their endeavours. It concerned an aid, running for several years, for the maintenance of traditional vineyards, within the framework of a specific scheme for the small islands of the Aegean, aiming to address the problem of insularity. This particular policy measure has been considerably successful in terms of uptake. It is considered as having played a positive role in the endurance of agricultural land uses when faced with external pressures as the ones mentioned before, albeit their theoretically small effectiveness (OECD, 2009).

On the proactive side, successful individuals collaborated and created networks in order to ensure the sustainability of their businesses and, nowadays, they are actively engaged in an effort to reinforce and increase the value of a collective asset such as the fame of Santorini wines.

On the proactive side, successful individuals collaborated and created networks in order to ensure the sustainability of their businesses and, they are actively engaged in an effort to reinforce and increase the value of a collective asset such as the fame of Santorini wines.

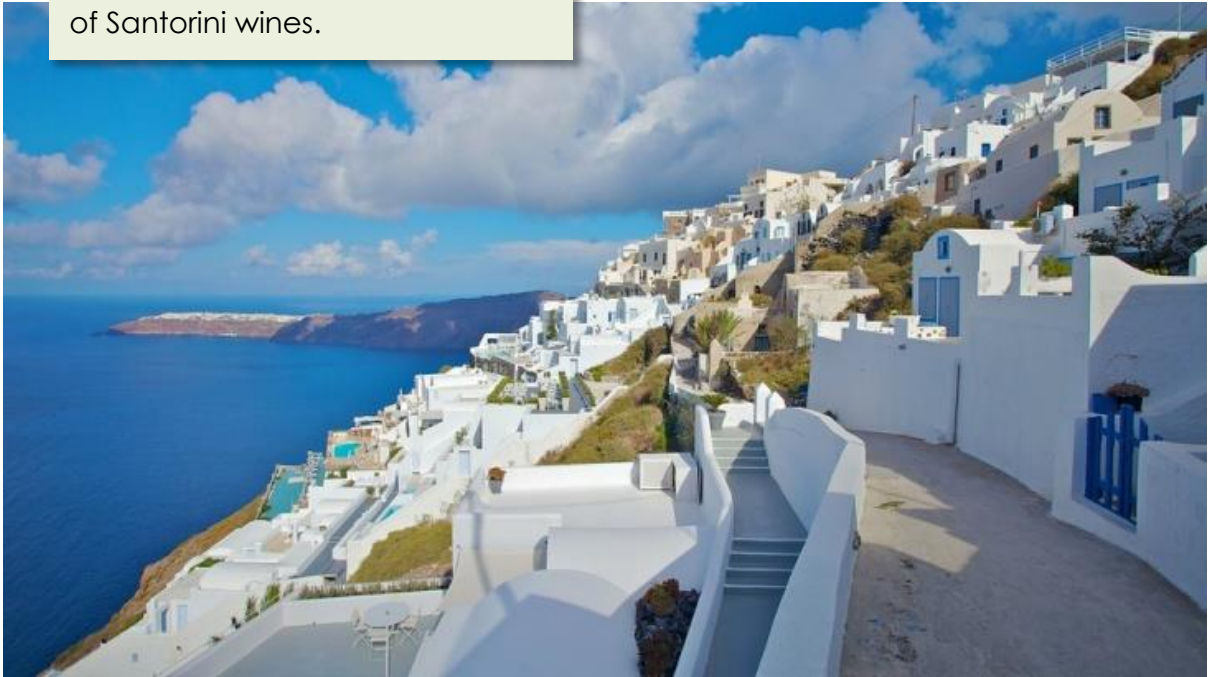


Figure 5: View of Fira, Santorini

At the same time, the successful management of the fame has been partially conflicting with landscape protection, that is, the first common asset of the inhabitants of the island, also shared with the tourism industry as well as the winemaking sector. This is further related to the second set of obstacles Santorini wine makers have been facing, that is, the trend of the global market for quality wines towards a homogenisation (Nositer, 2010, Rosenthal, 2009). As in the case of other quality consumer products, the influence exerted by big players on the global market tends to favour the creation of undifferentiated, “standardised” products; hence a “commodification” agenda is pushed forward in the global wine market (Colman, 2008), which marginalises wines that do not present the desired, by the wholesalers, homogeneity (Schoenfeld, 2015). On the other hand, it is deemed necessary for winemakers attempting to enter the market, to use the existing well established channels and comply to the rules and specifications established by these channels. However, the use of the

At the same time, the successful management of the fame has been partially conflicting with landscape protection.

This is further related to the second set of obstacles Santorini wine makers have been facing, that is, the trend of the global market for quality wines towards a homogenisation.

established marketing channels is a very difficult and demanding exercise for individual winemakers, especially for the small to very small ones that are active on the island. Hence, the need to coordinate their efforts. An effort that has already started with joint presentations to international fairs and exhibitions, participation in contests as well as establishing linkages to mainstream and influential specialised press.

A further issue, raised by this “aiming global” process, was that in order to achieve certain characteristics of the product that were desirable in the global market, it was thought necessary by winemakers subscribing to such an agenda to change certain farming practices. These winemakers attempted to impose such changes as prerequisites for buying farmers’ produce (grapes); consequently it created reactions on the part of vine growers.

A practice change that created conflict relates to the earlier harvest of the grapes, which in order to achieve the optimal quality has to take place in mid/ late August, instead of mid-September. This change, in fact, clashed with the farmers’ temporal occupation with tourism; a later harvest, as the traditional case had been, coincided with a relatively lower demand for labour in tourism activities, although it did not satisfy the conditions for a wine quality that was demanded by the global market.

A second change (innovation) promoted by some wine makers concerns the change of the pruning system, toward a more “rational” system according to which vines were pruned linearly and supported on wires. This novel, for the area, arrangement is deemed necessary for the improvement of quality mainly because it makes the harvest easier, facilitates other interventions like weeding and increases resistance to diseases. But, on the other hand, it threatens the highly valued landscape of the island which, as already mentioned, is an integral component not only of the farming tradition of the island but of the whole Santorini “image”. Although, up to date, this novelty has been adopted by very few of the winemakers and it is not widespread on the island it has raised a lot of concerns. For the local co-operative, focusing its marketing strategy mainly on direct sales to tourists, cruise passengers and visitors as well as to local businesses, such a threat is quite important and has created their fierce reaction. Especially so, as it was perceived by the coop as a threat coming from within the wine making community, not as an external pressure.

Such a concern was corroborated by an agri-environmental scheme launched in 2002 within the EU Rural Development 2000-2006 framework, aiming at the maintenance of the iconic landscape of the island. The scheme was specifically designed for the two adjacent islands, Santorini (Thira) and Thirasia, and compensated farmers for increased costs due to the maintenance of the traditional pruning system and terraces as well as for revenues foregone due to decreased productivity; it also supported the protection of bushes and trees at the field margins. More than 50% of the area cultivated on the two islands adopted this scheme (Vlahos and Louloudis, 2011).

Open issues

The above mentioned innovations have been introduced and promoted by a number of wine makers, mostly the ones striving for high quality wine production aiming at the global market. Nowadays, it can be argued that they have succeeded in fulfilling that objective to a certain degree. However, the benefits from such a success have not been distributed equally across the value chain. Not all the vine growers of the island are wine makers. For the primary producers, the demand for better grape quality and the stricter selection criteria imposed upon them meant increased costs, which, nevertheless, have not been adequately compensated. One might suggest that the maintenance of the small market slot and the attempt to widen it has been based on the relatively stable price for

the local grapes, despite the fact that both the price of the final product and the demands towards farmers has been significantly increased. An attempt of the local co-op to exploit the “second” rate wine and sell it in different packaging caused the immediate opposition of wine makers producing high quality wines (labels), since it was thought as undermining the whole effort to create a Santorini wine “brand”. This opposition was seen by some farmers as blocking an alternative, more convenient, channel to dispose their produce.

Therefore, the bottom up process of “redefining” the island’s collective goods such as the island’s landscape and fame is far from being a neutral process. The innovations introduced created conflicts. In our case, these conflicts refer to elements such as: the co-op vs. private companies, wine quality vs. tradition, economic viability/profitability vs. landscape, the production techniques (planting, pruning, varieties, harvesting), customer targeting as well as the incentives for small land owners and farmers, the distribution of the income generated; that is, elements of all dimensions of the process/chain (technical, social, institutional, economic, environmental) are contested.

One should notice the absence of any kind of intermediation that is, the lack of any actor (organization or person) who might steer or facilitate the processes of the introduction and acceptance of innovation(s).

In the Santorini case one should notice the absence of any kind of intermediation, that is, the lack of any actor (organization or person) who might steer or facilitate the processes of the introduction and acceptance of innovation(s). Instead, the process discussed was left to the market with the state in the role of the facilitator of only technological changes enforcing the wine-making firms’ competitiveness. On the other hand, a (free) actor would, in the first place, bring actors (stakeholders) together in order to discuss and negotiate the

desirability, feasibility and efficacy of innovative ideas and projects with the objective, if not attaining consensus - which might not prove possible, to get actors not to oppose innovative ideas and thus to avoid or ease conflicts. Furthermore, such an actor might facilitate the actual generation, dissemination and use of innovations through networking, the establishment of innovation platforms and social learning (i.e. an actor involved in process facilitation and not the generation of the innovation per se). In this respect, the case of Santorini clearly shows the limits of the market-based process. This is especially so in cases such as the one dealt with, involving multiple actors and issues at stake among which collective goods are of paramount importance for all, such an intermediary might have helped the coordination of the actors concerned in order to design a common development trajectory which would prove beneficial (in economic, social and environmental terms) for the various sectors activated in the island (primary producers/farmers and their coop, individual wine makers, various tourism entrepreneurs, etc.) through in common agreed trade-offs.

Instead, the process discussed was left to the market with the state in the role of the facilitator of only technological changes enforcing the wine-making firms’ competitiveness. In this respect, the case of Santorini clearly shows the limits of the market-based process.

A (free) actor might facilitate the actual generation, dissemination and use of innovations through networking, the establishment of innovation platforms and social learning.



Figure 6: Vineyards of Santorini

References

- Colman, T. (2008). *Wine Politics. How governments, environmentalists, mobsters and critics influence the wine we drink*. University of California Press, Berkeley- Los Angeles-London
- Darrot, C., Diaz, M., Tsakalou, E., and L. Zagata (2014) *The missing actor': alternative agri-food networks and the resistance of key regime actors*. In I. Darnhofer, L-A., Sutherland, G Wilson, L Zagata (Eds): *Transition Pathways towards Sustainability in Agriculture: Case Studies from Europe*. CABI International
- Nositer, J. (2010). *Liquid Memory. Why wine matters*. Atlantic books. London. UK
- OECD, (2009). *Farmland conversion: the spatial dimension of agricultural and land-use policies*.
- Rosenthal, N. (2009). *Reflections of a wine merchant. On a lifetime in the vineyards and cellars of France and Italy*. North Point Press, New York. USA
- Schoenfeld, B. (2015) *Taking on Napa's tastemaker*. International New York Times, May 30-31
- Vlahos, G. and L. Louloudis (2011). *Landscape and agriculture under the reformed Common Agricultural Policy in Greece: Constructing a typology of interventions*. *Geografisk Tidsskrift-Danish Journal of Geography* 111(2):131-147.

20

Beyond agriculture: Bio-districts

How organic farming model pushes the boundaries of innovation

Yulia Barabanova, IFOAM-EU, and Salvatore Basile, general secretary of the Cilento Bio-district and president of the International Network of Eco Regions (Italy)

In Italy, an innovative partnership between organic farmers, local governments, catering and hospitality industries have led to the creation of Bio-districts – territorial networks that promote short supply chains, preserve local traditions and resources, and support rural development. We talked to Salvatore Basile, one of the initiators of the Bio-district network, to learn how organic agriculture model gave an impetus to the development of 13 regions in Italy and spilled over to other countries.



What's the main idea behind the concept of bio-districts?

A bio-district is a geographical area where farmers, citizens, tourist operators, associations and public authorities enter into an agreement for the sustainable management of local resources, based on organic production and consumption (short food chain, purchasing groups, organic canteens in public offices and schools). In bio-districts, the promotion of organic produce is inextricably linked with the promotion of the land and its special characteristics so that it can fully realise its economic, social and cultural potential.

A bio-district is a geographical area where farmers, citizens, tourist operators, associations and public authorities enter into an agreement for the sustainable management of local resources, based on organic production and

How did the bio-district idea come about?

It all started around 15 years ago when a group of organic farmers from the Cilento region asked the local government to help promote organic food and farming. AIAB, the Italian Association for Organic Agriculture came up with a brilliant idea: instead of helping individual farms, they proposed to bring together a variety of local actors –public administration, restaurants, canteens, tourist business and so on – to work out a common strategy based around the organic principles.

The idea behind this systems approach was to create and reinforce links that would benefit everyone involved.

The idea behind this systems approach was to create and reinforce links that would benefit everyone involved: organic farmers would get better market access and exposure, consumers would benefit from transparency about the origins of their food and enjoy fresh, organically grown local products, the tourist operators would offer new destinations (eco trails), and public authorities would ensure food security, i.e. define the ways of meeting food needs of local communities. Other actors such as schools, university, researchers etc. got on board along the way.

What were the practical steps of building such a network?

Setting this first Bio-district was no joke – it took AIAB almost five years from the moment of the first public forum to the official launch of the first European Bio-district Pact in 2009. Now that there are 13 thriving Bio-districts across Italy and a few more outside (France, Germany, Slovakia, Portugal, Switzerland), establishing the regional network is of course a much smoother and shorter process.

A real must for the successful creation of a bio-district is a promotion committee that would organize public forums and general assemblies, as well as provide an initial analysis of the area's challenges and potential. Identifying and engaging all the relevant interested partners (public authorities, producer associations, business etc.) is another important task for the committee. Once there is a clear interest and commitment from the local actors, the general assembly is organized where all the participants take part in writing a strategic plan – a roadmap for the region with concrete objectives, responsibilities and action plans.

Establishing the first bio-district in Cilento must have involved a lot of trial and error. What would you do differently if you had a chance to start the process all over?

What we definitely lacked in the first years of the project is clearly assigned roles and responsibilities from the beginning, as well as targeted and feasible objectives based on reality and not only the expectations. Because the whole idea behind the bio-district is quite ambitious, no single partner would be able to implement all the tasks without sharing them with others based on the field of expertise and resources. That's why all the objectives and responsibilities should be codified in the strategic plan together with all the partners involved. Having unrealistic or vague responsibilities slows down the process and might even create a risk of disengagement.

Organic farmers were at the heart of the bio-district concept from the very beginning. What changes does it make in their day-to-day activities?

Indeed, organic farmers are the Central figures in bio-districts. Being part of the network has direct benefits for them, from market access to new knowledge to direct contact with consumers. The average turnover (including organic markets, fairs, and summer promotions in seaside resorts) has increased in the last two years by 20%. Today the entire produce, and not just a part, as before, is marketed as organic.

Being part of the network has direct benefits for them, from market access to new knowledge to direct contact with consumers.

Especially for smaller farms, bio-districts are an excellent opportunity to try new practices that would improve the sustainability on their farms (water, energy, biodiversity etc.), something that they would have difficulty doing on their own. On the other hand, farms are laboratories, a source of new knowledge themselves. The cooperation between universities and farmers is also an integral part of the bio-district concept and it has evolved in the last years as farmers give more input to the researchers and vice versa.

Another benefit for farmers is that because of the involvement of the local authorities and a growing interest of the consumers, conversions to organic agriculture are supported and the organic model becomes a reference point for the agriculture as a whole. It helps revive public interest in the

profession, making it an attractive and respectable occupation. As the state-owned and uncultivated lands are brought back to life through conversions to organic methods, new spaces open up for community engagement in the form of social farms. In addition to producing food, these farms also focus on creating employment opportunities and therapeutic services for the disadvantaged groups of society. In this sense, organic farmers also help rebuild the social tissue and strengthen local communities.

You mentioned direct contact with consumers. How does the bio-district concept facilitate these contacts?

By being part of a bio-district, farmers have the opportunity to market most of their produce locally through organic markets, farm outlets, direct distribution, solidarity purchasing groups and as part of the tourist circuit – bio-trails, for example. Besides, by reaching out to schools, farmers have direct experience and influence on children and their parents, helping them to reconnect with food production as well as promote environmental stewardship. It is in fact a mutually enriching experience for farmers and citizens get to know each other that establishes trust and deeper connection.

What is a typical profile of a farm that is part of the Cilento bio-district network?

Most are small farms, with an average agricultural area of five hectares. All together the usable agricultural area comes to approximately 2,000 acres, consisting of fruit trees (32%), seed crops/vegetables (22%), grassland (46%). The main tree crops are olives, widespread in all areas, vines, fruit and figs, common in hilly areas. Livestock farms are very small: cattle (on average 14 animals per farm), sheep (25 animals), goats (9), and pigs (3). The exception is buffalo, with farms having about 85 animals on average.

The 450 organic farms are controlled, certified and registered in the Registro Regionale degli Operatori dell'Agricoltura Biologica (regional organic farm register). By joining the Patto per il Bio-distretto (bio-district pact), they guarantee that their produce is typical of the area, organic and GMO free, in accordance with the ethical and social principles on which organic agriculture is based.

Which of the aspects of the bio-district concept would you highlight in terms of wider societal benefits?

Particularly important qualitative aspect is the work in the field of social agriculture, promoting and supporting cooperatives and farms which, in addition to producing food, perform the social activities of creating employment and offering a therapeutic service for the disadvantaged. Social agriculture has yet to be codified at national, European or international level. The term, though, refers to all the practices used in agriculture and in rural contexts to generate inclusive benefits, such as social inclusion and work placement for the disadvantaged and the marginalized.

Social agriculture also involves providing services to people and communities that are “fragile”, generating territorial development and making up for the deficiencies of the Centralized welfare state. However, although many private social and institutional actors have shown an interest in this scheme, there are many complex and objective difficulties to be surmounted if new social agricultural enterprises are to be created and the idea consolidated. In fact, different competences are involved and close cooperation required among actors and sectors that generally operate completely separately from each other (agriculture, health, social affairs and labour, education, justice.) In this context, bio-districts can foster new integrated forms of social farming.

What about the benefits of the network for other actors, not directly related to the organic farming per se?

The benefits are very real for these actors. The bio-district has created a network of 20 restaurants and 10 bathing establishments, committed to promoting the produce of farms and farming associations. In this way, organic farming not only plays an important role in the protection and preservation of biodiversity and typical products but can also rely on a local market that can appreciate the excellence of the area's organic produce. Thanks to these short supply chain initiatives, the consumers can be sure of the origin of the produce and can establish direct relations with the farms that are part of the Bio-district Pact.

Another example is tourism. These eco-tourist routes take you to farms, holiday farms, bio-cities, organic state-owned land, environmental sites important for their biodiversity and local traditions), linking inland rural areas and coastal tourist areas. All sites along the bio-routes are classified by AIAB Campania on the basis of the charter of principles for sustainable tourism in rural areas, which selects tourism activities that are ecologically sustainable in the long term, economically viable and acceptable from the ethical and social points of view.

The beautiful beaches of the Cilento, which attract tourists from all over the world, are an ideal place to promote rural areas and local organic produce. With the collaboration of bathing establishments and coastal municipalities, territorial marketing initiatives are carried out on the beaches to present the best organic products and bio-routes; the website www.biospiagge.it, also helps to create widespread consensus among producers and consumers. As of 2009, the Bio-District also organises boat trips to explore other beaches. Specially trained personnel promote organic products – Bio-lifeguards and Bio-recreation workers - who set up stands to give bathers a taste of local food, an activity that has proved successful beyond all expectations.

One of the main challenges in setting up such an innovative multi-actor network is in the communication between the partners: how do you make sure that everyone is included into the conversation and is on the same page?

What are the common difficulties that all bio-districts have to face?

One of the main challenges in setting up such an innovative multi-actor network is in the communication between the partners: how do you make sure that everyone is included into the conversation and is on the same page? Solving this challenge means engaging all relevant communication channels, from municipalities, to provinces, to regions, to natural park authorities etc., which is certainly time-consuming and sometimes complicated. Yet, without a proper communication the innovative network will not function properly.

Also, promotion of the bio-district concept to the local public should not be taken for granted, it is necessary to promote the network widely with the help of various actors. And as in any project, financial resources are often a challenge – applying for grants and support programs whether national, regional or European is a necessity for any bio-district. The idea is that by regularly bringing all actors together, new or existing funding sources will be identified and explored.

How would you describe the role of public authorities in the bio-district?

At the moment, 32 municipalities are part of the network. Many other municipalities in the area, impressed by the results, have applied to join the initiative. They play a fundamental role by providing information, promoting organic farming and environmental protection, undertaking educational activities on proper nutrition in schools, as well as activating organic canteens and other green purchase initiatives.

What is the future of the bio-districts?

The future is certainly bright! Demand for organic products is growing, and the overall shortening of the supply chain has generated loyal customers, boosting development in the sector, with more and more farms becoming multifunctional and converting to organic produce. Further impetus is expected from the future application of new simplified organic certification procedures, developed and tested by AIAB as part of a nationwide project. The bio-district has encouraged tourists to try typical local products and explore the local culture, increasing tourist flows throughout the year and not just in the summer months. We are hopeful that this trend will continue in the future.

Many state-owned lands have switched to organic farming. From an environmental perspective, a number of initiatives have been implemented to protect and valorise the landscape and natural features of rural areas. The conversion of new agricultural enterprises to organic farming will also help reduce the negative impacts of production on the environment.

I believe that the bio-district concept will continue to spread in Italy and beyond because it is a unique model that brings together local actors who have not worked together before, giving everyone a sense of purpose and very tangible benefits. Most importantly, it unleashes the innovation potential in each and every actor as everyone is committed to the same principles and ideals rooted in organic principles and also valorising natural and typical products of an area and the area itself, contributing to a form of economic development that benefits tourism and is based on the respect and appreciation of local resources and traditions.

In our rapidly changing world it is no longer a question of getting individual enterprises to adopt an eco-sustainable model. Nowadays and in the future the focus is on the holistic approach that covers whole areas and makes all relevant actors work together as an eco-system. The aim, therefore, is to put forward a global model capable of giving concrete answers to social needs for greater environmental quality, less densely populated rural areas, perennial financial crises, and climate emergencies, by promoting innovations in the field of research, production standards, alternative distribution channels, and in the sphere of certification. I think we are well on the way of achieving this goal.

Nowadays and in the future the focus is on the holistic approach that covers whole areas and makes all relevant actors work together as an eco-system.



More info: <http://www.biodistretto.net/>
Salvatore Basile: presidente@ecoregions.eu

21

Pearls and Puzzles

A baseline for the AgriSpin project

Eelke Wielinga: ZLTO, The Netherlands

What seems to matter most in innovation processes?

The partners in AgriSpin have told their stories, some even more than one, before the encounters in the cross visit started in September 2015. What do these stories reveal about what is in the minds of the partners in this project? What does innovation mean for us? And what do we actually do to stimulate farmers to innovate? What are pearls we are proud of and what are we puzzling about? What are our assumptions about what really matters in an innovation process? What ideas do we seem to share, and where do we deviate? And to what questions does this lead us in the discovery tour on which we embarked?

Innovation involves more than improving technical practices

The types of innovations that have been described in the stories vary from technical to organisational and social. Technical innovations are for example the grape testing device ([2-Tuscany, Italy](#)), precision farming ([3-Brabant, Netherlands](#)), and the ammonia reduction approach ([4-Flanders, Belgium](#)). These innovations lead to higher quality products, less pollution and better incomes for farmers.

In the stories about goat cheese ([6-Denmark](#)) and the example of the milk vending machine ([13-Basque Country](#)) farmers have been assisted to enter a niche market or an alternative way to market their product.

Big data play a role in the benchmark story ([7-Ireland](#)) as well as in the one on precision farming ([Netherlands](#)). In the Dutch story ([2](#)) a pioneering farmer developed a way to collect detailed data about his fields and feed them into the cloud, enabling sharing with others. The Irish story ([7](#)) shows how advisory work has changed since farmers can find benchmarking data themselves on the internet. The story tells about rise and fall of an internet tool (ePM tool) that was made for this purpose. Also the grape tester device ([2](#)) feeds its data into a large accessible database.

Remarkable are several stories that deal with the organisation of innovation support. In the Trump Cards story ([8-Denmark](#)) the need was felt to improve the communicative skills of the advisors who used to be predominantly technically oriented. Instead of instructing farmers what to do, they were stimulated to engage into dialogue with the farmers, and to commit themselves to the needs of their clients. The bottom up story of Teagasc ([12-Ireland](#)) tells about a process that started more than ten years ago, involving representatives of farmers in setting the agenda for research and extension, in order to make the system more demand driven. In the cases of ITERA-AA ([13-Basque Country](#)) and RITA ([15-Guadeloupe, France](#)) new structures were built for stimulating various actors in innovation support to get their acts together. The Green Creative Garden ([18-Finland](#)) is an effort to create synergy between partners from both the agricultural and the urban sector.

Other stories tell us about social innovations. A good example is the Bio District approach ([20](#)), initiated by AIAB, the Italian partner of IFOAM. Instead of helping individual farms, the support agent brought together farmers, citizens, tourist operators, associations and public authorities, in order to

work out strategies for developing a coherent and attractive region, based on the principles of biological farming. They reached an agreement, and the positive results have aroused the interest of several other regions. The story of Santorini Island (19-Greece) shows an effort into the same direction. Branding the region is expected to make the area more attractive for tourists. It requires all stakeholders to attune to a shared vision on what the island should look like, but that is not so easy in this case where large scale farmers have vested interests in the current situation.

The story of family farming in Transylvania (17-Romania) is a bit similar, although it reads more as a plea for branding the area, making use of the potential of High Nature Value farming (HNV) by small farming households in which the vast majority of farmers in the country is active.

The cases cover innovation in the wide sense: everything that contributes to an environment that is favourable for farmers to improve their practices can be considered, including organisational approaches and social organisation. This does not necessarily imply that all partners have this wide scope in mind when they think of innovation. This is something to find out.

Other questions remain untouched or answers are implicit. Not any change is an improvement. What makes an innovation successful? What kind innovations are desirable? Is the focus on doing things better or on doing better things? Are the partners supporting opportunities in the niches or do they also address transformation processes in the mainstream of agriculture? These are interesting issues to explore.

Most stories highlight only a part of the innovation process

An innovation is a practice that was new for the stakeholders involved, and became widely accepted as valid. Following this definition not every invention reaches that state. The AgriSpin partners tell us about opportunities to innovate, approaches to get closer to farmers demands, actions that bring actors together for collaborative action, creating access to resources, and in some cases also about innovations that appear to have a wider impact, and thus became innovations according to the definition.

Examples of innovations that spread out are both stories from Tuscany: the grape tester (2) and the old wheat varieties that were rehabilitated (5). The pioneer work in precision farming (3-Netherlands) is having considerable impact in a wider network of farmers and researchers, making use of big data resources. The Bio District approach (20-IFOAM) is being replicated in other Italian regions. The Trump Cards (8-Denmark) could be mentioned as a successful innovation in advisory work, although the effects at farm level are not part of this story.

Several stories explain how changes at individual farms came about. The advisory board of volunteering citizens for the goat farm in Flanders (16) is a nice example of an innovative way to connect farmers to their clientele. The Øselund goat farm family in Denmark (6) found a new way for diversifying and commercialising its products. The other story from Flanders about ammonia reduction (4) illustrates what a farmer with a good idea has to go through before he gets the necessary support to demonstrate that his idea really works.

Such stories are interesting as well, although it cannot be said that the new practices have become widely accepted, and thus innovations in the strict sense. They highlight only parts of the innovation process. For the AgriSpin project it will be most interesting to distinguish different stages in such

processes. Probably, each stage will require something different from actors who wish to support innovations. Moreover, support to specific stages can be valuable, also when it is not yet clear if and how the movement will turn into successful innovations.

Innovation is not a linear process that follows a plan. This makes it hard for support agents to justify their efforts: the end result is not guaranteed. Per definition the results are unknown at the start: otherwise it would not be innovative. Therefore it is helpful to specify what stage of the innovation process is being supported and what outcome can be expected from that stage. It will be interesting to explore stages, specific actions, and their outcomes throughout innovation processes that will be observed in the cases, during the cross visits.

The initiatives can come from anywhere

In five stories farmers were the initiators and drivers of the innovation process. The Dutch precision farmer (3) and the Belgian pig farmer (4) are inventors themselves with bright ideas and the guts to deviate from what is common. The brothers on the Pratini farm (5-Italy) followed their passion for which they deviated from the common path. Some initiators had been exposed to situations elsewhere and brought home new ideas: the Danish farm couple (6) went to New Zealand after which they started the goat farm, and the driver behind the movement on Santorini Island (19-Greece) came home with a new idea after his studies on the mainland.

Some initiatives started with advisors. The idea of an advisory board of volunteering citizens (16) came from the innovation support agency (Innovatiesteunpunt, Belgium). In Campania (20-Italy) the advisor reversed the call for help, and mobilised a network for generating answers.

In the case of the grape tester (2-Tuscany) the idea emerged from interaction between people from the wine producers' cooperative and researchers with a wide international network of scientists.

Various stories tell about initiatives for improving the quality of the service: the Trump cards (8-Denmark), and the bottom up approach (12-Ireland). The three German stories (9, 10, 11) dealing with their offer in training and consulting advisors and managers from advisory services, explain how these programmes evolved in response to developments in the advisory world, and ideas they brought home from elsewhere.

In the stories from Latvia (14) and France (15) it was the government taking initiative, as a response to trouble: the revolts in the French overseas territories, and the economic crisis putting the majority of Latvian farmers, and thus the food security in the country, at risk.

The first spark for an innovation can arise anywhere in a knowledge system. There is only one story which could be classified as a research driven innovation, and even here the idea arose in discussion with the practitioners (2). Clearly, these stories do not support the idea that was common for some time that innovation flows from the source (research) to the end users (farmers), and that the job of innovation support consists of transferring knowledge.

The picture is rather that initiatives are everywhere, and innovation is a matter of mobilising a network of actors which can assist in realising them.

The picture is rather that initiatives are everywhere, and innovation is a matter of mobilising a network of actors who can assist in realising them.

It will be interesting to explore further why some initiatives are being picked up while others are not. What makes the network of stakeholders and supporters grow and become productive?

Innovation support most often means building bridges

Those stories that deal with stimulating change at farm level practically all show that the support provided by the partner organisation consisted of building bridges. Examples of bridges between farmers, advisors and researchers are: Trump cards (8-Denmark), bottom up approach (12-Ireland), ammonia reduction (4-Belgium), precision farming (3-Netherlands); old wheat varieties (5-Tuscany) and the grape tester (2-Italy). Often the bridges also connect with other farmers (12-Ireland, 3-Netherlands, 5-Italy). Bridges were made to financial resources (14-Latvia, 15-Guadeloupe, 3-Netherlands). Some bridges connect different support agencies (13-Basque Country, 15-Guadeloupe). And bridges have been made between stakeholders in the region (20-Bio District, Campania, 5-Italy; 19-Greece, 18-Finland).

Most partners in AgriSpin appear to be intermediate actors, making the necessary connections for creating opportunities. They have a position in which they have easy access to actors in the knowledge system, ranging from farmers, farmers leaders, researchers, financiers, and others in the value chain.

When do advisors become good bridge builders? How do their agencies provide an environment in which such bridge builders can flourish?

In the two Tuscany cases (2, 5) as well as the Santorini story (19-Greece) this intermediate role is missing, and in the latter case also sorely missed. The German contributions are different: they focus on the soft skills of advisors (9, 10) and managers (11) in support agencies. How these improved competences have served innovations at farm level cannot be read in these stories.

The stories from Guadeloupe (15-France), Basque Country (13) and Latvia (14) report about newly created structures or programmes, offering opportunities for support agencies to assist farmers. In the Pratini farm story (5-Tuscany) the farmer profited from of a fund from the Regional Government.

It will be interesting to explore in more detail what the support service providers actually did to help farmers realising an innovation. It is nice to read that they were involved, but it is even more interesting to understand how they made a difference. It clearly involves more than repackaging knowledge from research and delivering it at the doorstep of farmers. When do advisors become good bridge builders? How do their agencies provide an environment in which such intermediates can flourish? And is it possible to compare regions where this intermediate role is being performed well, and others where this role seems to be absent?

Assumptions remain implicit so far

It is not easy to conclude from the stories what the assumptions are which we seem to share, and where our thoughts are deviating. Although the authors had been asked to make their assumptions about innovation processes explicit, none of them did. Remarkable, but maybe we should not be too surprised about it. It requires quite some reflection to be aware of the assumptions beyond our actions, and most authors are rather doers than philosophers.

When we, nevertheless, try to distil some key factors for success, the blurred and incomplete picture could be as follows. The cases of Guadeloupe (15), and ITERA-AA (13) suggest that connecting structures are helpful. In the stories of precision farming (3), ammonia reduction (4), goat cheese (6) and old wheat varieties (5) the innovative entrepreneurs are leading and they get support from the agency. The idea that farmers should be in the driver seat is also the assumption in the bottom up story from Ireland (12).

Advisors should have the soft skills, and also their managers should be aware of what it takes to play this intermediate role in innovation processes, as is clear in the Trump cards story (8), the German stories (9, 10, 11) and the benchmarking story (7).

Ultimately it is about the capacity of the entire network of stakeholders to find their own solutions together, as the Bio-District story (20) nicely illustrates. Also the Green Creative Garden (18) is an effort in that direction.

Clearly there is work to do for clarifying why some innovations become successful while others get stuck, and what interventions made by support agents make a difference. This is not so surprising though. You need to take time for reflection and ask yourself the right questions, preferably with peers who operate in a different reality. Then those things that look so common suddenly appear quite special in the eyes of an outsider. The AgriSpin project provides good opportunities to do so.

Summary of the 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 a farmer, 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.
- **Studying particular phases of an innovation process is valuable.** It is interesting to identify different phases, and to find out what is needed and helpful in such a phase.
- **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.

Summary of the puzzles

- **Reflection on the dynamics is needed.** How do support agents make a difference? This question deserves more clarification. If a new structure has been installed to connect major actors: when does this structure become effective? If soft skills are important for the backpack with which support agents approach their partners: what skills do they need and what tools can they apply?
- **What can be done if bridge builders are lacking?** Some stories show that intermediate structures are lacking (5, 6- Tuscany; 19- Greece). This does not necessarily mean that bridge builders are not there, but the threshold for doing what needs to be done is high. The puzzle is: how to lower this threshold?
- **The underlying assumptions are to be clarified.** It will be most helpful for the joint learning process to dig deeper for the assumptions partners make about innovation processes. This first exercise of the project makes clear that it is not so easy for the partners to make this type of reflection. It will be most interesting to follow what all the intensive interactions that are foreseen in the AgriSpin project will do to the way partners think and act.