



14th European Rural Development Network Conference

Knowledge sharing and innovation in agriculture and rural areas





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PROGRAMME



14th European Rural Development Network Conference



Knowledge sharing and innovation in agriculture and rural areas

Budapest, 3-5 October 2016

Monday 3 October – Pre-conference session, AKI, Budapest

10.00 – 10.30: *Reception and coffee*

10.30 – 10.40: *Introduction and welcome*

- **10.40 – 12.20 Session 0: Knowledge sharing and innovation: setting the context.**
Chair: KATONÁNÉ KOVÁCS JUDIT, University of Debrecen, Debrecen, Hungary

10.40 – 11.00: Paweł CHMIELIŃSKI and Bożena KARWAT-WOŹNIAK, Institute of Agricultural and Food Economics – National Research Institute, Warsaw, Poland:
Social, cultural and economic rationale for the development of small farms

11.00 – 11.20: KEMÉNY Gábor, RÁCZ Katalin, HAMZA Eszter, KESZTHELYI Szilárd, TÓTH Orsolya and VARGA Éva, Research Institute of Agricultural Economics, Budapest, Hungary:

The characteristics of small farms and their development opportunities in Hungary

11.20 – 11.40: Tomáš RÁBEK, Marián TÓTH, Ivan HOLÚBEK and Zuzana ČIERNA, Slovak University of Agriculture in Nitra, Nitra, Slovakia:

Profitability and risk of crop and animal production in Slovak farms

11.40 – 12.00: Drahoslav LANČARIČ, Jana KOZÁKOVÁ, Radovan SAVOV and Veronika NÉMETHOVÁ, Slovak University of Agriculture in Nitra, Nitra, Slovakia:

Human resources in Slovak agriculture: impact of selected factors

12.00 – 12.20: TAKÁCS-GYÖRGY Katalin, TAKÁCS István and Adam SADOWSKI, Óbuda University, Budapest, Hungary:

What kind of new solutions do we need to increase efficiency of land usage? – case studies from Poland and Hungary (who wins?)

12.20 – 12.30: *Concluding remarks and info for the rest of the day*

12.30 – 13 15: *Sandwich lunch at AKI*

13.15: *Depart for Novotel*

Monday 3 October – Novotel Budapest City Hotel, Budapest

13.00 – 15.00: *Registration*

14.30 – 15.00: *Introduction and welcome*

- **15.00 – 16.40 Session 1: The potential for knowledge sharing and innovation.**
Chair: Barbara WIELICZKO, Institute of Agricultural and Food Economics – National Research Institute, Warsaw, Poland

15.00 – 15.20: JUHÁSZ Anikó, Research Institute of Agricultural Economics, Budapest, Hungary:
Introducing the BioEast Strategic Research Agenda

15.20 – 15.40: Irene MONASTEROLO and Zbigniew FLORIANCZYK, Boston University, Boston, USA:
How EU Member States innovated the programming of EU structural funds and cohesion policies to support the transformation in farm structures? Evidence across EU countries

15.40 – 16.00: Jiří HRABÁK and Ondřej KONEČNÝ, Charles University in Prague, Prague, Czech Republic:
Multifunctional agriculture in Czechia: non-commodity production or integral part of rural development?

16.00 – 16.20: Lina BJERKE, Jönköping International Business School, Jönköping, Sweden
Agricultural knowledge: a micro data assessment on the role of internal and external knowledge on farm productivity

16.20 – 16.40: Floor GEERLING-EIFF and Marijke DIJKSHOORN, LEI Wageningen University and Research, Wageningen, The Netherlands:
Lessons learnt: the development of regional knowledge and innovation systems in seven Dutch Greenport areas

16.40 – 17.10 *Refreshment break*

- **17.10 – 18.50 Session 2: Mechanisms/processes of innovation and knowledge sharing 1.** *Chair: Radovan SAVOV, Slovak University of Agriculture in Nitra, Nitra, Slovakia*

17.10 – 17.30: Nevena ALEXANDROVA, FAO Regional Office for Europe and Central Asia:
Agricultural Innovation Systems – the FAO perspective

17.30 – 17.50: NEMES Gusztáv and Anna AUGUSTYN, MTA, Budapest, Hungary:
Towards inclusive innovation in a European context – analysing the innovation performance capacity of alternative networks

17.50 – 18.10: Wyn OWEN, Menter a Busnes, Aberystwyth, UK:
Action learning to support organisational change in rural businesses

18.10 – 18.30: Adrien GUICHAOUA, Les Instituts Techniques Agricoles, Paris, France:
The AgriSpin project: learning from sharing

18.30 – 18.50: KATONÁNÉ KOVÁCS Judit, Anna AUGUSTYN and Paulo ALVES,
University of Debrecen, Debrecen, Hungary:
Understanding the initiators of knowledge sharing and social innovation in rural areas

18.50 – 19.00: *Concluding remarks and instructions for the next day*

19.30: *Dinner in the hotel*

Tuesday 4 October – Ministry of Agriculture, Budapest

08.30 – 09.30: *Registration for access to the Ministry of Agriculture*

- **09.00 – 10.40 Session 3: Enabling environment for rural innovation 1.** *Chair:*
Monica Mihaela TUDOR, Institute of Agricultural Economics – Romanian Academy, Bucharest, Romania

09.00 – 09.20: Peter MIDMORE, University of Aberystwyth, Aberystwyth, UK:
The Impresa project: results from the Eastern European Union

09.20 – 09.40: Simona CRISTIANO, Serena TARANGIOLI and Marta STRIANO, Council for Agricultural Research and Economics, Roma, Italy:
The integrated supply-chain projects as a policy approach for encouraging cooperation for innovation in agriculture and rural areas

09.40 – 10.00: Bernd MÜLLER, Institute for Agricultural Policy and Market Research, Gießen, Germany:
Cooperative approaches to targeted implementation of Agri-Environmental Measures (AEM) in Hesse / Germany

10.00 – 10.20: Tomáš HLAVSA, Martin HRUŠKA and Edita TURKOVÁ, Institute of Agricultural Economics and Information Prague, Czech Republic:
Innovation and investment activities in the Czech Less Favoured Areas

10.20 – 10.40: Cecilia ALEXANDRI, Camelia GAVRILESCU, Lucian LUCA and Dan-Marius VOICILAS, Institute of Agricultural Economics – Romanian Academy, Bucharest, Romania:
National strategy for agriculture in Romania - Horizon 2035

10.40 – 11.10 *Refreshment break*

- **11.10 – 12.50 Session 4: Enabling environment for rural innovation 2.** Chair: Paweł Chmieleński, Institute of Agricultural and Food Economics – National Research Institute, Warsaw, Poland

11.10 – 11.30: Barbara WIELICZKO, Institute of Agricultural and Food Economics – National Research Institute, Warsaw, Poland:

It is all about the risk – how to create an enabling environment for agricultural innovation within the Common Agricultural Policy?

11.30 – 11.50: Helen CARAVELI, Athens University of Economics and Business, Athens, Greece:

The Leader Programme as a vehicle in promoting social capital in rural regions: a critical assessment and examples from the case of Greece

11.50 – 12.10: F. CONTÒ, Mariantoinetta FIORE and R. DICECCA, University of Foggia, Foggia, Italy:

'To Leader or not to Leader?' Cases from Bulgarian, Romanian and Italian LAGs

12.10 – 12.30: Věra MAJEROVÁ, Jiří SÁLUS, Tomáš PILAŘ and Anna BÁBIKOVÁ, Czech University of Life Sciences Prague, Czech Republic:

LAGs and their innovative approaches to rural development in South Bohemia within the post-crisis period

12.30 – 12.50: Theresia OEDL-WIESER, Thomas DAX and Michael FISCHER, Federal Institute for Less-Favoured and Mountainous Areas, Vienna, Austria:

A new approach for participative rural development in Georgia – analysing challenges, opportunities and innovation needs in Borjomi Municipality

12.50 – 14.40 **Extended lunch break in the Ministry**

During the lunch break there will be the following optional activities:

- **13.30 – 14.10: Panel discussion including plans for future ERDN activities.** Chair: Zbigniew Floriańczyk, Institute of Agricultural and Food Economics – National Research Institute, Warsaw, Poland.
- **14.10 – 14.30: Agrispin YouTube video clips.**
- **14.40 – 15.40 Session 5: Mechanisms/processes of innovation and knowledge sharing 2.** Chair: Jiří SÁLUS, Czech University of Life Sciences Prague, Czech Republic

14.40 – 15.00: Adrien GUICHAOUA, Les Instituts Techniques Agricoles, Paris, France:
Recent results from the SCAR Strategic Working Group on Agricultural Knowledge and Innovation Systems

15.00 – 15.20: KOLLÁNYI László, SZABADOS Zsuzsanna, DANCSOKNÉ FÓRIS Edina, HUBAYNÉ HORVÁTH Nóra, ILLYÉS Zsuzsanna, FILEPNÉ KOVÁCS Krisztina, MÁTÉ Klaudia, MIKHÁZI Zsuzsanna, SZILVÁCSKU Zsolt, TÖRÖK Éva and SALLAY Ágnes, Szent István University, Gödöllő, Hungary:

New ways of partnership in rural development planning

15.20 – 15.40: Ryszard KAMIŃSKI, Polish Academy of Sciences, Institute of Agricultural and Rural Development, Warsaw, Poland:

Polish experience of social farming in Bory Tucholskie area

15.40 – 16.00: HERDON Miklós, VÁRALLYAI László, LENGYEL Péter, PANCSIRA János, PETŐ Károly, Charles BURRIEL, Helene COCH, Tamás JÁNOS and Blaskó LAJOS, University of Debrecen, Debrecen, Hungary:

Innovation on agroforestry education, training and practice to develop rural living and environment supported by the AgroFE Leonardo and AgroF-MM Erasmus+ Projects

16.20 – 16.20: Simona CRISTIANO, Patrizia PROIETTI and Marta STRIANO, Council for Agricultural Research and Economics, Rome, Italy:

Agricultural innovation through Rural Development Programmes: experiences and pathways in Italy

16.20 – 16.30: *Concluding remarks and instructions for the evening*

16.30 – 17.00: *Refreshment break*

17.00: *Depart on foot to restaurant in centre of Budapest for dinner*

Wednesday 5 October – Ministry of Agriculture, Budapest

08.30 – 09.00: *Registration for access to the Ministry of Agriculture*

- **09.00 – 11.10 Session 6: VALERIE papers and workshop.** Chair: Paul NEWELL-PRICE, ADAS UK Ltd., Wolverhampton, UK

09.05 – 09.25: Hein F.M. ten BERGE, Luca BECHINI, Frits K. van EVERT, Arianna FACCHI, Michael den HERDER, Yolaine HILY, Eric JUSTES, Nicole J.J.P. KOENDERINK, Paul NEWELL-PRICE, Frank J. de RUIJTER, Dario SACCO, Peter M. SCHULER, Jan TOP and Don J.M. WILLEMS, Applied Plant Research/Plant Research International, Wageningen, The Netherlands:

Boosting outreach of research for innovation in sustainable agriculture and forestry: a semantic approach by VALERIE

09.25 – 09.45: Julie INGRAM, Pete GASKELL, Jane MILLS, Janet DWYER and Pieter de WOLF, Countryside and Community Research Institute, Gloucester, UK:

Integrating co-innovation into research translation: developing a stakeholder-driven methodology

09.45 – 11.10: *ask-Valerie.eu* demonstration and VALERIE workshop

11.10 – 11.40: *Refreshment break*

- **11.40 – 13.20 Session 7: Impacts of knowledge sharing and innovation.** *Chair: Věra MAJEROVÁ, Czech University of Life Sciences Prague, Czech Republic*

11.40 – 12.00: Monica Mihaela TUDOR, Mihai Alexandru CHITEA and Elisabeta Stefania ROSU, Institute of Agricultural Economics – Romanian Academy, Bucharest, Romania:
Competitiveness and innovation in rural Romania

12.00 – 12.20: Cristina Bianca POCOL, Călin MOLDOVAN-TESELIOS and Vlad Mihai OCHIROȘ, University of Agricultural Sciences and Veterinary Medicine, Cluj Napoca, Cluj Napoca, Romania:

Impact assessment of Local Action Groups - as an innovative measure of the Leader Programme - on the diversification of non-agricultural activities and encouragement for small entrepreneurs

12.20 – 12.40: Vladimír SZÉKELY, Institute of Geography, Slovak Academy of Sciences, Bratislava, Slovakia:

Changes of commuting to work in territories covered by registered Local Action Groups: Slovakia, 2001 and 2011

12.40 – 13.00: Agnieszka WRZOCHALSKA and Barbara CHMIELEWSKA, Institute of Agricultural and Food Economics – National Research Institute, Warsaw, Poland:

Economic and social changes in rural areas in Poland

13.00 – 13.20: Marie TRANTINOVÁ, Institute of Agricultural Economics and Information, Prague, Czech Republic:

The economic context of climate change impacts and evaluate the impacts of the proposed adaptation measures in the South Moravian region

13.20 – 14.20: **Lunch in the Ministry**

- **14.20 – 16.20 Session 8: Papers from Hungary.** *Chair: BIRÓ Szabolcs, Research Institute of Agricultural Economics, Budapest, Hungary (presented in English)*

14.20 – 14.40: MEGYESI Boldizsár, Centre for Social Sciences, Hungarian Academy of Sciences, Budapest, Hungary:

The changing role of local small-scale agri-food production in Hungary

14.40 – 15.00: SZILVÁCSKU Zsolt, Szent István University, Gödöllő, Hungary:

Landscape and community based management of rural areas (New system thinking approach for partnership in management of rural areas based on community and landscape resilience)

15.00 – 15.20: VITYI Andrea, M.R. MOSQUERA-LOSADA and R. BOREK, University of West Hungary, Sopron, Hungary:

The role of agroforestry innovation networks in post-2020 rural development of the eastern European region

15.20 – 15.40: FILEP-KOVÁCS Krisztina, VALÁNSZKI István and JOMBACH Sándor, Szent István University, Gödöllő, Hungary:

Green infrastructure and European Union agricultural policy

15.40 – 16.00: BALÁZS Katalin, KOHLHEB Norbert, PODMANICZKY László, SIPOS Balázs and MÉSZÁROS Dóra, Szent István University, Gödöllő, Hungary:

Towards public-goods oriented agricultural payments: research for performance-based agri-environmental schemes

16.00 – 16.10: *Closing remarks*

Poster

Klaus WAGNER, Federal Institute of Agricultural Economics, Vienna, Austria:

H2020 Project SIMRA – Social Innovations in Marginalised Rural Areas

Remarks

Only the affiliations of the lead authors are shown.

The conference organisers thank the following organisations for their generous financial support:

- The Hungarian Ministry of Agriculture, Budapest, Hungary;
- The EU Framework 7 project ‘VALERIE’ Valorising European Research for Innovation in Agriculture and Forestry;
- The Research Institute of Agricultural Economics, Budapest, Hungary;
- The Institute of Agricultural and Food Economics – NRI, Warsaw, Poland.

14th ERDN Conference Organising Committee:

Andrew Fieldsend

Szalay-Tóth Judit

Szabó Gábor

Menyhárt Csaba

BOOK OF ABSTRACTS



14th European Rural Development Network Conference



Knowledge sharing and innovation in agriculture and rural areas

The European Union (EU) has introduced new policy instruments such as the EIP-Agri and multi-actor partnerships in an attempt to stimulate innovation in agriculture. In addition, Leader has been replaced by the multi-funded Community-Led Local Development approach. These initiatives are being implemented across the EU despite the great variety of agricultural and rural circumstances, and in particular the continuing differences between post-socialist Member States and other parts of the EU in terms of farm structure, social attitudes and so on. Can programmes that have primarily been developed from a western EU perspective ever be successfully implemented in the eastern EU or is a different approach needed? Although it is still rather early to assess the degree of success in the implementation of the new approaches, the debate on the possible shape of EU innovation policy post-2020 has already started. Thus it is not too soon for researchers and policy makers in eastern central Europe to share their experiences and ideas on how knowledge sharing and innovation can best be encouraged in agriculture and rural areas of the eastern EU in order to influence the post-2020 agenda.

Monday 3 October – Pre-conference session, AKI, Budapest

Session 0: Knowledge sharing and innovation: setting the context

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0.1: Social, cultural and economic rationale for the development of small farms

Paweł CHMIELIŃSKI and Bożena KARWAT-WOŹNIAK

The discussion on the principles and preferences used in subsequent CAP support programmes emphasises the role of family farms as the most important form of organisation in agriculture. The commonly accepted priority importance of this form of agricultural production was the reason for FAO declaring 2014 the year of family farms (FAO 2014). As far as declarations are concerned, nearly all agricultural policies include care for the condition of family farms. What is stressed apart from their significance in agricultural production is their cultural value and their role in the preservation of biodiversity in the agricultural structure.

The prevalence of family farms in the agricultural structures results in the fact that the changes to the agrarian system are determined primarily by the mobility within this group. Due to the specific functions of family farms, where property, particularly land, is not merely a production factor, but the material family legacy passed from generation to generation, the scale of agricultural land trade is in a way limited a priori to a large extent, and the agricultural changes are evolutionary in nature. The scale of the ongoing change is determined by a number of various factors, the most important of which include the extent to which people leave farming and find jobs in other occupations (Sikorska 2014, Terluin, Post 2000).

The academic objective of the study fits issues related to the search of the new paradigm in rural and agricultural development in Poland (Cf. Wilkin 2009, Zegar 2012, Czyżewski, Czyżewski 2015) and in European Union (Davidova, Thomson 2014, Bosc 2014). In the previous research work, the process of development was primarily identified with the acceleration of concentration with agriculture, and the rate of changes in this regard was deemed dependent on the opportunities for finding jobs outside agriculture. However, our research shows that the acceleration of concentration in family farms that was observed in the last decade was mainly related to changes to the agri-business structure. Competition on agricultural markets and requirements imposed on agricultural producers by recipients of goods resulted in elimination of economically weaker entities from the market (Sikorska 2013, Józwiak 2013, Karwat-Woźniak, Sikorska, Chmieliński 2015). Taking account of agrarian fragmentation and low production assets of a significant part of family farms, most of farming families were forced to look for an alternative source of income. At the same time this process involved passive income agriculture (which has been studied by researchers to a relatively small extent), i.e. the situation where managers of small farms decide to maintain good agricultural and environmental conditions of the land primarily to obtain direct payments and/or financially secure their families (Brady et al. 2015, Sikorska 2014). This phenomenon, known as land blocking, is one of the barriers to the improvement to the agrarian structure (Csaki, *et al.*, 2000, Cramer *et al.* 2001, Bosc 2014, Davidova, Thomson 2014). Permeation of the family system to farming, particularly the customary rules governing inheritance of production assets leads to the situation that farm management and decisions concerning the land are strongly conditioned by demographic features as well as social and occupational ambitions of individual family members and opportunities for pursuing them. Social conditions affect changes to agricultural land ownership in the circulation within a family, they also significantly affect the situation on the agricultural land market. It particularly concerns the supply, i.e. the tendency to dispose of the owned land by selling or leasing it out.

The study attempts to determine the importance of small farms from the perspective of economic, social and environmental performance and to determine the share of these entities, which have a chance to survive and develop. The aim of the paper is to draw attention not only to the problems faced by small farmers, but also to the values they bring and use as a value added to their production. Due to the lack of a uniform definition of a small farm, we will use in operation as a criterion for the delimitation of the adopted area (1 of 5 ha), economic size (SO - up to EUR 4 thousand) and the orientation of production (mainly production for their own consumption). In the paper will also identify new forms of adaptation of small farm holders (and their families) to market conditions, provide an overview of the various forms of farm livelihoods currently being applied in Poland and highlight key environmental, economic and social factors of farm sustainability, including post-productivism, local and 'alternative' food networks and organic farming and community participation, as well as change in rural development programmes.

The objectives of the paper fit to the conference theme: Opportunities for the development of small (semi-subsistence) farms, but also refer to: The role of social farms in agriculture; and: Improving food processing and supply chain efficiency through innovation.

We use data from the survey of IAFE that covered 76 villages (and more than 3 thousand family farms) and involves about 0.5% of the total number of private farms in Poland. We compare our findings to the data from the Central Statistical Office Yearbooks and Agricultural Censuses with regard to representativeness, which is supposed to confirm the correctness of methodological assumptions. Due to the panel nature of the study and the fact that the set of studied villages has been nearly identical for many years (we use data from 1996, 2000, 2005 and 2011 surveys), an important factor for high quality of collected data is the residents' confidence in interviewers involved in the study.

We will show that the role of small farms extends far beyond the assurance of family livelihoods (and self-supply). Small farms promote regional economic development, by supporting rural communities and preserve better the landscape and countryside; produce generally healthier food (of better quality determined by use of traditional production methods) whose surpluses are sold on the local market often within the very innovative local food systems. They also are the places of economic activity for people who cannot find off-farm employment, particularly women and the elderly, and they give the possibility of using the marginal labour force. They also make an opportunity to develop non-agricultural economic activities on the basis of own assets owned. Statistics also show that rural areas and farms are more and more friendly places of living, and thus, prevent excessive migration. These issues, combined with environmental preservation (and protection of biodiversity), cultivation of indigenous traditions and customs of rural communities show that small farms constitute an important element in ensuring conditions for sustainable rural development. And last, we argue that the scope of what is considered innovation is much broader than the development of new tools and techniques for improving farm productivity, profitability or sustainability. Small farms holders are driven to innovate for a multitude of reasons, which include, but go well beyond, opportunities to participate in commercial markets and local economy (Cf. Bragdon, Smith, 2015).

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0.2: The characteristics of small farms and their development opportunities in Hungary

KEMÉNY Gábor, RÁCZ Katalin, HAMZA Eszter, KESZTHELYI Szilárd, TÓTH Orsolya and VARGA Éva

Small farms amount the largest group of agricultural holdings in Hungary, however their number decreased significantly by 36.4 per cent between 2005 and 2013. These predominantly subsistence or semi-subsistence farms are playing an important role by supplementing the rural household incomes and also producing the significant part of agricultural production. In our research, we examined the situation and future prospects of these small self-employed farms which are typically not engaged in market production and are not professional. The aim of the research was to present the major economic and social parameters of small farms, to identify their types, to border the circle of farms develop to market-oriented entities as well as to draw up development policy proposals.

Our research was based on three information databases. On the one hand, we used the general agricultural census (2010) from the HCSO, which provides a complete and detailed sociological background of all agricultural holdings in Hungary (from their size, structure and market orientation). On the other hand, our research was based on the representative survey in 2013 of the FADN database, which examined the small farms between EUR 2000-4000 Standard Output (SO). The third source of our research was the structured in-depth interviews, which were made among small farmers in three counties (Somogy, Tolna, Heves) of the country. We used descriptive methodology and simple statistical analysis as well as

basic cost-income indicators to characterize the various types of farms. In order to identify the types of small farms and to analyse them in details, we also made factor- and cluster analysis based on a representative FADN sample.

The research highlighted on the statement revealed also in the literatures that the small agricultural holdings cannot be considered as a single, homogeneous group, among them significant differences, fragmentation can be discovered. The farms under EUR 4000 SO play an important role in the output, the labour contracting and the animal husbandry in the Mediterranean Member States of the European Union as well as in several post-socialist Member States. There is a substantive difference compared to the Mediterranean member countries that although the weight of income generated by small farms in the majority of post-socialist countries is significant, this in itself is not enough to ensure an independent existence. This category is capable to do it only in Romania and Bulgaria.

In Hungary, the small farms under EUR 4000 SO make up to 80 per cent of the holdings, and employ 59.7 per cent of the labour force. 6.8 per cent of the used agricultural land, 13.6 per cent of the livestock and 11.9 per cent of the agricultural output belong to them. To examine the cost-income relations of domestic small farms according to accounting principles it can be stated that the small farms under EUR 4000 SO produce higher production value with specifically (per hectare) higher expenses and asset deposition, with larger livestock and higher labour contracting. However, their accounting income per hectare and per assets is lower compared to the farms belonging to the larger farm size, and their return on labour (and thus their labour efficiency) is one-third of the farms with EUR 4000-8000 SO.

Based on the research results, small-scale farming is basically determined by the farm manager's economic activity: the full-time entrepreneurs produce substantial income on a profit-oriented way, with high asset deposition and expenses, and with effective work; while agricultural and non-agricultural workers, pensioners and people living from social benefits produce increasingly low production value and income with decreasing expenses and asset decomposition under less efficient labour use. Our analysis, however, has also drawn attention to that significant, even HUF 400-500 thousand consumer base per holding derives from semi-subsistence farming, which can reach up to 30 per cent of incomes to the pensioners and households living from social benefits. This additional income is significant but it cannot be expected without help from outside and resources that people living from social benefits in the disadvantageous rural areas are going to step on path of producing to the market. The primary reason of that is the lack of expertise and resources which would allow to become market-oriented farm.

The results of the research show that a very small part of farms under EUR 4000 SO, only a few thousand farmer having entrepreneurial background belonging to the younger age group, more educated and has already dealt with market production could be the potential beneficiary of rural development programmes promoting to become a full-time market-oriented farmer. These farmers with entrepreneurial approach are more suitable for this role because they had access next to CAP single area payments to tender resources for development. However, the vast majority of small farmers are not suitable for full-time production because of existential reasons and the absence of a profit-oriented attitude.

It would be important towards the success of the present semi-subsistence farms to become market-oriented actors if the RDP would construct a preferential loan and it is necessary to have access to other rural development supports as well. It is desirable increasing the number

of farms which cannot be developed market-oriented actors from rural development and socio-political aspects with complex programs encouraging the entry to the market with production coordination, specialized knowledge, and current assets.

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0.3: Profitability and risk of crop and animal production in Slovak farms

Tomáš RÁBEK, Marián TÓTH, Ivan HOLÚBEK and Zuzana ČIERNA

The paper focuses on profitability and risk of crop and animal production based on an analysis of farms operating in Slovak Republic. Risk in agriculture has been a matter of worldwide concern since 1933, when the concept of risk analysis had been introduced. Agriculture is a sector facing particularly large risks, resulting mainly from natural factors outside the control of farmers. The resulting variations in farm output, combined with a relatively low price responsiveness of supply and demand, also cause agricultural markets to be rather volatile. The sources of risks, that are relevant in agriculture have different characteristics, and can be classified in very different ways. Sources of risk include biological nature of production, dependency on climatic conditions, seasonality, animal and plant health, prices instability, policy regulations, and range of macroeconomic factor.

After 1989, Slovak agricultural sector was transformed from centrally planned economy to the market economy. Fundamentally, this process was based on privatization. Before 1989, Slovak agriculture consisted of cooperatives and state farms with large acreage, without existence of private companies. Since that number of private companies (Joint Stock Company (JSC.), Limited Liability Company (Ltd.)) has been gradually increasing, because this type of legal form is considered to be more effective. The year 2004, when Slovakia adopted Common agricultural policy and farmers received their first direct payments, became a next milestone in the development of Slovak agriculture. New political regulations, quotas, requirements and single payment system led to the number of substantial changes that have been ultimately impacting economic development in the sector and priorities of farmers. In the years 2003, 2007 and 2009 agricultural production, and in particular crop production, was affected by extraordinarily dry weather, which influenced total agricultural production and the economic situation of farms. Not only the legal structure has been changing, but also the crop production has been year to year on the increase (except of year 2009), while the animal production has been in general decreasing. 2014 was the total number of farms 17 708 in Slovakia, which together operated on 1 883 220 ha of utilized agricultural area (UAA). From the point of the size of the farm (the utilized agricultural area size), is structure of farms in Slovakia different compared to the EU average. It results from the historical development of agriculture in former Czechoslovakia before 1989. Nowadays, the majority of UAA (74.64% in 2014) is cultivated by large farms with over 500 hectares, while the UAA per farm in the EU is much lower. Therefore, also measures implemented through CAP result different in Slovakia. The individual farm data used for the analysis are from the database of Ministry of Agriculture and Rural Development of the Slovak Republic. For our analysis, data were selected according to the farm production orientation to the subset of crop farms and animal farms. The selecting criterion for production orientation was the percentage share of revenues from crop production, or revenues from animal production from the overall revenues from own products and services. We analyse profitability of farms divided into groups based on the type of production into crop and animal farms (according to the share in sales from crop or animal production). Using descriptive statistics and portfolio theory we simulate the total

farm profitability and volatility of animal and crop production in Slovakia. The modified Markowitz portfolio theory approach was used to estimate the total risk of portfolios of crop and animal farms. We assumed that the return of the investor is based on the profit of the company and the equity invested. Measuring volatility of return in the Markowitz portfolio theory is based on the average return over the observed period for each subset of farms. Based on the results we conclude that in the long run crop farms are profitable and profit from crop production is used to cover the losses from animal production in mixed farms. Farms focused on animal production only are efficient and profitable, but the profitability is lower in comparison with crop farms. Animal farms results are less volatile than crop farms. Large farms tend to production with lower value added and can generate enough profit for the owner. But production with lower value added has significantly less positive impact on rural development and job creation in rural areas. Therefore, policy measures should be applied to motivate individual farmers with large UAA to increase value added of their production.

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0.4: Human resources in Slovak agriculture: impact of selected factors

Drahošlav LANČARIČ, Jana KOZÁKOVÁ, Radovan SAVOV and Veronika NÉMETHOVÁ

Keywords: agriculture, human resources, employment, Slovakia, impact

Agriculture has been the source of livelihood as well as one of major employers from the beginning of human society (Grim, 1916; Kjeldsen-Kragh, 2007). Slovakia is historically agricultural specialized area. Unfortunately there is a lack of the historical statistical data on number of employees in Slovak agriculture. Especially data before World War I. are not consistent (Bogaedts, at al., 2002). According to available data, there were 845 421 people working in agriculture in 1869 (80.6%). In that time it was almost the only employment opportunity for rural population. In 1900, there were 648,862 workers (68.3%) in agriculture (Petráš, 2011). Nowadays, after a series of political, economic and other structural changes there are only 33 797 employees (2.8%) in Slovak agriculture. The farms are mostly under Ltd. legal form (969 farms) and 503 of them. are JSCs (MoARD, 2015).

The aim of the article is to evaluate the impact of selected factors (total farm return, sales of crop and animal production, personal costs and total area) on employment at Slovak subjects in primary agricultural production.

We used the database of the Slovak Ministry of Agriculture and Rural Development (IL MoARD, 2016) over the period 1997 – 2013 as a data source. The database consists of individual data of 1 472 Slovak farms. It includes complete balance sheets and income statements. The data submission is obligatory for all Slovak agricultural farms. We included only active farmers (enterprises which generating sales from farming) into the statistical evaluation. Only the data for production cooperatives and companies (Ltd., JSC) were available. There were no data for family farms and individual soleholders.

After the data selection there were adjustments necessary. After the adjustment there remained 1 397 farms in our final selection. For evaluation of significant differences in the observed period (from 1997 to 2013) we used t-test and ANOVA. For evaluation of the impact of selected factors we used linear regression. The statistical software IBM SPSS v.20 was used for calculation.

Paper focuses on the employment on Slovak farms. With respect to this, the dependent variable was the number of employees. Independent variables were: total farm return (F_R), sales of crop (S_C_P) and animal production (S_A_P), personal costs (P_C) and total utilized area (U_A). These variables are commonly used to evaluate managerial and aspects of agricultural entities (Adamišín – Kotulič, 2013; Rábek et al., 2014; Giannakis and Bruggeman, 2015).

Based on the literature review and previous research we formulated following research hypotheses:

- H1: The number of employees in Slovak agriculture depends on total returns of agricultural entities.
- H2: Number of employees in Slovak agriculture depends on sales of crop production of agricultural entities.
- H3: Number of employees in Slovak agriculture depends on sales of animal production of agricultural entities.
- H4: Number of employees in Slovak agriculture depends on the personal costs of agricultural entities.
- H5: Number of employees in Slovak agriculture depends on the area of agricultural entities.

Using regression analysis and analysis of variance we determined the effect of independent variables on the dependent one. Explanatory power of the model (R^2) is very high in all analysed years. For the years 1997, 2001 and 2005 it represents a predictive value of 94 %. In 2009 and 2013, declined slightly to 90 %. Given that this is a multiple regression, we use the standardized regression coefficients (β).

According to conducted analysis we can conclude, that statistical significant effect on the employment in Slovak agriculture from selected independent variables have just labour costs. This is an only variable with $p < 0.05$ in every examined year. According to this we accept the H4 hypothesis and conclude that the number of employees in Slovak agriculture depends on the personal costs of agricultural entities. We rejected other hypotheses (H1, H2, H3 and H5) because the rest of the analysed independent variables have no statistically significant effect on employment in Slovak agriculture.

The results are surprising. We expected that the impact of sales of crop and animal production will be statistically significant factor influencing the employment in Slovak agricultural enterprises. Based on the results we conclude that on the individual farm level the sales are not an important factor influencing the employment. Moreover, the decrease in sales was observed during crisis years 2009 and 2013 which means the farms had to do several restrictions in terms of spending money policy (which, logically, influenced their HR policy as well). In line with this (and based on the results) we conclude the labour costs are the only factor significantly influencing the number of employees in Slovak farms. On the other hand, wage is a very important element for employees determining their choice of job. Wages in Slovak agriculture are lower than the average wage in national economy, which is one of the reasons behind the declining attractiveness of working in agriculture for potential employees.

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0.5: What kind of new solutions do we need to increase efficiency of land usage? – case studies from Poland and Hungary (who wins?)

TAKÁCS-GYÖRGY Katalin, TAKÁCS István and Adam SADOWSKI

After the beginning of the 1990s deterministic changes took part in land use and property structure in all former socialist countries. The process went in different way in Poland and in Hungary. The EU membership offered opportunities to all countries, nearly in the same frames, with same subsidy systems, but the results and the agriculture with different characteristics show: more attention should focus on different traditions, culture and historical

background. Regarding to the competitiveness of agriculture, Poland showed a developing tendency after the accession, but Hungary suffers from serious problems.

To be competitive in the agricultural market, the individual participants (i.e. the farms) have to apply up-to-date technologies, find and keep the consumers for the future, adopt new methods, solutions. The role of knowledge in improving – both the technical and economic – efficiency, strengthening the market and social connections, networks is high, but the success depends on the positive attitudes to changes, novelty of the people.

The paper tries to identify the main differences and similarities in land use and property structure, and their effects on the agricultural competitiveness based on the FADN data base, since 2004-2014. Based on the differences, good practices are demonstrated for innovative solutions in land use (i.e. site-specific plant production), sharing machine use (how can be increased the efficiency of assets), new marketing channels (short food supply chains; local markets), how they are working in Poland and in Hungary.

The aim of the paper to find answers to the question: why can be considered Poland as a winner of EU accession rather than Hungary from the point of view of agriculture and somehow of rural development. During the research relation analysis were made by descriptive statistics between the changes of land use and land ownership, emphasizing the effect in competitiveness of the land price and a land rent. After examining and comparing the land use in the evaluated two countries with best practice method we show some examples coming from agricultural practice to highlight the role of open-mindedness towards innovation, the role of open innovation, knowledge sharing.

Based on a former survey among Hungarian farmers focused on adoption of site-specific farming and literature we build up the model of its diffusion, the farmers' readiness/openness/receptiveness of innovation (factors of motivation; differences between Western and Eastern Europe).

Trying to define the state of agricultural structure it can be concluded that Poland possesses large resources of agricultural land, however the area structure of farms demonstrates a great variety. Before the socio-economic transition in Poland the private sector was dominant by cultivating 78.6% area of arable land. On this ownership base the Polish accession to the EU changed conditions of the farms. Farmers started to use the system of subsidies which mobilized a large number of them to take a more active farming. In recent years quite an intensive change in the scale of land use can be observed in Poland, at higher level than in Hungary. Also can be observed knowledge sharing patterns among farmers. The group of medium-sized farms strengthened, partly due to the increased technical level, new kinds of market channels, strengthened non-agricultural activities of the farms (rural tourism). Land use also went through under serious changes, in the structure of the production takes place limiting the production of root crops to cereals and oilseed rape. Meanwhile, due to investment went into crop production, a significant increase in yield can be observed. The production of meat per hectare of arable land also increased. In the case of swine a systematic, very dynamic drop was in livestock both in the general as well as a decrease in the number of sows. The results of analysis by region indicate the more competitive position farms located in northern and western Poland. The lowest growth potential is characterized by a farm from southern and eastern Poland. Some positive examples will be shown to encourage the results of innovation in horticulture, animal husbandry e.g. farm cooperatives or producer's organisations.

In Hungary the production structure of farms got simpler, radically decreased the number of mixed farms and farms with animal husbandry, especially among private holdings. The level of technical assets increased (due to supported machinery investment) that caused radical decrease in technical efficiency. The sharing machine usage are not common. Regional differences are also characteristics in changes of farm numbers, size and the land use, radical decrease was in Northern Hungary and in Northern Great Plain Regions.

The research shows, that the processes going on in the examined two Central (Eastern) European countries – on different historical traditions – resulted in different polarized land structure with different competitiveness.

So the question is not: who wins? but rather why Poland has realized more advantages ...

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Monday 3 October – Novotel Budapest City Hotel, Budapest

Session 1: The potential for knowledge sharing and innovation

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1.1: The Impresa project: results from the Eastern European Union

Peter MIDMORE

The Impresa project (FP7 2013-2016) examines the economic, social and environmental impacts of scientific research on agriculture across the whole of Europe. Two key aspects of the project are discussed in this paper. Firstly, it describes the results of the project's investigation in Eastern EU countries. Secondly, it examines the implications of the project's overall results as they apply to these Member States. This provides the basis for some conclusions to support future policy development, both for the member states concerned but also at overall EU level.

The objectives of the Impresa project are to describe the contemporary evolution of public and private agricultural research (bearing in mind that recent scientific and supply chain developments blur the boundaries of the discipline, as traditionally defined) and, using a variety of qualitative and quantitative approaches, to explore its resulting impacts. It has surveyed trends, sources and objectives of agricultural research across Europe, to establish the range, degree of integration and effectiveness of research activities. It has selected a number of regional case studies to represent agro-ecological and socio-economic diversity for investigation of the causal framework of case-specific individual research-based innovations. Using a variety of modelling approaches, it has also assessed the aggregate effect of agricultural science research on farming productivity, recognising also that, embedded in a "European model of farming", additional policy goals relate to social, cultural and environmental targets. Pathways to impact, whether implicit or directly observed, rely heavily on effective knowledge sharing and stimulation of innovation through the agricultural knowledge and innovation system in all countries studied.

The survey of agricultural research was confined to 20 European countries. On the minimax principle of achieving the most coverage from limited resources, the 5 countries responsible for over 70% of all agricultural science research expenditure (Germany, Spain, the United Kingdom, Italy and France) were included, along with a representative selection of the other 27 countries in the European Single Market (EU, EAA and Switzerland). In the Eastern EU, 7 countries were surveyed: Bulgaria, the Czech Republic, Hungary, Latvia, Poland, Romania and Slovenia. Official (Nomenclature for the Analysis and Comparison of Science Budgets and Programmes, or NABS) data on overall agricultural science expenditure for the 11 countries that joined the EU since 2004 currently has significant gaps, with on average 42% missing values since 2003 (and even more missing values for the business enterprise and private non-profit sectors of performance). Where data are missing, it is sometimes possible to supplement it from national sources, although under-reporting is a significant problem. While there are some exceptions, general trends in the 7 surveyed countries indicate serious declines in government and higher education expenditure (particularly after 2009), with some partial compensation from increased business enterprise expenditure. Qualitative interviews with senior scientists indicated considerable progress in surmounting the legacy of past central planning institutional structures, in terms of responsiveness in research topics and infrastructure orientation. However, they also revealed substantial pessimism about prospects for enhanced future funding.

One of the six Impresa case studies was carried out in Bulgaria.¹ The case study approach used mixed methods to define and validate the innovation pathway from initial research to overall impact, and the major influences affecting its efficiency. The choice of topic in this instance was a privately-funded and research-based innovation used for treating Varroaosis, currently a major global bee disease problem. The Ecostop plate innovation is an alternative to existing, harmful pesticides to which the Varroa mite had developed resistance. Substantial impacts occurred on environment protection and sustainable agriculture (including the support of organic beekeeping development), economic growth and resilience of beekeeping farms. Close involvement of beekeepers in the actor network helped in product development and was crucial for diffusion and adoption. The composition and the dynamics of the actor network were also significant. Most actors had already worked together since the socialist period and had jointly developed precursor anti-Varroa products before Ecostop. However, the inherent riskiness in scientific product development constituted a barrier, compounded by the rather negative role of institutional framework which provided no public funding and imposed heavy tax and registration requirements. Moreover, according to the innovators, although their product was developed legally, this occurred in a business environment in which corruption and bribery were widespread, considerably hindering their work.

Established quantitative studies of the aggregate economic impact of research investment recognise and explore a lag structure between cause and effect. Typically these show long, sustained lags from initial expenditure of between 25 to 30 years. In order to investigate these effects, very long continuous data series are required (such as those available from USA agricultural experiment stations). For the EU as a whole, and also for many member states (as the preceding discussion reveals) data is limited and discontinuous; also, where data exists for agricultural research in countries during the period of central planning, there are significant doubts about its meaningfulness. Hence, in Impresa a panel data analysis has been conducted.

¹ Another, conducted in Germany, has substantial scientific applicability for Eastern EU member states, as the innovation was primarily applicable to the LPG farms in the former GDR, although the political and economic context is less relevant.

While this does not provide estimates for the performance of individual countries, it shows that the average internal rate of return on investment is, depending on specification, between 7% and 10%. These are relatively low compared with other studies, although still high enough to merit increased, rather than lower, levels of public support. Moreover, since the agricultural sector in Europe has been substantially influenced by policies to reduce negative externalities and improve public goods availability in recent decades, scientific research (especially that funded by Framework Programmes) has also focused on environmental protection and amenity issues, to the detriment of productivity. An alternative approach, using structural equation modelling, links both public and private agricultural research expenditure to multiple sustainability dimensions and identifies the strength of causal relationships. Private agricultural research expenditures mainly contribute to improved and consolidated output, whereas the public counterpart, which has a more complex causal pathway, appears mostly responsible for improvement of competitiveness and support of better quality of life in rural areas (through improved health and incomes, for example).

The main implications of the Impresa project apply to governments of the Eastern countries as much as elsewhere in the EU. They include a need for greater recognition of the seriousness of the problems of the agricultural sector and the role of science in resolving them; the importance of understanding the complex pathways through which science-based innovations are translated into impacts, and the need to establish a culture of impact in the agricultural research community; and an appreciation of the fine balance required within public-private partnerships to ensure improved impact without providing an unwarranted subsidy for commercial advantage. However, it is clear that there are some important additional spatial considerations that relate to the Eastern EU.

The first is that agricultural and related food chain activities are relatively more important in these countries in terms of income and employment, even after nearly two decades of economic transition, and that that position is unlikely to change in the near future. The second is that, largely, overall conditions for agricultural production, including soils, climate, landholding and infrastructures are quite different to those that exist in the countries where the majority of agricultural science research effort is occurring (in France, Germany and the United Kingdom). The third is that, despite substantial improvements, the legacy of central planning is still evident and, as a consequence, the main lessons of the Impresa project will be harder to implement. Overall, this suggests that, as well as *how much* impact of agricultural science research achieves, an important additional question relates to *where* that impact occurs. Collectively, Eastern EU member state governments should explore prioritisation of agricultural science, in the format of coordinated activities tailored to their specific contexts, and also political collaboration to ensure that the role of agricultural development in completing the economic transition process is not neglected.

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1.2: How EU Member States innovated the programming of EU structural funds and cohesion policies to support the transformation in farm structures? Evidence across EU countries

Irene MONASTEROLO and Zbigniew FLORIANCZYK

Keywords: farm restructuring, CAP, CEE, financial engineering instruments, EU structural funds.

Common Agriculture Policy (CAP) is one of the main European Union (EU) policies and integrates two pillars, i.e., agricultural and rural development policy across Member States. One of the main reasons for policy instrument unification is to provide equal market conditions for all farming enterprises despite their geographical location and their initial productive endowments while assuring consistency between funds, and with countries' national development strategy. Indeed, the new EU programming period 2014-2020 (Council regulation 5600/14) introduced more flexibility in the use of such funds that entails also the creation of 'smart complementarities' with other structural funds within the European Structural and Investment Funds, as well as with financial engineering instruments such as JEREMIE to scale up investments in SMEs in rural areas (EC, 2016). More flexibility in programming and allocation of EU funds is meant to improve funds absorption and effectiveness, in particular for the European Agricultural and Rural Development (EAFRD) funded measures. This emerged as a main challenge of the CAP introduction in the countries from Eastern Europe and the Western Balkans that joined the EU in 2004, 2007 and 2013. In these countries, the integration of the CAP economic mechanisms stimulated productivity improvement but resulted in production concentration and specialization of farms (Csaki and Forgacs, 2009). This together with aging of farm holder is likely to result in decrease of farm flexibility (Buchenrieder and Mollers, 2009).

Recently, different dynamics of structural transformation of farm sector can be explained with the multifunctional regime underlining other than production of agricultural goods functions of agriculture (Wilson, 2008). Multifunctional paradigm is likely to polarize farm between food production and multifunctional orientated farms. Anyway both of them are strictly attached and compete for factors of production namely land and labour. Remuneration of these factors of production can be indicator of future development of farm structures. Recently, multifunctionality in agriculture embraced the environmental and resource resilience dimensions as a results of the concerns about the contribution of agriculture to climate change and the mostly negative impact of climate change on agriculture (IPCC, 2014; Monasterolo et al., 2015). The CAP changed accordingly introducing agri-environmental measures and new forms of support for short food chains development, along with a reform of Producers Organizations (Abatekassa and Peterson, 2011) to increase the sustainability and security of food production while preserving farmers' income.

In order to understand how best practices and lessons learned could be exploited, we need to account the differences of historically developed farm structures, economic and social environment among Member States and change in development paradigms influence dynamic of structural transformation. Farms' multidimensional characteristics in relation to different architectures of EU support for agriculture and rural development have rarely been analysed but are fundamental to understand the potential effects of CAP introduction on farm performance.

Therefore, in this paper we will analyse the evolution of farms structure and farming characteristics in CEE after the EU membership in terms of structural, socio-economic characteristics and productive change using FADN and Eurostat data. In so doing, we identify the main issues at stake for farm competitiveness and sustainability in CEE namely expressed in national agricultural and rural development strategies. Then, we will look at how such countries addressed their farm sector's challenges with the use of CAP measures in coordination with other EU funded measures and financial engineering instruments, focusing on Poland and Hungary. In order to do so we will use data on EU funds allocation by regions provided by Inforegio and national rural development programs. Through the help of a SWOT

analysis, we will map out the results of our analysis in terms of results of EU funded measures on farms' performance in the case study countries.

This paper provides three main contributions to the state of the art.

First, it identifies differences and similarities in the change in farms multidimensional characteristics after the CAP introduction. This will include range and intensification of the process of farm industrialization (defined by production concentration and specialization of farms).

Then, it analyses how countries in the EU tried to meet the development challenges faced by their farms introducing new potential architectures for the use of CAP and structural funds in complementarity with financial engineering instruments. In so doing, we will also check for the consistency between the EU funded measures and the agricultural and rural development challenges of the countries.

Finally, it identifies best practices and lessons learned to support sustainable and inclusive development in agricultural and rural areas while guaranteeing countries' financial sustainability.

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1.3: Multifunctional agriculture in Czechia: non-commodity production or integral part of rural development?

Jiří HRABÁK and Ondřej KONEČNÝ

Keywords: multifunctional agriculture, non-commodity production, rural development, Common Agricultural Policy, Czechia

The paper evaluates multifunctional agriculture in Czechia. There is a variety of approaches to multifunctional agriculture, acquiring their form depending on a specific conceptualisation. This conceptualisation of multifunctional agriculture originates from the critical discussion, sparked off by the transition of agriculture to the post-productivist stage (Ilbery and Bowler 1998; Mather et al. 2006). Some authors understand it as another stage of development following up post-productivism (Wilson 2001), while others define it as a characteristic of agriculture or a target of agricultural policy (Gallardo et al. 2003). This is not any uniform concept, but a number of approaches that react to the 'critique' of productivism and by means of multifunctional agriculture they come up with the definition that along with food production, agriculture should also provide further functions. This definition is common for most approaches to multifunctional agriculture. According to the emphasis on alternative functions, multifunctional agriculture is developing into several directions, with the understanding of multifunctional agriculture as non-commodity production (OECD 2001) and an emphasis on the activities associated with rural development ones (Van der Ploeg and Roep 2003; Van der Ploeg et al. 2000) being the most important.

The multifunctional agriculture as non-commodity production can fulfil both of the commodity and non-commodity character (OECD 2001). As non-commodity outputs have been considered non-marketable ones, there is a need of a search for a different evaluation and assessment than by means of the market (Durand and van Huylenbroeck 2003).

Along with multifunctional agriculture associated with the existence of non-commodity functions of agriculture, there is the development of an approach that is trying to find and elucidate the relationships between agriculture and the countryside. This approach is primarily based on the assumption that multifunctional agriculture can be a source of rural development (Van der Ploeg and Roep 2003) or that it even plays the central role in rural development (Van der Ploeg et al. 2000).

There is a variety of concepts and approaches to multifunctional agriculture which are more or less connected with the Common Agricultural Policy. The adoption of multifunctional agriculture by agricultural policy has been called by some authors ‘an institutionalisation of multifunctionality’ (McCarthy 2005). One can find two main directions among the approaches that were later used within the framework of the CAP. The article will inspect them in detail. The first can be called multifunctional agriculture as commodity and non-commodity production and the second can be called multifunctional agriculture as an integral part of rural development.

The paper discusses and subsequently evaluates these approaches to multifunctional agriculture in Czechia’s conditions by means of a quantitative assessment arising from statistically available indicators. Emphasis is also laid on regional differentiation of multifunctional agriculture indicators.

Given the nature of public goods (OECD 2001), an assessment of multifunctionality based on the production of non-commodity products is very difficult to measure. Nevertheless, non-commodity functions of agriculture are associated with the landscape management that can be best implemented by extensive grassland farming which occurs by cattle grazing. For this reason, a use was made of the indicators describing the development of permanent grassland and suckler cows breeding as a representative of extensive livestock farming. In addition, non-commodity functions are also fulfilled by means of organic agriculture whose substance is based on a care for the landscape, soil and biodiversity.

In the case of an evaluation of multifunctional agriculture, conceptualised as activities combining agriculture with rural development, we face again the limited availability of the data. This is why a choice was made of the activities that are available within the framework of agricultural statistics. In this way, the activities associated with tourism were selected. On the farms they are considered agritourism. It offers the spending of leisure time on a farm, allowing a farmer along with a diversification of incomes to introduce his holding to a visitor, who is a potential consumer of farming products. There is another selected indicator, the production of energy from renewable energy sources, thanks to which farms can diversify their activities by means of generation of electrical energy from agricultural commodities and waste.

Since multifunctional agriculture conceived as non-commodity production is primarily concentrated in the mountains and foothills, one can speak about an interrelated farming system. In addition, the approach was encouraged sooner and has a larger proportion of the farmers involved. By contrast, based on the evaluated indicators, the conceptualisation of multifunctional agriculture as integral part of rural development can be denoted as less important from the viewpoint of farmers’ involvement. Nevertheless, one has to point out that from the whole spectrum of possible activities interconnecting agriculture and rural development a choice was only made of two activities that are accessible within the framework of agricultural statistics.

With regard to the evaluated activities associated with multifunctional agriculture, there is an obvious link with the Common Agricultural Policy of the EU that has been implemented in Czechia since its joining the EU in 2004.

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1.4: Agricultural knowledge: a micro data assessment on the role of internal and external knowledge on farm productivity

Lina BJERKE

Agricultural knowledge – a micro data assessment on the role of internal and external knowledge on farm productivity

Keywords: Agriculture, competitiveness, productivity, internal knowledge, external knowledge, accessibility

Knowledge is often nominated as the most valuable resource to create a long-term competitiveness across all sectors (Caloghirou, Kastelli, & Tsakanikas, 2004). To what extent the lack of knowledge is the answer to why the agricultural sector in the European Union experiences low growth and insufficient innovation is not yet fully established. However, low growth and too little innovation is expected to also be two of the main future challenges, in agriculture as well as all other sectors (Horizon 2020, 2011). The European Commission heavily emphasizes investments in “knowledge generating assets” and consider those to be the key drivers to future productivity growth in all European economies and argues that education is a crucial part of such investments (EuropeanCommission, 2008). The Swedish agricultural sector is no exception on low growth. In 2014, it employed around 170 000 individuals but many firms are currently experiencing lower competitiveness and decreasing profitability. Others perform better but there is a perceived need to further explore such farm variations and the perspectives on what affects competitiveness could be widened. Why do some firms stay competitive while others show a downward-going trend and what role does knowledge play? The negative development in agriculture is not new information, neither for academics nor for policy makers and practitioners. However, knowledge on what factors that separate the high performing firms from their lower performing counterparts is to a large extent still missing (Latruffe, Davidova, & Balcombe, 2008). Different production conditions cannot tell the whole story since there are still major farm differences in competitiveness despite being of similar size and being located in the same geographical area. This paper aims to search for the role of knowledge within firm control i.e. internal knowledge and those factors outside firm control i.e. external knowledge, on farm competitiveness.

With a perspective of non-agricultural sectors, there is a large strand of literature on the effects of human capital on firm performance and it is nowadays widely accepted to be an important part of productivity. It is plausible to believe that such positive effect of knowledge has grown over time in agriculture while the sector as gone through a substantial structural shift- going from traditional to being a modern and technically advanced sector. One has slowly substituted labour for capital but also low skilled labour for high skilled labour. The technical progress and fast shifts in production techniques now require another type of adoption ability and therefore also another type of knowledge. This is also important since knowledge outside the firm also tend to have an impact on industries. Agglomeration, knowledge spillovers, regional specialisation and regional diversification can characterize the regional milieu and can be important for firms’ competitiveness but also affect the regional economic growth. Studies on the agricultural sector with this type of focus are, to my knowledge rare.

The development of the Swedish agricultural sector is nowadays often told to be characterized by a scale shift where farms grow larger but keep the same labour intensity. Structural shifts in developing- or transition economies have been shown to need a different type of labour input. Whether this is the case for the ongoing structural change in Sweden is not yet fully distinguished. The aim of this paper is to study whether agricultural firm competitiveness is influenced by internal and external knowledge. Internal capabilities such as education and level of experience are found to be significant in other sectors also the surrounding business milieu. Agriculture has gone through a considerable technological shift why one could assume that the same dependence on human capital also would arise in that sector. The results of the analysis in this paper indicate that this assumption is near the truth. By looking at an unbalanced panel data set of all individuals employed in Swedish agriculture between 2002 and 2011, we see that having an agricultural college degree is of significant importance and so also an agro-related higher education. The surrounding milieu has an impact on farm productivity, especially if it is related to agro-related business support.

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1.5: Lessons learnt: the development of regional knowledge and innovation systems in seven Dutch Greenport areas

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Keywords: knowledge, innovation, regional, public private partnerships, horticulture

The question addressed

Since 2012 the national government stimulates enterprises to invest more in knowledge and innovation in cooperation with research, education and or advisors to strengthen the 9 selected economic topsectors in the Netherlands. This provoked 7 Dutch horticulture regions, also indicated as Greenport regions, to follow a likewise approach. In the period 2012-2015 regional actors from research, advice, education, entrepreneurs (mainly small and medium enterprises - SMEs) and policymakers developed multi-actor projects together with other stakeholders to stimulate innovation in their specific region. The regions and their innovation programmes were:

1. Northern North Holland: Agrivizier;
2. Aalsmeer: the Innovation Motor;
3. Gelderland: Spearhead knowledge and innovation;
4. Venlo: GreenBrains;
5. Westland-Oostland (South Holland): 6 Innovation en Demonstrations Centres (IDCs);
6. Duin- en Bollenstreek (South Holland): IDC flower bulbs and plants;
7. Boskoop: Knowledge and innovation impulse.

Five out of seven of these programmes were co-financed with subsidy derived from the European Fund for Regional Development (EFRD). The question addressed in our study (2012-2015) was: ‘how should knowledge and knowledge streams through research, advise and education be systemically organised in order to stimulate public-private partnerships with horticulture business and in particular SMEs, to stimulate innovation in the Dutch Greenport regions?’ The intended outcome is that knowledge is both developed and valorised in order for the Dutch horticulture (top)sector to flourish at international level.

Concepts and theories

Researchers can offer entrepreneurs new insights for further business development, both demand-driven research results and new perspectives from more fundamental scientific research. This gives an innovation impulse. Education and training anticipate what the labour market demands, help develop the entrepreneurs of tomorrow and prepare entrepreneurs for their future (lifelong learning). Advisors have an intermediary function. They form the bridges between theoretical knowledge and practice (entrepreneurship). The interaction between the 3 knowledge functions and different knowledge flows are visualised in Figure 1. Collaboration and cooperation between different knowledge actors, enterprises, policymakers and other stakeholders lead to different knowledge streams that make agricultural knowledge and innovation systems (AKIS) operational at any level.

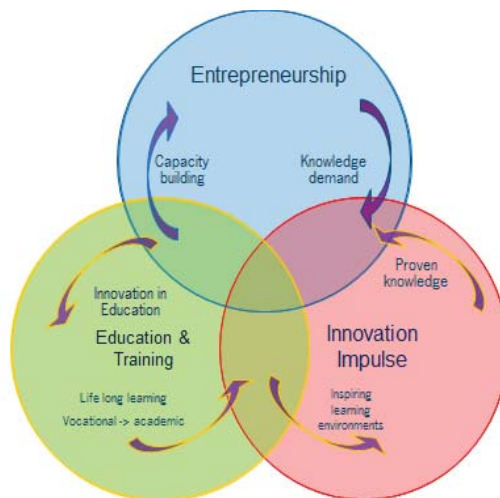


Figure 1: Interaction between three knowledge functions.

International competition increases in horticulture (Topsector T&U², 2011a and 2011b). According to the Scientific Council for Government Policy it should be more stimulated that knowledge and practice bridge the gap (WRR, 2013). This message is not new. In 1999 Tijssen and van Wijk addressed the economic importance of collaboration between knowledge and business. They pointed out that the lack of interaction was one of the most important causes for the technological deprivation with regard to the United States or Japan, the so called innovation deficit of the EU. The Netherlands still score well on the production of new knowledge but less on knowledge circulation and the valorisation of knowledge (WRR, 2013; Ministry of Economic Affairs, 2014). Knowledge valorisation refers to the process to be able to convert knowledge into commercial, feasible products, processes, services or societal value (Derks et al, 2013). Knowledge valorisation is not a linear process but happens through the interaction of multiple actors in diverse phases (SCAR-AKIS, 2014).

² T&U stands for horticulture and starting materials.

Methodology

The study was based on a qualitative research approach consisting of literature research, interviews, workshops, group discussions, other meetings and field trips. In the time period 2012-2015 approximately 200 interviews were conducted. Some actors involved in the knowledge and innovation programmes in the Greenport regions were interviewed multiple times or also participated in workshops or group discussions organised by the researchers. The research approach was twofold:

- monitoring the development of regional knowledge and innovation systems. The aim was to document best practices for the study and to serve as a mirror for reflection for the Greenport regions to be able to learn and improve for further developments;
- action research per region to support the collaborating partners in public-private partnerships to embed a sustainable knowledge and innovation system.

This type of both monitoring and facilitating research is identified as reflexive (Van Mierlo et al, 2010) and action research (Almekinders et al, 2009; Van Paassen et al, 2011) in which the researchers are part of the actual developments.

A research frame was developed for monitoring the development of ambitions, aims, knowledge and innovation agendas, public-private cooperation and the involvement of multi actors in developing the knowledge and innovation systems. A questionnaire for the interviews and a toolbox with several specific research instruments were developed to perform among others a network and stakeholder analysis, to map the different innovation phases and the development of the regional knowledge and innovation systems. Categorized, the following five research factors were studied:

- the development of vision and agenda setting in the knowledge and innovation programmes in the Greenport regions;
- commitment of and collaboration between the actors involved;
- activities (projects) undertaken and concrete results, including dissemination of the results;
- private investments of entrepreneurs in activities for knowledge and innovation and the balance between public and private investments;
- iterative learning, meaning the enhancement of the knowledge and innovation developments based on follow-ups, reflection and rolling insights.

There is a chronologic order and relationship between these aspects but they are also individual evolving elements.

The results obtained

In the different regional knowledge and innovation programmes authentic regional and unique visions, agendas and approaches were developed. However, originally formulated ambitions, goals, targets and approaches did not always match 1 on 1. Along the process some Greenport regions made adaptations or interventions to adjust their strategy. By doing so the different programmes in all regions contributed to the further development and collaboration to establish well-functioning regional knowledge and innovation systems. Most project and programme targets were succeeded regarding knowledge development, education and cooperation on innovation as well as regarding the strengthening of regional multi actor networks for knowledge and innovation. The way that innovation was interpreted and defined in the various regions differed. In some regions activities and projects were restricted to the

area codes. This had the advantage that regional financial means literally served the needs of the Greenport area. The disadvantage however is the risk that the region profits insufficiently from experience and expertise from outside the region. Other Greenport regions worked cross regional on knowledge and innovation, focused on optimal quality and to broaden national and international business opportunities. However, the specific advantage for the region must then be sharply formulated to avoid the loss of connection with the innovation goals of the particular region.

After four years of promoting and stimulating knowledge and innovation in the Greenport regions the next question is: how will the regions further develop their knowledge and innovation systems for horticulture? Many enterprises and especially SMEs were involved in the activities and projects and cooperated on enhancing innovation in the region. Their contribution was mostly in kind, in cash investments were limited. Many SMEs encourage activities for knowledge and innovation and are willing to participate but the capacity and partly the will to invest in cash is restricted. Enterprises invest in projects that correspond to their business. However, to be able to organise projects, activities, to demonstrate and disseminate the results, a knowledge and innovation infrastructure is needed. This takes more action and other expertise like organisation, network, communicative and administrative skills than e.g. technical expertise regarding content. To be able to finance the required knowledge and innovation infrastructure, public investments are a necessity. Regional and local governments need to acknowledge this fact. The administrative trade-off is to keep knowledge and innovation prominently on the agenda or to choose for other factors to stimulate innovation like hard infrastructures (buildings and roads) or public relations. Regional partners firstly have to focus on what they want to achieve together in their region and how to establish that. This sounds like an open door but is quite complicated in practice. Each party and actor often have their own stakes. Important is to come to a collective frame derived from different individual frames, or better known as reframing (Sol et al, 2013). In the Greenport regions we saw different ambitions for innovation. Through further analysis we found that they fit the typology of innovation by Chandy en Tellis (1998).

- Incremental innovation, which focuses on enhancing already existing products and systems by making the production process more efficient, cheaper, faster or of higher quality. The demand for incremental innovation among SMEs was quite common in all Greenport regions. The region Aalsmeer promoted this type of innovation. Its ambition was rather to connect knowledge workers with entrepreneurs than to stimulate high value innovation for new breakthroughs;
- Market breakthroughs, which focuses on new applications for new technology or combining different techniques. In the Greenport region South Holland one of the Innovation Demonstration Centres was particularly oriented on stimulating cross-over innovation and exchanging expertise, for example between horticulture knowledge specialists and the automotive industry;
- Technological breakthroughs, which focuses on high value application of new developed technology. We concluded that SMEs in the Greenport regions are more interested in the developments of this type of innovation than the actual implementation of the results because of the relative high investment risk. However, in the IDC Energy a couple of frontrunner famers have established new types of energy saving greenhouses as a result from the research conducted in the centre. These frontrunners also communicate about their experiences and demonstrate the possibilities. They are exemplary partners in the knowledge and innovation chain, not only as end users;

- Radical innovation, high value new technology that also adds high value for consumers like the compact disc in the 1980's. The Greenport region North Holland stimulated this type of radical innovation for their horticultural sectors which was really ambitious but quite complex to stimulate.

The study led to the following recommendations:

1. A regional triple helix strategy is a prerequisite for establishing a regional knowledge and innovation system. Not all decision making processes in the Greenport regions are on a triple helix basis. In some regions we saw a clear distinction between the government decision makers, the knowledge workers that operationalised the assignments derived from these top-down decisions with the entrepreneurs as the proposed beneficiaries. To establish public-private partnerships within the new Dutch policy context, the decision making process should be triple helix based meaning all actors are equal partners in the formulation of the strategy. This in order to establish trust and commitment for the collective reframed ambitions regarding innovation. Furthermore, it is required that the ambition, goals and targets are collectively formulated and clear to all actors involved. The strategy should contain concrete plans which instruments and tools can be deployed to support cooperation between knowledge workers (supply) and entrepreneurs (demand). Last, the linkages between regions and other networks for knowledge and innovation initiatives should be openly discussed how the regions can benefit most from exchanging experiences and collaboration;
2. Knowledge and innovation is defined differently in the regions. A sustainable regional knowledge and innovation system requires:
 - a. an integral and circular approach in the chain from fundamental knowledge to valorisation;
 - b. a transdisciplinary approach in which different knowledge workers cooperate with business and governments, from research question to practical implementation;
 - c. cross-sectoral networks. Horticulture does not operate in a vacuum. There are fruitful opportunities in the connection with other (top)sectors like other agricultural sectors, the food sector, health, water, energy, ICT, chemicals, etc.;
3. The Greenport regions need to acknowledge that the private sector will not invest in the infrastructure to coordinate, organise and to communicate about knowledge and innovation activities and results. This requires (structural) public funding. Private investments are mostly based on content;
4. Distinguish between knowledge tasks for sustainability (people and planet) versus economy (profit) driven knowledge tasks in public-private partnerships for knowledge and innovation. They distinguish mostly in accents. Both tasks mostly contain all 3 P's. That is why often it is hard to draw a clear line. However, the accent in the task influences the willingness for private investments;
5. Instruments and subsidy for knowledge (research, education or advice) should be more often or better combined with instruments and subsidy that stimulate innovation. Often there is no or hardly a direct connection between these instruments. Organising innovation contests or stimulating contact between entrepreneurs and financial intermediaries (like banks, venture capitalists or business angels) are also possibilities;
6. There are still a lot of administrative hick-ups to overcome in the Greenport regions. Similar projects are conducted next to each other, between regions but also in same regions. Different knowledge workers work individually from one another. Instruments and subsidy for different knowledge functions (research, education or advice) should be better integrated into a mix of instruments. More synergies between

instruments are needed in order to realise specific goals and targets for innovation. Furthermore, the role of entrepreneurs in the knowledge chain should be better acknowledged, not only as an end user but as a knowledge partner;

7. The approach for projects is often regionally organised. However, the targets and target groups of knowledge and innovation projects are often not restricted to the specific region. Regions should work on establishing cross-regional knowledge and innovation agendas in which interregional topics can be better tackled;
8. The most appropriate or specific knowledge cannot always be found within the borders of the particular region. Once the innovation question of the entrepreneur really has the centre of attention, this also means that knowledge and innovation tasks (projects) can be approached internationally, for example via a network like ERIAFF.

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Session 2: Mechanisms/processes of innovation and knowledge sharing 1

2.1: Agricultural Innovation Systems – the FAO perspective

Nevena ALEXANDROVA

No abstract received.

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2.2: Towards inclusive innovation in a European context – analysing the innovation performance capacity of alternative networks

NEMES Gusztáv and Anna AUGUSTYN

Keywords: inclusive innovation; European rural development; innovation performance; niche regime interaction; organisational dynamism; relational dynamism

This article presents a framework for the analysis of the *innovation performance capacity* of alternative networks in the agri-food sector in their quest to realise, maintain and spread inclusive innovation. Our analysis is based on a combination of elements from the scholarship on European rural development and the inclusive innovation literature and we build on the theoretical and empirical results of the SOLINSA FP7 research project. The central point of our reflection is the LINSA (learning and innovation network for sustainable agriculture), that we consider as the informal setting for innovation in the context of the European Agricultural Knowledge System (AKS) (Brunori *et al.* 2013). Thus, we concentrate on inclusive innovation for sustainable agriculture, developed in informal settings and interacting with the incumbent socio-technical regime.

Innovation performance of alternative networks indicates their ability to realise, maintain and spread innovation with potential to induce some shift in the current socio-technical regime. We claim that innovation performance, as a dynamic phenomenon, is the result of a complex interplay of two aspects: (1) network efficiency and (2) the interaction between the innovation networks and the incumbent regime. The first aspect to be examined concerns LINSAs as heterogeneous networks, based in informal settings, often having complex objectives and social dynamics, facing insufficient resources and other constraining factors limiting their effectiveness. The other aspect concerns the intertwined, dynamic relationship between LINSAs and the incumbent regime, considering their significant effect on innovation and systemic change.

For the analysis of these dimensions we introduce: (1) *organisational dynamism* – that is the capacity of a network to develop and maintain adequate knowledge and community to support the development and spreading of innovation; and (2) *relational dynamism* – that is the capacity of a network to position itself in relation to (and interact with) the incumbent regime to reinforce and spread innovation. Thus, our main question for the following analysis: *How is the innovation performance of alternative networks influenced by their organisational and relational dynamism?*

For the purpose of this paper, we focus on two LINSA case studies, giving an in-depth insight into the topic in the particular context of a transition country, Hungary, and its AKS. The first case concerns a voluntary bottom-up network of LEADER local action groups (LAGs) and the Hungarian version of the European Territorial Quality Mark(ETQM) system, which was created by the network. The other is about the Local Food Council of Gödöllő (G7) an informal network, campaigning for a more sustainable local food system in a Hungarian market town. Our analysis is based on the exploration of only two LINSAs, thus the possibility for general conclusions is very limited. To make any kind of typology or further explore the possible usage of our framework, many more cases should be analysed. However, some general points can still be drawn. Reflexivity and continuous adaptation of internal structure to dynamically changing external challenges is crucial to the success of alternative innovation networks in effectively supporting inclusive innovation. Analysing factors for organisational dynamism explains network effectiveness, while factors of relational dynamism set light to the role of niche regime interaction in shaping innovation performance.

Finding a governance model that is appropriate for the internal network structure (number of members, trust level) and then adapt it to face shifting challenges of a complex environment, seems to be a key factor. This marks adaptive management capacity that should also follow the network life-cycle. In the emergent period of a LINSA, management tasks tend to be focused and short term, enthusiasm and commitment of network members can make up for

low skills and resources. Later on, tasks tend to become constant and more complex that can coincide with the (typical) drop in enthusiasm. Thus, institutionalisation through creating a more consistent, organised and better resourced management structure becomes essential. This might require the change of the governance model and strongly influence innovation performance through network effectiveness.

We applied some elements of inclusive innovation theory to European transition country. We found this experiment relevant and useful, however, some questions and issues, should be further clarified, for example: what social groups should be the subject of inclusive innovation in a European context; what should be considered formal and informal (role of NGOs). Such questions should be the subject of further research and discussion.

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2.3: Action learning to support organisational change in rural businesses

Wyn OWEN

The use of group processes to encourage innovation and to transfer best practice is relatively novel in the agricultural sector. However, Menter a Busnes (MaB), a Welsh economic development company, has been utilising this approach for over thirteen years. Since 2003 they have been developing and expanding group principles with a view to engaging a greater number of farmers for a variety of purposes and with a broad range of different groups. This abstract (and proposed presentation) outlines how the company initially became involved and subsequently developed group processes through the design, launch and delivery of the Agrisgôp programme which utilises Action Learning to develop ideas and resolve issues.

During the initial development and establishment of the Agrisgôp programme and as a factor of Ashridge Consulting's involvement in the design, Action Learning (McGill and Beaty, 2001) was selected as the process best suited to Agrisgôp groups. To utilise Action Learning as a facilitation process with very traditional Welsh farming family businesses was in itself ground breaking and innovative and also risky. However, despite being typically used previously in very large corporate institutions, Action Learning has proven to be a highly successful and flexible tool which continues to be the primary group facilitation technique used by the group facilitators – known as Agrisgôp Leaders (Pearce and Williams, 2010). It has been valuable in the development of ideas and resolution of issues; moreover its group methodology involves the combination of support and challenge which is a key factor in changing mind-sets and attitudes to change, aligned with the idea that it is much easier to make difficult decisions when working with others. Burnes (2004) reports that the successful organisations in the twenty first century are those that continually instigate change despite the fact that seven out of ten change interventions actually fail. In the Agrisgôp context, the support of a group of like-minded individuals through the challenging change process is considered not only to be extremely beneficial but also to increase the probability of successful change interventions.

Action Learning has enabled Agrisgôp Leaders to engage a target audience with a range of abilities and knowledge and has encouraged and strengthened commitment to the process and the group. Nevertheless MaB has also constantly researched and developed new group facilitation techniques for use in tandem with Action Learning. Agrisgôp Leaders continually

introduce, trial, develop and share new and innovative informal and typically short group facilitation techniques with their groups.

However, although alternative facilitation methods are constantly being trialled, adapted and developed, Action Learning continues to be the preferred primary technique utilised with Agrisgôp groups. The main reasons for this are that one of the main characteristics of the Action Learning process is a strong ethos of confidentiality, which not only very quickly establishes trust within the group but also instils commitment to the group and the process. The fundamental Action Learning process of support and challenge also creates an environment where positive change is encouraged and this consequently enables and empowers individuals to make difficult decisions because they are working with others. Furthermore, Action Learning is an extremely flexible and adaptable process and this has proven invaluable to Agrisgôp Leaders, all of whom develop their own slightly different versions – albeit still facilitating within certain important guidelines. Finally to quote the founding father of Action Learning, Professor Reg Revans, MaB experience would certainly support his assertion that Action Learning is ‘deceptively simple – surprisingly powerful’.

During the development and delivery of the programme, the author has undertaken several studies in order to monitor, review and improve delivery of the programme and the intention would be to briefly share these at the October Conference in Budapest.

The first study was undertaken in 2008 and considered as alternatives to Action Learning, other more formal and structured facilitation techniques. The study involved a comparison of Appreciative Inquiry (AI) and Creative Problem Solving (CPS) undertaken with both Agrisgôp groups and groups of Agrisgôp Leaders (Owen, 2008). Twenty-four participants in four equal sized teams engaged in a day’s facilitation of either AI (Lewis et al., 2008) or CPS (Isaksen et al., 2000) and team potency was measured by individual questionnaires at the beginning, at the half way point and at the end of the session. The results suggested that although there was no effect on potency at the mid-task stage, group potency was higher at the post-task stage in both AI and CPS interventions. Furthermore, potency was significantly higher in the AI teams, when compared to the CPS teams.

The second study was undertaken in 2011 as a result of the high turnover in Agrisgôp Leaders for a variety of reasons including the insular nature of the work, difficulty in recruiting groups, high levels of stress/responsibility and in many cases an overriding desire to act in a consultancy or advisory role as opposed to following the Agrisgôp rationale of facilitating groups to reach their own conclusions. Consequently, a study was undertaken with a view to considering whether personality measures could be utilised to predict individuals who would be effective facilitators of organisational change.

Participants in this study (n=37) were all either currently working as Leaders on the Agrisgôp programme or had previously worked as Agrisgôp Leaders. They completed two personality questionnaires namely a questionnaire administering the 100 item set of IPIP Big-Five Factor Markers (Goldberg, 1990) and the Myers-Briggs Type Indicator (MBTI), (MyersBriggs, 1982). A third questionnaire was utilised in this study, namely the Consultant Effectiveness Questionnaire developed by Hamilton (1988) based on the requisite competency clusters deemed necessary for consultants working with organisational change. This questionnaire was completed by a manager who scored each participant according to the degree to which they believe the change agents ‘measured up’ to each of nine questions relating to organisational effectiveness.

Multiple regression was used to examine relationships between the dependant variable 'consultant effectiveness' and the combined effect of the other factors measured by the responses on the Big 5 and the MBTI. The main findings of this study indicated a strong correlation between consultant effectiveness and the factor of 'agreeableness' on the Big Five scale. The results also indicated a less strong yet significant relationship between 'extraversion' and 'consultant effectiveness'. However, no evidence was found that the MBTI in any way predicted effective organisational change facilitation. As a result of these findings, a version of the Big 5 questionnaire has been used as one element of the selection process for new Agrisgôp Leaders in the last two recruitment cycles.

The third study instigated in September 2011 came about as a result of increasing pressure from several quarters, not least the funders, to quantify the impact (financial, perspective, attitudinal and continuing) of group-based organisational change programmes such as Agrisgôp. Consequently, a mixed-measures longitudinal tool was developed and completed by over 1,000 Agrisgôp group members pre-, mid- and post-group and collated and analysed in 2014.

The quantitative data analysed (using a one way repeated measures ANOVA) indicated that Agrisgôp participants had since joining their groups:

- Increased confidence (49%)
- Improved communication skills (51%)
- Were more able to apply new information to their business (52%)
- Had a more positive attitude to change (52%)
- Were more likely to have a long term business strategy (13%)

These findings were supported by a large quantity of rich qualitative data collected from the pre, mid and post questionnaires which also (amongst a host of other findings) indicated a shift in mind-set from an individual (what's in this for me?) to a team (how can I help this group succeed?) approach.

The mixed, measures longitudinal questionnaires continue to be completed by all participants on the current Agrisgop programme (commenced Autumn 2015) and is also being adapted for use on other personal/business development programmes.

At the time of writing, the current Agrisgop programme involves a team of fourteen Agrisgop leaders pan Wales working with a diverse range of groups (n=32) across a new three tier structure. The first tier of groups is known as grass roots and involves bringing together between 4 and 10 group members from at least three different rural businesses to develop either individual or collective ideas in order to build the management capability of the individual group members and create more viable and sustainable businesses for the future.

The second Agrisgôp tier known as themed Agrisgôp recruits and works with groups with a particular collective business interest and aim to achieve a considerable measurable impact in addition to developing the management capabilities of the group members. The group themes can include (but are not restricted to) renewable energy, tourism, adding value to primary produce or digital technology.

The third tier is an additional and innovative level developing strategic management capability and known as Agrisgôp BDAL. Founded upon the principles of Business Driven Action Learning (Boshyk, 2012), this intensive programme utilises Action learning and also;

individual coaching, 360° feedback, use of digital technology to cascade learning, self-managed sub teams (researching several other businesses and reporting back to the whole group), outside-in dialogue and finally agreeing on recommendations and future challenges for the group. Working on a high level joint business challenge, these groups are ambitious, intensive and cutting edge and aim not only to develop their own businesses but to research concepts and develop initiatives and processes that will ultimately benefit the industry at large.

In summary, the author believes that empirically based best practice should be more effectively integrated into the workplace and that one way of achieving this is to encourage and support higher level lifelong learning. Furthermore, programme providers such as MaB need to become more involved in conducting research, in implementing the findings and sharing them with a wider audience.

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2.4: The AgriSpin project: learning from sharing

Adrien GUICHAOUA

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. Moreover, the originality of the conceptual framework lies in the fact that the methodology for the cross-visits is a 'permanently evolving concept' which learns from each cross-visit experience to be more accurate in order to better find what we are searching for during the cross-visits.

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.

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2.5: Understanding the initiators of knowledge sharing and social innovation in rural areas

KATONÁNÉ KOVÁCS Judit, Anna AUGUSTYN and Paulo ALVES

In recent years, social innovation has been gaining more attention, not only in the scholarly literature and in public discourse but in rural development practice as well. An important reason for this is the greater involvement of civil society in this form of innovation. Earlier investigation (Katonáné Kovács *et al.*, 2016) shows that, despite common patterns, social innovation is highly dependent on its actual context and on the individual (the initiator, the agentic engine) who initiates and carries out the innovation. Using the interpretation of the above mentioned study (Katonáné Kovács *et al.*, 2016) the most important aspects of social innovation in the context of rural development as follows:

- a purpose-driven novel solution to a social need or problem of a given society (social goal), in our case a local, rural community – PURPOSE (*motivation*)
- enables participation and cooperation of the different spheres/sectors such as economic, political and civil – IMPLEMENTATION (*process*)
- while creating positive social effects – BENEFICIARIES (*products*).

The main focus of this work is to enrich the understanding of initiators, individuals of knowledge sharing and social innovation, which can help the empowerment of initiators, and also social innovation in rural areas, not letting go the importance of the context (ecosystem) from the examination.

The analytical framework offered by Lawrence *et al.* (2013) for the analysis of the social innovation introduced the different aspects of the process of social innovation, the „how”. These four aspects are: the role of individuals, the impact of context, the sectors contribution and finally the way groups and networks are involved. Katonáné Kovács *et al.* (2016) examined the four factors of social innovation process using the Internal and External Factor Evaluation Matrix. The relative importance of each factor was indicated by assigning a weight ranging from 0.0 (not important) to 1.0 (very important). The sum of all assigned weights was 1.0, where the role of individuals was rated as the second most important aspect (after the context with a weight 0.4) and got a weight 0.3. The next step in the comparison of different social innovations was to rate the aspects from 1 to 4 which captured whether the factor represented weakness (rating = 1) or strength (rating = 4). In this paper this step, how to develop the rating of initiators is developed. The question what are the most important elements along the evaluation of initiators is examined. The work collects factors to have a better understanding in which case initiators are rated as weakness and in which case they are rated as strength along social innovation in rural regions.

Lawrence *et al.* (2013:5) refers to literatures where the role of individuals in managing social innovation has been highlighted “... in the growing literatures on social and civic entrepreneurship (e.g. Bornstein, 2007; Light, 2008; Goldsmith, Georges, and Burke, 2010), as well as the social innovation literature (Westley and Antadze, 2010). A review of historical cases, such as the initiatives of Benjamin Franklin (Mumford, 2002), identify the importance of individuals who were able to develop ground breaking ideas out of their everyday experiences and a willingness to experiment. They call attention to two overlapping skills (Lawrence *et al.*, 2013:5) “Social innovators appear able not only to diagnose causes of social problems, but also to consider the ‘downstream consequences’ of any proposed solution. This diagnostic ability may come from having a unique combination of outsider and insider knowledge (Marcy and Mumford, 2007). Second, successful social innovators seem distinctively able to garner elite support and financial resources: Franklin, for instance, was able to enrol supportive elites who provided him with ideas and finances (Mumford, 2002).

For the examination of the role of individuals in managing social innovation process a questioner is developed and tested with real initiators. The questioner examines the skills of the initiators, what kind of behaviours are linked to skills, which sectors individuals belong to, what kind of networks they have (e.g. formal, informal), do they have dreams/visions, how they develop projects.

The examination forms three main groups of these initiators such as: entrepreneurs, intrapreneurs and change agents. American Heritage Dictionary defines entrepreneurs as „a person who organizes, operates, and assumes the risk for a business venture” and intrapreneurs as „a person within a large corporation (in our case rural region) who takes direct responsibility for turning an idea into a profitable finished product (in our case not just products, but services, processes) through assertive risk taking and innovation”. While entrepreneurs and intrapreneurs are living in the rural regions, in the understanding of the authors change agents are those initiators who are not living in rural areas but making steps there, entrepreneurs in urban with an interest on rural.

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Tuesday 4 October – Ministry of Agriculture, Budapest

Session 3: Enabling environment for rural innovation 1

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3.1: BIOEAST – Central Eastern European Initiative for Knowledge-based Agriculture, Aquaculture and Forestry in the Bioeconomy

What is the challenge of BIOEAST?

Over the last ten years the resources of the Common Agricultural Policy have helped the Central-Eastern European (CEE) regions to improve their agri-food, aquaculture, forestry sectors, environment and rural areas thus increasing the cohesion of the European Union (EU). However, we believe that in order to achieve further progress in sustainable growth of agriculture, aquaculture and forestry in the bioeconomy we have to shift the emphasis to research, innovation and transnational cooperation for knowledge-based development. The problem is that the low levels of research, innovation, cooperation and lobbying in the CEE regions are hindering the sustainable growth in the whole EU. The low performance and visibility of knowledge-based agriculture, aquaculture and forestry in the bioeconomy in CEE regions is an issue which in the past months has been recognised and discussed at regional, national and macro-regional level by many stakeholders including farmers, researchers and policy makers. What we need now is cooperative action to reach synergies and improve our performance.

What are the objectives of BIOEAST?

Our objective is to improve the sustainable growth of knowledge-based agriculture, aquaculture and forestry in the bioeconomy in the CEE regions. The actions we propose to reach this objective are:

- Initiate cooperation: establish a multi-stakeholder network to facilitate joint actions;
- Provide an evidence base: establish data-driven support for implementation of policies;
- Focus on research: map specific challenges for a Strategic Research Agenda;
- Improve skills: train a new generation of dedicated multi-stakeholder actors;
- Develop synergies: promote regional, national, EU and international funding opportunities;
- Increase visibility: draw attention to specific challenges of the CEE regions.

What is the thematic scope of BIOEAST?

Theme 1: Climate change challenges in the Continental and Pannonian Bio-geographical Regions

- Sustainable intensification by maintaining soil conditions and improving water management;
- Sustainable extensification by maintaining biodiversity and ecosystem services;
- Improvement of organic farming in terms of production technology;
- The reduction of high dependence on non-renewable energy sources;
- Exploiting the potential for protein crop production;
- Strengthen the Region as a buffer zone against emerging and changing pathogens;
- Sustainable, efficient and competitive freshwater fish production.

Theme 2: Policy and governance challenges in the economically less developed EU regions

- Motivating knowledge-based modern farming and cooperation among farmers;
- Supporting the generation change of the first entrepreneurs in the agri-food sector;

- Improving supply chain efficiency and increasing its added value;
- Increasing consumer awareness in mistrustful and price sensitive societies;
- Increasing the value added use of agricultural and forestry biomass;
- Experiences of less developed EU regions in social integration challenges such as food, energy or social care security.

What is the process?

In the last year and a half, Hungary has been doing fact-finding and organisational work with the active involvement of stakeholders, and has started to become more actively involved in the policy work at EU level (e.g. more active participation in the SCAR-AKIS SWG and SC2 PC).

In the last few years, many successful events have been organised, during which topics and challenges specific to the region were identified by agricultural stakeholders, especially those relevant for Hungary. The topics listed under the menu item ‘What is the thematic scope?’ have been identified, including the areas related to agricultural production, food systems, bioeconomy, social and rural challenges. The identified topics still require regional validation, however in the case of the topic “veterinary diseases spreading across borders” a regional cooperation agreement has been signed by the participating actors. The identified topics are in line with the targets of Hungary's National Smart Specialisation Strategy (S3 Strategy), contribute to the long term agricultural and innovation strategy of DG AGRI (“Towards a long-term strategy for European agricultural research and innovation by 2020 and beyond”) and are connected with the Bioeconomy strategy.

A new tool of research, development and innovation is the European Innovation Partnership ‘Agricultural Productivity and Sustainability’ (EIP-Agri). EIP-Agri aims at implementing innovations that meet the needs of farmers using a bottom-up approach. EIP-Agri is a network based on the interactive innovation model that will speed up the utilisation of new knowledge in practice and bridge the gap between farmers and researchers. The main aim of the EIP-Agri network is to connect EIP Operational Groups and multi-actor projects, to facilitate the transfer of knowledge, expertise and best practice and to facilitate discussion among farmers and researchers. Its most important tool is a Hungarian language website that provides a general overview, shares interesting project and research needs, and serves as a virtual meeting point where funding possibilities, project ideas and questions of farmers are gathered.

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3.2: The integrated supply-chain projects as a policy approach for encouraging cooperation for innovation in agriculture and rural areas

Simona CRISTIANO, Serena TARANGIOLI and Marta STRIANO

Keywords: Integrated supply-chain projects; Rural development policy/programme; Agricultural, cooperation for Innovation, knowledge sharing, collaborative networks.

The **integrated supply chain projects** (ISCPs) represent an innovative approach to Rural Development Policy for addressing structural as well as organizational challenges of local agro-food chains, in view of increasing their competitive advantage and competitiveness

together with the entrepreneurial performances. This approach was applied in Italy under the regional Rural Development Programmes (RDPs) 2007-2013.

An integrated supply chain project reflects the shared strategy and objectives of a partnership for the development of a specific local supply chain. Under a common framework of cooperation, the partnership of an ISCP involves a number of relevant actors, upstream and downstream the specific supply chain, such as producers, transformers, suppliers, and others, who serve the integration of the farms and the agro-food holdings, both horizontally and vertically (advisors, innovation centres, universities etc.). The business plan of the ISCP describes the material and immaterial investments which will be undertaken by each partner in order to contribute to reaching the common goals of the specific local supply chain development.

The experience gained by the ISCPs in RDPs 2007-2013 needs to be considered significant for the EIP-AGRI approach and of the Operational Groups (OGs) to be implemented in the current programming period 2014-2020, because it stimulated innovation across the supply chains, particularly through implementing a collaborative model of knowledge transfer and co-creation.

In fact, during the programming period 2007-2013, the ISCP approach demonstrated a certain capacity to connect different actors of the AKIS, even at different levels (trans-regional, trans-sectorial), establishing the link between the research and the entrepreneurship worlds and arranging collaborative networks. Also, the partners of the ISCPs applied, among the others, a relevant number of investments in cooperation for innovation, supported by the measure 124 of the RDPs.

The objective of this research is to provide an overview of the innovation projects carried out by the ISCPs (amount of investments, types of innovations and agro-food supply chains and actors involved) and deepen on the "value drivers" of the agro-food supply chain's performance and models for co-creating the innovations realized (entrepreneurial experience, local reputation and consumer recognition; trust and interaction among partners and cross-overs).

The **research is based on a** mix-method approach supported by and a vary of tools and methods for the observation and analysis of the ISCPs, such as desk research, interviews and focus groups. These involved public servants and well as the partners of the ISCPs. Particularly, the desk research regarded the analysis of the quantitative and qualitative information on the ISCPs and on the innovation projects. Also, a case-study analysis allowed to deep into the value drivers of some of the supply chains and the relationships and interactions developed by the AKIS actors.

The results of the study show that: (1) The ISCPs demonstrated to be good sets for developing innovation ideas and knowledge sharing, which resulted in a consistent number of innovation projects and amount of the respective investments applied within ISCPs. On this regards, it also emerged that, the ISCPs approach helped participants to develop collaborative and innovative attitudes, which lasted even beyond the completion of the specific projects. (2) the ISCPs approach has a certain potential in spreading innovations which track the road for the development of entire specific agro-food chains by involving a large number of relevant actors. On this regards, it emerged that the ISCPs apply a systemic approach to the implementation of innovations, due to their strategic positions in the sectors/domains. (3) The partnerships applying for innovation projects developed within ISCPs are broader than the others, in terms of multi-actoriality and of number of participants.

3.3: Cooperative approaches to targeted implementation of Agri-Environmental Measures (AEM) in Hesse / Germany

Bernd MÜLLER

The increasing intensification of agricultural production and the associated simplification of landscape structure is a major threat to biodiversity especially in favourable arable farming areas. In the European Agricultural Fund for Rural Development (EAFRD) compensation payments for Agri-Environmental Measures (AEM) are used in particular to involve farmers in a more sustainable, more extensive land use, for example the expansion of the crop rotation or the installation of flower strips along field margins as habitat for small mammals. In spite of substantial investments for species and habitat conservation are made through payments for AEM the deterioration of various species and habitat status indicators in the agricultural landscape is alarming. The current funding structure of the Common Agricultural Policy (CAP) lacks the incentive of farmers to actively participate in achieving the environmental objectives of AEM and results in a low implementation of AEM in favourable arable farming areas.

To counteract this development of low demand in AEM by farmers, different recent studies on AEM schemes recommend cooperative AEM approaches. Through a coordinated working group of farmers, landscape managers, conservation organizations and the agricultural administration a higher possible accuracy and ecologically efficient implementation of suitable priority areas for species conservation can be achieved. Such a group can provide other interested farmers professional support, create a better understanding of the environmental needs and an on biodiversity conservation targeted management is possible.

The primary aim of this study is to develop a model of a group-oriented AEM approach which may increase the acceptance and the legitimacy of AEM in favourable arable farming areas in Germany. It is the intention to shift existing national and international approaches to the suitability of an AEM in Hesse (Germany) and to consider what modifications are necessary in order to use successfully group oriented approaches. A survey was carried out that considered current participatory AEM approaches and analysed their efficiency and effectiveness. This survey was used as a basis for the selection of suitable measures to form a model to introduce group-oriented AEM in Germany. Since January 2016 the model is tested in a case study in two municipalities with a high share of favourable arable farming area in the county Darmstadt-Dieburg in Hesse / Germany.

In the region a tailored project area with ecologically valuable habitats is developed by ecologists, on this basis objectives and measures are to be defined. Occurrence of protected and endangered animal and plant species is included as well as a review of the effective and potential occurrence of target and indicator species was conducted. The goal of the planning phase is to display on a map surfaces and objects which are deferred as optimal areas (eligible areas) like buffer zones along the edges of forests, landscape features, waters or corridors for networking of individual objects or to the development of migration corridors for animals. It tries to create awareness of the problem at all levels and provides the basis of area-related planning information about the possible uses of AEM.

The communication strategy in the case study is to be constructed that is made clear which areas are important as habitat structure and why certain measures in specific locations are crucial. So it is intended that through networking between farms and the advice, the implementation of measures is growing. The implementation goals give particular answers to questions like: In which habitats are to be what measures promoted in the project area? What location and with what priority? Which target of crosslinking surfaces is desirable for the individual habitat types? When do the objectives to be realized? How can the AEM funding procedure (flower pastures, arable flower strips, field margins, arable weeds surfaces possibly with arable light strips, erosion and water protection strips) are best used as a means to achieve these goals?

The idea behind the case study is not only to coordinate bilaterally AEM between the public sector and individual farmers and to reward them. It is more about causing farmers to cooperation and thus to obligate to mutual commitment in regional habitat and species protection. For the research approach the methodology of action research was chosen, to react best on the ongoing communication and interaction of several different stakeholders. Questions to be answered are, what are the rules (institutions), which responsibilities are to provide, how decisions about allocating funds are made, where it is to be invested, who controls and where are investments carried out voluntarily or as peer pressure, etc.

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3.4: Innovation and investment activities in the Czech Less Favoured Areas

Tomáš HLAVSA, Martin HRUŠKA and Edita TURKOVÁ

Small rural enterprises significantly contribute to the budgets of townships and rural communities, enabling the local governments to expand their abilities in promoting the sustainable regional and rural development. By combining the dispersed private capital with the public funds and dividing the risk burden, the rural enterprises can undertake quite a broad scheme of investments, starting from the infrastructure and ending with the eco-tourism and nature protection. The decline of unemployment and the rise in the investment incentives lead to an improvement in the quality of life, and generally speed up the economic convergence, which is especially relevant in the case of the Central and Eastern European countries that joined the EU in 2004 (Jeníček 2013).

According to Abrahám (2015), one of the crucial factors for innovations and investment activities proved to be the legal form of the enterprise which shows that the limited liability companies tend to innovate more than other legal forms. There are two possible explanations to this: first, the limited liability companies are often represented by the sole-traders (one-person firms) and the micro-enterprises that seek to establish a strong position in the market. These small companies tend to innovate and invest into new technologies and processes in order to beat the competition. Second, small companies are less cumbersome and more creative than the large enterprises and can spend less time dealing with the tax forms and the employment and health insurance agenda, and more time innovating their products or services. The general governmental support should create a progressive environment which would enable the micro-enterprises to grow faster to become small and medium enterprises that tend to be more innovative.

Based on findings in the paper Abrahám (2015), the development of enterprises contributes to the changes in the social and economic structure and the functioning of the given area through the following:

- initiating and prompting new forms of economic activity;
- creation of new jobs and thus a limitation of unemployment;
- prevention of large-scale rural migrations;
- increasing the population's income and creating new forms of income;
- opening new export markets;
- full use of local resources;
- changes in the life conditions and consumption patterns of the local populations;
- development of infrastructure in rural areas, and, as a result, raising the area's attractiveness for the foreign direct investment;
- stimulation of economic growth in the region and the country;
- creation of the entrepreneurial activity and instigation of economic development.

The growing importance of micro-enterprises in the development of economic systems is expressed in the growth of employment, its positive impact on the regional development (via the multiplication effects), improvements in the inhabitants' qualifications and knowledge, the exchange of information, the creation of initiative, and the stress on innovation.

The role of investment and innovation in increasing a farm's competitiveness is directly linked to technical progress that is an important factor of growth in modern agricultural growth models (Rembisz and Floriańczyk, 2014 in Wieliczko, 2015) and it drives productivity and efficiency in production and enhances firm profitability. A large part of the research is devoted to the impact of agricultural policy on investment decisions, for example Lefebvre (2014) in Wieliczko (2015).

With the CAP reform for the period 2007-2013, LEADER was formally integrated into the national Rural Development Programmes (RDP) and, conceived as a horizontal priority scheme, all RDP measures became eligible for LEADER funding.

The shift from a sectoral to a territorial rural development strategy in rural areas has focused attention on neo-endogenous strategies as a means of fostering rural development. Innovation within LEADER has involved economic initiatives but in particular shared learning processes and the mutual exchange of knowledge and ideas should be enhanced (Dax, Oedl-Wieser, 2016). Furthermore, the territorial orientation of LEADER is manifested by the concern for small-regional and local scales and the promotion and development of new forms of organisation at both an institutional and personal level, which result in social changes beneficial to the communities involved. As such, the notion of social innovation is widely recognised as of central importance to the aims of LEADER.

The Rural Development Programme of the Czech Republic for the period from 2007 to 2013 proceeds from the National Strategic Plan of Rural Development. It was prepared in accordance with Council Regulation No. 1698/2005 and operating guidelines of the above-stated standard. The RDP consisted of four axes (I. Modernisation, innovation and quality, II. Improving the environment and landscape, III. Quality of life in rural areas and diversification of rural economy, and IV. LEADER). In axes I. and IV. are priorities/measures focused on innovation and modernisation of agricultural enterprises (measure I.1.1. Modernisation of agricultural holdings and IV.1.1 Competitiveness). Their objectives are increasing the

competitiveness of agriculture and forestry as well as the quality of life in rural areas and the diversification of economy.

There is no sufficient evidence, how high the investment and innovation activities of agricultural holdings in Czech Less Favoured Areas are. The main objective is to evaluate innovation and investment activities of agricultural holdings in Czech Less Favoured Areas. There are following research questions:

- Does the size of the enterprise affect the innovation and investment activity?
- Are there differences in innovation and investment activities between agricultural holdings operating in different Less Favoured Areas?

The general evaluation, analysis of relationships and differences is carried out using statistical modelling (regression, hypothesis testing). All analyses are based on the database of FADN, Bisnode Albertina and the State Agricultural Intervention Fund.

The results show that the analysed agricultural holdings indicate negligible activity in the Axis IV LEADER, specially measures Competitiveness. Higher innovative activity was recorded in case of Modernisation of agricultural holdings (Axis I). In the reference period 2011 - 2014 is higher activity in mountain LFA, based on financial support per hectare. It dominated modernisation of holdings focused on livestock production in mountain LFA and on crop production in non LFA. Regarding the size of the holding, there are more engaged smaller farms in mountain LFA comparing to non LFA, where are more active bigger farms. The biggest farms in our analysis (above 2500 ha) indicated lower innovating activities in terms of observed measures. They probably use other financial sources than the Rural Development Programme.

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3.5: National strategy for agriculture in Romania - Horizon 2035

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Keywords: Agriculture, Strategy, Knowledge transfer, Horizon 2035, Romania

The question addressed

We plan to formulate and develop targets of foundation for Romanian agri-food sector in the short, medium and long term, so that it becomes a supplier of food security at national and European level, with performance comparable to those from developed countries of EU. A national strategy is necessary if we have in view the potential of Romania and the results of the Romanian agriculture in the last 25 years. The national strategy must have in view the main impact tendencies like: innovation, knowledge transfer, institutional cooperation and re-organization, development of infrastructure, cohesion between local, regional, national and European policies and projects. The main products analysed are: cereals, vegetables, fruits, meat and processed products.

The concepts, theories and methodology used

The development in the world of tomorrow, the horizon of 2020-2035 is expected to be contradictory, with different effects on the global zone and for Europe the expectations are not optimists. Conclusions of studies consulted in this regard focus on (e.g. European Commission, DG for Economic and Financial affairs, 2015): significant technological advances in biology, genetics and agriculture (nanotechnology, genetically modified organisms); development of communication, IT, cognitive sciences; China's economic rise; European demographic decline; EU economic stagnation and gradual loss of competitiveness in the face of new emerging countries; climate changes. In this context, the conditionalities of food security of the population bring attention to major issues that Romania will face in the medium and long term, such as: population decline and aging, progressive depletion of the productive potential of the soil in the absence of supporting measures, research fragility for agriculture sector. To answer the questions related to food safety and security of Romania in the perspective of 2030-2035 was used SWOT analysis of the products mentioned above.

The results obtained

SWOT analysis revealed some vulnerabilities, synthesized to select priorities for improving food security in the short, medium and long term: Romania's domestic agricultural supply is insufficient in a range of products; annual instability for domestic agricultural supply; Romanian competitiveness of many agricultural products is problematic, and integration into the European single market has amplified these problems; low level of processing of agricultural raw materials and value added; low income and income gaps between the territorial area of residence that generates food insecurity; existing problems in rural areas, mainly with weak infrastructure; poor food consumption in terms of quality.

After analysing these problems brought to light by the SWOT analysis, we defined three main strategic directions for food security and safety of Romania, during the next two decades, trying to identify areas of Romanian agriculture should focus efforts, public and private, to lay the groundwork performance convergence with developed countries within the EU: increasing role as supplier Romanian agriculture food safety; population increase access to improve quality food and feeding (based on reasonable assumptions regarding the growth of disposable income at purchasing power parity in the coming decades, based on forecasts of economic growth achieved by specialized institutions); rural development and raising the level of education - assumptions to improve food safety and nutrition.

Strategy that we propose has several strands: first, increasing the role of agriculture as a provider of food security at the national level (considering the present instability of the domestic agricultural supply). For this reason were analysed, especially those products that deficits exist regarding the current level of self-sufficiency and mainly meat (pork, poultry, beef), vegetables and fruits. At these product categories were formulated hypotheses as plausible future developments productions, structural change across sectors, support measures and possible investments in the medium and long term and formulated targets in the short, medium and long given the circumstances and future foreign markets. In Romania, the instability of domestic agricultural supply is an important vulnerability to food security. Proposed indicator to measure agricultural production is reducing variability coefficient of variation of agricultural production, which aims indicator decreased to levels close to those recorded in France. Domestic agricultural supply stability will be achieved primarily through rehabilitation and modernization of land improvement, particularly irrigation systems. Then, second direction aimed at development of the information and knowledge in agriculture, based on demand, centered on the needs of farmers and the close and functional relationship between the consultancy, research and education. In this context there were formulated targets that would ensure a functional integration of rural areas in the national territory by supporting interconnection of efficient transport networks, development of infrastructure (water and sanitation), for the support of the development of the business environment and improving quality of life in rural areas. It is envisaged also improving the education and training of rural youth to increase their access and participation in the labour market which ensures a satisfactory level of incomes and access to a nutritionally balanced diet.

Conclusions

The paper wants to underline the impact of agricultural, trade and macro-economic policy on perspectives for further East-West integration. In this context, the innovation and knowledge transfer has a basic role. The link and cooperation between farmers, processors, suppliers, education/research, consultancy and administration/decision makers will be crucial. The scenarios proposed will show the ways we see to achieve the targets identified.

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Session 4: Enabling environment for rural innovation 2

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4.1: It is all about the risk – how to create an enabling environment for agricultural innovation within the Common Agricultural Policy?

Barbara WIELICZKO

Keywords: common agricultural policy, innovation, risk, behavioural economics

Introduction

The EU agriculture faces numerous challenges. The most important of them relate to two issues – competitiveness and environment. With the strive to enter the path of sustainable development, sustainable intensification, climate smart agriculture, bio-based economy or

circular economy, it is of key importance that the EU agriculture absorbs innovations balancing economic and environmental goals related to agricultural activity.

Common agricultural policy (CAP) should encourage innovations in agriculture. The last CAP reform has introduced measures to support innovation, but it is too early to assess their impact. However, we can suppose that there is still much room for improvement as the financial incentives seem not to be accompanied by mechanisms to tackle other than financial barriers to implementing innovations at a farm level.

In relation to innovations there are two separate, although closely related, issues that need to be tackled. First is the creation of truly innovative, new technologies and practices. Second is the implementation of both brand new innovative technologies and of already established technologies that have not been implemented so far by a given farmer. Although both creation and implementation of innovations are important, a visible impact on competitiveness and environmental footprint of agriculture has the implementation of innovations. Therefore, it should be a priority for the CAP, while creating innovations should be a shared responsibility of the EU research policy and the CAP.

Innovations offer benefits both at social and private level [Moreddu, 2016]. Therefore, there is rationale to support them using public funds via a well-planned and targeted policy to ensure efficiency and effectiveness. The key barrier that should be answered by public policy is risk, which is a commonly known factor lowering the pace of adapting new technologies [Marra et al., 2003]. Yet, risk is not only related to financial aspects. As stated by G. Grolleau, N. Mzoughi, S. Thoyer taking into account the non-economic factors when shaping agricultural policy can lead to higher efficiency and effectiveness [Grolleau et al., 2015]. In order to benefit from behavioural economics in agricultural policy design, carefully prepared experiments must be conducted. There is already a wide range of studies on conducting experiments in agriculture [Greiner et al., 2014].

There are several the most common non-economic factors that should be accounted for when designing policy instruments. They all seem to be especially important when trying to encourage farmers to implement innovations. The best known behavioural factor biasing farmers' decisions is loss aversion [Grolleau et al., 2015]. The other key element that have to be taken into account are: risk aversion, ambiguity aversion, status quo bias/default bias and choice overload [Colen et al., 2015]. Moreover, policy makers must also bear in mind that there is certain time inconsistency between their decisions and actions undertaken by other stakeholders.

Method and paper organisation

The paper applies systemic review approach. It studies different experiments concerning farmers' attitudes towards enumerated policy scenarios. Most of the studies cited relate to environmental measures as they are most often evaluated using discrete choice experiments or other ways of conducting experiments within behavioural economics.

The paper is divided into three sections. First of them focusses on key non-economic factors influencing farmers' decision making process. The second section presents the analysis of the findings concerning farmers' behaviour shown in experiments conducted in other research studies which in most cases relate to environmental issues. The third section includes an

assessment of the potential impact of non-economic factors on innovation implementation and a presentation of policy recommendations for the next CAP reform.

Findings and conclusions

Intrinsic motivation and human responses, especially risk perception and its tolerance, are vital to policy effectiveness and innovation implementation. When designing specific policy measures policy makers have to take into account not only economic but also social and personal rewards expected by farmers. Based on the presentation of key non-financial barriers related to implementing innovations we argue that they are all related to different types of risk. Aversion to different types of risk is an important factor discouraging farmers from implementing innovations. Therefore, it is recommended that in creating the CAP 2020+ more attention is paid to insights from behavioural economics as it may offer useful advice on the designing of an enabling environment for agricultural innovation. Making use of behavioural economics means conducting experiments to verify farmers' attitudes towards different forms of policy design. Such experiments serve not only to answer the question of the farmers' preferences towards different forms of policy measures but they also offer guidance on the ways of helping to alter farmers attitudes towards implementing innovations. Moreover, it must be also borne in mind that some of the technological innovations can reduce farmers' exposure to risk and thus they can influence farmers' attitudes towards future implementation of innovations.

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4.2: The Leader Programme as a vehicle in promoting social capital in rural regions: a critical assessment and examples from the case of Greece

Helen CARAVELI

Keywords: Social capital, Rural Development Programmes, LEADER, regional development in Greece

The 'new rural paradigm' in Europe, applied through the Rural Development Programmes (RDPs), places at the center of academic analysis and policy formation the concept of 'territorial dynamics' (versus the sectoral approach) as an important vehicle for growth in rural regions. The term denotes "specific regional and local elements, structures and tendencies" which include factors such as "entrepreneurial traditions, public and private networks, work ethics, regional identity, participation and attractiveness of the cultural and natural environment" which would facilitate the creation of 'smart places' among EU regions - according to the 2020 EU strategy terminology - competitive on a regional and global scale (Camagni and Capello 2013; Frank et al. 2013; Pollermann et al. 2013). Such intangible elements constitute 'social capital' which is considered of paramount importance in delivering the objectives of local development programmes in the context of the endogenous approach.

The concept of endogenous development stresses the contribution of bottom-up initiatives, reflected in the mobilization of local public and private actors, in creating networks and participating in the design, implementation and evaluation of local development programmes. In this approach, attention is not restricted to an assessment of quantitative impacts of local programmes (e.g. RDPs), resulting from an application of top-down decisions of central administration and an influx of external funding, both aimed at regulating the redistribution of resources and minimizing market imperfections. The endogenous philosophy on the contrary gives special merit to the cooperative processes involved in determining the means and goals of these programmes for the effective use of local physical and human resources, especially environmental and cultural, based on the needs and visions of the local rural population. The local actors involved in this type of processes, i.e. the formulation of horizontal relations (at the local level) and vertical relations (between local actors and high tier administration bodies at the regional, national and supranational levels), constitute in essence the area's 'social capital'. As these relationships are considered innovatory, 'innovation' – not in the traditional sense of technical advancement, but as the creation of new institutions of social organization and new structures of multi-level governance which combine bottom-up and top-down initiatives to the formation of networks and partnerships - becomes a major source for development (European Policy Brief 2009; Caraveli and Chardas 2013).

In the first place, rural areas themselves are generally considered as rich in social capital, broadly understood as network cooperation based on trust and regular face-to-face contact.

This idea has been emphasized by Putnam (2000), who argues that urban areas have lower levels of social capital, as the small size of a community is better from a social capital point of view. The OECD (2006: 3) recognizes social capital as “one of the few key assets of rural areas” and many writers acknowledge that faced with difficulties of obtaining “a critical mass needed for effective public services, infrastructure and business development, rural areas are encouraged to focus on their existing assets, such as location, natural and cultural amenities and social capital” (Sorensen 2012: 874). Secondly, the LEADER approach of RDPs, whose “immaterial objectives” comprise “social attitude changes” (Pizani and Franceschetti 2011), can be instrumental in promoting local development and hence overall regional cohesion through the promotion of social capital in rural areas.

This paper critically examines the significance of LEADER in this context. In the second section, after a brief presentation of the programme’s philosophy and methods of application, its relationship with social capital elements is established. The lack of adequate attention to social capital in conventional evaluation methods of this programme and the need to incorporate this dimension are discussed in the third section. LEADER’s efficiency in stimulating features of social capital is assessed in the fourth section for the case of Greece by referring to some studies’ findings. This country was chosen due to its overall low level of social capital, a very centralized governance model, the prevalence of a sectoral (vs. an integrated and holistic) approach to rural regions and intense regional imbalances largely stemming from unexploited resources in marginal regions. It then appears to be a good case for pointing out the difficulties of applying the LEADER approach but also the challenges that it involves in inducing territorial/regional growth by stimulating social capital elements. Social capital’s contribution in facilitating the shift from an agricultural-based development to a more integrative, place-based approach in rural regions (Horlings and Marsden 2014) is emphasized in this context. A summary of the analysis appears on the fifth section, the concluding remarks.

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4.3: 'To Leader or not to Leader?' Cases from Bulgarian, Romanian and Italian LAGs

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Keywords: LEADER approach, Local Action Groups, rural development, participation, innovation

Rural development is often translated in concepts such as food chain organisation, social inclusion, sharing innovative and best practices, fostering integrated and multi-sectoral actions. The latest reforms of the Common Agricultural Policy have recognised the importance of innovation, cooperation and networking, but agricultural innovation systems need to be updated in order to reinforce the development of rural areas. Among the EU-funded programs supporting a sustainable rural development, the LEADER Approach (Liaison Entre Actions de Développement de l'Économique Rurale" which means, 'Links between the rural economy and development actions') has attempted to analyse and promote the specificities and peculiarities of European rural areas with an innovative participatory approach based on, 'participation', 'decentralization', 'partnership and collaboration'. The approach has been running for 20 years and plays a key role in development of European rural areas, however represents still a pretty new system for East-European countries such as Bulgaria and Romania. In this framework, is the LEADER approach the perfect tool to tackle the European rural development issues? This paper explores and compares the implementation of the LEADER approach in Bulgaria and Romania, comparing with Apulia region in Italy, through an analysis on Local Action Group (LAGs). The examined Local Action Groups deal with diverse challenges concerning the adoption of the LEADER approach, the composed partnerships, the available resources and, above all, the decision power capability on the local area. The analysis investigates the so called 'Leaderability' faced by the LAGs, with special regard to the main role they cover in the single local area, through a survey on 4 Romanian, 10 Bulgarian and 15 Italian LAGs. Results show whether the selected LAGs match with the LEADER features. We particularly emphasize the need to find a clear identity according to the diverse form they can shape, such as information diffusion centre, rural development agency or centre of expertise and competence with different autonomies and responsibilities for promoting innovation in agriculture and rural areas.

Background

Research on rural development is increasingly focused on the importance of the network-based approach involving local stakeholders in supporting innovative ideas and strategies for development (Shortall 2008, Teillmann 2012, Dargan and Shucksmith 2008). Innovation has been the core concept behind the latest agricultural policy programmes. The shift from a

'linear' to a 'learning process' view of innovation, implied a huge change in rural development and also in agricultural extension services. Barke and Newton (1997) stress a change in rural development that 'implies a process of local mobilization and requires an organizational structure which brings together varied community interests to pursue agreed objectives, a locally agreed strategic planning process, and an agreed allocation of resources with the specific purpose of developing local capacity in terms of skills and competences' (Barke and Newton, 1997, p. 320).

The LEADER approach operates through the Local Action Group (LAG), born from the dialogue between civil, private and public individuals and/or organizations that bring together local development strategies (Kovach, 2000; Perez, 2000). These partnerships, widespread all over the Europe, receive financial support to develop and implement a local development strategy based on the LEADER approach. The main features are based on the following concepts: (i) area-based local development strategies, (ii) public-private partnerships, (iii) a bottom-up strategy, (iv) the implementation of innovative strategies, (v) the implementation of cooperative projects, (vi) a cross-sector approach and (vii) the networking of local partnerships (EC 2006, Art. 61). Moreover the added value of the local groups is a better identification with local needs and an increased capacity for innovation.

Results

Results show six Bulgarian cases, eleven Italians and one Romanian consider the LAG as rural development agency, mentioning that their current strategies, plans, resources and partnerships could fit with this model of Leaderability. It is the case that mostly reflects the functioning of the LAGs. Conversely three Bulgarian, three Romanian and two Italian LAGs see their activities more closer to the diffusion centre model. The Centre of expertise on management model, instead, has been chosen as fitting model only by two Italian cases, meanwhile there is just a Bulgarian LAG who states that is acting as Centre of competence on thematic strategies (bio-energy and alternative energy). At decision-making level, concerning the design and the implementation of local development strategies, all of the respondents assert that the bottom-up approach has been concretely implemented. According to the sample, Bulgarian LAGs work together with economics actors, local entities and cultural association more than farmers, rural women association and environmental groups. Romanian LAGs mainly work with economic actors and local entities; and finally, Italian ones mostly are composed by farmers' organizations and local entities. Finally, the capability of the partnership within the administrative activity as well as in the financial and the strategies decision making, is suitable for all the LAGs activities and takes in account quality and quantity of human resources and management procedures

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4.4: LAGs and their innovative approaches to rural development in South Bohemia within the post-crisis period

Věra MAJEROVÁ, Jiří SÁLUS, Tomáš PILAŘ and Anna BÁBIKOVÁ

The success of the development of rural communities depends on internal and external factors that should always be detailed in developmental documents. The article is focused on the impact of the global economic crisis which occurred within the EU programming period of 2007–2013. The crisis is considered as the most distinctive external factor. Because at the time of planning the developmental strategies for 2014–2020 the effects of the crisis were already known, it can be assumed that in the developmental documents there is an observable shift from dysfunctional innovative processes to functional processes. Those innovations have assisted in defining the potential of rural areas for further development. The strategic plans of LAGs of the South Bohemia Region are the selected developmental documents for analysis. This region has been categorised according to the new EU methodology as "predominantly rural".

In these documents, the authors have focused on the changes of perception of successful endogenous factors, such as support for the building of regional identity and the role of institutions and organisations operating within the territory. There is an assumption that, comparing the developmental documents for both programming periods, these changes can generally be defined as part of the transformation of rural society in the post-crisis era. The global economic crisis plays the role of a specific catalyst in this respect, with the potential of detecting erroneous innovation in the development of selected rural locations.

As indicated above, regional identity can be considered as one of the most significant endogenous developmental factors. According to Paasi (1986), we may distinguish two aspects of regional identity: firstly, regional identity as regional consciousness (regional identity of the population) expresses the degree of identification of individuals with the image of the region, which includes a number of partial characteristics - symbolic, environmental, cultural and economic. Secondly, the identity of the region (we may use the term "image of the region"), i.e. the perception of the region by its residents as well as non-residents living outside the region. The question of regional identity is discussed in particular within the context of globalisation processes and their economic and social consequences (which may also include consequences of the global economic crisis). Regional identity can be viewed as an individual embeddedness within a given location; it is the result of self-knowledge and an expression of identification with the sociocultural aspects of the region. From this point of view, it represents a contrast to the ongoing globalisation processes that are typified by their transnational and non-territorial nature.

Society is therefore subject to dynamic changes from the external world, with the willingness and possibilities of adapting to the consequences of these changes differing significantly. In

some cases, there is a frequent updating of spatial identification or a regionally anchored feeling (a sense of 'home', the place where a person has roots), as opposed to the need for mobility to utilise the opportunities afforded by the globalised world. The high rate of migration is also considered as an expression of weak regional identity and may negatively affect a region, especially in a crisis period. The level of identification can generally be regarded as an indicator of the socioeconomic development of the region. Its support, especially within the context of intensifying crisis phenomena, seems to be very important.

The authors focus on the mobilisation function of regional identity and investigate how various regional communities represented by local action groups could absorb and institutionalise the consequences of the economic crisis and use it for their own benefit and the benefit of the region. The paper also attempts to contribute to the discussion on regional identity and the possibilities of its strengthening, especially in a crisis period. An intense feeling of regional identity can result in positive future effects, e.g. an increase in the population in the rural areas, and the preservation of traditions and traditional products.

Actively engaged LAGs create new, innovative practices for rural development. There is a combination of the interests of the public and private sectors, including the interests of individual residents. In order for the partnership of public, private and voluntary sectors to function, there must be common objectives and their relationship to the locality. Organisational processes bring about order in the relationships among various actors in the regional community and order to their activities. These activities are not feasible without control and coordination processes.

According to population theory organisations, the reaction of local organisations to a crisis could be a certain degree of inertia and immutability. It could cause a process of selection, where some of the institutions survive at the expense of others. Other approaches based on the assumption of cooperative strategies and adaptation are not possible without an innovative approach.

Analytical procedures are based on inductive and deductive methods within a qualitative and quantitative approach. These are notably the critical discourse analysis of texts (in this case, the LAGs' developmental documents of the South Bohemia Region) and the analysis of statistical data. Authors within discourse analysis seek shared meanings and approaches to the social reality of the South Bohemian countryside. Existing limitations to this kind of analysis, which are manifested by the fact that the discourse is not simply a reflection of another actual reality of rural development in a given area, are compensated for by adding a socio-economic analysis of the region.

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4.5: A new approach for participative rural development in Georgia – analysing challenges, opportunities and innovation needs in Borjomi Municipality

Theresia OEDL-WIESER, Thomas DAX and Michael FISCHER

Since regaining its independence 25 years ago the Republic of Georgia had to face long periods of instability due to civil wars, military conflicts in secessionist areas and Russian embargos. Also the global economic crisis contributed to economic problems and is an obstacle to the recovery process. Georgia has lost much of its production scope in agriculture,

e.g. for special, high quality products like wine, citrus, tea, meat and partly access to the related markets for these products in other former Soviet Republics. Nowadays, the productivity of the agricultural sector is low and the situation in many rural areas is worse. Over many years of neoliberal politics investments concentrated on the capital of the country Tbilisi, and the development of the infrastructure, the economy and the agricultural sector in rural regions were not addressed adequately. Still almost half of the population of Georgia lives in rural areas, where a low-input, subsistence and semi-subsistence farming is the major source of livelihood.

Because of high unemployment rates and poor socio-economic perspectives out-migration from rural areas towards urban centers (above all Tbilisi) and to foreign countries is a common pattern of rural Georgia. Since a couple of years, politicians have realized that it is essential to pay more attention to agricultural and rural development policies and to improve the quality of life for people in rural areas. To address these serious problems the „European Neighbourhood Programme for Agriculture and Rural Development in Georgia“ (ENPARD Georgia) of the European Union promotes the project „A New Approach for Rural Development in Georgia“ which aims at elaborating LEADER/CLLD-like activities in three Georgian municipalities Kazbegi, Lagodekhi and Borjomi. The traditional tourism region of Borjomi Municipality in the Lower Caucasus was chosen because it is representative for an area that holds significant potential in the linkage of nature-based tourism activities, agricultural diversification, cultural events and environmental protection activities in this mountainous area.

As for the European LEADER/CLLD approach, the Local Development Strategy (LDS) of Borjomi Municipality is the result of intensive discussions and participation in working groups of the LAG members during the preparation. This strategy should support activities to develop a wide scope of social and economic initiatives in the municipality in an integrative way by involving local people as far as possible. This perspective is based on the conviction that only if local people are aware of their strengths and opportunities, local resources can be harnessed and future development can be shaped successfully with the aim of increasing well-being for the community. The main objectives of the LDS are addressing the needs of Borjomi Municipality, involving the aspects of raising awareness, local capacity building and innovation implementation. During the development process of the LDS the members of the LAG from the public sphere, from several institutions and the civil society were supported by Mercy Corps, an international NGO active in Georgia, who serves as project coordinator and by experts from the LAG Angus Council in Scotland and international experts on LEADER assessment from the Federal Institute for Less Favoured and Mountainous Areas in Austria.

The elaboration and implementation of such a participatory and place-based approach requires a certain degree of open-mindedness by the involved stakeholders and LAG members and the willingness for cooperation and the support of the administration and politicians of the municipality and region. The general aim of the LDS is “to improve the quality of life of Borjomi residents and create a more attractive destination for visitors”. This headline stresses the need to develop and link the different aspects of regional resilience – economic, ecological and social aspects – in an innovative and sustainable way like nature-based tourism development, short agri-food chains, agri-tourism, protecting biodiversity and environment, fostering entrepreneurship or using and enhancing tacit and new knowledge. Transfer of knowledge from European cases of LEADER application to the regions of Georgia and elaboration of local appreciation of “traditional” know-how and enhancing capacity building processes is at the core of the local development process. Although the project is limited to a

2-year duration the understanding that this involves a long-term perspective is growing and an extension of the period is already scheduled.

At the start of this paper the economic and social background in Georgia will be examined by describing the situation in the remote mountainous rural region. In the second section the method of participatory and neo-endogenous rural development strategies, especially the LEADER/CLLD approach, and its impact on (social) innovation and knowledge sharing will be explained. In the following section the case study of LAG Borjomi Municipality in the Lesser Caucasus will be presented through highlighting the process of LAG formation and the elaboration of the Local Development Strategy. The final section will focus on the assessment of the potential of the LEADER/CLLD approach in rural areas of Georgia with specific interest for the aspect how to initiate (social) innovation processes and how to achieve knowledge sharing in a situation of such a less-developed mountain region.

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Session 5: Mechanisms/processes of innovation and knowledge sharing 2

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5.1: Recent results from the SCAR Strategic Working Group on Agricultural Knowledge and Innovation Systems

Andrès MONTERO APARICIO

The SCAR SWG AKIS since its first mandate has provided insights for a better understanding of the AKIS systems in the EU. The different mandates have allowed to develop a narrative for the strategic development of these systems in the political and socio-economical context of the EU (Member States and regions) and globally. The successful implementation of this active and participatory group has provided the EC and the EU Member States and the interested actors concerned a set of ideas, tools, best practices and recommendations for reflections on their AKIS and an efficient and coherent use of the different instrument available for the implementation of the EIP-AGRI in the EU.

The SCAR SWG AKIS, mainly during the second and partially the third mandate, has evolved in parallel to the setting up and first steps of the EIP Agri. However, some of the activities previously addressed by the SCAR SWG AKIS in the past mandates are now embedded in the Sub-Group on Innovation of the ENRD. This new element must lead the AKIS group to address complementary issues faced by the implementation of the EIP at national, regional and EU level in order to cover the most prominent EIP challenges between both groups and to coordinate adequately both initiatives.

In the past mandates, the SCAR SWG AKIS has contributed to the enhancement and the further development of the AKIS in the EU Member States by promoting an exchange of views, practices and experiences. In the past two mandates this group has contributed to the development, and conceptualization of the interactive innovation approach linked to the EIP-Agri in the EU Agrifood sector. In H2020 via the Multi-Actor approach (MA), and Thematic Networks (TN). As well in the the Rural Development Programmes via the Operational Groups (OG's). This group has also been active in the development of the common format for

the dissemination of the outcomes coming from the different initiatives linked to the EIP-Agri e.g.: OG's and MA and TN projects in H2020, the so called "practice abstracts".

Although many topics and issues have been addressed in the first three AKIS mandates, the groups' dynamics, newly emerging topics and the further development of the EIP advocate for a continuation of the SWG AKIS under a fourth mandate. For the renewal of the mandate the SCAR SWG AKIS, whose role is to coordinate, analyse, put in perspective, design, propose, etc..., should also feed the innovation subgroup and interact with it. In this context six specific activities are proposed for SCAR AKIS4:

1. Improve the integrated approach within the European AKIS and the Implementation of the EIP. Implementation of the EIP in the member states with emphasis on the integrated approach, the connections/links between H2020 projects and OGs (and among H2020 project - especially Thematic Networks - and among OGs) and the regional dimension. The interactive innovation model of the EIP AGRI dynamic, through other funding mechanisms and programs (including infrastructure) at national and regional level. Complementarity among funds (H2020-EAFRD-EFRD-ESF). (Identify examples with experiences in the MS and Regions as well as Bottlenecks and barriers. Develop pathways to improve the governance and its communication).
2. Learning and feedback from interactive projects approaches (multi-actor projects, thematic networks, operational groups). Analysis and potential further development of the projects scheme/paradigms. Based on the previous experiences (arisen through the first H2020 projects) and AKIS group discussions, greater synergies and complementarities with other funds should be foreseen for boosting interactive approach and its potential evolution (rewarding mechanisms).
3. Better address the knowledge flows along the whole production/value/supply chain in the AKIS for the future. Better address the vertical and horizontal relations through e.g. the application of the concept of Net Chain Analysis (Agrifood sector - Small chains – Food City -Urban farming policies). Further development of the EIP approach: e.g. through mechanisms to collect practice needs, design of peer review and rewarding mechanisms, further investigation of the role of innovation brokers, stimulating interaction with civil society, etc.
4. Analysing the development opportunities powered by the cross-fertilization: identification and evaluation of experiences from other EIPs (Water, Raw materials ...), other sectors not related to the Agri-food for boosting and improving the AKIS.
5. Analysing (jointly with SCAR SWG ARCH), the perspective of AKIS in Food and Nutrition Security and Sustainable Agriculture in other countries with a special focus in Africa. Based on the interactive innovation approach, what (successful) experiences from other countries could be scaled up and how to influence the research agendas.
6. Monitoring interactive innovation policies and benchmarking for sustainability: relevant input is expected in the coming period from MS EIP implementation and monitoring processes, from the OECD country reports, from the EIP evaluation study, from the FG benchmarking and from big data initiatives. This material can be collected and structured in a small study. On the basis of this, the SWG AKIS can analyse and discuss trends and evaluation systems and Try to formulate indicators for interactive innovation in collaboration with OECD.

Expected deliverables

1. Toolbox with best practices and policy recommendations for synergistic action to develop the Interactive innovation model making use of different available funding instruments with a synergistic approach. Also with the consideration of the knowledge exchanges and innovation through the whole value chain.
2. Further development of the EIP-AGRI approach to the (real) needs and demands that allow overcoming barriers (involvement of actors-end users, funding scarcities, unbalance between different themes-minor sectors/crops, education and training needs, ...). Also based on the experiences from other sectors, projects and regions linked to Bioeconomy. Rewarding mechanisms and incentives for further development of EIP-AGRI oriented to policy makers.
3. Tools/Models for other SCAR SWG's to reflect their AKIS.
4. Provide policy recommendations and insights for the Agenda setting for H2020 and CAP-EAFRD beyond 2020.

In order to contribute to the AKIS mandate, it is also foreseen to develop different studies linked to the following topics:

1. Analysing the complementarities and synergies among EU funds.
2. AKIS supporting infrastructures.
3. Better address the knowledge flows along the whole production/value/supply chain in the AKIS for the future.
4. Monitoring interactive innovation policies and benchmarking for sustainability.
5. Linking education into AKIS.

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5.2: EIP-Agri implementation: approaches, strategies and differences among western and eastern European Countries

Elena FAVILLI and Gianluca BRUNORI

In the agricultural sector, innovation is vital for sustainable economic, social and ecological development and, consequently, it is acknowledged that innovations, both in agriculture and rural development, need to be adequately fostered. To that end, the need of a systemic approach to innovation in agriculture and rural development is becoming largely acknowledged and it is considered more appropriate to address the challenge of sustainability.

In the system approach to innovation, different kind of actors (civil society, government, NGOs, companies/enterprises, knowledge institutes) are supposed to collaborate in order to innovate towards sustainability goals: anyway, these processes present several realization difficulties and efforts to overcome the numerous barriers to effective innovation and cooperation should be central to the public interest and justify public investments.

To that regard, there are a wide variety of policy instruments to support innovation processes, such as research funding, patent regulations, or industry standard inducing innovation. Recently, the literature has indicated that these mechanisms need to be complemented with “systemic instruments”; such instruments are oriented towards stimulating co-innovation

approach and orchestrate adequate combination of individual innovation policy instruments and actors of the innovation system.

In this perspective, the role of people and organizations able to catalyse innovation through bringing together actors and facilitating their interaction is growing in relevance.

In a context where collaboration among actors in order to speed up innovation need to be adequately fostered, the European Innovation Partnership for agricultural productivity and sustainability (EIP-AGRI) - which can be perceived as a platform based on interaction among farmers, researchers, advisors/extensionists and which has the aim of stimulating such a co-innovation approach by fostering synergies between the Rural Development pillar (RD) of Common Agricultural Policy (CAP) and Horizon 2020 policies - can represent a new operational tool to contribute to a desired institutional change.

In this paper we attempt to contribute to the identification of effective and efficient approaches for the implementation of the EIP-AGRI strategy. Moreover, we aimed at understand how the co-innovation approach of the EIP works, how it is translated into practice and which kind of barriers it presents. Specifically, we present some preliminary findings on the functioning of EIP-AGRI system and Operational Groups across European regions and countries by comparing different implementation modalities of the EIP strategies.

By comparing some aspects dealing with the translation of the co-innovation approach in case study region/countries (the organization of the Agricultural Knowledge and Innovation System (AKIS); the overall approach for EIP and the rules for its implementation, for example how the calls for OGs are managed; the role of innovation support services in implementing EIP strategy) we highlighted the differences from western and eastern countries.

Preliminary results of our research, show different models of implementation of the EIP: despite the common guidelines provided by European legislation, it is clear that regions/countries can adopt different strategies, also in relation to their internal institutional organization.

From these first results, we can draw some preliminary considerations.

The EIP for agricultural productivity and sustainability, can represent a useful tool for a better understanding of applied innovation processes. Our preliminary analysis of some of the EIP implementation modalities, confirms that the role of people and organizations able to catalyse innovation through bringing together of actors and facilitating their interaction is growing in importance.

Comparing the different models of the EIP we can stress the engagement of regional and national governments in transposing this new European approach to innovation in agriculture; also the involvement of support services in the designing of the strategy underlines the willingness to cooperate in order to achieve a more coordinated innovation support system.

European countries are starting now to experience the EIP implementation and more time is needed in order to understand if the adopted strategies will bring to the desired outcome. However, this preliminary analysis allows us to understand how different regions and

countries interpreted the interactive innovation approach within the EIP and this represent a starting point for further research and insights.

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5.3: Polish experience of social farming in Bory Tucholskie area

Ryszard KAMIŃSKI

Keywords: farm welfare, agriculture, social farming, care farm, outplacement farmers, new profession for the farmer.

After integration with the European Union, there was an accelerated process of diversification of the income situation of farms in Poland. Many of them have problems to make a living from agricultural production. At the same time the problem and the scale of the whole society becomes a demand for care in old age. This article describes the possibility of taking care on farms in the formula of care farm. Quoted in the article, the various forms of care farms are part of a wider trend of social farming. The first attempts to create a Polish care farm in Tuchola Forest offers hope for real development of this form of economic activity in the country.

The Opinion of the European Economic and Social Committee from 2013, agriculture society is increasingly developing in Europe innovative approach that combines two concepts: multifunctional agriculture and social services - health care at the local level. As part of the agricultural production it contributes to the improvement of well-being and social integration of people with special needs. The term agriculture society is known in Europe a number of actions defined as agriculture for health "farming for health", agriculture caring "care farming", "green care", or "green therapies." These terms refer to different activities in the area of care, social reintegration, training, social and vocational rehabilitation of people in special needs and disadvantaged. Taking such actions, contributes to the well-being of disadvantaged people improve their health and social inclusion. Sometimes such actions through contact with nature and production activities contribute to improve learning, improve self-esteem and facilitate participation in social life.

In 2008, Kuyavian - Pomeranian Agricultural Advisory Centre (KPODR) undertook activities related to the reorientation of farmworkers and their family members. Direct inspiration of actions for developing care farms in the Kuyavian – Pomeranian region, were attempts of this type of activity undertaken in 2002-2004 in Podkarpacie and Lubelszczyzna region. In 2013 KPODR Minikowo began talks with the owners of agritourism farms from the area of Tuchola Forest affiliated to the Association of Agrotouristic Farms "Tuchola Forest" about the possibility of extending their activities with caring functions. In 2014, we began to prepare the concept of creating a care farms in Tuchola Forest based on the Dutch experience. We developed assumptions of care farms in Tuchola Forest (Individual Plans of Creation Care Farms), and made individual review of farms for compliance with the technical requirements of individual rooms and the entire space ultimately offered to the charges. We also made a preliminary financial analysis transform agricultural or working farm to caring activities. According to Manintveld [2014], in the Netherlands, care farms provide a various care services for the following target groups:

- Mentally disabled;
- People with reduced mobility;

- The elderly disabled mentally / physically;
- People with brain damage resulting e.g. As a result of accident or illness such as dementia (Alzheimer);
- People with mental health problems;
- Reintegration of (former) prisoners;
- Reintegration of addicts (e.g. drugs, alcohol);
- People suffering from autism;
- Child care (before and after school hours);
- Difficult youth;
- The long-term unemployed;
- People with occupational burnout;
- People seeking asylum.

As a result of the described activities carried out within the international cooperation, farmers in Tuchola Forest attempt to create care farms, in some cases very advanced, because already they take the first charges. Described in the article models are possible to implement in the existing legal status in Poland. Only the care functions in the form of day care requires complement, which is most common among in the Netherlands.

Care farms in the Tuchola Forest are the experiment and basis to create other solutions, the implementation of social agriculture in the Kuyavian-Pomeranian region and Poland. For many agrotouristic farms this direction of specialization may become in the future a real opportunity for development, while acting an alternative form of care for the growing multitude of older people requiring support.

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5.4: Innovation on Agroforestry Education, Training and Practice to Develop Rural Living and Environment Supported by the AgroFE Leonardo and AgroF-MM Erasmus+ Projects

HERDON Miklós, VÁRALLYAI László, LENGYEL Péter, PANCSIRA János, PETŐ Károly, Charles BURRIEL, Helene COCH, Tamás JÁNOS and Blaskó LAJOS

Introduction

There are many definitions, aims and potentials of agroforestry. One of the definitions, increasingly used by ICRAF publications and achieving wide acceptability is: “*Agroforestry is a collective name for land-use systems and technologies where woody perennials (trees, shrubs, palms, bamboos, etc.) are deliberately used on the same land-management units as agricultural crops and/or animals, in some form of spatial arrangement or temporal sequence. In agroforestry systems there are both ecological and economical interactions between the different components.*”

This definition implies that:

- agroforestry normally involves two or more species of plants (or plants and animals), at least one of which is a woody perennial;
- an agroforestry system always has two or more outputs;
- the cycle of an agroforestry system is always more than one year; and

- even the simplest agroforestry system is more complex, ecologically (structurally and functionally) and economically, than a monocropping system.

Agroforestry can be applied to all agricultural systems, in all parts of Europe. Agroforestry systems are obtained by planting trees on agricultural land or introducing agriculture in existing woodland (e.g., silvopasture). Europe has a unique heritage of traditional agroforestry systems with a high environmental and cultural value and high potential for innovative modern agroforestry systems developed by research centres across Europe during the last two decades.

Existing research indicates that appropriate application of agroforestry principles and practices are a key avenue to help the European Union to achieve more sustainable methods of food and fibre production that produce both profits for farmers and environmental benefits. Agroforestry practices have been overlooked by previous CAP (Common Agricultural Policy) schemes, resulting in billions of trees being destroyed across Europe. Recently incentives for establishing agroforestry plots have been introduced and in the new CAP agroforestry will receive support through Pillar II. Article 23 of the new Rural Development Regulation 1305/2013 is devoted to the establishment of agroforestry systems and it now depends on Member States and regions to use this article to adopt agroforestry measures in their Rural Development Programmes.

The AgroFE Leonardo project

In recent years following scientific research, the development of structures and professional experiments in agroforestry has met national and European recognition. In some European countries namely Belgium, France and UK professional organisations and training organisations have begun to reintroduce agroforestry with the training of agricultural students and adults in further education. Small scale training in these countries remains at only a low level due to limits of resources and funding.

In the AgroFE project in partner countries there is a need for conversion and development of about 15 000 to 20 000 farms, in the next 5 – 7 years, which means training of the same number of operation managers. To achieve these goals more advisors and trainers in agroforestry are needed.

The main project objective is the development of an agroforestry training system, based on a common framework and core content, and to promote training at European level. The training should involve professionals, agroforesters, and should be as innovative as possible: field based trainings, usages of ICTs, development of training materials.

The specific objectives were:

- Producing of one proposal of European professional referential of farmer agroforester, as support of the training common framework - core content, which one could be adapted to local environment;
- Designing, implementing a knowledge data bank (KDB - BdC), knowledge which will be used as materials, resources for trainings, including the existing and the transfers from partners;
- Developing new training pathways then carrying out experimentations targeting student future farmers or advisors and adults, farmers, in the countries of the partnership;

- As much as possible, inserting, developing the trainings in the framework of the qualification, certification systems for the targeted levels, trainings based on to the needs and specifications of the country education systems.

Main results of the AgroFE project

Related to the objectives of the AgroFE project the following results can be highlighted:

- A collection of different resources were made based on the synthesis of needs and expectations of partners. This collection were used in developing new and existing training sessions.
- A professional book of references has been developed to support for transfers in training.
- The knowledge database has been developed which will be used for tools and training resources and which will also integrate existing resources in the future.
- Collaborative and dissemination platforms were created such as official web site, videoconference system, facebook, mailing list and Moodle for project document and as Learning Management System.

The Agrof-MM Erasmus+ project

Based on the AgroFE Leonardo project the Agrof-MM extends the activity to the Mediterranean and Mountain areas.

The duration of the project: 2015-2018. The Project Coordinator: AgroSup Dijon – France; Partners are TEI Stereas Elladas (GREECE), The French Association of Agroforestry (FRANCE), University of Tuscia (ITALY), University of Debrecen (HUNGARY), AliénorEU (BELGIUM), Friends of Nature (LEBANON), Abacus Organic Associates Limited (GREAT BRITAIN), CFPPAF Mirecourt (FRANCE), EPLEFPA Valentin (FRANCE), University of Ondokuzmayıs (TURKEY).

Agroforestry is an ancient practice that was gradually abandoned. The training of agricultural stakeholders is one of the fundamental elements in the new development of agroforestry practices in Europe. Education is essential, not only in order to make this innovation method of production known, but also in order to allow the acquisition of new competencies and knowledge by those working in the agroforestry agricultural profession. This is why Agrof-MM sets up different types of training:

- Courses, group work, conferences
- Training in the field and online
- Self-training
- Thematic workshops
- Case studies
- Visits to agroforestry plots
- Tutored placements on farms.

The Agrof-MM training programs directed to pupils, students, farmers and future farmers, foresters, workers, teachers, trainers and agricultural advisors

Agrof-MM analyses existing educational systems and develops new innovative tools:

- A description of existing training procedures and an identification of needs
- A census and evaluation of existing educational tools

- The enrichment of the European book of professional reference for agroforestry farmers. Created in the framework of the preceding AgroFE project, the book of professional reference describes the tasks that the farmers and foresters who practice agroforestry must be able to achieve. It also serves to support the transfer of training.
- The design of the book of professional reference as well as the training systems
- The production of educational material including multimedia tools
- The practical validation of educational systems
- The analysis and dissemination of the results obtained.

The Knowledge Data Bank and ICTs

The knowledge database has been developed which will be used for tools and training resources and will also integrate with existing and future training resources. Collaborative and dissemination platforms were created such as an official web site, video-conference system, Facebook, mailing list and Moodle training portal for project document and as a Learning Management System (LMS).

The knowledge databank is a component of the project training system. It aims to gather and share a set of documents, resources that partners can use and which will have been accessed by learners and the public users. The project focuses to the newest innovative ICT solutions and trends. The knowledge databank is to enable the sharing, access and consultation in the use of certain resources for training. These resources are under different forms: Mono document object (like a photo, a text, a diagram) and Composite materials (for example a html web page with images, a pdf file with pictures and diagrams, a video clip with images and sounds ...). The prototype of the AgroFE project is based on a software, RUBEDO, developed in PHP and RUBEDO is built on different components: a data base management software (DBMS-SGBD), type 'NoSQL', MongoDB, and the user interface uses the ElasticSearch search engine. The paper describes the knowledge databank system prototype and the used ICT tools in the project, such as LMS and the collaborative working environment. These tools have been used in both the AgroFe and the AgroF-MM project.

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5.5: Agricultural Innovation through Rural Development Programmes: experiences and pathways in Italy

Simona CRISTIANO, Patrizia PROIETTI and Marta STRIANO

Keywords: Agricultural Innovation; Evaluation; AKIS; measure 124; Rural Development Programme (RDP); cooperation for innovation; innovation partnerships.

The European Rural Development Policy 2014-2020 fosters the competitiveness and sustainability of agriculture and forestry sectors, through the Operational Groups (OGs) of the European Innovation Partnership (EIP-AGRI). The latter represent a new approach to innovation aimed at building bridges between different actors (research, farmers, business and advisory services), in order to speed up the development of innovative projects and ensure a wide dissemination of their results. The Managing Authorities (MAs) of the RDPs have a crucial role in setting the scene for enabling and promoting such innovation processes in rural areas, in terms of Programme design and delivery.

The programming process of the EIP-AGRI and Operational Groups by the Italian Regions has been rather complex. Also, the implementation of the EIP-AGRI system differs from one region to another, depending on procedural and methodological choices afferent to different political views.

The **aim of this research** is to explore the different policy frameworks adopted by the Italian regions in implementing the measure 124 of Rural Development Programmes 2007-2013 (RDPs) co-financed by the EU. The results of the study provide an overview of the enabling environments for promoting innovations in agriculture and rural areas that have been experienced in Italy.

The study has been carried out at national level in order to gain an overview of the processes of innovation activated by the innovation partnerships and to carry out a comparative analysis.

The experiences of measure 124 are analysed against the EIP-AGRI framework. In this view, the study focuses on the quality of the partnerships set up for implementing innovation at farm level, presence and role of innovation brokers, relationship between innovation and sustainability, use of innovative approaches to share problems, search for solutions, spread information, behaviours and skills of the actors as well as farm-system related determinants of innovation (policy, supply chains, advisory systems and social networks). Also, the research deepens the analysis on the maintenance of the partnerships in the long terms, which could facilitate the correct identification of farmers' needs and the full implementation of the project results.

The study is supported by the use of a mix – method approach, based on desk and on field research, qualitative and quantitative methods. The desk research brought to the set-up of a database of all the innovation projects funded under the measure 124 of the RDPs 2007-2013 in Italy, that contains qualitative and quantitative information on projects features, partners, supply chains and financial provisions. The analysis on the field has been based on semi-structured interviews, focus groups and workshops which have supported the poll of different innovation rural actors, allowing to capture quantitative, descriptive and relational information on relevant issues such as organizational models, involved, roles, expectations and behaviours, relationships and types of innovations.

The results of this research certainly represent key issues and tips for policy makers for understanding mechanisms, governance and processes to foster enabling environments for innovations in agriculture and rural areas. Particularly, the results of the study show that: (1) well defined policy and programme setting is crucial to enable environments and cooperation for innovation between AKIS actors in agriculture/rural areas; (2) local systems act in different ways, according to types of AKIS actors and to specific agricultural systems (3) project-driven innovation approaches might not support the maturation of innovative

entrepreneurships nor, in general, the systemic capacity to innovate of local contexts; (4) networking instruments – such as national networks – particularly in regional MSs are extremely important to support the implementation of the EIP (5) there's a need for appropriate monitoring and evaluation tools and methods to capture innovation needs and practices, to benchmark experiences, to build cumulative evidence on how interactive innovation works – or not works – and foster co-learning processes in OGs.

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Wednesday 5 October – Ministry of Agriculture Budapest

Session 6: VALERIE papers and workshop

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6.1: Boosting outreach of research for innovation in sustainable agriculture and forestry: a semantic approach by VALERIE

Hein F.M. ten BERGE, Luca BECHINI, Frits K. van EVERT, Arianna FACCHI, Michael den HERDER, Yolaine HILY, Eric JUSTES, Nicole J.J.P. KOENDERINK, Paul NEWELL-PRICE, Frank J. de RUIJTER, Dario SACCO, Peter M. SCHULER, Jan TOP and Don J.M. WILLEMS

Introduction

“Research should play a significant role for the future in meeting the challenges of increased demand for food, balanced against the need to deliver other ecosystem services. Outreach and translation of research for innovation is an essential part of the process. While many EU and nationally funded research projects in the fields of agriculture and forestry provide excellent scientific results, outreach and translation into farming and forestry practices is limited. The challenge here is to boost innovation by facilitating the uptake of formal and empirical knowledge, and its integration into field practices. This is to be achieved in a manner that ensures optimal valorisation of knowledge, avoids duplication of innovation efforts, and capitalises on work in other sectors.” (shortened from EC, 2012).

Approach

In response to the above call, the VALERIE project (www.valerie.eu) started January 2014 with the aim to develop a virtual adviser, <http://ask-Valerie.eu>. This interactive system should enable practitioners (farmers, foresters) and advisers to access knowledge of direct relevance to their problem. Key elements of such a system are (1) a document base that comprises domain knowledge in a suitable language; (2) a digital assistant that helps the user formulate his/her query as precisely as possible; and (3) an infrastructure to find, rank and present the documents and text fragments that best match the user query. Whereas *ask-Valerie.eu* also aims to connect people - for example stakeholders exchanging views on how to control a certain weed; or ‘real’ advisers offering their specific services – and present other relevant sources (videos; infographics; equipment; projects), this paper focuses on the retrieval of best matching texts. More details are given by Bechini *et al.* (2016).

The backbone pivotal to each of the above three key elements is an ontology. This is a set of ‘concepts’ (also called ‘things’, ‘terms’ or ‘primitives’) that together represent a knowledge domain. In soil management, for example, relevant concepts are ‘sandy soil’ and ‘clay soil’, but also ‘tillage’, ‘soil water’, ‘fertiliser’, ‘disk-harrowing’, ‘nematode control’, ‘nitrate leaching’ and ‘green manuring’. The concepts are organised in a network that expresses relations between them. For example, ‘pH’, ‘permeability’, ‘erodibility’, ‘water holding capacity’, ‘disease suppressiveness’, and ‘respiration rate’ all belong to the category of ‘soil properties’, they are a ‘type of’ soil property. Likewise, other categories are ‘soil processes’, ‘soil types’ etc. etc. There may be two or more names (synonyms) for any given concept, e.g. an organism may be described by its scientific name and by colloquial names in several languages. We collected concepts and their names from stakeholders in our case studies (see Ingram et al., this conference), as well as from experts. The VALERIE ontology aims to roughly cover the wide domain of agriculture and forestry. It includes the thematic sub-domains: crop rotation, integrated pest management, eco-system and social services, soil management, water management, integrated supply chain services and tools, innovative farm management, and recycling and smart use of biomass. We compiled the ontology with the help of the ROC+ tool (Koenderink et al., 2008). ROC+ assists in identifying synonyms, offers suggestions from existing ontologies (e.g. Agrovoc by FAO), and enables to indicate relations between concepts. ROC+ supports two kinds of relations: hierarchical (“type-of”, as above), and “related-to”. The latter is used, for example, to express that *Botrytis* (a fungus) is related to strawberry (a susceptible host crop), and ‘tillage’ is related to ‘seedbed’ and ‘soil structure’.

Table 1: Examples of innovations documented in the VALERIE collection of innovations.

Applications of zeolites to crop protection
Impact of wood ash fertilisation on carbon sequestration
Hand-held sensor to improve N fertilisation management
Constructed wetland for the treatment of agriculture wastewater
Use of LIDAR to improve forest management
Fertilizer made from bone meal
Impact of variety mixtures on weeds
Plant disease management by stimulating crop residue decomposition
Setting up a forest owners' group
Biochar application to improve soil quality and fertility
Biodegradable drip irrigation tapes
Fruit harvesting robots
Ammonia stripping from manure

The ontology fulfils several tasks. *First* is the annotation of documents, so that for all documents in the document base it is known which concepts occur and how frequently (‘digital fingerprint’ of each document). This task is performed before any interaction with the user. *Second* is query articulation. When entering a query, the user is assisted with auto-completion options, which may help in expressing the question more clearly. Next, the user is offered alternative terms from the ontology. These alternatives may be either ‘broader’ or ‘narrower’ than the term entered. A user entering ‘strawberry fungi’ may actually be looking for information on ‘strawberry diseases’ (a broader concept), or on *Botrytis* (narrower). Terms offered may also include ‘related to’ terms: e.g., control methods, or names of particularly sensitive (or resistant) strawberry cultivars. The user may accept these suggested terms to improve his/her original query. Ontologies or semantic vocabularies have been used previously to reformulate a user query, e.g. by Athira et.al. (2013) and Guo and Guo & Zhang

(2008). *Third*, documents are retrieved and ranked based on the similarity between ontology terms in the query and the digital fingerprint of the respective documents.

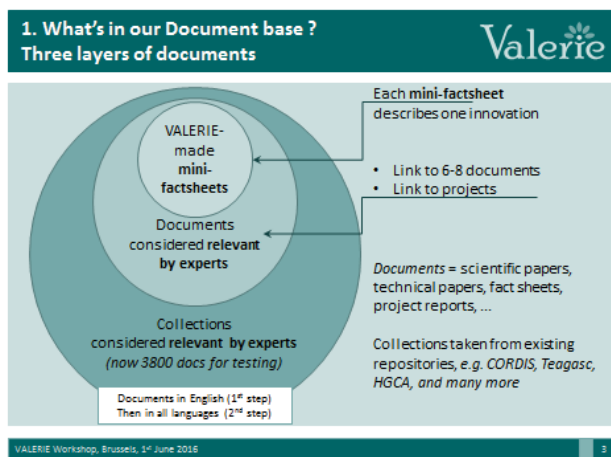
We are still in the process of compiling the document base, and developing facilities for its sustenance and continued expansion beyond the project. Document types will include scientific papers (by scientific publishers and aggregators), practice-oriented documents in existing repositories (by agricultural chambers, cooperatives, advisory organisations and ministries), and outcomes from European research and innovation efforts (CORDIS for FP5-FP6-FP7; ERANET; FACCE-JPI; OrgPrints; and H2020). In the latter category, special attention is given to EIP-Agri outcomes (e.g., brochures and reports from Focus Groups and Thematic Networks). VALERIE workshops with stakeholders and representatives of the SCAR strategic working group on AKIS have taught us that users prefer to decide beforehand which of these document types they seek to find.

Cross-sectioning these document categories, we are building a ‘collection of innovations’ as a way of summarizing (a small part of) existing information. Each innovation is described in a very brief template (‘mini-fact sheet’) that names the innovation and the problem it aims to resolve, explains how it works, and gives key references for further reading. Innovations in this collection (Table 1) are selected by experts in the respective themes listed above. This is an admittedly subjective process for two reasons.

First, an innovation may be a near standard practice in one location but not elsewhere. Second, each innovation can be split into many, depending on application domain (i.e. they vary between crops, soil types, climate zones) and technological implementation. It may, ultimately, be up to the user community to establish a proper regime to select practices, methods, techniques or approaches for inclusion into the collection of innovations. The mini-factsheets are core documents in the document base, and lead users to the referred literature and to specific source projects (represented by the middle sphere in Fig.1). The outer sphere in this figure represents collections selected by experts, and which include the above document types: scientific, practice, European. (The latter category may obviously include both scientific and practice oriented documents, and non-peer-reviewed reports.) Currently, we have identified 1600 relevant FP5-FP6-FP7 projects (under CORDIS), 24 ERA-NETs, and over 18,000 OrgPrints documents.

In short, our approach differs from general search applications in that we involve domain experts in the loop: for writing factsheets, selecting documents, building a dedicated ontology, and for evaluating the selection and ranking algorithm.

Figure 1: Layout of the ask-Valerie.eu document base.



Preliminary results

The *Valerie ontology* currently³ has 6007 concepts, 20,824 synonyms in seven languages (English, Italian, Dutch, French, Spanish, Finnish, Latin) connected by 5833 ‘type of’ relations and 3766 ‘related-to’ relations. An early version is available for viewing at <http://www.foodvoc.org/page/Valerie/>.

The *document base* currently contains 4274 documents, a limited set deemed sufficient for testing *ask-Valerie.eu* with stakeholders in the case studies. We have compiled a collection of 479 innovations, 201 of which are now fully described in a mini-factsheet. Besides the mini-factsheets, the documents include 92 books; 40 book chapters; 144 conference papers; 2306 journal articles; 25 magazine articles; 36 presentations; 129 reports; 20 theses; 7 videos; 357 web pages; and 917 other documents such as newspaper articles, blog posts, and unclassified attachments. The documents are both in English and in national languages, and some are from EIP-Agri, ERANET-projects, FACCE-JPI, OrgPrints.

Software: the web portal *ask-Valerie.eu* has been implemented with software that covers the digital advisor and the infrastructure to present the results in a concise way. It is currently available for project team members only, for testing and development. We expect to have a public version available by mid-2017.

Perspective and remaining challenges

While our intent was to summarize research outcomes for practice, stakeholders in our case studies soon pointed out that practitioners often look for solutions that can be applied *now*. Ideas or concepts that might hold a promise but still require lengthy tinkering and maturation are less favoured, yet many research outcomes are in this latter category.

³ Ontology Valerie version 6, dd. 18-6-2016.

Knowledge *for innovation* seems different from knowledge *on innovations*. In response, we will separate document types and direct part of our efforts to identifying repositories of content for direct application. These include manuals for ‘best practices’, some of which others might not classify as ‘innovations’. We have identified some 50 repositories that hold practice-oriented documents of interest to our target community. We will contact these repositories to index their content, in order to bring users to their pages.

Access was granted by the US National Agricultural Library (NAL) to AGRICOLA, its bibliographic database with over 4 million references, updated monthly. We also work with a scientific publisher to annotate the full text of selected agricultural and forestry science journals, and to learn from experiences in the private publishing business.

With respect to European projects, we have access to Results in Brief and Project Summary Reports. It remains difficult, however, to obtain full access to all project documents produced under FP5-FP6-FP7 as this often requires direct interaction with the respective original consortia. One way to partly address this issue may be to seek the involvement of existing large aggregators. Examples of these are OpenAire (www.openaire.eu) and AGRIS by FAO (<http://agris.fao.org/>). However, technical and/or legal constraints may limit the scope to achieve this in the short term.

The virtual adviser *ask-Valerie.eu* is built for integration into the platform of the EIP-Agri Service Point (<https://ec.europa.eu/eip/agriculture/en/content/EIPAGRISP>). It is intended as a tool to support the multi-actor approach envisaged by the Commission under Horizon2020, by offering practical and scientific information to stakeholders in Thematic Networks and Operational Groups from web-based sources, including from documents in the EIP repository itself. We aim to explore whether *ask-Valerie.eu* can evolve into a merger portal giving access to various strains of European work, including FACCE-JPI and ERANETs.

A future-proof system should offer facilities for – at least partial - sustenance by the user-community itself, allowing for the continued expansion and refinement of the VALERIE ontology for sustainable agriculture and forestry, of the document base, and of the collection of innovations. Part of this functionality is available already: users can contribute ontological terms and relevant additions to the document base. Alignment of the ontology with larger co-ordinated efforts (such as the GACS ontology by FAO, CABI, and NAL) may offer another perspective to consolidate the VALERIE effort.

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6.2: Integrating co-innovation into research translation: developing a stakeholder-driven methodology

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Keywords: research translation, co-innovation, arable farmers, supply chain, AKIS

Although innovation is understood to encompass much more than R&D, science continues to be an essential ingredient. In particular translation, adaptation and 'valorisation' of research⁴ results, the responsiveness of research to users' needs and improved access to results are all regarded as important in achieving a more sustainable European agriculture (OECD, 2010). These challenges can be addressed in a number of ways including increased collaboration, networking, transdisciplinary research and co-operation between researchers and practitioners. From a theoretical and practical perspective such approaches often involve inserting elements of co-innovation into the traditional science-driven model. Whilst a number of studies have examined the processes entailed in co-innovation, such as co-reflection, learning, reflexivity, and co-creation of knowledge, less attention has been paid to integrating co-innovation processes into the translation of existing scientific research outputs. This paper examines this topic drawing on experiences in the VALERIE⁵ project which is using an iterative stakeholder-driven methodology to create an effective retrieval facility (*ask-Valerie.eu*) for existing science-driven research outputs. Specifically the paper aims to understand the interplay between users' identification and articulation of research needs and evaluation of solutions.

The premise of the VALERIE project is that many EU- and nationally-funded research projects in agriculture and forestry provide excellent scientific results but that outreach and translation of these results into farming and forestry practices is limited (EU SCAR, 2012). The challenge is therefore seen as boosting innovation by facilitating the uptake of formal and empirical knowledge, and its integration into field practices. Overall the project's objective is to translate research outcomes with a special interest in innovative and applicable approaches into end-user content and format (for farmers, advisers and enterprises in the supply chain), and to provide easy access to it. This is through the development of a smart retrieval system (*ask-Valerie.eu*) for use at a European level (Willems et al., 2015). It does this by extracting and summarising knowledge from international, EU research and national projects and studies

⁴ Whilst it is acknowledged that 'research' can refer to outputs from a number of sources in a number of different forms, here the term is used to denote the formal scientific process, which produces scientific information as scientific literature, reports etc.

⁵ FP7 EU funded project VALorising European Research for Innovation in agriculturE and forestry (www.valerie.eu)

concerning innovations in agriculture and forestry; with a focus on six selected themes. These outputs are screened, filtered and tested with stakeholders (see www.Valerie.eu for details).

An iterative stakeholder-driven methodology is being applied. Case studies (10 across Europe) and their stakeholder communities are at the core of this iterative process; these are organised around a particular supply chain, a farming / forestry sector, or a landscape, and cover different regions, scales and dimensions.

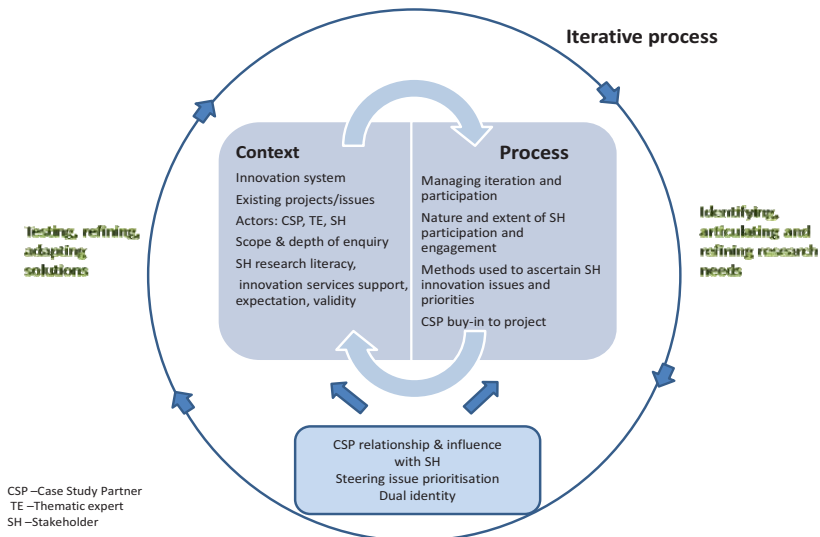
In each iteration cycle stakeholders in case studies identify innovation issues (research needs) in participatory meetings facilitated by Case Study Partners (extension experts). The project Thematic Experts (scientists) then search existing scientific literature, EU reports etc. and extract relevant information and prepare end-user formats (factsheets) for innovation solutions to address these issues. Stakeholders, refine and screen apply, test these for their innovation potential in the local context and feedback their evaluation of the solutions, thus completing one iteration cycle.

Data analysed for this paper are derived from three iteration cycles using meeting reports and Dynamic Research Agendas (used for monitoring in each Case study), semi- structured interviews, discussion/reflection in interviews, workshops and discussion with Case Study Partners and Thematic Experts. The analysis is drawn from four agricultural case studies (Table 1) and looks specifically at the first stage of innovation: issue identification, factsheet preparation, evaluation and feedback.

Table 1: Case studies

<p>Innovative Arable Cropping group, France Farmer group active since 2005, working with an agronomist to test techniques (tillage, legumes, cover crops) to improve soils, reduce weeds. SH: mainly farmers, technical services, field advisers , co-operatives; Agricultural Chambers; institutes</p>
<p>Potato supply chain, Poland Supply chain linked to a processor company with a large farm and 60 contract farms. The company invest in research to improve quality and yield SH: suppliers of seeds, fertilizers, pesticides, processors & professional farmers already accessing research</p>
<p>Bread wheat supply chain, Italy Quality is a key concern for this supply chain SH: Farmers, supply chain players, cooperatives offering storage, millers , input suppliers, retailers and processors</p>
<p>Catchment management in arable cropping, UK A partnership comprising individual farmers, local authorities and government agencies, farming representatives, NGOs to enhance catchment management SH: 4-5 farmers participated in meetings</p>

Figure 1: Contextual and procedural influences on identifying and evaluating innovation issues and solutions.



The results to date have shown that the way stakeholders identify their innovation and articulate issues and evaluate solutions differs according to an interaction between *contextual* and *procedural* influences. Identifying issues and problems and articulating these has taken different forms in the diverse case studies (Fig 1). This is influenced firstly by the case study *context*: the goals, the innovation system and stakeholder characteristics and their experience of innovation support, their professionalism or research literacy, the Case Study Partners and Thematic Experts; and secondly by *processes* within the project at case study level: the nature of participation and SH engagement, participatory methods used to ascertain their innovation issues and their prioritisation. Central to both of these is the intermediary role of Case Study Partners and the relationship with the stakeholders.

As the project progresses the iterative methodology process is evolving, assisted by reflection throughout, at project, case study and stakeholder levels. To date it provides useful insights into the process of, and highlights some challenges associated with, integrating co-innovation and research outreach. Involvement of end-users in determining, undertaking and translating research results as others have shown can be demanding (Botha et al., 2104; Klerkx & Nettle, 2013). However in all case studies a considerable number of research outputs and several factsheets have been delivered to stakeholders and evaluated for their potential to address the issues identified and articulated by stakeholders. It is apparent that the process can be effective but that it takes time and that iteration through several meetings and dialogue is important.

More fundamentally, the results reveal the assumption that innovation issues equate to research demands and that scientific knowledge equates to innovation solutions to be quite simplistic, as in reality the process is far more nuanced. Producers already have a high degree of experience and complex knowledge which they use for everyday problem identification and solving (Baars, 2011). Asking them to externalise this process and to articulate issues in

an explicit way that can be interpreted by researchers is not a straightforward process and in some cases requires sustained dialogue, clarification and a number of iterations. Furthermore, the assumption that scientific information will provide a solution to these innovation issues as opposed to other sources of knowledge, or indeed other factors linked to the wider innovation system, is also revealed as a rather one dimensional view.

Despite these challenges, experience to date has shown that involving end users in the translation process provides opportunities to facilitate the uptake of formal scientific knowledge, specifically the stakeholder driven methodology provides a mechanism to insert co innovation process into a more science driven model of translation. This methodology is potentially transferable to other contexts.

The case study activities contribute toward the development of *ask-Valerie.eu* by providing a wide range of innovation issues and solutions and enabling us to learn how potential users articulate innovation issues needs and formulate questions for research, and understand how potential users screen, filter and test extracted research outputs.

The VALERIE project is helping us to better conceptualise and plan for a more effective translation of research for different types of practitioners in contrasting local situations, and how better to foster coherence between co-innovation and broader scientific research agendas and processes. This project will provide important insights for the European Innovation Partnership with respect to its thinking and support of interactive innovation (e.g. through Horizon 2020 research and Rural Development Programme operational groups) and contribute to AKIS thinking at a European level (EU SCAR, 2012, 2013).

The authors would like to acknowledge the valuable contributions from the case study partners, the case study stakeholders and project partners of the VALERIE project

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Session 7: Impacts of knowledge sharing and innovation

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7.1: Competitiveness and innovation in rural Romania

Monica Mihaela TUDOR, Mihai Alexandru CHITEA and Elisabeta Stefania ROSU

Keywords: regional competitiveness, innovation, rural area, Romania.

The debates on the competitiveness issue have gained increased relevance with the acceleration of the economic globalization processes, as an expression of the increasingly fierce competition worldwide.

In the sense of the present analytical approach *regional competitiveness* is understood as the *ability of regions to promote, attract and sustain the economic activity, so that their population can reach and maintain a high living standard*. According to this definition, a region is competitive when its average business environment features high accessibility, which produces and/or is attractive for the mobile production factors (highly qualified labour force, innovative entrepreneurship, etc.), thus generating economic growth. The successful attraction of these factors creates positive externalities, such as benefits related by concentration and location, leading to the economic welfare of a region.

The present study has proposed the substantiation of a methodology to evaluate the rural competitiveness of the regions in Romania. A special focus is laid on the investigation of competitiveness disparities at NUTS III level, defined according to the rurality level (predominantly rural counties, on one hand, and intermediate counties, on the other hand).

In Romania, the predominantly rural regions (NUTS III) and the intermediate regions have a significant socio-economic importance compared to the other European Union member states. Thus, the predominantly rural regions from Romania, accounting for 60% of the national territory, where 45.6% of the country's population is living, contributing by 32.7% to gross value added (GVA) and by 14.8% to labour employment, are added to the intermediate regions, which in their turn largely contribute to the descriptive parameters of our country, which makes Romania the most rural EU member state.

In order to evaluate the *rural competitiveness index* at NUTS III level, a statistical model was used, developed by Ornella Mikuš et al. in 2012 to measure the territorial disparities in regional competitiveness in Croatia. The rural competitiveness evaluation model includes four sets of indicators, namely: (i) human resources; (ii) situation of the non-agricultural sector economy; (iii) situation of the agricultural sector economy and (iv) innovation and specialisation (business complexity). Each of the four categories mentioned above is composed of specific indicators and the selection of indicators for measuring rural competitiveness is based on the concept of sustainable rural development. The input data of the model were extracted from statistical sources of secondary data available in the official national statistics.

Two *working hypotheses* were formulated, which were tested throughout our analysis, as follows:

1. the competitiveness of predominantly rural regions is lower than the national average;
2. the weak development of the RDI sectors at regional level significantly impacts the competitiveness level.

The results of the study revealed that the economy of the predominantly rural regions is less competitive than the economy of the intermediate regions. The factors that largely contribute to the amplification of territorial rural competitiveness disparities between the two categories of NUTS III regions are the following: i) size of staff involved in RDI activities that contributes to the comparative advantage of the access to innovation and ii) value of exports, both in the non-agricultural and agri-food economy, which certifies the competitive advantage of the regional economies on the world markets, both parameters being deficient in the case of predominantly rural NUTS III regions.

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7.2: Impact assessment of Local Action Groups - as an innovative measure of the Leader Programme - on the diversification of non-agricultural activities and encouragement for small entrepreneurs

Cristina Bianca POCOL, Călin MOLDOVAN-TESELIOS and Vlad Mihai OCHIRO □

The interpretation of "innovation" by the actors involved in the Leader projects at European level seldom reveals a picture that is slightly "disappointing" (Katonáné Kovács et al., 2016). In Romania, the Leader Program has been implemented since 2011 and aims at the improvement of the rural development potential. Thus, in the 2011-2012 period, a total of 163 LAGs (Local Action Groups) were selected, representing 63% of the eligible population and about 58% of the eligible Leader population (RDP 2014-2020). Local Action Groups established were a real success, although the projects undertaken did not exhibit a very innovative character, as they were rather similar to those conducted through the National Rural Development Programme 2007-2013 (NRDP 2015). It is from this context that the research aims at an impact assessment of projects implemented by Local Action Groups in the regions of North-Western and North-Eastern Romania, on the diversification of non-agricultural economic activities and the encouragement of small entrepreneurs in rural areas, as well as on the number of employees in non-agricultural enterprises. The choice of the two regions, as research areas, was due to their large gap in terms of socio-economic development. For this reason, it was paramount to assess the impact of intervention measures applied by local action groups on rural communities encompassed in the two areas. Propensity Score Matching as quantitative analysis method was used to assess the impact of implemented projects on the establishment of small and medium non-agricultural enterprises and the increase in the quality of life for the areas under study.

Covariates selected by the authors, according to literature in the field, were those related to both independent variables (in this case, the association within a LAG), as well as dependent ones (in our case, the development of non-agricultural economic activities). In other words, covariates contribute to the development of community and intercommunity initiatives and the development of the economic environment, towards the emergence of entrepreneurship.

The first aspect employed in the analysis was the amenity infrastructure. This set of variables included housing (number of houses, housing area), the existence of drinking water, sewage and gas facilities.

A second aspect included as covariate is the population structure (age structure, external migration, internal migration). This aspect correlates with the independent variable by means of pressure from the community on the decision-makers with regard to local development, as well as dependent variables through the direct influence on the workforce (number of employees, number of unemployed, female unemployment), a dimension represented by a different set of covariates included in PSM determination.

The next set of covariates targets the culture, education and health dimension, as a development factor for social capital (number of students, equipping schools with computer and laboratories and the existence and improvement of libraries, medical personnel, medical offices and pharmacies). Additionally, a final set of covariates involves local government (political affiliations of local councils, budgetary policies and investments).

Following the selection of a control group (encompassing 282 municipalities non-included in LAGs) associated with the intervention group (consisting of 282 communes included in LAGs) in the 12 counties of the North- East and North-West regions, data analysis revealed the presence of a larger number of operators in the non-agricultural field as well as a larger number of employees of these businesses in the administrative-territorial units of the intervention group. We can say that LAGs produced, among other effects, an acceleration of entrepreneurship, creating the conditions to start a local business. Also, as an immediate effect of the emergence of local businesses, local budget analysis indicates higher income from income taxes collected in the municipalities included in the Local Action Groups (LAGs), thus representing an indicator of a higher financial contribution of the economic environment to local development.

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7.3: Changes of commuting to work in territories covered by registered Local Action Groups: Slovakia, 2001 and 2011

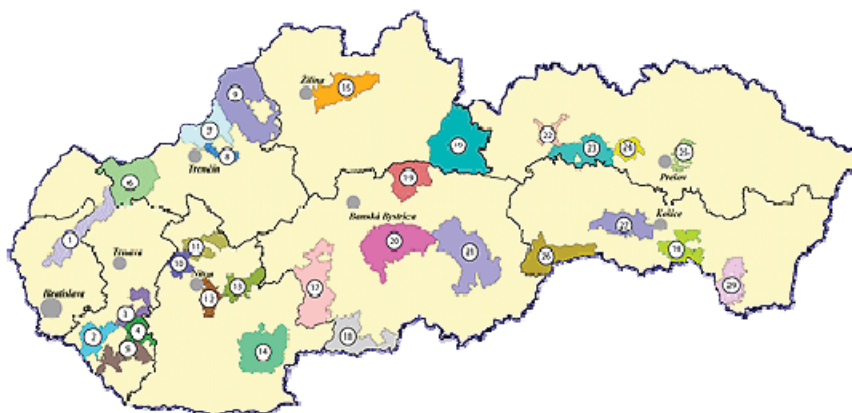
Vladimír SZÉKELY

Leader programme, as integral part of Rural Development Programme, is perceived as the important, spatially oriented instrument of rural policy. The main objective of its

implementation is the improving of rural economy and quality of life in rural areas through exploitation of their endogenous potential (territorial capital) and activating local inhabitants and stakeholders from public and private spheres. In the ideal case these active representatives of rural territory from different socio-economic sectors cooperate together with attempts to receive the status “Local Action Group (LAG)” which represents the institutional background for EU financial support of local development strategy. Local Action Groups, groups of public and private partners (public-private partnerships) from the rural territory, are the mainstay of the implementation of the Leader – the place-based bottom-up approach of rural development.

There are a couple of quantitative and qualitative conditions for establishment of LAG. In Slovakia a LAG area must be a coherent rural territory formed on the principle of common interests, with a total population in the range between 10 000 and 150 000 and boundaries which coincide with those of the municipalities that are partners in the LAG. In the 2007–2013 programming period 29 Local Action Groups have been registered in Slovakia (Fig. 1). Regions covered by these LAGS have been selected for detail analysis of commuting multidirectional patterns and flows, and their temporal comparisons. The reason for such type of research is the hypothetical idea: the strength of commuting flows among rural municipalities (rural-to-rural commuting) on the territories covered by LAGs (intra-LAG commuting) can serve as a proxy for the degree of economic and social linkages between institutionally networked rural local governments, entrepreneurs and representatives of the civic society, or as an indicator of their sustainability (attractive local rural labour markets).

Figure 1: Slovakia: list and geographical positions of registered Local Action Groups in the 2007-2013 programming period



1. Civic association Podhoran
2. Agroprameň
3. Local Action Group Dudváh
4. Local Action Group Stará Čierna voda
5. Local Action Group Aqua Paradise – Aquaparadiso - Víziparadicsom
6. Kopaničiarsky region – Local Action Group
7. Local Action Group Vršatec
8. Local Action Group of microregion Teplička
9. Naše Považie
10. Civic Association Microregion RADOŠINKA
11. Association of microregion SVORNOSŤ

12. Regional association Dolná Nitra c.a.
13. The civic association for development of microregion „Požítavie – Širočina“
14. Dolnohronske development partnership
15. Civic association “Partnership for LAG Terchovská dolina“
16. Local Action Group Horný Liptov
17. Civic Association Zlatá cesta
18. Partnership Krtíšske Poiplie
19. Local Action Group Chopok juh
20. Podpoľanie
21. Local Action Group MALOHONT
22. Civic association for regional development Spiš
23. Civic Association LAG LEV, c.a.
24. Partnership BACHUREŇ
25. LAG Šafrán
26. Civic Association KRAS
27. Local action group RUDOHORIE, c.a.
28. Local Action Group HORNÁD – SLANSKÉ VRCHY, c.a.
29. Local Action Group TOKAJ – ROVINA, c. a.⁶

Commuting to work (statistically registered travelling of economically active population between two not identical places of residence and work) is one of the basic types of spatial mobility. The regularly held Censuses organised by the Statistical Office of the Slovak Republic (we will compare the results of the last two Censuses which took place in 2001 and 2011) provide specific and relatively detailed data about in- and out-commuting in Slovakia. The existence and access to these data is “condition sine qua non” for our research.

The primary aim of the study is to describe and analyse the selected, very specific aspects of commuting to work in 29 rural regions covered by registered LAGs in Slovakia (Leader territories - practically “artificial” local rural labour markets) with negative commuting balance; total number of out-commuters is higher than total number of in-commuters):

- the share of intra-LAG, predominantly rural-to-rural commuting (with zero commuting balance), from the total numbers of out- commuters and in-commuters (indicator of intra-LAG economic networking, social capital and diffusion of codified and/or tacit knowledge) – comparison 2001 (before the official acceptance of LAG) and 2011(after the official acceptance of LAG),
- and the share of individual LAG out-commuters abroad from total number of out-commuters from territories of individual LAGs (indicator of “openness” of rural communities on the new challenges which is aimed to improving their living standards) – comparison 2001 (before the accession of Slovakia to the EU, entry into the Schengen Area, and opening of labour markets of the Member States of the EU for the citizens of the Slovak Republic), and 2011 (after “Europeanization” of Slovakia).

In the conclusion we will try to present the typology of territories covered by registered LAGs application of data about commuting to work (with specific attention on dynamics of intra-LAG commuting).

⁶ Source: <http://nsrv.sk/index.php?pl=18&article=34>

7.4: Economic and social changes in rural areas in Poland

Agnieszka WRZOCHALSKA and Barbara CHMIELEWSKA

Keywords: Poland, rural areas, economic and social situation, housing situation, infrastructure educational activity

Rural areas in Poland occupy 90.3% of the country. Over 15 million people (nearly 40% of the population of Poland) live in the villages. The accession to the EU has a significant effect on socio-economic situation of rural dwellers. The level of schooling and educational activity changed significantly as well as the life-expectancy of the elderlies increased. In the past two decades the changes in lifestyles were accompanied by the development of information and communications technologies. The contribution of agricultural sector, which employs only a certain number of people, to the rural economy reduced. Above mentioned factors are important for social change in the Polish countryside. Besides these problems the paper analyses social activity of the rural population.

The purpose of the study is to assess economic and social situation of the rural population in the period after Polish accession to the European Union (years 2005-2014). The study was conducted on the basis of the results of the European Survey on Income and Living Conditions (EU-SILC) and household budgets GUS. Source of information are the survey conducted by the Institute of Economics of Agriculture and Food - National Research Institute to. Study materials are the results of the IAFE-NRI surveys carried out in 2011⁷ among nearly 8.5 thousand rural families, of which 3.3 thousand families had agricultural holdings with the area of more than 1 ha of agricultural land⁸. Each time, the surveyed entities accounted for about one five hundredth of the actual number of individual agricultural holdings. Virtually, all surveyed farms (99.7%) pursued agricultural activity.

The assessment of the quality of life of the rural population was based on indicators characterizing the objective living conditions (income, expenses, infrastructure, environment, housing and furnishings, educational activity) and subjective assessment.

Basic indicators relate to individuals or households. Quality of life in rural areas is worse than in the cities, which is primarily due to lower income of rural residents. Also, the level of expenditures is lower, mainly with respect to higher needs. The equipment of households with basic technical installations and durable goods, especially modern, is also worse in rural areas than in the urban areas. The rural population evaluate subjectively their quality of life as worse than the urban population and they also believe that the ability to satisfy their needs are worse than in the cities.

With time, rural areas and their inhabitants underwent significant and multidirectional transformations. The Polish rural areas have always been characterised by economic, social

⁷ Surveys carried out in 2011 were another edition of the IAFE-NRI surveys implemented periodically in the same villages.

⁸ Each time, the surveyed entities accounted for about one five hundredth of the actual number of individual agricultural holdings and their number in the last survey (2011) amounted to 3,3 thousand and virtually all of them (99.7%) pursued agricultural activity.

and mental diversity of their inhabitants. They were shaped by two basic directions of changes: on the one hand – "the countryside was catching up with cities", and on the other hand – "cities were moving to the countryside". Improvement in the area structure of agricultural holdings and their adoption of new functions, as well as the progressing urbanisation processes and the accompanying phenomenon of dissemination to rural areas of the so-called urban lifestyle, changed rural areas and their inhabitants. However, despite the significant improvement, there are still disproportions between the countryside and the city, mainly in terms of the development of technical infrastructure (water and sewerage, gas, road and institutional infrastructures), as well as the standard of living of their inhabitants.

The disproportions between the development of road, water supply and sewerage networks are the most significant nationwide negative effects of the lack of proper application of the structural policy in Poland.

The rural development policy should continue pursuing actions contributing to the development of entrepreneurship, renewal and development of villages, in order to ensure sustainable development of rural areas, also with regard to technical infrastructure, which contribute to improvement in the living conditions and the conditions of business operations of the inhabitants of rural areas. This will contribute to bridging a gap of economic and social disparities between urban and rural population.

In the paper, as a basic working instrument, the descriptive analysis has been applied using the quantitative and comparative methods, including the structure and intensity ratios of the analysed phenomena and growth rates.

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7.5: The economic context of climate change impacts and evaluate the impacts of the proposed adaptation measures in the South Moravian region

Marie TRANTINOVÁ

The problem of climate change has been subject of the project EEA-CZ02-OV-1-039-2015, which was solved by partners from the Czech Republic and Norway. It is a multidisciplinary project focused on mitigation of negative climate change impacts, particularly their extreme phenomena, i.e. drought and rainstorms in the South Moravian Region. On the basis of the current climatic data and expected scenarios, this region can be considered the most affected region (particularly by drought) in the Czech Republic. The main focus of the contribution is aimed at the agriculture sector, which, due to the climatic change, a reduction in the natural land capability and subsequently in farm crop revenues can be expected. The aim of the study (IAEI) was to present the procedures and the results processed cost-benefit analysis (CBA) adaptation measures to mitigate the impact of climate change on farming in the countryside. The project has taken into account the current status of the territories, the threat of, and risks resulting from climate change.

Cost-benefit analysis was tested for 36 cadastral units where co-investigators suggested adaptation measures on the impacts of drought, erosion, retention and torrential rains. Costs were investments for the creation measures, loss of production from the area where the action was on the arable land. Benefits were based on reducing the negative impacts of climate change and ecosystem services.

Project outputs create a system of tools of various types of adaptation measures to reduce negative climate change effects. There were evaluated costs and benefits of main measures in the landscape. The results show that investment which will be used for measures of decrease risks of climate change will bring society-wide effects. This study compares costs and benefits of impacts of erosion and implementation of adaptation measures in four scenarios (Table 1).

Table 1: The main conditions of scenarios.

	climate change no	climate change yes
Measures no	Scenario 1	Scenario 2
Measures yes	Scenario 3	Scenario 4

These scenarios differ according to whether there will be implementation of the measures and whether there is a change in the impact of climate change. On the cost side were listed and appreciated measures: restriction of cultivation of crops wide-space (version 1, version 2) agro-technology (version 1, version 2), grassing, afforestation, stabilization paths of concentration runoff, dike, furrow and retention area. Costs side has been calculated with investment for measures, operating expenses and loss of profit. For each of the ten measures were created scheme temporal distribution of costs between the years 2017-2040.

The analysis (CBA) used five kinds of monetization benefits. These are additional benefits from cost savings to recover the topsoil washed down back on land blocks, cost savings for the removal of topsoil washed down the streams and reservoirs, saving the cost of lost soil nutrients compensation and savings for irrigation through increased water retention in the landscape. The remaining benefits could not be quantified, but there were mentioned in the study. Monetary value of costs and benefits were then calculated for individual years and expressed in present value as at 1 7th 2016.

The results of CBA clearly showed that the implementation of adaptation measures could bring societal benefits beyond the cost of the measures. According to calculation procedure of costs and benefits for each scenario, it is possible to express a net social benefit of each scenario as the difference between benefits and costs expressed in present value. Sum of benefits in scenarios 1 and 2 are zero because they will not plan to implement adaptation. As in the case of the status quo erosion and an increase in erosion due to climate change leads to negative social benefits, i.e. social loss. Climate change deepens this loss. In contrast, in scenario 3 and 4, where will be a socially beneficial action. Benefits from costs savings outweigh costs of implementing the measures.

Net social benefits in present value are estimated at nearly CZK 55 million for the 2017-2040 timeframe while maintaining the current situation and implementing measures. Net social benefits are will increase to 2.1 billion CZK in case modelled the impacts of climate change and the implementation of adaptation measures. These results are positive in both scenario 3 and 4 regardless of whether there will be negative impacts of climate change or not. Conversely, if the adaptation implementation was successful, the agriculture and forestry sector can show the most significant effects. The solution will cause a desirable model interconnection of various space planning routines - land consolidation, spatial planning data,

plans of river basin areas, regional forest development plans. Finally, the project develops a comprehensive strategy to harmonize and link the partial conclusions into the linkages and ensuring the synergy effect of different types of instruments (e.g. economic, legislative, planning approach).

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Session 8: Papers from Hungary

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8.1: The changing role of local small-scale agri-food production in Hungary

MEGYESI Boldizsár

The paper aims at presenting the first results of an ongoing research on the changes of food self-provisioning (FSP) and small scale food-production in the last decade. The issue has always been in the focus of both the Hungarian and the European agricultural policies (Marsden 2006, Goodman 2002, Ploeg-Renting 2000, Ploeg 2008). The Hungarian context is especially interesting thanks to the parallel presence of traditional self-provisioning (Kovách 1982, 2012) and the post-modern forms of agriculture (organic farming, community supported agriculture) (Balázs 2012). Although these issues have never been neglected by contemporary Hungarian social science (Laki 1997, Csité et al. 2002, Váradi 2008), the different forms of small-scale food production were not described systematically. Neither the effect of recent changes in agricultural and rural development policies on small-scale food-production was analysed.

The paper is based on the analysis of existing data-bases, policy and planning documents, semi-structured interviews with experts and decision-makers to describe the policy field.

The theoretical background of the paper is made of the following concepts and theories: agricultural restructuring in Central-Europe in the last decades (Jehlicka-Smith 2011, Swain 2013, Kovách 2012, Tisenkopfs et al. 2011) and alternative food networks (Renting et al. 2012, Lamine 2005, Fonte 2010, Benedek-Balázs 2014). The paper focuses on FSP, or subsistence farming, on semi-subsistence farming and local small-scale food production.

Small scale farming (FSP & food-production) in Hungary in the last decades

According to certain estimations in the late eighties around 40% of food production from small scale farming was self-provisioning. There are no reliable data on the proportion of self-provisioning among farmers. There are two ways to estimate the relevance of self-provisioning; on the one hand the number of self-provisioning farms can be assessed, on the other the proportion of households engaged in agricultural activity. According to the most recent data (Central Statistical Office, Agriculture in Hungary (CSO – Agric in Hun (2010)) the number of farm units is continuously decreasing from 1396 thousand (in 1991) it fell to 960 thousand (in 2000)⁹, and now it is around 575 thousand in 2010. According to the data of

⁹ <http://www.ksh.hu/docs/hun/xftp/idoszaki/pdf/amo7.pdf>

http://www.mvh.gov.hu/portal/MVHPortal/default/kozerdekmenu/kozerdeku_adatok/tevekenysegi_adatok/kozze_teteli_listak/Z20080910001

the Agricultural and Rural Development Agency 186.126 farms received SAPS in Hungary; it is less than one third (32,4%) of the number of total farm units. It means that 68% of the farms (as defined by the Central Statistical Office) produce on less than 1 hectare. Most of these small farm units are self-provisioning farms as several papers state (Kovách-Megyési 2006, Kovách 2012). There are very few data about the other perspective. According to a survey conducted in 2005, around one third (33.3%) of the Hungarian population is engaged in any kind of agricultural activity (Kelemen-Kovách 2007:17). According to the estimations of the Central Statistical Office beside of the farm units there are around 1.1 million household with some agricultural activity. It means that there are 1.667 million households actively involved in agriculture at least to some extent; it is around 40,6% of the households (CSO – Agric in Hun (2010):2 and Bakos et al.)¹⁰.

According to Kovách there were two main types of self-provisioning farms: traditional and leisure farms. Traditional farms, usually originating from peasant type farming are around the household. Leisure farms are the “product of socialism” (Kovách 1982). The site of production is far from the household itself, at the outskirts of the cities, and in frequented tourist areas. Both types used to sell their surplus at local markets and in certain areas also for food processors (Kovách-Megyési 2006). As several authors argued at this time in Central-Europe traditional form of self-provisioning and small scale food production used to be a coping strategy (Alber-Kohler 2008).

After the regime change new, post-modern forms of small-scale agricultural activity and FSP appeared: earlier in the nineties the different forms of community supported agriculture (CSA): basket schemes, community gardens, farmers’ market at public places (Benedek-Balázs 2014). Later mainly after the EU accession different forms of social farming appeared: social cooperatives and public work in agriculture (Németh L. 2011, Németh N. 2011).

The objective of the paper is to understand the role of FSP and small scale food production in rural and agricultural restructuring. Both FSP and small scale food production has a long tradition in Central-Europe and in Hungary, and although both changed considerably in the last decades as the social and economic environment changed, both exists, but differs from the Western-European examples. Whilst in Western-Europe FSP and small-scale food production is kept to be a possibility to reach sustainability goals, to shorten the rural-urban divide and to make rural life attractive, in Hungary (and Central-Europe) these activities are valued differently.

The paper will present the policy background of FSP and small-scale food production. The novelty of the paper is that it discusses the different forms of FSP and small-scale food production from the traditional subsistence farming to the post-modern initiatives, thus it broadens our knowledge about contemporary Hungarian rural society and agriculture.

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¹⁰ It is worth noting that even the data of the CSO are contradictory (see Bakos et al 2011: 121-122).

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8.2: Landscape and community based management of rural areas: New system thinking approach for partnership in management of rural areas based on community and landscape resilience

SZILVÁCSKU Zsolt

In 2013 several nature park umbrella organizations of Germany, France, Austria, Hungary and Slovenia as well as the EUROPARC Federation signed the 'European Nature Park Declaration'. Under the motto: 'Europe needs Nature Parks: Strong Nature Parks - strong rural areas', in context of the Europe 2020 strategy, the importance of nature parks for regional development was particularly highlighted. However, nature parks should not only implement their own projects and programs on landscape level, but also act as a coordinating junction between the various national and international stakeholders (e.g. institutions, government, economy) and consequently enable an easier transfer of knowledge. A binding 10-point program to 'strengthen rural areas in Europe by enhancing nature parks' contains the central and necessary tasks and measures in order to reach the defined goal of regional development.

Nature parks are co-operative models. Nature parks forge regional identity in a modern way and involve citizens, stakeholders and institutions in their region. They establish a platform for co-operation, creating the basis for citizens’ joint commitment to the region in which they

live. Nature parks are the driving force behind regional development in rural areas, including establishing a joint platform for action for people in the region.

Nature parks are model regions for integrative nature conservation. As integrative managed rural areas for humans and nature, nature parks combine the protection and use of landscape within the meaning of sustainable development. They make up a large proportion of national protected areas and include many Natura 2000 sites and in addition, they make a crucial contribution to implementing the Water Framework Directive (WFD).

Nature parks the driving force behind rural development. Nature parks can make a vital contribution to the Europe 2020 strategy. In the areas of employment, social integration, education, resource and climate protection in particular, nature parks already contribute to the positive development of rural areas by, for instance, promoting knowledge bases in rural areas, restoring, preserving and improving ecosystems, promoting local markets and short marketing chains, and supporting local development in rural areas. In addition, nature parks play a role in coping with demographic change in rural areas.

Exploiting potentials – nature parks for vibrant rural areas in Europe that are worth living in. Nature parks act as partners to governments in the individual European states to develop rural areas in Europe in a way that unites the conservation of biological diversity with sustainable land management and the creation of jobs. Studies on the tourism value added created by nature parks prove that it makes economic sense to invest public money in nature parks.

The implementation of the new European Union's funding period 2014–2020 within the Europe 2020 strategy provides the opportunity to make even greater use of nature parks to strengthen rural areas and to achieve the objectives at European Union and individual state level. Nature parks are ideal for meeting the objectives of European cohesion policy (coherence, complementarity, co-operation and co-ordination). Here, nature parks can shape successful projects within the European Agricultural Fund for Rural Development (EAFRD), the European Regional Development Fund (ERDF) and the European Social Fund (ESF).

During my research I analysed the experiences and the institutional solutions of nature parks in Germany and in Hungary. Based on this result, I try to create a new partnership framework, which could be strengthened based on covenants and empowerment of rural ecosystem and community networks and resilience.

The research

As pilot areas was selected 4 nature parks in Germany, and 4 nature parks in Hungary, where my research was completed during 2015 and 2016 in partnership of Association of German Nature Parks (Bonn), Association of Hungarian Nature Parks (Békéscsaba) and two universities: Carl von Ossietzky Universität Oldenburg, Institut für Biologie und Umweltwissenschaften, AG Angewandte Geographie und Umweltplanung und Szent István University of Gödöllő, Dept. Landscape Planning and Regional Development (Budapest).

Methodology

I used different methods to survey and assess the ecological network and ecosystem services in nature parks parallel with identification of social and institutional networks and their

interdependences. Main tools: institutional analysis, GIS analysis with field survey on farm and on landscape level, interviews, focus groups and Dephi-methods.

Main results

The presentation reflects on the main aspects of becoming alive and valuable, with accentuating the importance of community and landscape based management of rural areas. The community consists of local people – related to the landscape – who are interconnected by different phenomena and issues. Besides, the values we can recognize in the landscape, in each other and the communities enable a life-evolving landscape maintenance, at settlement and regional level.

Through conscious and collective thinking and cooperation, rational interests, viewpoints and values have to be chosen, which will lay down the basics of collective work in the future. It is necessary not only to the level of intuitive comments, components of problematic situations also have to be distinguished. Before the start of the planning, a decision has to be made about the collective aspects, interests and values, which are going to be represented during the whole rural management process.

Based on conscious consideration and by means of manifold co-operation and thinking together (social and organisational learning) the rational views and scales of values along which we think about the problems shall be selected. We should not stop at the level of intuitive hypotheses, but should also distinguish among the different components of the problematic situations. The declared (uncovered and hidden) views, interests and values, including the common elements of the value system, shall be the subject matter of decision-making, before starting any kind of planning activities.

The landscape and their community consists of local people and local networks, which are interconnected by different phenomena and issues. Besides, the values we can recognize in the landscape, in each other and the communities enable a life-evolving landscape maintenance, at settlement and regional level. The adaptive landscape maintenance based on the local communities and networks is essential for the results based rural development.

During the presentation will be presented the new system thinking approach (fig.1) for the landscape management based on community development and resilience in nature parks and for rural network management of different landscapes.

**Community based landscape maintenance (CBLM)
matrix for planning, monitoring and evaluation**

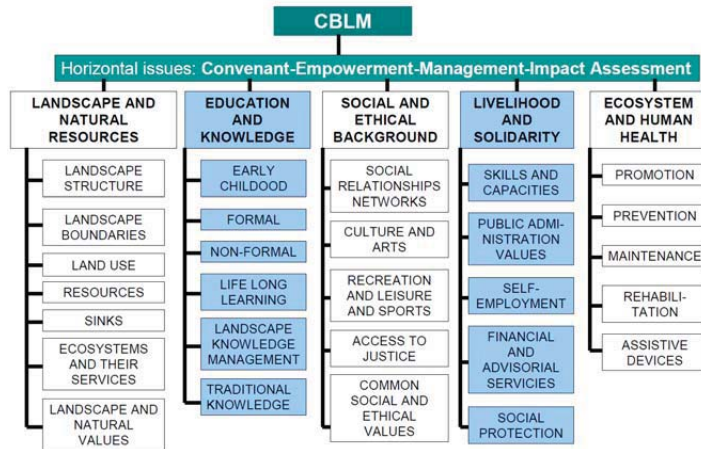


Figure 1: Community based landscape maintenance (CBLM) as new system thinking approach for green network management of different landscapes
Based on CBR (WHO-ILO-UNESCO-IDDC, at al 2006.) and MEA Report, 2005

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8.3: The role of agroforestry innovation networks in post-2020 rural development of the eastern European region

VITYI Andrea, M.R. MOSQUERA-LOSADA and R. BOREK

Introduction

Agroforestry is the land use practice of integrating woody vegetation with crops and/or livestock systems to optimise the benefits from their ecological and economic interactions. As multi-purpose mixed and integrated system, agroforestry has thousands of types with different combination of woody, herbaceous and animal components, adapted to local conditions. Furthermore, AF practices may vary both by spatial and temporal point of view. (*Cap and agroforestry – Mosquera-Losada et al 2016*). Agroforestry systems can increase resource efficiency, enhance productivity, and improve the overall resilience of agro-ecosystems. All these aspects are key to recognize the important role that AF has to play as a technique for mitigation and adaptation to climate change.

The FP5 Silvoarable Agroforestry For Europe (SAFE) research project (2001-2005) used field experiments and modelling to show that agroforestry could increase land resource use efficiency by up to 40%, relative to “standard” monoculture arable or monoculture woodland systems (*Dupraz et al. 2005*). The introduction of agroforestry practices can greatly contribute to increase the sustainability of farming and diversifying production (e.g. fruits, woody biomass, fibres) making farms more resilient to market changes and more profitable.

State of Agroforestry in Eastern Europe

Agroforestry is a traditional land use practice in the whole of Europe, still there is limited information available on the extent of agroforestry in the Central-Eastern region, especially as regards the modern practices. At the same time recent studies implies that agroforestry – both in traditional and modern form – might be present to a notable extent in the landscape of this region.

According to a newly published study on the state of agroforestry in Bulgaria, a particular attention has been placed on the creation of agroforestry systems, in relation with the energy crisis, the recently raise of prices of conventional fuels as well as in regard to climate change. There are known successful forms of implementation of agricultural use in plantations, protective forest belts, forest-grassland complexes, and specialized plantations of fast growing tree species. Also high value fruit bearing trees such as ordinary walnut, hazel, almond, and wild cherry among others are cultivated in plantations. The development of the forest farming is particularly suitable and promising in Bulgaria. (*Kachova and Mosquera-Losada, 2015*)

In Romania, large areas of wood pasture can be found in Southern Transylvania. These were created by the grazing of closed oaks woodlands and they are considered to have high cultural and natural value due to the presence of the ancient oak trees. These dynamic systems derived from previously closed woodlands during the past two centuries due to the increasing demand for timber and agricultural products.

Agroforestry practices have been traditionally used also in Czech Republic. According to a recent study on national inventory of agroforestry a significant area of traditional farming systems combining trees and agricultural crops is still remaining in small-holders. (*Zelba et al., 2015*)

In Poland, experts have recognised and evaluated diverse services and products offered by woody patches and belts in agricultural areas, particularly soil protection, water balance improvement and biodiversity enhancement functions or amenity values. The extensive studies on these aspects are supportive of the environmental policy in terms of protecting trees in the agricultural landscape, however current legislation considers merely natural protection of individual trees, thereby blocks development of agroforestry systems within farms. Despite of this, agroforestry systems become to be incorporated in farms, especially on pastures and hilly areas, some farmers introduce also hedges among their fields. Recently, therefore a strong national cooperation of foresters and agronomists started to promote agroforestry nationwide. (*Borek, 2015*)

Still in Central and Eastern Europe, particularly in Romania, Bulgaria and Poland, significant part of agroforestry areas is related to diversified land cover use on highly fragmented structure of agricultural holdings, within arable as well grassland areas. This implies that large area of rural areas in these countries can be considered as traditional agroforestry at the landscape scale.

In Hungary agroforestry was a widespread technology of land use but has been regressed and disappeared from large areas of the Hungarian countryside during the last decades. (*Varga and Bölöni, 2009, Vityi, et al. 2015*). Nowadays - with the exception of forest belts (16 000 ha) and traditional silvopastoral systems (5500 ha), agroforestry technologies are not widely used in Hungary. Other arable agroforestry systems such as alley cropping and forest garden -

considered as new (atypical) land use technologies in Hungary – are existing mostly in small farms or newly established pilot systems for educational and/or experimental purposes. (Szalai et al. 2012; Vityi et al. 2014) In Hungary the high ratio of agricultural territories (60%) and of the agro-environmentally sensitive and/or “triple-risky” areas (floods, droughts, inland waters) demonstrates the strong need for development in climate-adaptive agrotechnologies. The more extent use of arable agroforestry systems or re-adaptation of traditional ones could become a new pathway for realising a more resilient and sustainable agricultural production. (Vityi, et al. 2013)

In the previous CAP Hungary was the only country in Central Europe to implement the EU Measure 222 (First Establishment of Agroforestry on Agricultural Land with the aim of maintaining a sustainable land management and facilitate protection of soils against erosion. (Szedlák, 2006)

Examples to follow: Agroforestry Innovation Networks

During 2014, a participative research and development network was established to focus on different types of European agroforestry systems within the frame of AGFORWARD project. This international network comprises 12 national arable agroforestry stakeholder groups, 8 stakeholder groups dealing with agroforestry systems for livestock and 10 stakeholder groups of AF systems that are recognised for their high natural and cultural value. The stakeholder groups include farmers, breeders, foresters, landowners, representatives of regional and national associations, agricultural services companies, extension services, nature-related NGOs, local action groups, policy makers and scientists. The facilitators of these groups synthesised their results to identify key areas on which to focus research and development in the next years. (Moreno G et al. 2015; Mirck J et al. 2014; Hermansen JE et al. 2015)

In cooperation with the network of national associations of EURAF, the network of agroforestry stakeholders are continuously growing throughout Europe. Development of successful AF systems and knowledge share are common attributes of these groups which are framed by AGFORWARD project and the European Agroforestry Federation (EURAF). In the last years more and more Central-Eastern-European countries (eg. Czech Republic, Romania, Poland, Bulgaria and Hungary) got the possibility to participate in this rural revolution by contributing to the successful activities of this community.

Examples of AF innovation networks in Eastern Europe

The Hungarian AF innovation network

The Hungarian Agroforestry Network was established in 2014 in the 1st National Agroforestry Forum, with more than 70 stakeholders. (Vityi, 2014) The members are farmers, extension services, related NGOs, local action groups, policy makers and scientists. The scope of activity ranges from organising national and international forums to share knowledge and experiences to representation of interest and catalyze common innovations. Regular meetings, conference attendance, consultations and participatory work with farmers ensure the fastest way of knowledge exchange, instant feedbacks for policy development and opportunity for farmers to realize common ideas together with other stakeholders. As result of the network’s activity the number and total area of AF systems has increased, the Hungarian Agroforestry Civil Association has been created, 14 members joined to the organisation of EURAF, and

agroforestry has been more integrated into the educational programme of the University of West Hungary Faculty of Forestry. The network serves as potential base for National Operational Groups, LEADER groups and other RD organisations.

The Polish AF innovation network

Polish AF innovation network is based mainly on cooperation between foresters, agronomists and ecologists, initiated in 2014 by present members of Polish Agroforestry Association (OSA). The group has ambition to develop agroforestry systems in Poland cooperating with farmers and advisors and participate in consultative meetings at governmental level, particularly for Ministry of Agriculture and Rural Development.

Presently, the main Polish research unit engaged in AF activities is Institute of Soil Science and Plant Cultivation – State Research Institute in Puławy, a unit conducting numerous interdisciplinary studies in the framework of policies on sustainable agriculture, involving farmers and advisors from all the country. Important role in dissemination all innovative agricultural ideas is played by public network of agricultural advisors, managed by Agricultural Advisory Centre at Brwinów, responsible for dissemination and knowledge exchange through a network of Agricultural Provincial Advisory Centers. The unit is the core of the National Network of Innovations in Agriculture (SIR) as a part of EIP-AGRI. Agricultural universities and other agricultural state research institutes are relevant stakeholders.

Based on the good experiences, AF could be a recommended practice for the CEE countries.

Recent options for agroforestry in the rural development programmes

In CAP 2014-2020 grants are available for agroforestry within Pillar I. and Pillar 2.

In Pillar 2 grants available for establishment of new agroforestry systems on either agricultural or forest land. The main instrument for new agroforestry systems on agricultural land is submeasure 8.2, which has been activated only by Hungary out of the surveyed CEE countries. In case RDPs fully implemented, the total area of newly established agroforestry in Europe will reach 74,000 ha. In addition to submeasure 8.2, funding is available to assist agroforestry in other measures and submeasures related to, among others, operational groups, advisory services or climate adaptive land use practices of lower production risk and higher environmental benefits. Pillar 1 grants are also available for agroforestry, but practically the uptake is limited. In case newly established Ecological Focus Areas (EFAs) grant for agroforestry is only eligible if the EFA is established on arable land and within a Pillar 2 scheme. So, from the surveyed CEE countries only Hungary are able to use the agroforestry EFA measures. In Pillar 1 the eligibility of the area for Direct Payments remains an uncertainty. (*Lawson et al. 2015*)

A recent study from EU-JRC compared the ecological benefits of eighteen of the EFA elements and found agroforestry highest in almost all countries surveyed. (*Tzilivakis et al. 2015*).

According to the Ricardo/IEEP study published recently agroforestry is among the mitigation actions having the greatest potential. The aim was to make a meta-review of mainstreaming climate action in the CAP; in total 22 mitigation actions were assessed.

New results of project SOLMACC proves that it is possible to reduce GHG emission from agriculture practices such as agroforestry, improved on farm nutrient recycling, or improved crop rotation and among all agroforestry had the highest record in GHG saving.

Therefore it is a pity that most of the surveyed countries in the region did not activated measure 8.2. and the agroforestry EFA.

Conclusion

Results of recent studies and achievements of the European agroforestry networks show that agroforestry has high potential in ecological, economical, and social improvement of rural areas. Agroforestry is one of the most recognized practices to fight against climate change and an effective tool for climate adaptation of agriculture.

Thus networks promoting agroforestry strongly contributes to the sustainable and climate adaptive development of the rural areas. Despite of the fact that agroforestry has a tradition in all European countries, agroforestry networks are less developed in the Eastern European region. Also CAP instruments for new agroforestry systems are more poorly implemented compared to the rest of Europe as shown in the survey made by the European Commission.

The discussion on the next CAP reform should take into consideration the necessity of evaluation of all the benefits of land use practices and systems. Current and future implementation of Rural Development Plans should better encourage the use of beneficial agricultural practices such as agroforestry.

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8.4: Green infrastructure and European Union agricultural policy

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People have changed their surrounding since thousands of years especially because of agricultural production. In early history these changes were of local scale but mostly since the 18th century great scale landscape changes occurred. The major activities in the 19th century changing the landscape were drainage, river regulation, meadow-plough land conversion, deforestation. Production was shifted from extensive to intensive methods which resulted in the growth of plough lands.

In the 20th century during the socialism regime the organization of agricultural associations and further intensification of agricultural production brought further changes in landscape structure. Analysing the former trends we are going to explore the most effective ways for CAP greening measures and green infrastructure development in our pilot regions.

After 2004 the EU Common Agricultural Policy has the most significant effect on the Hungarian agriculture, and thus on the agricultural landscapes. It has direct or indirect effect on the farm size, the type of the crops, the ratio of the crop and livestock production, the land cover structure, the size of the ecologically valuable areas in the agricultural regions. From the view of the landscape structure some of the most important regulations and subsidies were the following: encourage afforestation, 'set-aside' payments to withdraw land from production, payment to limit stocking levels, 'decoupling'.

The reformed common agricultural policy came into force in 2014. From the view of our research in the current period the most important CAP innovation is the 'greening'. It supposed to make the direct payments more environment-friendly, to strengthen the environmental sustainability of agriculture and enhance the efforts of farmers, the Commission is proposing to spend 30% of direct payments specifically for the improved use of natural resources. Farmers receiving an area-based payment have to make use of various straightforward, non-contractual practices that benefit the environment and the climate. These require action each year. They include:

- diversifying crops
- maintaining permanent grassland
- dedicating 5% of arable land to 'ecologically beneficial elements' ('ecological focus areas').

The CAP greening measures fit entirely into the framework of green infrastructure. What is green infrastructure? Green infrastructure is becoming a widely used term in literature but especially a practical tool for conservation and development. While grey or technical infrastructure refers to the facilities that support social and economic production (Van de pol, 2010, pp 17), green infrastructure is described as an integrated network of natural and semi-natural areas and features which deliver a variety of benefits to humans (Naumann et al., 2011).

While grey infrastructure is designed to perform only single functions, green infrastructure networks serve multiple functions as 'ecosystem services' (Ely and Pitman, 2014). Green infrastructure can be an important tool in rural development because of its multifunctional approach. Typology of green infrastructure:

- natural and semi-natural ecosystems, such as pastures, woodland, forest (no intensive plantations), ponds, bogs, rivers and floodplains, coastal wetlands, lagoons, beaches, marine habitats,
- extensive agricultural and forest landscapes, large marsh and bog areas, rivers and floodplains,
- restored ecosystem types,
- high nature value farmland and multi-use forests (such as watershed forests); protection forests,
- greenways, green belts, metropolitan park systems (Dancsókné Fóris, 2015; Civic, and Siuta, 2014).

The EU intends to integrate GI into different policies like Biodiversity Strategy to 2020,¹ the roadmap to a Resource Efficient Europe,² the Commission's proposals for the Cohesion Fund and the European Regional Development Fund,³ the new Common Agricultural Policy⁴, the new Forest Strategy⁵ (especially relevant since many GI elements might be forest-based), or the forthcoming communication on “land as a resource”. The EU accepted in 2011 the Biodiversity Strategy that sets the following objectives: by 2020, ecosystems and their services are maintained and enhanced by establishing green infrastructure and restoring at least 15 % of degraded ecosystems.

Based on the historic research and analysis of CAP greening measures and green infrastructure, the objectives of our research were the following:

- to identify the historical changes in the agricultural landscapes in our study areas,
- to identify the regularities of these historical policies, regulations in the context of the landscape structure,
- to explore the current situation and landscape structures in the study areas,
- to find common enforcement options of 'greening' and green infrastructure initiative in the study areas,
- to identify potential areas for 'greening' in the study regions (similarities and differences between the study areas),
- to build up different scenarios in the pilot regions based on the intensity of the enforcement of 'greening' principles.

We have chosen two rural regions lying along the western and north-eastern borders of Hungary. Both pilot regions contain backward settlements, suffer from severe depopulation processes, and are peripheries or have peripheral parts. Agricultural land use forms are significant in both landscapes.

The micro-region of Csorna situated in the Small-Plain between the great centers of Győr-Moson-Sopron County. The micro-region of Csorna consists of two major landscape units: Hanság with wetlands, swamps, and forests, extensive agriculture, and the intensive agricultural landscape of Rábaköz. The ratio of plough fields is extremely high in the micro-region (national average 48%, local 66% with great local differences).

In the micro-region of Gönc, the settlements belong to the most disadvantaged areas of the country. The sample area can be divided into two main parts with different landscape characteristics, the upper valley of the Hernád River and the mountains of Zemplén. In the Valley of Hernád the ratio of arable land is very high. This region historically was called as the "pantry of Kosice", so the agriculture has a great tradition. The southern settlements of the micro-region belong to the "Tokaj Wine Region Historic Cultural Landscape" World Heritage

Site. The other interesting area is Gönc and the settlements in its surroundings, which are traditionally fruit product areas ("pálinka of Gönc").

The material of the research can be divided into three groups: written sources, map databases, statistical data. We used the data of the Hungarian Statistic Office, and other types of databases (Spatial planning and development Information System – TEIR, landscape values – TÉKA, nature and environmental protection databases – TIR, CORINE Land Cover database) for the evaluation of the historical and the present structure of the landscape.

We used various methods in the different parts of the work. GIS analysis was used during the identification of the historical changes in the agricultural landscapes (based on historical maps) and during the scenario development/modelling. We also employed GIS-techniques to identify the potential areas for 'greening'. Microsoft Excel program helped us to analyse the statistical information.

The objectives of nature protection and agricultural production often contradict each other. These contradictions can be eliminated by the complex approach of green infrastructure development and considering the most effective ways of greening measures. In our study we have drawn the attention on the overlapping functions of agricultural greening and green infrastructure. The improper agricultural management cause severe negative effects, which on the long run hinders the effective and profitable production. Harmonization of green infrastructure development with greening of agricultural production improve the ecologic network and the efficiency and diversity of production and local economy. We have identified the most effective location of greening and green infrastructure development in the pilot regions. With the scenario building we tried to give guidance for future planning in landscape management and development.

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8.5: Towards public-goods oriented agricultural payments: research for performance-based agri-environmental schemes

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Rising pressures on the environment have made today's EU citizens increasingly more environmentally conscious and recent financial crises have made the public mindful of how money is spent. According to the Eurobarometer survey¹¹, EU citizens believe that one of the most important responsibilities of farmers is "protecting environment" and that they support rewarding farmers who carry out agricultural practices benefiting the environment.

Faced with society's increasing expectations, the European Union's Common Agricultural Policy uses environmental management as an increasingly critical criterion in the allocation of farm subsidies. Moreover, there is an increasing EU budget pressure for the post CAP 2020 policies for a gradual shift in focus from production and area-based subsidies to payments for supplying public goods. It is a high priority and urgent research need to meet this pressing demand to assess the ecological and environmental performance of farms as the public money spent on provision of environmental services requires proper justification.

Currently the most widespread policy tool for rewarding land managers across Europe for undertaking environmental services are management-based payment schemes, where the payment relates to defined agricultural management requirements.

Yet the environmental outcomes of payment schemes with defined agricultural management prescriptions are not obvious at farm level in many cases, impact evaluation is challenged with lack of data and appropriate methods to assess the maintenance or improvement in environmental qualities.

Inadequately targeted management based schemes may adversely affect local traditional (site specific) farming practices and highly contribute to loss of trust of farmers in the scheme objectives¹².

¹¹ Special Eurobarometer 440: Europeans, Agriculture and the CAP European Commission, January 2016

¹² Eszter Kelemen , Genevieve Nguyen , Tiziano Gomiero , Eszter Kovács , Jean-Philippe Choisis , Norma Choisis , Maurizio G Paoletti , László Podmaniczky , Julie Ryschawy , Jean-Pierre Sarthou , Felix Herzog , Peter Dennis , Katalin Balázs Farmers' perceptions of biodiversity: Lessons from a discourse-based deliberative valuation study LAND USE POLICY 35: pp. 318-328. (2013)

Some initiatives of (mainly biodiversity) results-based payment schemes exist for results-based agri-environment payment schemes (RBAPs¹³), where the payment relates to the achievement of a defined environmental result, and the farmer or land manager is allowed the flexibility to choose the most appropriate management to achieve that result. These schemes are very knowledge intensive both for scheme participants and scheme operators that are main constraints for applicability over large territories.

Research, training and advisory services has a lot to do to advance this field.

Our presentation aims to promote the notion of environmental performance based schemes as an intermediate solution between the management-based and the result based scheme types. We introduce and compare two assessment systems and methodology developments and results of pilot evaluations from two projects that assess farm level environmental performance.

The mission of the GuardEn project (www.guarden.eu) funded by the South East Europe Transnational Cooperation Programme was to improve the social and environmental awareness of farmers. The Agridiag project (www.agridiag.hu) funded by the EU LLP Leonardo Programme developed farm assessment training courses for agricultural advisors and innovative professionals related to the Agridiag green point system.

As a first level assessment the GuardEn HU evaluation system is designed to give an overview on the farm level compliance with water and soil related legislation in Hungary. Based on the land use type and environmental sensitivity (nitrate, erosion, LFA) of the area various checklists were developed that consider the agrotechnics, cropping pattern and nutrient management practices. The environmental performance of farms are scored along the checklists and the farm could be certified as a “Guardian of Environment farm” if reaching certain threshold during the assessment.

One step further the Agridiag green point system is able to measure the environmental performance of farms and their value/ capability of providing public goods and sustaining ecosystem services through a framework of farm enterprise calculations and assessments. 20 indicators are applied to highlight the strengths and weaknesses of a farm. Indicator specific scoring and the analysis of the results assist the farmer in improving farm level environmental sustainability.

We make an attempt to payment calculations and give recommendations how these systems can be real alternatives for public goods provision rewarding to currently dominant management-based schemes.

Piloting result oriented environmental service provision requires a joint action of farmers in an area together with researchers and agri-environmental advisors, for which purpose the Cooperation Measure¹⁴ and EIP-AGRI operational groups are both considered to be potentially appropriate mechanisms.

¹³ http://ec.europa.eu/environment/nature/rbaps/index_en.htm

¹⁴ http://ec.europa.eu/eip/agriculture/sites/agri-eip/files/16_measure_fiche_art_35_co-operation.pdf

These approaches fit well into the stream of yet scarce approaches and efforts, which in several European countries aim to introduce and strengthen environmental outcomes and service provision through result based schemes.

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8.6: New ways of partnership in rural development planning

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Background

LAGs in Hungary have just elaborated their development strategies for programming period 2014-2020. These strategies try to generate effective and productive projects with lower financial resources based on local conditions and resources, structures of co-operations generating synergies. The colleagues of the LAG noticed the rural development research projects of Department of Landscape Planning and Regional Development and Department of Landscape Protection and Rehabilitation of Szent István University. The LAG invited researchers for common projects in two pilot regions in frames of student workshops. By using the results of research projects of the university we were focusing on place based approach. Detailed landscape analysis, interviews with local stakeholders, researchers and landscape architect students brought new approach into the practice of rural development. The possible achievements of the pilot projects are:

- the services resulting from greening of agricultural areas will offer real added value,
- diversification of economy will enhance the population carrying capacity,
- several projects can be realized by involving local stakeholders, communities and poor people.

We would like to realise the elaborated plans in the frames of landscape based partnership.

Participants

At the Faculty of Landscape Architecture and Urbanism of Szent István University (Former faculty of Landscape Architecture, Corvinus University of Budapest). The first landscape plans to increase crop yields were elaborated by Professor Mihály Mőcsényi in Hungary. After the political changes land use planning, rural development, green infrastructure planning and development as new topics were added to landscape planning. On the base of European traditions in the frames of landscape plans we pay attention on the involvement of local people, farmers, owners of the land. Development plans are carried out considering wide range of topics as: water management, traffic, agriculture, tourism, environment and nature protection. Recently we carried out complex plans involving students for micro-regions.

The Local Action Group for Living Balaton Uplands (*Éltető Balaton-felvidékért Helyi Akciócsoport*) was established with the partnership of 134 NGOs, communities, enterprises in 2008. The main goals of the association:

- Exploring, mapping, protection and propagation of the cultural and natural heritage of Balaton Uplands.

- Increasing public participation, enhancing local identity, common thinking and working.
- Marketing of local products and services.
- Development of quality of tourism services.
- Prevent young people from migration.

Pilot regions

Our survey areas were the Nivegy Valley and the micro-region of Sümeg. Most of the villages' population is under 1000. The Nivegy Valley is a part of one of the most important tourist destinations of Hungary, the Balaton region. The entire valley is protected landscape area and part of the Balaton Uplands National Park. Within the valley, tourism is not common, the locals mostly work in agriculture. The locals, however, wish tourism only to have a smaller, complementary role to agriculture, horticulture (in addition to the traditional grape cultivation, orchards have emerged and wine production has advanced) and livestock farming (cheese production), thus retaining the fundamentally cultivation-focused character of the land. This is different from the aims of the communities directly by the lake, as local developments there primarily aim to promote tourism.

Micro-region of Sümeg is a backward region in Transdanubia made up mostly of small villages. The center of the micro-region is the small city of Sümeg with less than 7000 population. In the Southern part of the region and in Sümeg there is considerable tourism related to Balaton recreational area. The region is mostly of agrarian character with a rate of plough lands above the county average. During the socialism the agricultural associations employed the majority of local population. After the collapse of the regime a lot of people lost their job and the ratio of population employed in agriculture dropped to 8 % in the pilot region.

Method of the projects

In Spring semester of 2014/15 we had a workshop focusing on five settlements of Nivegy Valley and in 2015/16-we elaborated plans for 14 settlements of Sümeg micro-region. Landscape architect MSc students of 2nd study year carried out a complex planning project. The area was examined from more aspects and the students worked out a landscape development concept on regional scale, which implied a sort of viewpoints specified by the teachers (and LAG) participating in the educational model project. The students solved different problems in the framework of subjects during term, that all focused on the Nivegy valley and micro-region of Sümeg. The subjects were: Land use planning and regional development, Rural development, Green infrastructure, Tourism, Heritage protection and Digital planning techniques. During the semester, the students worked in the framework of the subjects, and a one-day visit on the spot helped the examination. At the end of the semester we had possibility to spend one week in the Nivegy valley and micro-region of Sümeg. Finally the students worked out the development concept in the workshop. After checking the local governments' viewpoints the development of agriculture based on the landscape conditions and the tourism were in the center of our work. And naturally the necessary landscape development proposals (including the greening opportunities) were worked out in detail too.

Main results

The local governments and the LAG were appreciative of the study, and admittedly did not expect such a comprehensive work. We carried out a detailed landscape analysis, which is usually skipped in the general planning process in Hungary. This analysis can be a base for further planning in order to a better utilization of landscape resources. For effective rural development it is highly important to fit, adapt land use to landscape conditions especially in agriculture and tourism. The colleagues of LAG can utilize the landscape analysis and study in their day-to-day life. The work organization of the LAG is in the midst of creating the new local strategy, in which process they also take advantage of the study. We have formulated project ideas based on local natural and cultural resources such as the elaborated plan of a greenway. These project ideas can be used directly in project generation serving a good base for bottom-up development. In the landscape architect education these workshops were really successful as our students were able to face challenges from real life. The co-operation meant a win-win situation for the LAG and Szent István University as well: the Uni was able to carry out a low budget practical training and the LAG got professional study. We present our experiences and results of the rural development projects carried out in co-operation with the local rural development association and stakeholders.

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Invited posters

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Problems of poverty reduction in rural areas of Ukraine

Oksana PERKHACH and Lesia KUSHNIR

Nowadays priorities of the international community are solving the problems of poverty and reduce inequality, improve living standards and access to basic services for all segments of the population, development of social infrastructure and capacity for self-realization in a safe environment. The reduction of poverty is a central task for Ukraine at the present stage. The poverty rate in the country remains high. According to the nine months of 2015, below the relative poverty expenditures were 23.8 percent of the population (“Strategy of poverty reduction”, 2016). One of the main factors of aggravation of poverty was the deterioration of the labour market, especially in areas with large clusters of internally displaced persons. It is important to pay attention to the problem of poverty of working population and polarization of incomes, which are the growing gap between rich and poor layers of people.

Significant impact on the expansion of poverty is unemployment. Failing work automatically associated with the ability to remain in the category of "poor." In Ukraine there are some major reasons of poverty: slow adaptation of national economy to market conditions, lack of competitiveness of some production, low productivity, prevalence of low-paid jobs, and lack of necessary specialists. The main factors of poverty are low wages (firstly - in agriculture and the public sector), pensions, social assistance because of an ineffective system of providing and high unemployment, especially in some regions. The main factor of poverty in rural areas is an abuse of dominant position employers for employment, low level of legal awareness of the majority population and its legal insecurity, low mobility of the rural population.

Poverty limiting access to health care and education and it is unacceptable in terms of human capital growth. The risk of poverty increases with decreasing size of settlements. The level of rural poverty is higher than in large cities (29.7 percent versus 17.1 percent). Available in Ukraine infrastructural problems determine the specificity of poverty by living conditions. In this regard, the most vulnerable to poverty and social exclusion is the rural population: 45.7 percent of households suffer due to lack of facilities providing personal services; 41.8 percent - due to insecurity settlement services timely emergency medical care; 28.5 percent - due to lack of nearby health facilities; every fourth household - due to lack of regular daily transport of settlement with more developed infrastructure; more than 50 percent - due to the inability to provide basic household amenities in the house ("Strategy of poverty reduction", 2016).

Poverty in rural areas in Ukraine has its own characteristic property. Taking into account that 99% rural families are land-owners and it is lack of labour supply in rural areas, most of working-age population (40%) is employed in individual rural households. Work on private land makes people spend a lot of effort, because they are working an average of 295 days of 8.6 hours per day (Kyrylenko O., 2010). Employment in households is quite labour-intensive; it provides the usage mostly manual labour without any appropriate mechanisms and focused mostly on households' own needs of food. This kind of agricultural producer sells almost 1/5 of grown on their land products. According to such problems semi commodity mode of production cannot ensure their financial resources sufficient for the proper development of human potential and appropriate living standards. Ukrainian rural areas have very limited opportunities to provide other kinds of economic activity, except agricultural production.

International experience suggests reducing poverty and social exclusion with the use of social and economic policies by expanding access to education, health and other social services, improve the environment and natural resources, particularly in rural areas. Government of Ukraine approved the "Poverty Reduction Strategy in Ukraine 2020". The main goal of the strategy is a gradual reduction of poverty, social exclusion and the introduction of new mechanisms to prevent it. It is expected (according to the data of Ministry of social policy of Ukraine) that the level of poverty by 2020 on an absolute criterion will be reduced by almost half – from 28% to 15%, and poverty among the working population will fall from 18.5% to 11%. Thus the unemployment rate will fall to 9%.

Finally, in the purpose of generating and implementing innovative approaches concerning the poverty reduction in rural areas it is important to solve the following priorities:

- ensuring support of small and medium business based on multifunctional development of rural areas;
- forming economic conditions conducive to the development of production in the agricultural enterprises;
- improving the investment attractiveness of the national economy;
- radical and effective reforms in tax, fiscal, administrative areas;
- legalization of the shadow economic activity;
- modernization of agricultural production;
- development of social and production infrastructure of agro-food complex.

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H2020 Project SIMRA – Social Innovations in Marginalised Rural Areas

Klaus WAGNER

Keywords: Agricultural Policy, Rural Development, Social Innovations, Governance

SIMRA seeks to advance understanding of social innovation and innovative governance in agriculture, forestry and rural development, and how to boost them, particularly in marginalised rural areas across Europe, including non-EU, especially Mediterranean countries. It encompasses the complexities and various dimensions, and understanding of how to support enhanced governance and social innovation, addressing specificities and priorities of social needs and new social relationships and collaborations. These objectives will be achieved by:

1. Developing systematic frameworks: a) theoretical - for improved knowledge of the complexity of SIs and its dimensions, and its impact on unfolding territorial capital; b) operational - based on a trans-disciplinary coalition (researchers and practitioners) to advance understanding of preconditions and success factors (e.g. instruments, incentives etc.) for implementing/operationalizing social innovations.
2. Creating a categorisation of social innovations which encompasses the specificities in terms of social priorities, relationships/collaborations etc. and serves as an instrument to explore reasons why regions with similar conditions display diverging paths and to turn diversity into strength.
3. Creating an integrated set of methods to evaluate social innovations and its impacts on economic, social, environmental, institutional and policy dimensions of territorial capital.
4. Co-constructed evaluation of social innovations in case studies across the spatial variation of European rural areas, considering which components of territorial capital foster and, or mainstream rural development.
5. Synthesis and dissemination of new or improved knowledge of social innovations and novel governance mechanisms to promote social capital and institutional capacity building and inform effective options/solutions for shaping sustainable development trajectories.
6. Creating collaborative learning and networking opportunities and launching innovative actions at different/multiple scales, with continuous interactions among researchers, knowledge brokers and stakeholders to foster and mainstream social innovation, leaving a durable legacy.

SIMRA (running from 2016-2020) is a cooperation of 23 partners from all over Europe and Egypt, Tunisia and Lebanon too. It is coordinated by the James Hutton Institute, UK. The Austrian Federal Institute of Agricultural Economics will participate in the development of theoretical concepts and care for an Austrian case study of the agricultural sector, to be selected and evaluated due to the criteria developed in the course of the project.

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