Informal knowledge and learning for alternative modernisation pathways in agriculture

S. Šūmane, K. Knickel, I. Kunda, I. de los Rios, M. Rivera Méndez, A. Strauss, T. Tisenkopfs[1]

***Abstract* – Developing alternative modernization pathways in sustainable agriculture requires a new knowledge base, which in turn is associated with an acknowledgment of the relevance of informal farmer knowledge. We use three case studies of organic and small-scale farming implemented in the international RETHINK research programme to explore farmer knowledge and learning practices and networks, their enabling and limiting factors and their (potential) contribution to a more sustainable and more resilient agriculture. The results show that most farmers studied use mixed knowledge sources, and, to a considerable extent, also informal knowledge and networks. These informal exchanges offer farmers not only verified, locally adapted knowledge and inspiration for innovations, but also strengthen their identities, communities, and professional and personal pride; they thus help to build social structures which contribute to advancing sustainable agriculture.**

INTRODUCTION

Sustainable agriculture, due to its holistic, diverse and distinctive nature, requires also new content and forms of knowledge and learning (Curry & Kirwan, 2014; Pretty, 1995; Kloppenburg, 1991). The formal agricultural knowledge system does provide relevant contributions to sustainable agriculture. But it also reproduces the productivist model of agriculture grounded in standardised universal knowledge. Farmers who strive to take alternative paths, therefore tend to rely on alternative support networks, knowledge sources and modes of learning. Morgan & Murdoch (2000) in line with that point out that reassertion of local knowledge is necessary to establish sustainable pathways in agriculture. In this paper we analyse social processes and mechanisms through which informal knowledge is created and how it produces sustainable outcomes in agriculture.

By informal knowledge we understand farmer knowledge gained in informal settings by doing, self-educating or learning from other farmers or other actors. We point to the farmer's authorship of knowledge and its local embeddedness in a specific situation which also makes clear its holistic nature, practical relevance and applicability.

The potential of informal knowledge to contribute to sustainability goals is explained in terms of its multiple embeddedness in local settings and its continuous updating in response to uncertainties and opportunities. Sustainable agriculture, which itself is context-specific, is a process for learning and perpetual novelty creation; it is a process of participatory learning as active involvement of all stakeholders is necessary in order to react to dynamic contexts and implement changes (Pretty, 1995). Indeed, the farmer is never alone in producing knowledge: s/he acts within the framework of the knowledge of prior generations, her/his peers, community, partners etc. The farmer is both an author and co-creator in a complex web of other "authors" who constantly negotiate their experience and knowledge.

In line with that, we analyse informal knowledge and learning in the frame of social learning networks. Contemporary sustainable agriculture is advanced by multi-actor knowledge networks, in which various knowledge are exchanged and new meanings and practises of farming are negotiated, learnt and institutionalised (Moschitz et al., 2015; Tisenkopfs et al., 2015; Wood et al., 2014; De los Ríos et al, 2011; Knickel et al., 2009). Those knowledge and learning processes are embedded in farmers' daily relational structures which are largely self-organized, personalized and local (Wood et al., 2014). During those learning interactions actors co-create new meanings and rebuild their identities and cognitive frames of action. Therefore knowledge is not only instrumental, but it is also infused by values, cultural and social factors and everyday realities.

METHODOLOGY

We base our paper on three case studies carried out in the international RETHINK research programme: organic farmers in Austria, Latvian small-scale farmers and Camposeven organic cooperative in Spain. The case studies use a common analytical framework, and the data were gathered by mixed methods involving semi-structured in-depth interviews and group discussions as well as relevant secondary data from surveys, statistics and previous research.

RESULTS

Knowledge sources

[69] S. Šūmane, I. Kunda and T. Tisenkopfs, Baltic Studies Centre, Riga, Latvia (sandra.sumane@gmail.com).

K. Knickel, Institute for Rural Development Research at J W Goethe University, Germany (karlheinz.knickel@gmail.com).

I. De los Rios and M. Rivera Mendez, Technical University of Madrid, Technical College of Agriculture, Spain.

A. Strauss, University of Natural Resources and Life Sciences Vienna, Institute of Agricultural and Forestry Economics, Austria (agnes.strauss@boku.ac.at).

Farmers use various knowledge sources to meet their diverse knowledge needs which include technical aspects of farming, marketing, management, networking skills and administrative procedures. Among those knowledge sources, self-education (individual learning from own experience, reading literature, internet sources and other media) was commonly used for finding new solutions. Farmer knowledge (own experience, learning by doing, experimenting, self-education, using other farmers' experience) was the most prominent and trusted knowledge base. Its importance stems from the close engagement with local settings.

Market actors, in particular consumers and retailers with whom farmers have direct relations, are another important knowledge source. Farmers use also knowledge from formal agricultural institutions and various government bodies. Formal institutions are necessary also to stay informed about and comply with agricultural regulations or qualify for public support. But formalisation and standardisation of knowledge can be also restrictive for farmers' own knowledge and skills.

In their farming realities farmers integrate and use all kind of knowledge which they have access to and which they find relevant for their situations.

Knowledge networking

The various knowledge sources point to the presence of social links and networks which allow circulation of knowledge and learning. We identified farmers are operating in multi-actor knowledge networks consisting of various overlapping formal and informal sub-networks.

Farm families, in particular in Latvia, manifested themselves as core milieus of learning where knowledge is transferred from generation to generation and exchanged between family members and where curiosity, active learning and creativity are maintained.

Farmers and farmer organisations are another central node in farmers' learning networks. Austrian organic farmers and Latvian niche farmers show that farmer groups are particularly important in the pioneer phase of new agricultural approaches in order to spread knowledge and exchange experiences. But they continue to be essential sources of information and innovation also later. Farmer organisations, like Camposeven, may also help connect farmers to formal knowledge institutes and international knowledge platforms.

Learning from other farmers often happen in informal settings like morning meetings in local bars. Informal knowledge exchanges can be also more purposeful, like calling other farmers for advice. Still more formal forms for mutual learning are also established, when knowledge networking and exchanges are perceived as a collective benefit. In Camposeven participatory mechanisms are set in place to share ideas, opinions and expertise among farmers and "learn for the common good".

The role of informal knowledge and learning

Practical, experiential knowledge is indispensable for farming. Knowing the land, cattle breed and crop variety, and knowledge which has been tested against reality tends to form a more reliable base for farming. Informal and endogenous knowledge is not automatically replicated, but it can inform innovations when revisited against the changing context. Informal networks reduce knowledge gaps in the formal knowledge system. They are a trusted and valued source of knowledge as farmers adopt more easily new ideas and practices which are known to and applied by other farmers.

Informal knowledge and learning have also other socio-cultural implications. Direct contacts and informal knowledge exchanges serve for community building, they are source of professional and personal satisfaction, pride, regeneration of local socio-cultural values, norms and identities.

Conclusions

The holistic nature of sustainable agriculture as well new societal demands require new knowledge and skills from farmers. Personal curiosity and willingness to learn together with social networking and supportive formal knowledge institutes appeared as central elements for successful learning, creation of knowledge and innovation.

The changing nature or vision of agriculture and the multiple dimensions of rural development require also the development of mixed networks with both agricultural and non-agricultural actors. The research confirmed complementarity and interplay of local and external knowledge from various fields, the networking character of knowledge and learning processes for sustainable agriculture.

Knowledge sharing and combining helps to overcome the limits of personal knowledge and it contributes to community building. Within social knowledge interactions a sense of community, common values and goals, shared ideas, mutual trust and identity are developed. Knowledge interactions therefore do not only provide a sounder knowledge base but also strengthen social structures and mechanisms for advancing sustainable agriculture.

Acknowledgement

This work was supported by RURAGRI ERA-NET Rethink research. We gratefully acknowledge the contribution of informants in Austria, Latvia and Spain.

References

Curry, N., & Kirwan, J. (2014). The role of tacit knowledge in developing networks for sustainable agriculture. *Sociologia Ruralis 54 (3)*, 341-361.

Knickel, K., Brunori, G., Rand, S., & Proost, J. (2009). Towards a better conceptual framework for innovation processes in agriculture and rural development: From linear models to systemic approaches. *Journal of Agricultural Education and Extension*, 15 (2), 131-146

Kloppenburg, J. (1991). Social Theory and the De/Reconstruction of Agricultural Science: Local

Knowledge for an Alternative Agriculture. *Rural Sociology*, 519-548.

De los Ríos, I., Díaz J.M. & Cadena, J. (2011). The Initiative Leader as a model for rural development: implementation to some territories of México. *Agrociencia* Vol 45: 609-624. 2011.

Morgan, K., & Murdoch, J. (2000). Organic vs Conventional Agriculture: Knowledge, power and innovation in the food chain. Geoforum 31, 159-173.

Moschitz, H., Roep, D., Brunori, G., & Tisenkopfs, T. (2015). Learning and Innovation Networks for Sustainable Agriculture: Processes of Co-evolution, Joint Reflection and Facilitation. *The Journal of Agricultural Education and Extension* 21 (1), 1-11.

Pretty, J. N. (1995). Participatory Learning for Sustainable Agriculture. *World Development* 23 (8), 1247-1263.

Tisenkopfs, T., Kunda, I., Šūmane, S., Brunori, G., Klerkx, L., & Moschitz, H. (2015). Learning and Innovation in Agriculture and Rural Development: The use of the concepts of boundary work and boundary objects. *The Journal of Agricultural Education and Extension* 21 (1), 13-33.

Wood, B. A., H. T. Blair, D. I., Kemp, P. D., Kenyon, P. R., Morris, S. T., & Sewell, A. M. (2014). Agricultural Science in the Wild: A Social Network Analysis of Farmer Knowledge Exchange. PLoS ONE 9 (8), doi: 10.1371/journal.pone.0105203.