Technology Platform Organics: Knowledge Generation And Exchange In Organic Food And Farming Research

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Abstract

The paper illustrates the role and activities of Technology Platform Organics (TP Organics) in addressing the requirement that research in organic food and farming systems generates output of relevance to wider end-users. It describes approaches to research and knowledge exchange and suggests that a more participatory approach can improve organic research outcomes. It describes different models of research and knowledge exchange and their pros and cons. The criteria for success of a participatory approach to research also need to be different. These are discussed.

Introduction

TP Organics brings together stakeholders from the European organic sector and the wider public to discuss strategic research priorities that enhance the sectors' ability to produce high quality foods consistently, reliably and in sufficient quantity, while at the same time serving the interests of European societies at large. TP Organics supports agricultural research, by engaging with the food chain through its broad range of stakeholders. Since 2007, TP Organics produced a range of publications addressing organic research and knowledge transfer needs now and in the future (Niggli *et al* 2008, Schmid *et al* 2009, Padel *et al* 2010).

Materials and methods

An objective of TP Organics is to influence the European research agenda so that the topics chosen and the output is of relevance to the organic sector, i.e. it is useful to organic and other farmers, businesses, consumers and stakeholders, as well as civil society and policymakers. As part of this the platform has considered different models to undertake research activities (including priority setting, research approaches,

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disseminating results) and consulted on this with its members. In this paper we have contrasted the contributions of 'top-down' and 'bottom-up' approaches in developing responses to the Europe's grand challenges (Anon 2009).

Results and discussion

Four approaches to research and knowledge transfer activities were considered (RELU 2007). The LINEAR model assumes that users passively receive knowledge. The FEEDBACK model establishes a dialogue between knowledge generators (researchers) and knowledge users who can give feedback on the outcomes of research but not the process. The COLLABORATIVE model is a more integrated approach that puts knowledge generators and users alongside each other and allows them to communicate about problem framing, research methods, context and site-specific conditions and dissemination of outcomes. The JOINT PRODUCTION OF KNOWLEDGE model crosses the boundary between knowledge generators and users, so that all partners involved contribute to undertaking research. Expertise in numerous forms from many actors can make valuable contributions to knowledge production. There is an emphasis on how scientific and non-scientific knowledge can be mutually enriching. The joint production of knowledge model underlines the need to move from ideas about one-way "knowledge transfer" to mechanisms that will facilitate "knowledge exchange" in networks. This model is also known as "participatory research."

Participatory research approaches are often seen as effective means of enhancing end-user learning and instigating change in the relationship between the researcher and the end-user. However, in European agriculture, participatory research has not been widely used, but the value is beginning to be recognised partly in response to a growing number of successes with farmers in developing countries and in countries where agricultural production is not supported by government i.e. Australia (Aagaard-Hansen *et al* 2007, Friend *et al* 2009). Additionally, the second SCAR foresight study acknowledges the importance of such 'niche' experiments in developing profoundly creative, step-wise mitigation and adaptation strategies against climate change (SCAR CEG 2008). In facilitating ecological knowledge systems, the emphasis of research should shift from developing technologies for farmers to working with farmers (Röling & Jiggens 1998) and this has particular relevant for organic farming.

Models differ in the level of input from participants in the research process. In this discussion 'the farm' is usually used as a default example, but participatory research can be undertaken throughout the supply chain with a range of actors and end-users. In participatory on-farm research (also called 'action research' or trans-disciplinary research) the researcher participates in the farm process under investigation. The farmer reveals their tacit knowledge through dialogue with the researcher. The research process is complemented through observations and experiences of the working farm. The assimilation of the knowledge gained from the site-specific research is utilised by the actors (farmer and researcher in this case) to become more expert in the areas addressed, and in their passing on this expertise through farming practice, further research or other knowledge exchange processes.

TP Organics considers that the organic sector must work towards developing closer links between researchers and end-users. Making joint knowledge production more commonly used among a raft of research approaches will require change. Both researchers and funders have to ensure that research is addressing end-users' needs. For this to occur successfully end-users must be part of the whole research process,

as opposed to being passive recipients of its end products. Institutes and researchers who have undertaken participatory or collaborative research have had to go through a considerable amount of institutional learning. A wide range of stakeholders involved in the organic food and farming are potential end-users of research, and their needs should be considered. This includes producers but also processors, market partners, consumers, control bodies, civil society organisations and governments. Stakeholders need to be involved at all stages of the research process: identification of knowledge and innovation needs; scoping of the research activities; engagement with the research and implementation; and adoption of outcomes. In most research the involved stakeholders should represent larger groups and thus may be involved at different times and scales (e.g. identification of main research questions in livestock production may involve representatives of pig farmers prior to an actual research project and, at a later stage, extension workers and regional farmer groups could be involved in selecting promising solutions for experiments). Such close engagement requires stakeholders' time, for which they should be appropriately rewarded. In developing more sustainable systems, there is a need to accept that there is no 'one size fits all' research model. Research needs to consider the specific site and context of the system in which the work is done, for a 'tailor-made' approach in line with farming systems research theory. And participatory research may not be the most appropriate method for all areas of research (i.e. lab work may not benefit), but a joint knowledge generation model should ensure that outcomes of any research are relevant to its end-users.

Criteria for success of participatory research should be different to those of more traditional scientific approaches. TP Organic considers that participatory processes are important in ensuring that more sustainable farming practices become more widespread in the future and proposes three elements to defining their success: (1) Stakeholders are satisfied with their participation and make full use of the results; (2) The results allow stakeholders to keep their independence and their sovereignty of knowledge and property rights; (3) There are real improvements in the system in terms of sustainability. Further indicators of success could include the level of stakeholder involvement, the direct effects of the research on immediate beneficiaries, and also any indirect effects on the whole sector or on wider public policy goals in areas such as environmental protection, public health or animal welfare (Schmid & Lampkin 2008).

Conclusions

Experience has shown us that driving innovation from research for the organic sector is not straightforward, but momentum is lent by models for the joint generation and exchange of knowledge that recognises, integrates and builds on the diversity of the natural environment and people. A joint (participatory) production of knowledge model should reduce the boundaries between knowledge generators and users, while respecting and benefitting from transparent division of tasks. Trans-disciplinary research attempts to straddle disciplinary boundaries, and therefore requires all participants to recognise different forms of knowledge and different ways of discovering knowledge. Researchers and end-users need to learn new forms of active engagement in joint innovation and knowledge production. It must be accepted that there is no 'one size fits all' research model. Different research models will be appropriate for different research questions. All research, however, should consider the specific site conditions and context of the system in which its work is done. Only

by adopting 'tailor-made' approaches can we develop systems that are genuinely sustainable.

Members of TP Organics are involved in developing a European initiative to further develop the model of participatory research for the organic sector. In the TP Organics Strategic Research Agenda (Schmid *et al* 2009) an initiative for knowledge management is proposed for the organic sector in Europe. The main aim of a European organic knowledge management strategy is to facilitate the transfer and exchange of scientific and technical knowledge in organic and low external input agriculture, by putting in place that essential link between research activities and the food and farming sector building on an inventory of existing actors, systems and best practise examples of facilitated communication. The new EU project, "Agricultural Knowledge Systems in Transition: Towards a more effective and efficient Support of Learning and Innovation Networks for Sustainable Agriculture, SOLINSA (SOLINSA 2011) will provide valuable input to the process of organising effective knowledge exchange networks, driving innovation, and improving the multi-functional sustainability of organic farming in Europe.

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