How do farmers research and learn? The example of organic farmers' experiments and innovations: A research concept

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Abstract

Experimenting, adapting and innovating are central features of farmers' activities all over the world. Farmers hold valuable knowledge about their environment, they actively do experiments, and have their own research traditions. The development of organic farming systems is continually evolving through the experiments and innovations of organic farmers. So far, there has been little attempt to study the nature, characteristics, and factors associated with the experimental processes of farmers in a systematic, comprehensive way. A current research project investigates learning processes of organic farmers in Austria, Cuba and Israel through researching the multifaceted experiments they conduct and the innovations they obtain as possible results. This paper presents the research concept of the project.

Introduction

The history of farming shows how farmers have constantly developed and adapted their farming systems to changing agro-ecological and socioeconomic conditions. Farmers have an intimate knowledge of their local environment, conditions, problems, priorities, and criteria for evaluation, and they are actively engaged in experimentation as a part of their farming routine (Chambers et al. 1989, Rhoades and Bebbington, 1995, Sumberg and Okali, 1997). Organic farming research developed through pioneer farmers and scientists in the 1920s. Formal scientific research activities began in the 1970s through a few private research institutes. Organic farming chairs at universities and organic farming projects at state research institutes were only established later (Niggli and Willer, 2000). Therefore, organic farmers themselves have been responsible for most of the advances and innovations in organic farming, and have always researched topics pertinent to their production systems. Not surprisingly then, organic farmers have become the leaders and experts in this field (Bull 2000; Scialabba and Hattam, 2002). Through investigating farmers' experimental processes, formal researchers can broaden their epistemological base by understanding the importance of observation and experience, as well as tacit knowledge, and by learning from farmers' strategies how to deal with complexity (Hoffmann et al., 2007).

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Objectives

A research project about organic farmers' experiments and learning processes is carried out between January 2007 and December 2008. The objectives of the project are:

• to generate empirical knowledge on the processes by which organic farmers' local knowledge is created (Figure 1);
• to identify and define motives, topics, methods and outcomes of farmers' experiments;
• to understand the factors associated with variation in organic farmers' experiments within and among sites;
• to define the links between organic farmers' experiments and the local agricultural communication systems; and
• to understand the role that experimentation plays as a mode of learning and a strategy to deal with changes.

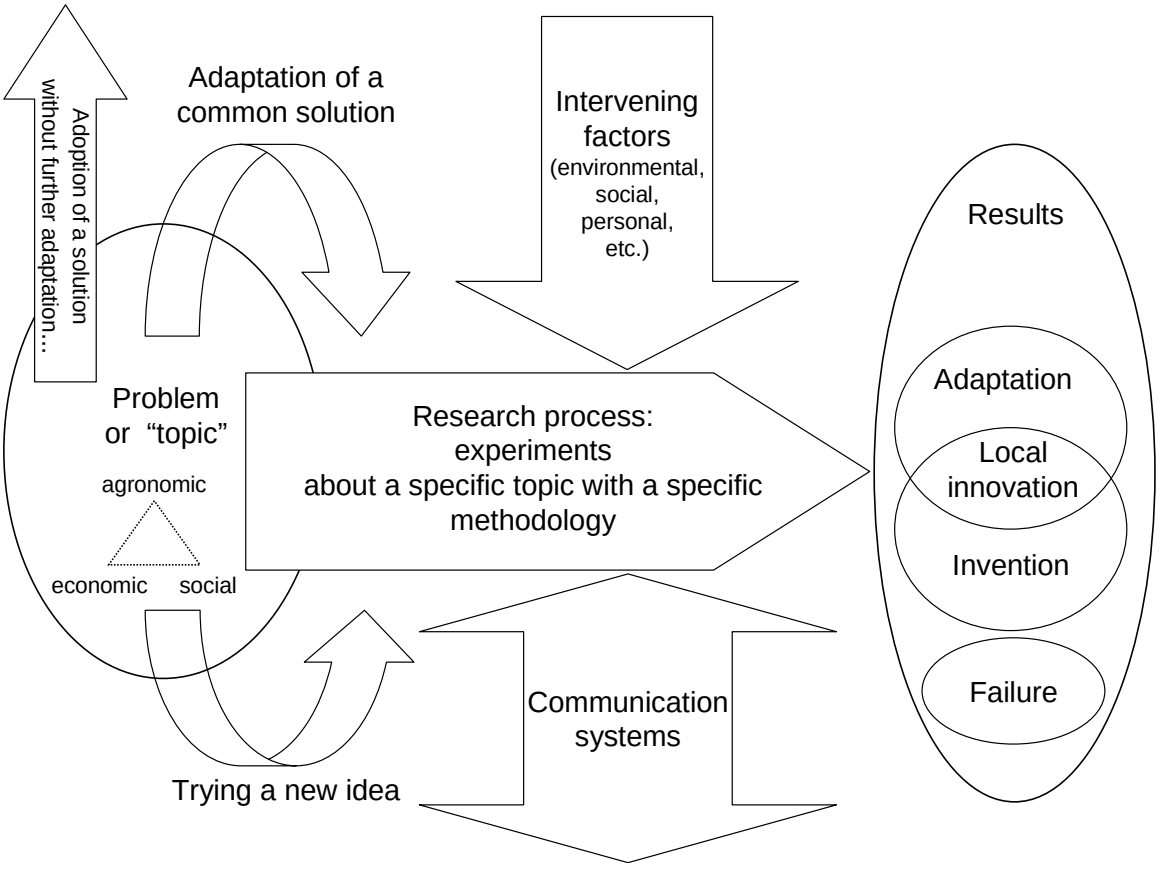

Figure 1: The research process as context to study farmers' experiments

Methods

The research project is conducted in Austria, Cuba and Israel by 3 PhD-students, as well as several master students. The countries were selected to represent organic

farmers in i) different environmental conditions ii) different agricultural systems iii) different socio-economic conditions and iv) different phases of the organic farming movement.

The first field research phase of the project was carried out between July and December 2007. In the first field phase, 40 to 50 personal in-depth interviews with organic farmers, as well as several interviews with experts (e.g. advisors of organic farmers' institutions, scientists, etc.) were completed in each country. A purposeful stratified sample, based on maximum variation regarding agricultural zones, farm structure, infrastructural conditions, and types of farmers was applied. Farm walks as well as photographic documentation were realized in the course of the visit on organic farms to complement the interviews. Timelines were used to track changes at the farm level, based on the hypothesis that changes are either triggers for experimentation or the results of experiments.

Recorded interviews were transcribed, coded and analyzed with the help of the software package Atlas.Ti©. This first qualitative analysis is currently going on. Structured quantitative data (sociodemographic and farm data) was stored in an Access Database and facilitates a multivariate analysis with specialized software packages (e.g. SPSS).

Conclusions

Farmers' experiments are one important source of information and knowledge that supports the evolution of agricultural practices and systems (Rhoades and Bebbington, 1995; Sumberg and Okali, 1997). Organic farmers gain practical experience and build up local knowledge by experimenting. Practical experience, accumulated wisdom and traditional knowledge offer valid solutions, tested by time (IFOAM, 2005).

Numerous recent publications draw attention to farmers' experiments and local innovations (e.g. Reij and Waters-Bayer, 2001, Bentley, 2006, ILEIA, 2000), mostly by using case studies of peasant farmers in developing countries. To develop a comprehensive understanding of farmers' research, it is important not only to focus on marginal areas, but to consider diverse social, political and natural conditions. Furthermore, there has been little attempt to look systematically at the nature, characteristics, and the factors associated with the experimental processes of farmers.

Advances and innovations in organic agriculture have so far been done mainly by organic farmers themselves. These processes of experimentation and innovation in organic farming have not yet been assessed scientifically. Understanding which role farmers' experiments play, improves our understanding and knowledge on the complex interactions that organic farmers face in their daily farming practices. Conducting a comparative study about organic farmers' experiments in three different countries permits us to determine the nature of farmers' experimentations. Furthermore the factors associated with variations in the experimental processes, within and among sites are being analyzed. This research contributes to the study of learning processes, and enhances the understanding of the links between organic farmers' experiments and local agricultural communication systems.

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