

Research Design and Communication in Production System Experiments: A Multiple-Case Study in the Nordic Countries Steffen A. Adler (Norway), 2003

Since the 1980s production system experiments are a commonly used research strategy in ecological farming in the Nordic countries. These types of experiments fit under the holistic oriented framework of farming systems research, which was developed in the 1970s as a reaction to the negative impacts of the Green Revolution in developing countries. The approach is to investigate farming systems as a whole and integrate researchers, extensionists and farmers actively in the research design.

In the Nordic countries 48 production system experiments are identified in a survey. By using the criteria of 1) research orientation, 2) experimental area, 3) duration and 4) other criteria, the design of the production system experiments could be characterised as more reductionistic or more holistic.

A qualitative multiple-case study of production system experiments at the research station Apelsvoll (Norway), and the research farms Logården, Öjebyn and Tingvall (all Sweden) was accomplished to relate communication between researcher, extensionist, farmer and consumer back to research design. Both formal and informal communication forms indicate differences in the communication networks of the cases. Apelsvoll has a more reductionistic research design and a hierarchical one-way communication. Tingvall has a holistic full-scale design that includes other actors and a more developed communication network, which is less hierarchic and two-way. Logården and Öjebyn have features of both reductionistic and holistic research design. Also social aspects play an important role for the development of communication channels.

In the multiple-case study a relationship was found between reductionistic research design and a less developed communication network on one hand, and holistic research design and well-developed communication on the other hand. However, the integrative approach of the Logården project and the Tingvall project is not embedded in the research methodology. New knowledge is needed about ecological farming at a farming systems level, which includes also social aspects. This is necessary to meet rapid changes in social and economical structures on farms and in society in general.

Insights gained in this study may help to improve the existing research design of ongoing production system experiments and to develop new research strategies under the framework of farming systems research in the Nordic countries. This work may also contribute to more focus on interdisciplinary