Science as an actor. On the role of values and science in organic farming

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ABSTRACT

If research is to play a role as a tool for development of organic farming, it needs to be forward-looking and proactive. Research therefore has to take up the challenge of analysing, clarifying and communicating the values that enter into the initiation of research projects in relation to the course of the organic movement. In general, values play an important role in science. This means that conventional objectivity is not an appropriate criterion of scientific quality. What is required, is a reflexive objectivity that involves the identification and communication of the cognitive context of research, including not only the observational context but also the societal and intentional context.

Keywords: values; science; objectivity; organic farming; research philosophy; research methodology

INTRODUCTION

European agriculture and food production is in a period of change. There is an increasing interest in organic production methods and a growing demand for organic products. In many countries we have seen a rapid growth in organic production. But what is the role of science in this development? In this paper we will try to answer that question. The answer will be, mainly, philosophical and normative – we are more interested in what role science can and should play, than what role it actually has played hitherto.

In the last decade, various countries in Europe have increased their research effort and initiated action plans to facilitate the development of organic farming. Last year, the process towards implementing a European Action Plan was initiated, and here it was explicitly recognised that research can play an important role as a tool for development of organic food and farming (Danish Ministry of Food, 2001).

To be able to support the development of organic farming, research needs to be forward-looking and proactive. This can, however, only be achieved if there is some degree of consensus on where the organic movement is going – that is, on the values, aims and principles of organic farming. Research therefore has to take up the challenge of communicating, analysing and clarifying the values of organic farming as a means of coordinating the planning and initiation of research projects with other actors in the organic movement (producers, consumers, industry, retailers, etc.).

In order to take up this challenge, we need some general methodology on how science can be an actor and still be scientific, and on how to handle values in science. Elsewhere, we have described such a methodology, which we call a 'systemic research methodology' (Alrøe and Kristensen, 2001). Here, we will concentrate on two questions. Science is evidently not value free, but where and how, exactly, do values enter into the research process? And, how can research handle values in a scientific way?

HOW VALUES ENTER INTO SCIENCE

Values enter into several phases and aspects of research. One place is in the use of scientific concepts. Some concepts that are widely used in agricultural research, are clearly value laden. Obvious examples are sustainability, precaution, animal welfare, nature quality and soil fertility.

Such concepts often have different meanings to different groups and in different discourses. The exposure of the different meanings of such concepts, and the values and ethics embedded in these different meanings, has already been the subject of some attention (see references in Alrøe and Kristensen, 2001). These conceptual differences influence the kinds of technologies and production systems that are investigated and developed, and how the systemic connections of food systems are handled in research.

Values also play a more direct role in the initiation of research projects. The choice of problem to investigate is central, and the role of values in identifying something as a problem is not always, made explicit. Some times the relevance of projects to different groups, or to society in general, is discussed without making the underlying values and their relation to different groups in society clear. In relation to this, we need to be aware that the more 'technical' choices in research, on research objects and methods, are not independent of values. Values also play a role in the approach and methods employed in addressing a specific problem.

As an example (taken from Lantinga, 2001), we can take the setting up of farm systems experiments. When such experiments are established, many choices have to be made on what systems to include, the specific structure of these systems, where to make them similar and where to make them different. In a study of dairy systems, are the systems to be 'organic', 'integrated' or 'conventional' and (since none of these are clear-cut) what kind of organic, or integrated, or conventional? Are the stable systems to be based on solid manure or slurry? Are the breeds to be Jersey, Holstein or something else? Are the bull calves to be sold or fattened, as steers or bullocks? These choices on system structure are in many ways related to the intentions and goals behind the research. Once the experiment is established, these intentions and goals no longer influence the experiment. But when the results are ready, it is important to realise that if, for instance, an organic system with deep bedding and solid manure is compared with a conventional with slurry, then this choice of systems influences the results with regard to welfare, nutrient losses, crop yields, etc.

HOW TO HANDLE VALUES IN A SCIENTIFIC WAY

Values do, in general, play an important role in science. This means that objectivity in the usual sense – involving the ideal of a science free of subjectivity and values – is not an appropriate criterion of scientific quality. What is required, is a reflexive objectivity that involves the identification and communication of the cognitive context of research (Alrøe and Kristensen, 2001). This should include the value-laden societal and intentional context as well as the observational context.

As immediately follows from the criterion of reflexive objectivity, the communication of completed research projects should include a complete description of the value-laden context, including for example the source of funding and the underlying intentions, in order to facilitate peer criticism and the use and critique of the results by different users and stakeholders.

However, the conception of science as an actor and the new criterion of objectivity require general changes in the norms of science that cannot be implemented by single researchers or research groups alone. Their successful implementation involves all the different institutional structures of science, such as the organisational structuring of research, research policy and funding, scientific journals and other media of publication, and educational institutions.

SOME METHODS TO FULFIL THE ACTOR ROLE

In this paper there is no space to give detailed examples of methods that can be used in research as means to fulfil the role as a forward-looking actor in the development of organic agriculture. We will only mention a few methods that focus on the initial phase of research. They have been developed as tools for research management at the Danish Research Centre for Organic Farming (see also DARCOF, 2001).

User participation in research management

At the level of research management and funding, the clarification and evaluation of the relevance of research is equally important as the evaluation of traditional scientific qualities. The relevance needs to be evaluated with respect to the values of users and stakeholders, which therefore need to be represented in the evaluation process. In DARCOF this process is facilitated by way of a 'Users Committee' that cooperates closely with the board of directors.

Knowledge syntheses

There is often a need for clarifying and synthesising both the factual knowledge and the underlying perceptions and values of a problematic issue before planning a detailed research project. In DARCOF this is undertaken in the form of so-called 'knowledge syntheses'. In short, a knowledge synthesis analyses, discusses and synthesises the existing knowledge on an unclarified, and often disputed, subject in relation to the main points of view. This work takes place in a group of experts from different fields, who represent different points of view. In such trans-

disciplinary work, clarifying the understood perceptions and underlying values forms an important precondition for the more technical discussions. An important aim of the knowledge syntheses is to create mutual understanding among the involved experts with a view to the planning of future research. The process and the results are also communicated widely. Knowledge syntheses have proved to be a very efficient tool for securing the relevance of new research projects.

Identifying basic normative principles

A third method that can help science fulfil the role as a forward-looking actor, is the identification of basic normative principles. So far, the development of organic farming has been guided by formulated aims as well as more tacit values and principles. Given the rapid technological and structural development of agriculture, where organic farming is faced with new options and technologies, the aims are, however, not sufficient. There is a need to identify the underlying normative principles. DARCOF prepared a discussion document on the principles of organic farming, which suggests a few basic principles of how to 'act in an organic way' (DARCOF, 2000). These normative principles have been widely discussed among the different actors of the organic movement as a tool for making decisions on practices, technological and structural developments, rules, and research ideas.

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