

Research methodology and knowledge dissemination

A cross-disciplinary approach to multicriteria assessment and communication of the effects of organic food systems

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Abstract

This paper describes a cross- and transdisciplinary approach to develop a multicriteria assessment framework that aims to help organic actors and stakeholders conduct, document and communicate balanced overall assessments of the effects of organic food systems on society and nature. The framework will be based on extensive analyses of existing methods for multicriteria assessment and communication, and the adaptation and development of selected methods to suit organic food systems and the principles organic agriculture. The validity and utility of the framework is secured through involvement of actors and participatory testing of prototypes in practice. The goal is to help sustain an integrated development of the organic production, contribute to open and credible communication, and thereby support long term growth.

Introduction

The organic form of production aims to fulfil many different private and societal objectives at the same time. And according to a recent Danish knowledge synthesis, the potential for continued growth of the organic market depends not only on further technological and organisational development, but also on securing the integrity and credibility of the organic alternative through continued improvement in line with the organic principles and increased synergy with societal goals and consumer concerns about health, animal welfare and the environment (Alrøe & Halberg 2008). There is therefore a need for tools that can mediate and communicate overall assessments of a range of different effects of organic production and food chains on society, environment and nature.

Some of the effects of organic agriculture can be measured and assessed in quantitative terms. For others only qualitative assessments are available. An important question is therefore how to establish a balance between using quantitative and precise assessments where available and avoiding that aspects which are relatively easy to measure, gain disproportionate weight in the overall assessment. Attempting to evaluate all aspects of organic farming in monetary terms would be empirically demanding and in some cases theoretically problematic. Multicriteria analysis offers an alternative approach in terms of techniques for structuring and solving decision problems characterised by multiple, incomparable and possibly conflicting criteria (Bogetoft & Pruzan 1997). There is a body of general multicriteria techniques available, but they have to be adapted to the distinct and varied problems posed by overall assessments of organic food systems.

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Appropriate assessment techniques are important for making a balanced and comprehensive evaluation of the effects of organic agriculture. Yet, they are of little relevance if they are not easy to communicate and understand for the many different organic actors and stakeholders. From a communication perspective the main challenges for multicriteria assessment of organic agriculture are normative transparency and complexity handling. In any assessment there is both an empirical and a normative aspect. The assessment of complex systems must be based on a reduction of complexity, such as the choice of indicators. Indicators are quantitative or qualitative measurements of certain states or dynamics in the system, which are selected because they are important to us. For the ways in which they are important, Hartmut Bossel (e.g. 1999, 2001) has suggested the term orientors to represent fundamental interests, values, criteria or objectives. "It does not make much sense to develop indicator systems without explicit reference to the orientors about which they are to provide information. But that means starting by first analyzing the fundamental interests or orientors of the system for which we want to define indicators." (Bossel 1999: 26)

There is therefore a need to work explicitly with how normative criteria are built into the multicriteria assessment framework, e.g. in the selections and condensations made, and how orientors in the framework relate to values and principles of organic agriculture and societal interests and objectives. The importance of this normative work is underlined by the fact that different actors and stakeholders may attach different weights and values to different effects.

Furthermore, the ability to handle complex information differs, communication strategies are multiple, and there is a fragmentation of information. Modern societies are media-saturated, and the media have to be taken into consideration when credibility and trust are constructed and negotiated. Important research questions are how credibility and trust is constructed in the organic value chains, and what the potentials are for more nuanced assessments – particularly in light of the increasing complexities caused by 1) globalisation and differentiation of food chains, 2) expansion of media and communication channels, and 3) efforts to include additional considerations for nature and society in the certifications of organic agriculture.

The cross-disciplinary approach described here will be carried out in the research, development and demonstration project "Multicriteria assessment and communication of the effects of organic food systems (MultiTrust)." The project is supported by the Danish Organic RDD programme and runs in 2011-2013. It includes partners from agricultural science, food economy, environmental education, media science, business communication, animation and visualisation, advisory services, a dairy company, and municipalities and regions, as well as nine international partners. The main goal of project is to provide analyses, methods and prototypes of multicriteria assessment, which can help organic actors and stakeholders develop, document and communicate balanced overall assessments of the effects of organic food systems on society and nature.

Methods

If the MultiTrust project is to successfully achieve its goals, the two main perspectives outlined in the introduction (the technical and economic assessment perspective and the contextual communication perspective) will have to be combined throughout the work. There are multiple other and more specific perspectives involved in the project, perspectives that cannot be unified, but must be utilized in unison. The project is

therefore construed as a multiperspectival (or polyocular) approach, which works explicitly with the different scientific and actor perspectives involved (in line with Giere 2006a, 2006b), and how they expose different aspects of organic agriculture (see further in Alrøe & Noe 2008, Noe *et al.* 2008). The multiperspectival approach is required both to facilitate the cross-disciplinary work and to enable the participation of a diverse range of organic actors and stakeholders in this work (Alrøe & Noe 2010).

The research studies in the MultiTrust project are divided into three parts with different methods. They run in sequel, but with a large overlap to ensure interaction. The first part is to carry out reviews of general approaches and methods for multicriteria assessment, and of how such overall assessments can be communicated with regard to complexity, values, trust, and credibility. This will provide a theoretical background for the project. The second part is to establish a framework for how to carry out overall assessments specifically of organic food systems in relation to the organic principles, and moreover to develop concrete assessment, communication and visualisation tools. In relation to this, it will also carry out empirical analyses of relations and communication in selected organic food networks. The last part will test prototypes of methods for multicriteria assessment and communication in selected cases with groups of stakeholders, including organic farmers, food processing and marketing companies, consumers and public officials at the municipal, regional and state level. In relation to this, it will investigate consumer conceptions of different assessment criteria for organic food and farming.

Results

The project has barely started yet, but the results are expected to contribute to open and credible communication about the benefits of organics, serve as a policy tool in relation to regulation and differentiated support schemes, and support the integrated development of organic production in relation to the organic principles. And a key hypothesis is that this will improve the potential of the organic alternative to help solve current societal challenges and support long term growth of the organic market.

A separate result of the project is the further development of cross-disciplinary, transdisciplinary and multiperspectival research methodology. Much importance is placed on project meetings that include all university and actor partners, which will facilitate the cross-disciplinary working process by working explicitly with how different perspectives influence goals and problems, observations, communications and results. As an element in this, and to make the participants better able to understand each other, each partner will write a short 'self-labelling' text that describes their perspective. This will include the theoretical or practical background, the meaning of key concepts, what is taken as the main problem, and how the perspective can contribute to the goals of the project.

At the time of the conference we expect to be able to communicate the first experiences with the cross-disciplinary methodology and some first results on the reviews of existing multicriteria assessment and communication methods.

Discussion

Organic agriculture has been studied intensively in research studies (e.g. biodiversity, nutrient flows and consumer reactions), and much information is accessible. Nevertheless, it is complicated to judge how different and often conflicting results should be evaluated. One of the challenges is that in order to pave the way for a

growing importance of organic food production, the organic actors have to document and communicate complex and sometimes intangible benefits, such as ecosystem services, environmental and landscape protection, sustainable food supply, health and food safety, rural development and employment. A broad understanding and acceptance of this challenge is an important means to qualify the dialogue with citizens and policymakers – and this can support the further development of the organic food production methods, and the further implementation of organic agriculture as a part of the measures to meet overall societal goals.

Conventional systems are often optimized with regard to a few criteria that can be measured in quantitative terms, and which have a high societal focus. The framework developed here can be useful to make more comprehensive assessments of agriculture in general – not only of organic agriculture – and this will be important for future agricultural policy and for the food market. Having one common way to assess the effects of different agricultural production methods will also make it easier to compare the effects of organic food systems with other production systems.

Conclusions

There are significant difficulties in developing balanced, overall assessments of organic food systems that can handle the issues of knowledge limitations, value differences and fair comparisons. And there are equally significant difficulties in communicating such assessments with regard to complexity, trust and credibility. Yet the future of the organic alternative in many ways depends on how it compares in such assessments. To address this challenging problem, cross- and transdisciplinary cooperation is needed between natural, social, and cultural sciences and with a range of organic actors and stakeholders – a cooperation that acknowledges and works openly and clearly with the different perspectives involved.

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