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. Attemptin g 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 impor tant for making a balanced a nd comprehensive evaluation of the effects of or ganic agriculture. Yet, the y ar e of lit tle relevance if the y are not easy to communicate and understand for the m any different organic actors and stakeholder s. From a communication pe rspective the m ain challenges for multicriteria assessment of organic agriculture are normative transparency an d complexit y ha ndling. In any as sessment there is both an empirical and a no rmative aspect. The as sessment of complex s ystems must be based on a reduction of complexity, such as t he choice of indicators. Indicators are qua ntitative or qualitative measurements of cer tain states or dynamics in the sy stem, which are selected because the y are important to us. For th e ways in which the y are important, Hartmut Bossel (e.g. 1999, 20 01) has suggested the term orie ntors to represe nt fundamental interests, values, criteria or objectives. “It do es not make much sense to develop indicator s ystems without explicit referenc e to the o rientors about which they are to provide information. But that means starting by first anal yzing the fu ndamental interests or orientors of the sy stem for wh ich w e w ant to define indicators.” (Bossel 1999: 26)

There is therefo re a need to w ork explicitly with how normative criteria are built into the multicriteria assessment framework, e.g. in the selections and condensatio ns made, and ho w orientors in the frame work re late to values and principles of organic agriculture and societal interests and objecti ves. The importance of this normative work is underlined b y th e fact that different ac tors and stakeh olders ma y att ach different weights and values to different effects.

Furthermore, the ability to handle comp lex i nformation differ s, communication strategies are multiple, and there is a fragm entation of information. Modern societies are media-satu rated, and t he media have to be taken into c onsideration when credibility and trust are constructed and negotia ted. Important res earch questions are how credibility a nd trust is constructed in the organic value chains, and w hat th e potentials are for more nuanced assessments – particularly in lig ht of the increasing complexities caused b y 1) gl obalisation and differentiation of food chains, 2) expansion of me dia and communication channels, and 3) efforts to include addition al considerations for nature and society in the certifications of organic agriculture.

The cross-discip linary approach described her e w ill be carried out in the research, development and demonstration project “Multicriteria assessment and communication of the effects of organic food s ystems (Multi Trust).” The project is supported b y th e Danish Orga nic RDD pr ogramme and runs in 2 011-2013. It includes partne rs fr om agricultural scie nce, food eco nomy, env ironmental education, media science, business comm unication, animation and visua lisation, advisory services, a dair y company, and m unicipalities and regions, as well as nine international partners. T he main goal of project is to provid e anal yses, methods and protot ypes of multicriteria assessment, which can help organic acto rs and stakeholders develop, document and communicate balanced overall assessments of the effects of organi c food s ystems on society and nature.

Methods

If the MultiTrust project is to successfully achieve its goals, the two main perspectives outlined in the in troduction (th e technical and economic assessm ent perspective and the contex tual communication perspective) will have to be combi ned thro ughout the work. There are multiple other a nd more specific perspectives involved in the p roject, perspectives that cannot be unified, but mu st be utilized in un ison. The project is

therefore constr ued as a multiperspectiva l (or pol yocular) approach, w hich w orks explicitly with the different scientific and ac tor perspectives involved (in line with Giere 2006a, 2006b), and ho w the y e xpose 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. The y run in sequel, but w ith a lar ge ove rlap to ensure in teraction. The fir st part is to carr y out review s of general approaches and methods for multicrit eria assessment, and of how such ov erall assessments can be communicated w ith regard to complexity, values, trust, and c redibility. This will provide a theoretical background for the project. The second part is to establis h a framework for how to carry out overall assessments specifically of organic food s ystems in relation to the organic principles, and more over t o develop concrete asse ssment, communication and visualisation tools. In relation to this, it w ill also carry out e mpirical analy ses of relations a nd communication in selected organic food netw orks. The last part will test prototypes of methods for mu lticriteria assessment and com munication in selected cases with groups of stakeholders, includin g 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 start ed yet, but the results are expected to contribute to op en and credible co mmunication about the be nefits of organics, serve as a polic y to ol in relation to regulation and differentiated s upport schemes, and sup port th e integ rated development of organic production in relati on to the organic principles. And a key hypothesis is that this will improve the pot ential of the organic alternative to help solve current societal challenges and support long term growth of the organic market.

A separate result of the p roject is the further development o f cross-disciplin ary, transdisciplinary and multiperspectival res earch methodolog y. Much importance is placed on project meetings that include a ll univer sity and actor p artners, which will facilitate the cross-disciplinary working process by working explicitly with how different perspectives influence goals a nd problem s, o bservations, communications and results. As an element in this, an d to make t he participants better able to u nderstand each other, eac h partn er will write a sho rt ‘s elf-labelling’ tex t t hat describes th eir perspective. This w ill inc lude the theoretical or practical background, the meaning of key concepts, what is taken as the ma in pro blem, and ho w th e perspective can contribute to the goals of the project.

At the time of the conference we expect to b e able to communicate the first experiences w ith the cross- disciplinary meth odology and some first results on t he reviews of existing multicriteria assessment and communication methods.

Discussion

Organic agriculture has b een studied intensively in research studies (e.g. biodiversit y, nutrient flo ws and consumer reactions), and much information is a ccessible. Nevertheless, it is complicated t o judge how dif ferent and often conflict ing results should be evaluated. One of th e challenges is that in order to pave the way fo r 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 policy makers – 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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