

extent of personal and organizational impacts on human, cultural, economic and nature environment. Transdisciplinary concepts concerning ethical values and practices represent one means for thinking about “acting responsibly” and understanding that ethics are not (or should not be) “top down”, but emerge in a participatory context.

We argue that strengthening self-reflexivity is a key towards a healthy agriculture, food and healthy environment that obviates the need for external controls and regulation.

## **Organic farming and multicriteria decisions: An economic survey**

*Tove Christensen, Søren Bøye Olsen, Alex Dubgaard and Niels Kærgård*  
*University of Copenhagen, Denmark*  
[Tove@foi.ku.dk](mailto:Tove@foi.ku.dk)

Shifting from traditional to organic farming and food consumption might impact biodiversity, health, agricultural productivity, animal welfare, the environment, food quality and other important variables. Many of these changes involve what economists call market external effects and public goods; these are effects which are not directly paid by either the producers or the consumers in the market. From an economic point of view, these effects constitute the key justifications for public interventions in the market in the pursuit of socially optimal allocation of resources. Interventions can take the form of imposing taxes, subsidies, minimum standards and even rules for public consumption. Identifications of optimal policies require that all aspects of a change are included.

Economists have worked with such multidimensional decision problems for decades and a number of rather effective methods have been developed. The traditional method, at least for relatively small projects is the cost-benefit method where all cost and benefits are measured in money. However, cost-benefit analyses are based on a considerable number of simplifying assumptions and less restrictive “multi criteria decision methods” have been developed. There are ongoing discussions of how to design the single optimal method. This is possibly because multicriteria decision problems are on the borderline between economic science and policy. Nevertheless, economists can contribute with methods and considerations which can make the decision making process significantly more rational and highlight the trade-offs at stake.

The paper provides an overview of the economic theory of multi criteria decision making and discusses both theoretical and practical problems related to the use of such methods. Examples of studies treating traditional and organic farming are given. Interesting results are found; e.g. indications of conflicts between the benefits as perceived by consumers vs. documented by science.

## **Stakeholders and the challenges of sustainability assessment**

*Hugo F. Alrøe, Egon Noe, Henrik Møller and Jeppe Læssøe*  
*Aarhus University, Denmark*  
[Hugo.Alroe@djf.au.dk](mailto:Hugo.Alroe@djf.au.dk)

In order to develop better and more sustainable food systems, there is a need to make overall assessments of their effects, and to bring those assessments into practice. This paper will identify key challenges in developing and using overall assessments of the effects of food systems on the environment, nature, health and welfare, focusing on the role of actors and stakeholders in meeting these challenges. The case in question is organic food systems, but the analysis is also of broader relevance. The three pivotal challenges concern knowledge, values and communication. The first challenge is how to use and balance different types of knowledge. The effects of different developments can be assessed based on local knowledge of practices and histories, indicators on environmental pressures and states, scientific system models, etc. Different sciences and different actors can provide different kinds of knowledges. Some are quantitative and precisely measured, others qualitative and narrative, some easily accessible, others costly or difficult to obtain. The second challenge is how to render values visible and bring the relevant values into the assessments. Scientific

perspectives are based on certain value-laden problems, questions and concepts, indicators have built-in orientors, assessment systems are based on value-laden selections and reductions, stakeholders have different values and interests, organic agriculture has explicit ethical principles, and society has a range of objectives of relevance for food systems. The third challenge is how to communicate complex overall assessments in an effective and participatory way. This is needed by researchers and stakeholders in the development of assessment tools, by producers and other actors in the development of better organic practices, and by public authorities in the development of appropriate policies for organic food systems. Reduction of complexity, visualisation, and media all play a critical role in this.

## **The role of values in multicriteria assessment methods**

*Hugo F. Alrøe, Egon Noe and Martin H. Thorsøe*

*Aarhus University, Denmark*

[Hugo.Alroe@djf.au.dk](mailto:Hugo.Alroe@djf.au.dk)

In order to develop better and more sustainable food systems, there is a need to make overall assessments of their effects, and to bring those assessments into practice. One of the main challenges in this is the role of values. In organic food systems, in particular, values and ethics play a clear and important role. Furthermore, all multicriteria assessments are based on value-laden selections and weightings of criteria, and the chosen indicators are connected with orientators that distinguish good changes from bad. It is therefore important to clarify how values and ethics enter into the assessment process, so that assessments and decisions can be made in a way that supports the development of organic agriculture. This paper will analyse where and how values and ethics enter into different methods for multicriteria assessment and communication, identify the explicit and implicit built-in values in concrete multicriteria assessment tools, and compare them with the specific ethical principles, values and objectives that characterize organic production and consumption.

## **A comparison of complex expert-based assessments versus quickscan assessments**

*Fleur Marchand, Lies Debruyne and Ludwig Lauwers*

*Institute for Agricultural and Fisheries Research*

[Fleur.Marchand@ilvo.vlaanderen.be](mailto:Fleur.Marchand@ilvo.vlaanderen.be)

Past decades, several sustainability assessments emerged, ranging from very complex expert-based assessments to quick scan ones. The former type is based on expert information and an extensive data demand, the latter on information gathered instantly from the farmer. This research compares both types while using the following criteria: i) the design approach and characteristics; ii) the critical success factors for implementation put forward by De Mey et al. (2011); iii) results in the field and evaluation by the end-users. As an example for an expert-based assessment, we used MOTIFS (Meul et al. 2008) designed for dairy farming in Flanders. We applied this tool on Flemish dairy farms within the EU-Interreg project DAIRYMAN. The OCIS Public Goods tool (Gerard et al. 2011), designed for organic dairy farms in Great Britain was used as example of a quickscan method. During the EU project SOLID, the tool was adjusted for the entire European region and applied on organic dairy farms. This research determines the strengths and weaknesses of both types of sustainability assessment systems including the method of application, resulting in suggestions on which type of sustainability assessment is relevant depending on the case (related to the critical success factors such as attitude of model users, time and data availability, user friendliness, communication aid,...). Researchers and practitioners can use this information when developing or selecting, and possibly modifying, an appropriate tool for their goals.