Systemic research methodology
On the role of values in research in organic farming

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Two key points

• Science is an important actor in the development of organic agriculture
• In order to fulfil this role as an actor, science needs to be able to handle values
What is a systems approach?

Two perspectives:

1. Agriculture as a system
   - Without human actors
   - With human actors (often farmers)

2. Agricultural science as a system

Science as actor and observer

[Diagram showing actor, observer, system, and environment]
Communicating values

Decide on values to be employed in ...

- the identification of problems
- the design of methods and experiments
- model assumptions

Reveal the values embedded in ...

- the use of concepts
  - Sustainability
  - Food quality
  - Soil quality
  - Nature quality
  - Animal welfare
  - Farm well-being
  - Rural development
  - Human well-being

Criteria for doing good science

Relevance

Value inquiry
Participation
Transparency

Reflexive objectivity

Communicating the cognitive context
  - societal
  - intentional
  - observational

Revealing ignorance and uncertainties
Examples

- Knowledge syntheses
- Criteria for evaluation
- Organic Eprints

Knowledge syntheses

Before initiating research projects - in areas where there is a lack of clarity.

- Nitrate leaching
- Health and welfare in milk production
- Nature quality
- Pig production
- Organic seed production
- Consequences of GMO production
- Energy use
Evaluation criteria for organic research

• Quality of research process
  (following and adjusting plans, cooperation, etc.)

• Number and quality of different research products
  (papers, meetings, etc.)

• Reflexive objectivity
  (e.g. how are values handled)

Organic Eprints

Organic Eprints is an electronic, open access archive for papers related to organic agriculture.

http://www.orgprints.org
Conclusions

• Values play a key role in ‘a systems approach’ to agricultural research

• Science is an actor in organic farming
  – Do researchers employ values that correspond with the spirit of the organic movement?
  – Should they always?

Conclusions

• Science works at different levels of reduction
  – but values still play a role

• There are normative and empirical disciplines in science
  – but there is always an interplay of facts and values
More information

- My webpage -- http://www.alroe.dk/hugo
  - Alrøe and Kristensen (2002) Towards a systemic research methodology in agriculture
  - and other related papers
- DARCOF -- http://www.darcof.dk
- Organic Eprints -- http://www.orgprints.org