The challenge of systemicity in organic research

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This presentation is at http://www.orgprints.org/archive/00000292

Key points

- A systemic science is a science that influences its own subject area
- Research is an important actor in the development of organic agriculture
- In order to do good systemic research, science needs to be able to handle values
The self-reflexive learning cycle in systemic research

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

See http://www.orgprints.org/archive/00000005/
Criteria for doing good science

Reflexive objectivity

Relevance

Value inquiry
Participation
Transparency

Communicating the cognitive context:
- societal
- intentional
- Observational

Revealing ignorance and uncertainties

Examples

- Knowledge syntheses
- Scenarios for an all-organic Denmark
- Normative principles for organic agriculture
- Criteria for evaluation of organic research
- Organic Eprints
Knowledge syntheses

Before initiating research projects - in areas where there is a lack of clarity of problems, concepts, etc.

- Nitrate leaching
- Health and welfare in milk production
- Nature quality
- Pig production
- Organic seed production
- Consequences of GMO production
- Energy use

Different views of nature quality

Separative: Man separate from nature
- Controlled, ordered cultivated nature
  - Culturist view of nature
- Wild, authentic, uncontrolled nature
  - Naturalist view of nature

Systemic: Human a part of nature
- Social system
- Natural system

Ecologist view of nature

See e.g. http://www.orgprints.org/archive/00000010/
A systems view of animal welfare

Agricultural system
- the nature of the animals
  - breeding, reproduction
  - the farm structure
  - housing systems, management
- the larger production and consumption system
  - market mechanisms, consumer perceptions and preferences

Individual level
- Animal welfare as the relation between the innate nature of the animals and the conditions they are exposed to in the agricultural system

See http://alroe.dk/hugo/papers/orgwelfa.html

All-organic scenarios for Denmark

Model assumptions → Empirical data → Model → Scenario results

Vision of the future state → Value inquiries

See http://www.orgprints.org/archive/00000209
Three normative principles

- **Ecological principle**
  - Human integrated part of nature
  - Cooperation with nature
  - Emulation of natural processes

- **Precautionary principle**
  - Scientific knowledge is limited
  - Stop unforeseeable technology
  - Cleaner and safer technology

- **Nearness principle**
  - First hand experience important
  - Communicative experience
  - Transparency and participation

See also http://www.darcof.dk/discuss/index.html

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Evaluation criteria for organic research

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

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

- Reflexive objectivity
  (e.g. how context and values are handled)
Organic Eprints

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

http://www.orgprints.org

A discussion on context and values can take place by way of linking comments to papers.

Conclusion

- Values and context should play a key role in systemic research
- Hence the criterion of reflexive objectivity
- Questions to research in organic farming:
  - Does it employ values that correspond with the spirit of the organic movement?
  - Should it always?
More information

- My webpage -- http://www.alroe.dk/hugo
- DARCOF -- http://www.darcof.dk
- Organic Eprints -- http://www.orgprints.org