Evaluating the Contribution of an Innovation Network to Resilient Agri-Food Systems

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Core Organic II Project: ’HealthyGrowth – from niche to volume with integrity and trust‘

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Overview

I. Introduction
   • Background, hypothesis, objective

II. Approach and analysis
   • Operationalization of the resilience concept
   • Application to the innovation network

III. Conclusions
I) Introduction

• Food and farming sector: Overall need to produce more food and improve food and resource distribution - “Producing more with less”

• Agricultural innovations are urgently needed due to significant challenges facing the agri-food sector such as protection of water and soil, climate change mitigation and adaptation, ecosystem services …

→ New EU strategies, concepts and policy measures are put in place
European Innovation Partnership (EIP-Agri)

• European Innovation Partnership for Agricultural Productivity and Sustainability implements over-arching EU strategies “Horizon 2020” and “Innovation Union 2020”

• Objective: Closing the innovation divide as fast as possible!

• Key words: Communication and networking, partnership and cooperation, enhancing resilience, social innovation
Our hypothesis

Close cooperation of all actors in value-based food chains

• Improved efficiency and competitiveness
• Reduced negative environmental impacts of farming
• Fostering positive social and environmental effects
• Higher number of innovations, quicker disseminated
• Improved resilience of farms, food businesses and rural economy at large

vs. limited cooperation

• Reduced efficiency
• Increasing inequalities within sector and between regions
• Unbalanced development of the three axes of sustainability
• Lower rates of innovation and development
• Reduced resilience
Objectives

• To learn more about the interrelation between network activities and the related contributions to resilient farming and food chains.

• To develop and test a methodological framework for the assessment of the impacts of network activities.

• If possible, to measure/evaluate the impacts of the innovation network.

All related to the agri-food innovation network of Eberswalde University in north-eastern Germany
II) Approach and analysis

1. Operationalization of the resilience concept and application to farming and food chains

2. Application to the agri-food innovation network of Eberswalde University
<table>
<thead>
<tr>
<th>Autor</th>
<th>Particular aspect elaborated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Folke (2003)</td>
<td>Measuring resilience is not only a status analysis, but resilience can be as well a process of learning and adaptation</td>
</tr>
<tr>
<td>Darnhofer &amp; Milstad (2003)</td>
<td>The socio-economic dimension is highly relevant for measuring resilience in the agri-food sector (this is a difference to a merely ecosystem-based assessment)</td>
</tr>
<tr>
<td>Darnhofer (2010)</td>
<td>Particular relevance of social factors and impacts as well as the farmer’s management of production systems and skills (the farmer as entrepreneur)</td>
</tr>
<tr>
<td>Milestad &amp; Kummer (2012)</td>
<td>Resilience is nurturing diversity for re-organisation and renewal</td>
</tr>
</tbody>
</table>
Resilience in the agri-food sector (based on Darnhofer 2004)

1. Diversity as an asset in re-organisation and renewal (property/status)

2. Buffer capacity: Ability to buffer small disturbances (smaller adaptations, short term)

3. Adaptive capacity: Ability of system to adjust and ‘develop’ (continuous change of system, ‘development’)

4. Transformative capacity: new basic operating assumptions for the long term (farmer as decision-maker; structural, longer-term adjustment)
Application of the concept to the agri-food innovation network

Several on-going cooperative study and research projects

Learning:

• Regular study projects as part of the bachelor and master curriculum

Research:

• Values-based food chains (HealthyGrowth)
• Climate change adapted arable farming (INKA BB)
• Direct marketing concepts (Lifelong Learning I)
• Strengthening competitiveness of typical farming systems (Lifelong Learning II)
Status-quo of the network

Establishment since 2004

80 cooperating farms and enterprises, thereof

30 contract partners and

50 associated enterprises

- Farmers
- Processors
- Merchants/wholesalers
- Stakeholders
- Researchers/teachers
- Students at HNEE
## Types of contribution to the agri-food sector

<table>
<thead>
<tr>
<th>Economics</th>
<th>Knowledge Transfer</th>
<th>Science/Learning</th>
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</thead>
</table>

![Economics](image1)

![Knowledge Transfer](image2)

![Science/Learning](image3)
### III) Assessment

<table>
<thead>
<tr>
<th>Component 1</th>
<th>Relevant aspects</th>
<th>Actual contribution</th>
</tr>
</thead>
</table>
| Diversity as an asset for reorganisation and renewal | • Diversity of farms and marketing channels  
• Diversity of networks (private and professional) and of the farming community  
• Diversity in production systems etc. | • Offers of the working group ‘Alternative marketing concepts’ for organic farms  
• ‘Studying’ alternative production systems on other partner farms or organic demonstration farms  
• Cooperation with organic associations or farm international farm comparative network – learning about other systems |
## Component 2 Relevant aspects Actual contribution

<table>
<thead>
<tr>
<th>Buffer capacity</th>
<th>Ability to buffer small disturbance</th>
<th>Variety of information sources (national, local, international, practical, theoretical, informal)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Ability to buffer small disturbance</td>
<td>• Short-term perspective</td>
<td>• Variety of learning approaches: workshops, open farm days, on-farm trials</td>
</tr>
<tr>
<td>• Short-term perspective</td>
<td>• Assimilation without change in structure/temporary reallocation of resources</td>
<td>• Continuous or new research &amp; working group project and other HNEE activities</td>
</tr>
<tr>
<td>• Assimilation without change in structure/temporary reallocation of resources</td>
<td>• Relevant preconditions: flexibility, curiosity, able to handle small risks, open-minded, participation</td>
<td>Yes!</td>
</tr>
<tr>
<td>• Relevant preconditions: flexibility, curiosity, able to handle small risks, open-minded, participation</td>
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<tr>
<td>Component 3</td>
<td>Relevant aspects</td>
<td>Actual contribution</td>
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</table>
| Adaptive capacity | • Ability of a system to adjust and ‘develop’  
• Realising continuous changes as a response to external drivers  
• Allowing development while staying within current system  
• Learning from success and failure | • Greater variety of information sources and learning approaches  
• Improved knowledge management  
• Enhanced trust in information provided  
• Increased trust in continuity of network relationships and support  
• Improved methods of reflexion (successes/ failures)  
• Improved exchanges among farmers and with other actors in food chains |
<table>
<thead>
<tr>
<th>Component 4</th>
<th>Relevant aspects</th>
<th>Actual contribution</th>
</tr>
</thead>
</table>
| Transformative capacity | • New basic operating assumptions for the long term  
• Ability to implement radical changes (farmer as decision-maker)  
• Shifts in perception, new pattern of interaction  
• Structural changes  
• Transformation may be gradual or abrupt/surprising | • Direct and indirect contributions of the network to transformative capability  
• Multi-level nature of the network’s contributions and impacts |
Open questions

• How to assess the impact of network activities on farmers’ risk management and on risk aversity?
• How to address the farmers’ apparent inertia - which can be positive (reducing risks) as well as negative (hampering change, reducing adaptive and transformative capacity)?
• How to assess multi-level and inter-scale effects, and specifically the impact of network activities on individual farm or food enterprises?
III) Conclusions

1. Assessment of impacts on resilience remains a challenge.

2. Application of resilience concept to the agri-food sector is important and needs further development.

3. The application of the resilience concept to an innovation network helps to highlight a variety of issues related with learning and change processes.

4. The analysis indicates that an innovation network can contribute to resilience – but, verification is difficult.
Thank you!

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www.coreorganic2.org oder www.hnee.de/HealthyGrowth

www.innoforum-brandenburg.de
References


