INNOVATION PROCESSES OF SMEs IN PERIPHERIAL AREAS AND LOCAL INNOVATION POLICIES - findings from Finland

seminar “Innovation in remote and peripheral areas” at the European Policies Research Centre, University of Strathclyde, Glasgow, June 15, 2010

Seija Virkkala, University of Vaasa, Finland
Outline of the presentation

1. Innovation studies in peripheral areas in Finland: A. Survey and
   B. Case studies of innovation processes and networks in rural areas and small cities

2. Comparative Nordic studies: Innovation System and the periphery 14 cases: manufacturing, food processing and tourism in 5 countries (ISP)

3. Action research in transferring the good practices found in previous studies (PLIP)
Concepts

- Modern innovation theory:
  - Innovation are learning processes
  - Innovations are interactive processes
  - firm level: firm’s interaction with its milieu
- Definition in the project: innovations are new solutions to the firm
- Organisational learning
- Regional learning
Rural development

• Rural and urban in post modern society
• Rural development theory: Rural areas from the production areas to the zones of "consumption."
• Different views on the regional integration and the role of rural areas.
• Empirical categories: A. Rural adjacent areas
  B Rural heartland
  C. Sparsely populated regions
<table>
<thead>
<tr>
<th>Urban-rural model</th>
<th>Innovation</th>
<th>Innovation policy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural residual</td>
<td>Innovation diffusion from the cities</td>
<td>Innovation in cities, rural hinterlands</td>
</tr>
<tr>
<td>Continuum</td>
<td>Population/business density</td>
<td>Sectoral policy</td>
</tr>
<tr>
<td>Urban-rural mix</td>
<td>Similar condition</td>
<td>Sectoral policy</td>
</tr>
<tr>
<td>Dual consensus</td>
<td>Dual consensus</td>
<td>Local resource exploitation – niches</td>
</tr>
<tr>
<td>Dual conflict</td>
<td>Dependency</td>
<td>Empowerment, mobilisation</td>
</tr>
</tbody>
</table>
Innovation processes and networks in rural areas and small towns - Research questions

• In what degree the innovation processes of SMEs are local embedded?
• How are the innovation networks of SMEs constructed in the peripheral areas?
• What kind of innovation potential do peripheral areas have in Finland?
I Innovation in SMEs in rural areas and small cities - empirical data


B. Case study on innovations of three sectors (mechanical wood, electronics and programming/soft ware), in remote rural areas, best cases, qualitative study
INNOVATION
PRODUCT, PROCESS, WAY TO ACT

SMALL ENTERPRISE
• Combining resources
• Own resources
• Tacit knowledge

RURAL MILIEU
• Raw material, nature – based
• Other local resources
• Networks
• Local policy

NON-LOCAL RESOURCES
coming from over-local networks
The questioner

I Basic data of the firm: product, development, turnover, prospects, production technology, way to act
II The evaluation of the local milieu (less than 50 kms) by the firms
III Interaction and networks: social networks, trust, experiences of co-operation, the role of firm in the network, benefits of co-operations, the lack of co-operation
IV Innovation process: different type of renewals, development activities, resources, the effects of the innovation activities
V Technology policy
Innovations of SMEs by the size classes

- At least one remarkable innovation
- No remarkable innovation
- No innovation

Size

50 --

10 -- 49

5 -- 9

-4
Innovation activity of the SMEs in different area of business
Innovation activity of the SMEs outside growth areas in Finland in 2003 by the company size
Innovation profiles outside the growth areas

- Sparsely populated areas
- Rural hearthlands
- Rural adjacent areas
- Small towns
Conclusion: innovation activities of the SMEs - quantitative analysis

- Regional differences in the innovation activities are smaller than expected. ("proximity does not matter")
- The size of the firm and the education of the entrepreneur/manager matters.
- The SMEs have efforts to active renewal, but the resources are not equal. High tech firms have bigger inputs in innovation activities.
- Correlation between internationalization and the innovation activity.
B. Case studies: 3 sectors in rural areas

I Three sectors: raw-material based (mechanical wood), foot loose industry (soft ware), ”urban” sectors in rural areas (electronics)

II Searching of innovative rural firms: expert interviews, documents, literature

III Thematical interviews in firms: innovation process, interaction, rural environment.

IV Interpretation, analysis
Findings 1: The characteristics of the innovation process of rural firms

- Innovations are incremental product and process innovations.
- In innovation processes the demand is starting point.
- The clients and suppliers are the most important partners (in innovation network).
- The activity of firms and local actors is important.
- The rural areas are mostly home areas of entrepreneurs.
- The characteristics of innovation processes depend on the sector.
Findings 2: The local milieu and non-local networks

• Non-local networks are important.
• Local production systems in mechanical wood and electronics.
• In software local contacts are minor, more interaction inside the firm.
• The distance is a problem but not a threshold.
• The rural environment can also promote innovation (raw material, space for bigger buildings, labour pool)
Findings 3: The construction of innovation networks

A From urban areas to rural areas (electronics)
   – Local production system, vertical integration
   – Regional ICT-cluster, centre in Oulu,
   – Global network, rural firms in the end of the chain.

B From rural to urban  (mechanical wood)
   – Local network of suppliers, lead firm important
   – Networks between different rural areas
   – The innovation network is embedded in rural environment, but there is only little innovation activities (mature sector).

C Scattered model,  (soft ware)
   – The clients, suppliers and partners in Helsinki and other big cities in global scene.
   – "Silence and nature" as sources for innovation.
Findings 4: The role of rural locations in innovation network

1  Trickle down model
   Urban areas as innovation centres, rural areas as residuals (Electronics)

2  Regional specialisation, different sectors do have different innovation profiles (Mechanical wood)

3  Urban-rural continuity model (Software)
<table>
<thead>
<tr>
<th>Networking</th>
<th>Urban-rural system</th>
<th>Innovation model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vertical</td>
<td>Centre-periphery (electronics)</td>
<td>Urban innovations diffusion to rural areas</td>
</tr>
<tr>
<td></td>
<td>Urban-rural continuum (software)</td>
<td>Scattered firms</td>
</tr>
<tr>
<td></td>
<td>Dual (mechanical wood)</td>
<td>Sector specific</td>
</tr>
<tr>
<td>Horizontal</td>
<td>”Industrial district”</td>
<td>Endogenous/Regional</td>
</tr>
</tbody>
</table>
Conclusion: case study of 3 sectors

• Vertical integration the dominating model in Finland: the networks of the bigger firms and national clusters.
• Also small niches even in mature sectors and more independent firms.
• Different urban-rural systems and innovation models.
• Local trajectories can base in different assets, also human created assets.
• Combining the rural assets and networks
II Comparative Nordic studies

“Innovation System and the Periphery”

3 sectors: manufacturing, food processing and tourism in 5 countries.

Based in interviews.

Innovation defined from the perspective of each firm, i.e. it has to be new to the firm.

Findings: Many small scale and incremental innovations in the case study areas; no single innovation model, instead variety of innovation types.
<table>
<thead>
<tr>
<th>Study areas</th>
<th>Focus of cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ringkøbing and Viborg Counties: Denmark</td>
<td>Agri-food industry: Dairy- and brewing industry</td>
</tr>
<tr>
<td>Ringkøbing and Viborg Counties: Denmark</td>
<td>Tourism: Recreational services that focus on local culture or natural environment</td>
</tr>
<tr>
<td>Ringkøbing and Viborg Counties: Denmark</td>
<td>Manufacturing: Wood industry (furniture)</td>
</tr>
<tr>
<td>Central Ostrobothnia: Finland</td>
<td>Agri-food industry: Dairy industry, crop processing, etc.</td>
</tr>
<tr>
<td>Central Ostrobothnia: Finland</td>
<td>Tourism: Recreational services that focus on local culture or natural environment</td>
</tr>
<tr>
<td>Oulu South (Northern Ostrobothnia): Finland</td>
<td>Manufacturing: Electronics and wireless technology</td>
</tr>
<tr>
<td>Northwest region: Iceland</td>
<td>Agri-food industry: Milk production and the dairy industry</td>
</tr>
<tr>
<td>Northwest region: Iceland</td>
<td>Tourism: Recreational services that focus on local culture or natural environment</td>
</tr>
<tr>
<td>Lofoten: Norway</td>
<td>Agri-food industry: Dairy- and meat production</td>
</tr>
<tr>
<td>Lofoten: Norway</td>
<td>Tourism: Recreational services that focus on local culture or natural environment</td>
</tr>
<tr>
<td>Lofoten: Norway</td>
<td>Manufacturing: Production and maintenance of machinery and equipment for the fishing industry and the aquaculture industry and development and testing of technologies for fry production</td>
</tr>
<tr>
<td>Dalarna county: Sweden</td>
<td>Agri-food industry: Meat, crop processing and bread production</td>
</tr>
<tr>
<td>Dalarna county: Sweden</td>
<td>Tourism: Recreational services that focus on local culture or natural environment</td>
</tr>
<tr>
<td>Dalarna county: Sweden</td>
<td>Manufacturing: Wood and metal industry</td>
</tr>
</tbody>
</table>
III Action research in transferring the good practices

- Developing the methods of action research in transnational learning
  - Peripheral Localities and Innovation Policies (PLIP) – Optimizing conditions for innovation through transferring good practice, a Nordic project 2005-2006
  - New models for regional mobilisation in BotniaAtlantica regionen” project 1.10. 2008- Cross border co-operation (“Interreg”)
  - The analysis of good practices in local innovation and innovation policies
  - Transferability of good practices
  - To test the method of action research in local innovation policies
Good practice

- is a separate entity (unit, process, sector, network etc.)
- has something from which the other can learn.
- brings something new to the development of the locality.
- has some kind of formal structure.
- has measured or expected outcome which increases the regional learning capability.
Method: Learning history approach

- Based on grounded theory
- Codifying tacit practice through narratives
- Actors involved in the process will reflect upon the story
- Generating a thicker story of the process of good practice, its impacts and achievements.
- Dis-embedding = abstracted elements
- Re-embedding (from abstract to the concrete in a new context) through dialogue
The story

• A thicker story of the success and process of a good practice. Stories/narratives with plot or other themes
• The achievement of a good practice
• The impacts of a good practice
• Reflexive interviews of insiders and outsiders
• Outcome: Abstracted elements of the thicker story of good practice
“Transfer” of good practice

- Workshops with researchers and local actors
- Evaluation of good practice transferability in workshops
- Inputs from outsiders stimulate actors looking for problems to be solved. Destabilising is a pre-condition for learning
- What are the local actors doing? Does the story of good practice improve their own performance?
- Reports by the researchers
Good practice in the "Peripheral localities and innovation policies" project

• Competence building:
  – Innovative co-operation between Centria Ylivieska and the SME’s in Oulu South, Finland
  – The Skive Technical Institute -Innovation Centre competence-building activities for the furniture industry, Denmark

• Entrepreneurship and product innovation:
  – Emigration Centre at Hófsos in Northwest Iceland – innovation in culture-based tourism
  – Glomfjord – successful local-global networking, Norway

• Networking and co-ordination:
  – Collaboration in tourism industry in Lofoten, Norway
  – Small food producers’ network and the Knowledge Centre for Food Development (VIFU), Denmark
  – Networking and knowledge transfer between large and small firms – IUC Dalarna, Sweden

Embeddedness of good practices

• 7 good practices: initiatives from the regional level, but the activities have received national and EU resources.
• The national context was never very prominent but national characteristics could be seen, like user driven innovation in Den. and technology driven innovation in Fin., dual economy in Sweden, strong entrepreneurship in Icel, local identity and state resources in Norway.
Local development policy: support system, education, knowledge production or transferring

Innovation process x in locality y

Locality: economic structure local culture, type of locality

National Business system

Major economic sectors

National innovation policy

Entrepreneurship

Research framework
Innovation co-operation between Centria and the SMEs in Oulu South

- Centria is a R&D unit of a regional polytechnic (university of applied sciences)
- A development agency, bridge between SMEs and technological knowledge
- Supply the firms the development issues, technologies, new ways to act which they are not necessary asking (activation, mobilisation)
- Enhancing the skills of the relevant sector: proactivity concerning the sectors (electronics/ICT and woodworking)
- Intersectoral transfer inside the region: the models and practices developed in one sector are transferred to other sectors
The Good Circle of Innovation Co-operation between Centria and SMEs in Oulu South

- Other knowledge institutes
- University of Applied Sciences Ylivieska
  - Students
  - Teachers
  - Facilities
  - Laboratories
  - Knowledge

Innovation co-operation
- Education projects
- Applied research projects
- Development projects
- Services: testing etc.

SME:s in Oulu South
- Recognising innovation needs
- Development activities
- Skilled staff

Impacts in Oulu South
- More innovation co-operation
- Growth of firms
- New firms
- Jobs
- Innovation ability

- Graduated

Flow of people<br>

People → Equipment, prototypes etc.<br>

Information, knowledge → Multiply impacts
centria

- High trust between Centria and SMEs stemming from common aims and "history"
- Social and geographical proximity: closeness to the firms: easy to take contact to Centria receive knowledge of firms Linking Centria projects with the teaching: students and teachers are working in the projects
- "the good circle of education and business development": cumulativeness
  business is developed through centria and the firms are recruiting the students which then ask more innovation projects from Centria
"New models for regional mobilisation in BotniaAtlantica regionen” project 1.10. 2008-
• Region A has "development problems" or a willingness to learn from others’ experiences.
• Region B has good practice which might help the actors in region A to solve the problem.
• Researchers tasks:
  1. analysis of the problem
  2. analysis of good practice
  3. benchmarking seminars for local actors in region B
  4. reports of the results.
"Botnia-Atlantica" Institute of transnational learning in regional development (proposal)

- Develops the methods of action research in transnational learning
- Target areas: Botnia-Atlantica region (http://www.botnia-atlantica.eu/default.asp?lid=1), later on possible other regions in the EU, Asia and America.
- Analyses of good practices
Policy implication: good practice networks

• receiving group should match the group created the good practice.

• different methods could be supplementary tools to enhance the transfer.

• Bottom-up approach to indicator production

• More efforts to plan the receiving networks
The role of researchers

• identify and distil the story
• define suitable groups of institutions and people who might be tempted to apply the process for the creation of good practice
• the good practice is altering in the process
• Long term interactive learning processes based on tacit and codified knowledge passed back and forth between research and practitioners.
Learning history

- Discussing the stories
- Constructing the (new) stories

- New conceptual ideas
- Testing new ideas in practice

Dialogue

Field building

Linking explicit knowledge

Learning by doing
Learning history

- Screening for relevance
- Identifying contexts and preconditions

- Reflecting on alternative contexts
- Critical incidents and preconditions
- New abstract combinations

- Interviews
- Focus group meetings
- Story telling

- Testing new ideas in practice

Dialogue

Linking explicit knowledge

Field building

Learning by doing
Learning history

Dialogue
- Screening for relevance
- Identifying contexts and preconditions

Field building
- Interviews
- Focus group meetings
- Story telling

Linking explicit knowledge
- Reflecting on alternative contexts
- Critical incidents and preconditions
- New abstract combinations

Learning by doing
- Testing new ideas in practice
General background

- Need for analysis and for models in local development policy.
- Theories of organisational learning applied in regional/local development (Nonaka)
- Action research in local development:
  - The analysis of good practices in local development policies
  - Transfer of good practices