The importance of Agrarian Clusters and Chains in Rural Areas
- examples from Poland and Germany

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1. Introduction

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1. Introduction

Subject Areas and Questions

Linkages of Agricultural Production
  Question: To what extent are rural areas dominated by agricultural cluster structures based on intensive networks and integration in value chains?

Position in Competition
  Question: Which types of agricultural units - dependent on their characteristics and their form and intensity of integration into the cluster and value chains - have a better position in competition?
2. Theoretical Framework of the Study

Considerations about rural areas and agriculture (in economic advanced countries):

- Linkages in supra-regional/global value chains (input-output-relations, imbalance of power between participating actors) are becoming increasingly important.

- On the one hand this can lead to external dependency of agricultural production. (Today a lot of farmers are dominated by food processing industries and big retail chains; buyer driven chain)

- On the other hand rural areas can contain regional agricultural clusters (agricultural systems) in which the agricultural units possess competitive advantages and achieve bargaining power in the value chain according to intensive linkages (material and immaterial flows).
2. Theoretical Framework of the Study

Analysis - of cluster structures in the regional agrarian system and - of the form of integration in supra-regional value chains
3. Empirical analysis - Study Region

Indicators for the selection of the Study regions
- no direct proximity to agglomerations
- diversified (no mono-) structure of agricultural production
- diversified farm sizes (no domination of few large units)
- High employment share of agriculture

Characteristics of the study regions
- mixed production (e.g. crop, milk, canola, pork)
- average size of the farms (EE: 176 ha (individual farmers and companies, PY: 18 ha mostly individual farmers)
3. Empirical analysis - Method

Data base of the study:

- secondary statistics

- standardised questionnaire survey (N = 332 farms)

- expert interviews (N = 50; farmers, stakeholders, politicians, officers of institutions)
3. Empirical analysis - Linkages

Results of the spatial distribution of linkages to suppliers (e.g. seed, fertiliser, feed, machinery), customers (e.g. wholesaler, retail, production, consumer) and service providers (e.g. consulting, finance, insurance, handicraft)
3. Empirical analysis - Linkages

Results of the spatial distribution of linkages dependent on characteristics of the farms

- smaller units have a strong regional orientation and a limited number of contacts (“..doing their job because they are freelance and independent. They want to be on their own!”)

- younger businesses (less than five years old) have fewer local suppliers and buyers than the average and strong supra-regional service linkages (especially dependent on the use of new equipment and technology)

- larger units have many contacts and both strong local and supra-regional linkages

- in Germany the share of supra-regional buyer linkages is higher

- larger and older units have more intensive immaterial linkages with other economic stakeholders (including auxiliary fire brigade, farmers union, sports club) inside and outside the region, and practice different forms of co-operation (information exchange, projects)

A strong spatial cluster with material and immaterial linkages exists and is covering much more parts of the regional economy than only just agriculture
3. Empirical analysis - Competition

Statistical “cluster analysis” dependent on the farm characteristics

<table>
<thead>
<tr>
<th>Groups (No. of Farms)</th>
<th>1 (40)</th>
<th>2 (13)</th>
<th>3 (75)</th>
<th>4 (26)</th>
<th>5 (137)</th>
<th>6 (24)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Region</td>
<td>German</td>
<td>German</td>
<td>mostly German</td>
<td>mixed</td>
<td>mostly Polish</td>
<td>Polish</td>
</tr>
<tr>
<td>Sales Volume</td>
<td>high</td>
<td>high</td>
<td>low</td>
<td>high</td>
<td>low</td>
<td>low</td>
</tr>
<tr>
<td>Range</td>
<td>specialised</td>
<td>specialised</td>
<td>mostly specialised</td>
<td>specialised and mixed</td>
<td>mixed</td>
<td>specialised</td>
</tr>
<tr>
<td>Legal Form</td>
<td>mostly business partnerships and capital companies</td>
<td>mostly business partnerships and capital companies</td>
<td>individual enterprises</td>
<td>mostly individual enterprises</td>
<td>individual enterprises</td>
<td>individual enterprises</td>
</tr>
<tr>
<td>Age of the Business</td>
<td>mostly high</td>
<td>high</td>
<td>mostly low</td>
<td>low</td>
<td>mostly high</td>
<td>high</td>
</tr>
</tbody>
</table>

(Source: Own survey results 2004 and own calculations 2005; the variables were first dichotomised (value 1 = German; high; specialised; business partnerships and capital companies; high; value 0 = Polish; low; mixed; individual enterprise; low). Subsequently, the businesses were categorised into groups (cluster) of similar characteristics by a cluster centre analyse with SPSS (Bahrenberg et al. 1992 p. 278ff and Popeschill 2002 p. 134ff).
3. Empirical analysis - Competition

Indicators of competitiveness in %

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<tr>
<th>Group (no of farms)</th>
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<th>5 (137)</th>
<th>6 (24)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good or very good access to business relevant information</td>
<td>63</td>
<td>62</td>
<td>37</td>
<td>69</td>
<td>51</td>
<td>25</td>
</tr>
<tr>
<td>good bargaining power to suppliers</td>
<td>62</td>
<td>67</td>
<td>51</td>
<td>88</td>
<td>37</td>
<td>29</td>
</tr>
<tr>
<td>good bargaining power to buyers</td>
<td>59</td>
<td>58</td>
<td>53</td>
<td>75</td>
<td>38</td>
<td>25</td>
</tr>
</tbody>
</table>
### 3. Empirical analysis - Competition

#### Indicators of networking in %

<table>
<thead>
<tr>
<th>Group (no) of farms</th>
<th>1 (40)</th>
<th>2 (13)</th>
<th>3 (75)</th>
<th>4 (26)</th>
<th>5 (137)</th>
<th>6 (24)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intensive immaterial cooperation with suppliers</td>
<td>53</td>
<td>46</td>
<td>23</td>
<td>58</td>
<td>49</td>
<td>29</td>
</tr>
<tr>
<td>Intensive immaterial cooperation with buyers</td>
<td>55</td>
<td>46</td>
<td>28</td>
<td>65</td>
<td>33</td>
<td>25</td>
</tr>
<tr>
<td>Intensive use of private advisory</td>
<td>78</td>
<td>85</td>
<td>57</td>
<td>54</td>
<td>48</td>
<td>25</td>
</tr>
<tr>
<td>Mostly local suppliers</td>
<td>61</td>
<td>31</td>
<td>65</td>
<td>38</td>
<td>70</td>
<td>58</td>
</tr>
<tr>
<td>Mostly local buyers</td>
<td>38</td>
<td>15</td>
<td>63</td>
<td>35</td>
<td>66</td>
<td>79</td>
</tr>
<tr>
<td>Intensive immaterial cooperation with other farmers</td>
<td>43</td>
<td>62</td>
<td>23</td>
<td>54</td>
<td>23</td>
<td>25</td>
</tr>
</tbody>
</table>
4. Conclusion

- Rural areas posses a regional agrarian cluster which covers much more activities than agriculture (important for spatial economic policy)

- The cluster is based on material connections, immaterial co-operations, information transfer and also social capital (like auxiliary fire brigade) is of great importance

- The different types of agricultural units show different forms and levels of integration in the cluster. These differences are important for their position in competition

- The best position in competition have farms which are embedded in the local cluster in connection with integration in supra-regional networks (material and immaterial)