Rural Implications of Innovations in the Agri-food Sector

Presented at
Workshop of the Regional Group, Canada Agriculture Innovation Research Network, APRN
and
Rural Secretariat

by

M. Rose Olfert
University of Saskatchewan

Ottawa, Ontario
January 25th

Overview

• Agriculture Innovations along the supply chain—research and innovation at different levels have different impacts on rural
• Research and innovation policy with a people-based (place-based?) vs. sector-based focus
Agricultural Innovations

• Research-generated Innovations in the agri-food sector may be in:
  – primary production
  – first stage processing
  – manufacturing production
  – final demand (incl. services).

• Innovations in primary agriculture have strong implications for rural areas since primary production is located primarily in rural areas.

[Bar chart showing Canada Farm Population (000’s) from 1931 to 2001]
Canada's census urban population reached 80% of the total population in 2001

*The “farm population” refers to all members of a household with a census-farm operator present. The data for 2006 have not yet been published.
The census urban definition has changed over time but generally has referred to the population in settlements of 1,000 or more.

Courtesy of Ray Bollman, Statistics Canada
Implications

• Major innovations in primary have substituted capital for labour
• Farm population declining precipitously
• Ag Sector policy requires a continuation of the trend to maintain international competitiveness
• Current high farm output prices will accelerate consolidation
• Non-farm rural a constant proportion, about 20%--holding its own relative to urbanization

Courtesy of Ray Bollman, Statistics Canada
The Ag Processing Sector

- Manufacturing includes several stages
- Hog barns, poultry farms, feedlots in the primary sector—enormous economies of size
- Slaughter plants, milling, oil crushing plants and ethanol plants, canneries, wineries, etc., also capital intensive, economies of size
  - locally significant
- Also sausage makers, cheese making, ice cream production, candies, bakeries, etc.—the more labour intensive (consumer oriented), the more likely to locate in or near urban?

Employment in Predominantly Rural Regions, 2001

<table>
<thead>
<tr>
<th></th>
<th>No. Employed (millions)</th>
<th>% of Total Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Industries</td>
<td>4.517</td>
<td>100.0</td>
</tr>
<tr>
<td>Agriculture</td>
<td>.290</td>
<td>6.0</td>
</tr>
<tr>
<td>Processing, input supply, grain storage</td>
<td>.070</td>
<td>1.5</td>
</tr>
<tr>
<td>Agriculture Plus</td>
<td>.360</td>
<td>7.5</td>
</tr>
<tr>
<td>Other Agri-food</td>
<td>.478</td>
<td>10.6</td>
</tr>
<tr>
<td>Agriculture and Agri-food</td>
<td>.838</td>
<td>18.6</td>
</tr>
</tbody>
</table>

Predominantly rural = regions where more than 50% of pop live in a rural community (pop. Density <150/km²)
Agriculture = primary and services incidental to ag.
Other Agri-food = wholesale and retail of ag and food, plus empl. In the food and beverage industries

Source: Rural and Small Town Bulletin Vol. 4, No. 8, plus Ray Bollman
## Employment by Sector

<table>
<thead>
<tr>
<th></th>
<th>Urban Regions</th>
<th>Intermed. Regions</th>
<th>Rural Regions</th>
<th>All Regions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Agriculture</td>
<td>13</td>
<td>16</td>
<td>71</td>
<td>100</td>
</tr>
<tr>
<td>All Agri-Food</td>
<td>50</td>
<td>20</td>
<td>30</td>
<td>100</td>
</tr>
<tr>
<td>NON-AGR. Sectors</td>
<td>53</td>
<td>20</td>
<td>28</td>
<td>100</td>
</tr>
<tr>
<td>Total, All Sectors</td>
<td>51</td>
<td>20</td>
<td>29</td>
<td>100</td>
</tr>
</tbody>
</table>

Statistics Canada, Census of Population, assistance from Ray Bollman

## Employment by Region

<table>
<thead>
<tr>
<th></th>
<th>Urban Regions</th>
<th>Intermed. Regions</th>
<th>Rural Regions</th>
<th>All Regions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Agriculture</td>
<td>1</td>
<td>2</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>All Agri-Food</td>
<td>11</td>
<td>12</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>NON-AGR. Sectors</td>
<td>88</td>
<td>86</td>
<td>81</td>
<td>85</td>
</tr>
<tr>
<td>Total, All Sectors</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Statistics Canada, Census of Population, assistance from Ray Bollman
Innovations for the Rural Economy

• In the research and innovation agenda, what would be of value to rural areas?
• “people” and “rural location” are important
• “innovation” needs to be broadly defined to include institutional, infrastructure, communication innovations
• Build on strengths
  – Rural-urban linkages
  – Selected manufacturing
  – Natural amenities
Consider Four Types of Rural and the Required Innovations

- Rural Residence-Urban Employment
- Manufacturing in Rural Space
- High amenity rural areas
- Primary production dependence
Rural residence-urban employment

- Quality of Life and natural amenities may be a strength of rural areas
- Enhancing this ‘niche’ for rural areas requires high quality services, state of the art transportation, communication, facilitated access to urban, governance arrangements that reflect the inter-dependency
- Innovations required are institutional, organizational and governance innovations

Manufacturing in Rural Space

- Low cost land (maybe labour) can be an advantage
- Access to markets is still essential, access to urban amenities and services
- Still need attractive local living conditions for the labour force and population
- Innovations in land use institutions, governance, linkages to markets, inputs, labour force.
- Research and innovation in the production that occurs in rural space—goods and services
Amenity Areas

• Real potential as recreation areas—remember the urban population is the market.
• Innovations in marketing, communication and transportation will be necessary
• Innovations in defining recreation opportunities and particularly the ‘bundling’ that can make them tourist destinations.
• Communication skills, world class hospitality, success in a highly competitive industry

Primary Production Dependence

• Limited Input-oriented manufacturing
• Sparse populations require innovative ways of providing health and education services—the old models do not apply
• Efficient and reliable transportation will still be essential—novel solutions for both bulk and niche market (container) products.
• Communication innovations essential for quality of life and for business reasons
Research and Innovation for Rural Communities

• Population retention/expansion is key
• Labour intensive, not capital intensive economic activity is desirable
• Reduced transportation and communication costs may reduce the “price” of distance
• Governance issues will be key—rural jurisdictions cooperating to achieve threshold size, and rural-urban cooperation to reflect functional dependence and benefit from urban-based agglomeration economies