The Small Farms Industry Clusters (SFIC) Project

Funded by the
USDA/CSREES National Research Initiative,
Small Farms and Rural Community Vitality Initiative,
Grant No. 05-55618-15744 and supported by
The Northeastern Regional Center for Rural Development
Located at The Pennsylvania State University
A partnership among:

Cornell University, Small Farms Program
University of Maine
University of Maryland Eastern Shore
University of Massachusetts
Community and Rural Development Institute (CaRDI, Cornell)
The Pennsylvania State University
West Virginia University and
The Northeast Regional Center for Rural Development
About the project

3 Years: 2005-2008

6 States, and growing

$320,000

5 Disciplines

3 Functions: research, extension, teaching
This project examines how “clusters” of small farms achieve agricultural economic development and environmental management objectives. It identifies how clusters support long-term farm viability and community sustainability. It engages farmers and development professionals in research and outreach. It uses powerful computer algorithms to analyze and understand social networks.
Clusters are concentrations of firms or businesses that:

- are located in relatively close proximity
- compete with each other in similar markets
- cooperate to enhance technical skills and market access
- support, through social networks, growth and development of individual businesses
Clusters are concentrations of firms or businesses that:

- share common inputs such as labor with specific skills
- recruit support industries based upon the local concentration of firms
- benefit mutually from new, location-specific knowledge generation and
- work together to respond to new demands, such as environmental goals
General research questions

- How and why do clusters form?
- What are minimal ingredients (how do we know we have one)?
- What are their benefits, their costs?
- How can clusters be nurtured for further growth?
We examine and compare clusters formed around:

1. *traditional commodities*
   dairy, wines, mushrooms

2. *agricultural practices or philosophies*
   organic vs. non-organic

3. *social or ethnic networks*
   Hmong, female, disadvantaged

The Small Farms Industry Clusters Project, 2005
Clusters provide an ideal organizational framework for analyzing all of the factors impacting an industry:

- **Economic:**
  - profits, transactions costs, marketing

- **Social:**
  - formal and informal networking

- **Environmental:**
  - impacts of farming practices on the environment and impacts of environmental regulations on farming

- **Biological:**
  - philosophical basis underlying farm management practices
About Clusters

- The importance of clusters suggests new roles for government at [all] levels ... removing obstacles to the growth and upgrading of existing and emerging clusters takes on a priority.
- All clusters can be desirable, and all offer the potential to contribute to prosperity.

*Benefits are internal to the cluster, not the individual firm.*

Michael Porter (2000, pp. 15, 16 and 27).
This project is multi-disciplinary, multi-functional and multi-state

**Disciplines involved:**
- Horticulture
- Animal Science
- Plant and Soil Science
- Rural Sociology
- Agricultural Economics

**Functions involved:**
- Research
- Outreach
- Teaching

**States and clusters involved (Sept. 2005):**
- North Country DVI
- Fingerlakes Wineries
- PA Dairy
- Tuscarora Growers
- NY certified Organic
- Chester mushroom
- Hmong farmers
- Hispanic farmers
- Eastern Shore Organic farmers (3 Maples)
- WAN (PA)
- WV organics
- tbd (ME)
- WV organics
- WAN (PA)
- Eastern Shore Organic farmers (3 Maples)
- Hmong farmers
- Tuscarora Growers
- North Country DVI
- Fingerlakes Wineries
- NY certified Organic
- Chester mushroom
- Hmong farmers
- Hispanic farmers
- Eastern Shore Organic farmers (3 Maples)
- tbd (ME)
- WV organics

The Small Farms Industry Clusters Project, 2005
### Overview of groups studied (selected)

<table>
<thead>
<tr>
<th>Name</th>
<th>St.</th>
<th>Type</th>
<th>Comp.</th>
<th>#farms</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Country DVI</td>
<td>NY</td>
<td>dairy</td>
<td>F,8 PU</td>
<td>40</td>
</tr>
<tr>
<td>Pennsylvania Dairy</td>
<td>PA</td>
<td>dairy</td>
<td>F,PU</td>
<td>100</td>
</tr>
<tr>
<td>Chester Mushroom</td>
<td>PA</td>
<td>mushr.</td>
<td>IS,F,CM</td>
<td>125</td>
</tr>
<tr>
<td>Finger Lakes Win.</td>
<td>NY</td>
<td>wine</td>
<td>F,70Win</td>
<td>75</td>
</tr>
<tr>
<td>Tuscarora growers</td>
<td>PA</td>
<td>organic</td>
<td>F,DM</td>
<td>472</td>
</tr>
<tr>
<td>NY Certified Organ.</td>
<td>NY</td>
<td>organic</td>
<td>PU,F,C/DM</td>
<td>20</td>
</tr>
<tr>
<td>3-Maples, ES</td>
<td>MD</td>
<td>organic</td>
<td>F,DM</td>
<td>52</td>
</tr>
<tr>
<td>Hmong farmers</td>
<td>MA</td>
<td>ethnic</td>
<td>F,CM,DM</td>
<td>25</td>
</tr>
<tr>
<td>Hisp. new farmer</td>
<td>NY</td>
<td>ethnic</td>
<td>F,DM</td>
<td>10</td>
</tr>
<tr>
<td>Women’s ag ntwrk</td>
<td>PA</td>
<td>female</td>
<td>F,DM</td>
<td>35</td>
</tr>
</tbody>
</table>

Key: F=farmers, IS=input suppliers, CM=commercial, DM=direct markets, PU=proc.unit
Understanding and harnessing the power of social networks

- Who talks with whom? How often?
- Who are the opinion leaders?
- Who are the between-cluster “brokers”?
- What does this mean for more effective delivery of extension materials?
- Do farmers sit back at Extension meetings or are they active participants?
- Degrees, betweenness, closeness (SNA)
Examples of clusters and cluster relationships

Additional cluster profiles are being prepared by team members
The Mushroom Cluster in Chester County, PA

Penn State University, Ag. Experiment Station/Cooperative Extension

*J.B. Spawn Co.*
*Mushroom Supply Co.*
*L.F. Lambert Spawn Co.*

**Land:** gentle, rolling hills (important for houses)

**Water:** adequate ground supply

**Labor** (Society of Friends/Quakers): Experienced growing roses, carnations

Horse manure, straw, other compost materials

*Knowledge creation and transfer (yield increases)*

**Mushroom Growers**

PA’s Food & Agriculture Cluster

PA State/Local Government Agencies

**Transportation:**
Interstate highway, rail; proximity to major cities

Mushroom brokers, transporters, packers, sellers

Basic data are from Harris (2004)
California’s Wine Cluster (based on Porter 2000, p.17)
Industry Clusters for Small Farms, NRI proposal

W. Whitmer: outreach/education and cluster strategic planning
T. Gabe: cluster benefits, training
D. Smith: clusters, dairy
J. Tomlinson: workforce dev., dairy
M. Simsic: New York City cluster

Economic
Farm profits
Scale
Efficiency
T. Kelsey
D. Smith

Social
Networking
Social capital
Leadership
F. Mangan
M. Moreira
W. Whitmer
L. Jones

Environmental
Run-off
Pollution
Regulations
K. Brasier
A. Rangarajan

Biological
Field Mgmt.
Organic
F. Mangan

Rural Community Viability

Processing and delivery channels
S. Goetz

D. Kuennen
E. Mattox

(Name of co-PI or collaborator with primary responsibility shown in italics)
Clusters of small farms

Primary project contact/liaison

Project Associate(s)

Faculty contacts (subject matter)

Office support and overall project management

The Northeastern Regional Center for Rural Development

The Small Farms Industry Clusters Project, 2005
This project addresses all four *Priority Areas* of the USDA Small Farms/Rural Vitality RFA

(a) Environmental management and biological field practices can readily be compared across different clusters

(b) “Value chains” are essential cluster elements; we study interactions affecting high return production, processing and delivery channels
This project addresses all four **Priority Areas** of the USDA Small Farms/Rural Vitality RFA

(c) Clusters are a natural organizing framework for studying interactions among economic, social, environmental and biological forces related to small farms and rural communities.

(d) Drawing on a close working relationship with cluster members, we solicit ideas about emerging threats and opportunities for small to medium sized farms.
Data collected

- The social benefits, challenges of participating
- Resources the cluster provides
- The differing abilities, contributions and values of other members
- Changes in behavior or attitudes as a result of participating in the cluster
- How to grow and enhance clusters
- Meaning of leadership in a cluster context
- Social or cultural norms that limit or enhance cluster development

*Continued on next page*
Data collected

- The formal & informal interactions among members
- The economic benefits of participating
- Opportunities for sharing and learning w/i cluster
- Impact of cluster on the local community
- Farm profitability (revenues, expenditures)
- Meaning of farm sustainability, including lifestyle, community, family considerations and profits
- Farm management practices related to environmental concerns
- Marketing practices used
In a flat world, branding and regional identity are keys to (farm) prosperity.

Clusters are essential to creating a regional/brand identity.
The Opportunity

- Move from producing basic commodities to providing sophisticated consumers with lasting experiences: clusters are key for creating regional brand identities.
- From wine-tasting to hosting heritage trails organized around vineyards.
- mummnapa.com
Changing Times

1960s and 1970s: Making things cheaper
- mass production (Taylorism)
- division of labor, advantage based on cost

1980s and 1990s: Making things better
- Quality and speed key, automation
- TQM, JIT, flexible specialization

2000s: Making better things
- aesthetics, authenticity
- design, innovation, uniqueness

Source: Stuart Rosenfeld, RTS
To whom do you want to sell?

Estimated share of grocery market (%)

<table>
<thead>
<tr>
<th>Year</th>
<th>Kroger</th>
<th>Giant</th>
<th>Walmart</th>
<th>Whole Foods</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>83.2</td>
<td>16.2</td>
<td>2.53</td>
<td>1.0</td>
</tr>
<tr>
<td>2003</td>
<td>81.5</td>
<td></td>
<td>18.0</td>
<td>3.59</td>
</tr>
<tr>
<td>2004</td>
<td>79.9</td>
<td></td>
<td>19.4</td>
<td>4.69</td>
</tr>
</tbody>
</table>

Basic data: Retail Forward
Summary of research questions

- How agricultural clusters form and function
- How participation in a cluster affects farm management practices, environmental impacts, profitability and access to markets
- Whether clusters help small farmers innovate and adapt more quickly
- Whether cluster analysis can help strengthen the way these groups form and compete/collaborate
- What new research and extension needs (and opportunities) exist for a cluster as opposed to an individual grower
- Commonalities and differences among clusters based on commodity, ethnicity, agricultural philosophy, and how they affect management of production, environment and marketing of crops or products
An Invitation

Please contact us if you are interested in partnering on this project…
Stephan J. Goetz, Project Director
<sgoetz@psu.edu>

www.nercrd.cas.psu.edu
H:\ Clusters raise the profitability (sustainability) of groups of small- to medium-sized farmers beyond levels that individual farmers can achieve operating on their own.

Sub-Hypotheses:

1. Clusters with greater density among, and less distance between, members are more effective.

2. Cluster benefits are greater: for small farmers, and for farms organized around ethnic groups and agricultural philosophies rather than commodities.

3. Clusters organized around agricultural philosophies, social networks or ethnic groups have different environmental practices than do those organized around primary commodities.
Sub-Hypotheses (cont.):

4. Clusters organized around agricultural philosophies, social networks or ethnic groups have different market access channels than clusters organized around primary commodities. *For example*, Hmong farmers in Massachusetts.

5. Every cluster has a champion(s), who holds together the soft network infrastructure needed to make the cluster work.

6. Clusters become more effective as they get older, become institutionalized and socially accepted in the region, and as they create a regional or brand identity.