Conducting Needs Assessments for Crop Improvement

University of Agriculture, Faisalabad, June, 2011
1. Existing Data Approach
2. Survey Approach
3. Key Informant Approach
4. Community Forum
5. Focus Group Interview
• Already existing statistical data is used to obtain insights about the well-being of people

• A large volume of community-related data is routinely collected by various government agencies and community groups

• Analyzing this data can be useful in identifying community problems and needs

http://www.extension.iastate.edu/communities/tools/assess/
Existing Data Approach

**Advantages**
- Makes use of already existing data
- Can be done relatively quickly
- Easy to chart changes over time

**Disadvantages**
- Indicators are often indirect
- Available information may be old
- Does not consider people’s perceptions of needs

http://www.extension.iastate.edu/communities/tools/assess/
• Percent of people below the poverty level in the US

Data Classes
- Percent
  - 0.0 - 11.7
  - 11.8 - 17.6
  - 17.7 - 25.4
  - 25.5 - 40.6
  - 41.2 - 65.7

Statistical Significance
- Selected Geography
- Not Different

Features
- Major Road
- Street
- Stream/Waterbody

Items in gray text are not visible at this zoom level.
• Percent of people below the poverty level **in WA state**
Median age of total population
US Census Bureau – Foreign Born

- Percent of people that are foreign born

Data Classes
- Percent
  - 1.7 - 3.4
  - 4.3 - 5.3
  - 5.8 - 6.8
  - 8.6 - 14.7
  - 16.8 - 25.4

Features
- Major Road
- Street
- Stream/Waterbody
- Stream/Waterbody

Items in gray text are not visible at this zoom level.

Approx. 555 miles across.
• WSU Extension has two strong programs that focus on immigrant farmers
  – Asia (Hmong farmers)
  – Mexico (Hispanic farmers)
US Census Bureau – Asian Immigrants

- Percent of people born in Asia
• From 1975-1996, the US resettled about 130,000 Hmong from Thailand
• About 1200 Hmong farmers live in WA State
WSU Extension plays a role in helping Hmong Farmers find land and exploit farmers markets.
Neng Vang, a Hmong farmer, arranges a bouquet of flowers. *Celeste Gracy/Renton Reporter*
• Disaster (Flood water) assistance
• Tractor repair
• WSU extension coordinates volunteers to help Hmong farmers in need

See Ye, Chadoua Lor and Koua Yang watch as volunteer Grant Gibbs tries to start Lor's once-submerged tractor earlier this month in Carnation. Gibbs and another volunteer offered their time and knowledge to help Hmong farmers whose equipment and crops were damaged by floodwaters
Examples – US Census Bureau

• Percent of people born in Mexico

Data Classes
Percent
- 0.0 - 10.7
- 11.9 - 22.2
- 34.6 - 41.8
- 44.9 - 53.7
- 69.3 - 95.8

Statistical Significance
Selected Geography
Not Different

Features
- Major Road
- Street
- Stream/Waterbody

Items in gray text are not visible at this zoom level

Approx. 555 miles across.
Manuel Herrera, apple grower, of Wapato, WA. Manuel recently leased these apple trees from another grower. They had been neglected for some years, Herrera is working to restore the orchard.

Sergio Marquez, apple grower, of Wapato, WA
• Rosalio Moreno, cherry grower, of Zillah, WA. Moreno, who speaks very little English, moved to Zillah three years ago from California to start an orchard. He bought some land and is producing Bing, Rainier, and Sweetheart cherries.
WSU Extension Small Farms Team

1. Extension Courses on Business and Farm Management
   - Business Planning Curriculum (Spanish)
   - Whole Farm Plan Template
   - Whole Farm Planning Curriculum

2. Weekly one-hour radio broadcast in Spanish
   - Topics include accessing operating capital, alternative marketing strategies, business planning, soil and pest management and keeping records
3. Farm Walks
   - Promote hands-on learning and information exchange among farmers

4. Forums with state lawmakers and state and federal agency officials to discuss drought mitigation strategies and resources

5. Spanish language hotline
   - Sessions on completing loan programs
   - Accessing federal programs
   - Support for farmer led organizations
Advantages
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Questions?
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• Identifies community leaders and decision makers who are knowledgeable about the community and can accurately identify priority needs and concerns

Mark Schoessler, Washington State Senator

Stephen Jones, WSU Wheat Breeder
• An example
Key Informant Approach
• Through our key informants, we learned that the major, long-term problem facing agriculture in our region is soil erosion

• Different approaches need to be taken to address this problem

http://www.extension.iastate.edu/communities/tools/assess/
• How do we find out which approaches we should take to solve the problem of soil erosion in our region?

• Survey Approach
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• We surveyed over 1000 wheat farmers in Washington State for possible solutions to soil erosion

• 2 major responses
  1. No-till wheat production
  2. Perennial wheat development
• No-till wheat is marketed very successfully through ‘Sheppard's Grain’ and ‘The Food Alliance’ as a Value Added Product
FEATURED FARMER
Our growers are dedicated to producing the finest quality grains in an sustainable fashion. These are the people that grow the food that you enjoy... All the growers at Shepherd's Grain thank you.

• Web-site
• Farmers talking directly with bakers and millers
• www.shepherdsgrain.com
Farmer Spotlight
But no-till is not for everyone.
What is another option for erosion control?
Perennial Wheat
Perennial crop more than 50 x more effective than annual crops in maintaining topsoil (Gantzer et al. 1990)
## Growers’ interest (%) in planting perennial wheat

<table>
<thead>
<tr>
<th>Perennial wheat characteristics</th>
<th>Very interested</th>
<th>Somewhat interested</th>
<th>Somewhat uninterested</th>
<th>Very uninterested</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mixes well with annual wheat, using the same equipment</td>
<td>52.3</td>
<td>33.2</td>
<td>8.6</td>
<td>5.9</td>
</tr>
<tr>
<td>Meets minimum yield requirement</td>
<td>48.8</td>
<td>35.4</td>
<td>8.6</td>
<td>7.2</td>
</tr>
<tr>
<td>Grows well in highly erodible areas</td>
<td>48.3</td>
<td>35.0</td>
<td>9.6</td>
<td>7.1</td>
</tr>
<tr>
<td>Works well under specific conservation programs or regulations</td>
<td>35.8</td>
<td>45.7</td>
<td>11.7</td>
<td>6.7</td>
</tr>
<tr>
<td>Suited for currently unproductive parts of fields</td>
<td>35.5</td>
<td>33.9</td>
<td>20.3</td>
<td>10.4</td>
</tr>
</tbody>
</table>
Wide hybridization

- Annual crops supply genes for domestication and high yield
- Perennial relatives supply genes for regrowth and disease resistance

$Th. \ elongatum$ (2n=2X=14) $\times$ $T. \ aestivum$ (2n=6X=42) ‘Madsen’
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• A public meeting is held during which time the participants discuss what some of the needs facing the community are, prioritize these needs, and decide what can be done about these needs

• All members of the community are encouraged to attend and participate

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This is a map of annual precipitation averaged over the period 1961-1990. Station observations were collected from the NOAA Cooperative and USDA-NRCS ScaTel networks, plus other state and local networks. The PRISM modeling system was used to create the gridded estimates from which this map was made. The size of each grid pixel is approximately 4x4 km. Support was provided by the NRCS Water and Climate Center.

Legend (in inches):
- Under 10
- 10 to 20
- 20 to 30
- 30 to 40
- 40 to 60
- Above 60
- 60 to 80
- 80 to 100
- 100 to 140
- 140 to 180

For information on the PRISM modeling system, visit the SCAS website at http://www.scas.orst.edu/prism.

The latest PRISM digital data sets created by the SCAS can be obtained from the Climate Source at http://www.climatesource.com

Copyright 2000 by Spatial Climate Analysis Service, Oregon State University
To address concerns of growers in Western Washington, we held several community forums and farmer roundtables. We learned that farmers in Western Washington lost money on wheat each year they grew it and needed an alternative marketing strategy.
• Farmer-led research
• Wheat with **high yield** and **high micronutrient concentration**
1 ton per week local flour

20 tons per week
• Resulted in the development of linkages between farmers, millers, bakers and consumers

• Farmers in Western Washington now have the option to market their wheat locally as a value-added product
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A group of people selected for their particular skills, experience, views or position are asked a series of questions about a topic to gather their opinions. Group interaction is used to obtain detailed information about a particular issue.

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Dryland Grain Project – Growing Staple Foods without Irrigation
Increase Grain Crop Diversity
• Nutritional value
• Salt tolerance
• Drought tolerance
• Grows well in low fertility soils with a wide pH range
• Broadly adapted
• Gluten-free grain
• Farmer to farmer cross-continental linkages
• Northwest US – Central/Southern Chile and Argentina

Shuttle Breeding

Exchange of seeds

http://www.ovallito.cl/node/2390
Gluten-free products
Whole grain quinoa bread
Cereals / Grain mixtures
Greens
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