Keeping the organic system learning: The role of organic farmers’ experiments

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Please be aware that this only a short version of the oral paper given. The original paper includes aspects that will be only published in the conference proceedings later.
Farmers` experiments

- Farmers’ experiments (FE) build up local knowledge (Sumberg and Okali, 1997)
- Importance of local knowledge for sustainable development (IAASTD, 2009)
- Development of farming systems due to continuous experimentation of farmers (Hoffmann et al., 2007)
- Strategies to adapt farms to changing conditions (Bentley, 2006)
- Lack of advice and research in pioneer phase of organic farming: culture of experimentation (Padel, 2001; Gerber et al., 1996)
- Most research in development context (e.g. Chambers et al., 1989; Van Veldhuizen et al., 1997; Reij & Waters-Bayer, 2001)
Definition – Farmers Experiments

- Trying or introducing something new at the farm, including evaluation (Quiroz, 1999).
- Evaluating, developing or modifying something at farm level (e.g. Pretty 1991)
- Comparing something known to something unknown (Stolzenbach, 1999).
- “Key process in the history of farming”
Creating local knowledge

- Austria, Cuba, Israel, 3 years research project, PhD and MSc theses, ~ 300 Interviews with organic farmers & stakeholders;
  - How is new knowledge generated?
  - On which topics?
  - Sources of ideas?
  - By which methods?
  - Including planning, monitoring, evaluation?
  - Outcomes?
  - Knowledge sharing?
Topics of FE in Austria

- Cropping, soil & weed & pest & fertilizer management;
- Animal husbandry & feeding;
- Commercialization;
- tools, machinery, construction, labor management;
- social issues such as organization, cooperation and trust building.

Frequency of topics for farmers’ experiments in Austria according to thematic clusters (134 experiments discussed in SEM-I and STR-Q interviews, n=123)
Methods of farmers’ experiments
Austria

- Planning: 69% have explicit plan (13% written, 56% mental plan)

- 63% set up experiments on small scale

- Kinds of monitoring:
  - observations (88%)
  - comparisons (82%)
  - measurements (13%)

Frequency of comparison strategies (STR-Q; n=76, 8 non-experimenters, Austria 68=100%; multiple answers possible)

<table>
<thead>
<tr>
<th>Comparisons</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>With own experiences</td>
<td>79%</td>
</tr>
<tr>
<td>With other farmers</td>
<td>64%</td>
</tr>
<tr>
<td>With other unit on the farm</td>
<td>27%</td>
</tr>
<tr>
<td>With results from literature</td>
<td>23%</td>
</tr>
<tr>
<td>With information of advisors</td>
<td>11%</td>
</tr>
</tbody>
</table>
Cuba

- “experimenting” & “inventing” or “trying” frequently used terms;
- Response to economic crisis;
- Competition;
- Awards.
“Every farmer lives experimenting.”

MedNar
“There is the red radish and the white radish and we were searching for the best variety for this soil.” JosPer
Motives

Motives: fun > urgent need;

- Increasing productivity: 26%
- Independency from external resources: 24%
- Improving farm management: 24%
- Satisfying curiosity: 21%
- Increasing self-sufficiency with food products: 15%
- Proving the feasibility: 15%
- Saving production costs: 15%
- Personal interest in the topic: 14%
- Improving working conditions: 14%
- Improving plant protection: 14%
- Increasing income: 14%
- Active promotion of the experiment: 13%
- Responding to environmental changes: 11%
- Having fun: 10%
- Enhancing farm diversification: 10%
- Environmental concern: 8%
- Using available resources: 7%
- Improving animal health: 7%
- Improving the taste of products: 6%
- Health reasons: 3%

Frequency of motives for farmers' experiments
(n=72; 100% = the total of all answers given by the respondents; multiple answers possible)
Farmers’ methods - scale

<table>
<thead>
<tr>
<th>Small scale</th>
<th>Large scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>90%</td>
<td>10%</td>
</tr>
<tr>
<td>Minimizing risks</td>
<td>Convinced of success</td>
</tr>
<tr>
<td>Gathering experience</td>
<td>Low risk estimated</td>
</tr>
</tbody>
</table>

“When I get a new seed, I sow it on a small plot to observe it.” PabTor
## Farmers’ methods – observations

<table>
<thead>
<tr>
<th>Process observation</th>
<th>Systemic observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessing the experiments’ performance</td>
<td>89%</td>
</tr>
<tr>
<td>Gathering experiences</td>
<td>11%</td>
</tr>
<tr>
<td>Specific parameters under review</td>
<td>Regular assessment</td>
</tr>
</tbody>
</table>

“That’s day by day. As you have it so close, you observe it, you watch it, you look at it day by day.” LasPim
Farmers’ methods – observation

Comparison

60%

On the own farm

With another farmer

“You sow different varieties and then you compare it to your traditional one.”

LasPim
Farmers’ methods – documentation

- Memory
  - 74%
    - Simple experiments
    - too much effort

- Written notes
  - 26%
    - Complex experiments
    - Measuring specific parameters

“*I have some notes, but I do not have statistics. I am bad in writing things down but I have it in mind, more or less.*”

PabTor
Outcomes

- Improved productivity: 35%
- Increased self sufficiency: 29%
- Enhanced working efficiency: 25%
- Improved plant health: 25%
- Economic benefits: 21%
- Work easment: 21%
- Improved sustainability: 19%
- More knowledge and experience: 19%
- Enhanced resource efficiency: 18%
- Better taste and culinary diversity: 18%
- Easy to use: 13%
- Social reputation: 13%
- Quality improvement of farm products: 11%
- Improved animal health: 10%
- Enhanced soil fertility: 7%
- Improved personal health: 7%
- More work safety: 4%
- Independency from climatic conditions: 4%
- Better seed conservation: 3%
- Multiple use: 3%
- Personal satisfaction: 1%
- More quality of life: 1%
- Improvement of farm management: 1%
- Stability of yield: 1%
- Economic benefits: 3%

Frequency of mention of outcomes (n=72; 100%=the total of all answers given by the respondents; multiple answers possible)
Related publications

- KUMMER, S., F. LEITGEB & C. R. VOGL (under review): Farmers’ own research: The example of organic farmers’ experiments in Austria.