COST Action 869

New Approaches to communicate with Farmers:

Enhancing social learning processes for soil and water conservation in Switzerland

Dr. Patricia Fry
Knowledge Management Environment LLC, Zürich
1 | Introduction
2 | Differing views of farmers and scientists
3 | Approach «from farmer – to farmer»
4 | Conclusions
1 | Introduction

> Soil erosion/Phosphor:
  a major environmental threat

> Research:
  mainly by natural sciences on soil erosion processes

> Implementation:
  Beyond natural and social sciences

→ How can we bridge the gap between science and practice?
> **Message 1: Differing views**

Farmers and scientists have differing views shaped by the aims, methods and contexts of their work (deep versus broad view)

Farmers and scientists need know-how to accomplish their tasks successfully (tacit knowledge)
> Message 2: Explanation of Implementation problems

Problems tend to occur when

one style (terms, language, approach, context, argumentation etc.) opposes the other

knowledge is tried to be transferred one-way

knowledge is tried to be transferred by documents only
> Message 3: Recommendations

- From knowledge transfer to knowledge exchange
- From documents to discussions
- From transferring scientific methods to exchanging experiences with soil conserving methods (SWC)
- From transferring scientific terms to considering different languages
We need:

- Strong laws
- Effectual incentives
- Room and suitable methods for triggering learning processes
## Differing aims, methods and contexts of work

<table>
<thead>
<tr>
<th></th>
<th>Farmers</th>
<th>Scientists</th>
<th>Scientists</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Aims:</strong></td>
<td>Production (Plants, animals)</td>
<td>Protection (Maintain soil quality)</td>
<td>Theories (Functions, processes)</td>
</tr>
<tr>
<td><strong>Methods:</strong></td>
<td>Action (seeding, harvesting)</td>
<td>Policy work /Monitoring Incentives /Quantification</td>
<td>Experiment Quantification</td>
</tr>
<tr>
<td></td>
<td>Perception during work</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Contexts:</strong></td>
<td>Field</td>
<td>Field / Standardized</td>
<td>Controlled</td>
</tr>
<tr>
<td></td>
<td>Farmland</td>
<td>Polluted / investigated sites</td>
<td>Examined plots /universal</td>
</tr>
</tbody>
</table>
### Differing views of science and practice:
An explanation for implementation problems

#### «Broad» View
- **farmers**

**Overview**

<table>
<thead>
<tr>
<th>Plants</th>
<th>Soil</th>
<th>Animals</th>
</tr>
</thead>
</table>

**Relation between:**
Plants – Soil – animals – weather – actions …

**Variable conditions**

#### «Deep» view
- **scientists**

**Insight**

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**Analysis of:**
Plants – soil – animals – climate …

**Controlled conditions**

(Fry 2001, Ingram et al. in press)
Recommended communication

Integrate aims, methods and contexts of farmers work:

- Talk about concrete actions
- Rural context
- Farm specific
- Integrate farmer language
3 | Approach «from farmer – to farmer»

> The project has two aims

**Establish** successful farmer knowledge on conservation agriculture:

Farmers who have implemented soil protection measures on their farm have specific knowledge about the necessary actions.

**Communicate** this relevant expert knowledge by means of film, discussions with local experts at local assemblies of farmers and by face to face interactions (knowledge exchange by farmer networks):

Farmers can take up arguments much more easily when they come from successful colleagues (same profession, same culture, same language).
## Project organisation

### Four Phases

<table>
<thead>
<tr>
<th>Phase</th>
<th>Dates</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concept phase</td>
<td>2001</td>
<td></td>
</tr>
<tr>
<td>Pilot phase</td>
<td>2002 to 2003</td>
<td></td>
</tr>
<tr>
<td>Main phase</td>
<td>2004 to 2007</td>
<td>(No-Till etc.)</td>
</tr>
<tr>
<td>Additional phase</td>
<td>2008 to 2010</td>
<td>(Fodder production, viticulture)</td>
</tr>
</tbody>
</table>
> **Project manager, concept and idea**

Dr. Patricia Fry, knowledge management environment LLC, Zürich

> **Project Team**

Jeanne-Charlotte Bonnard: French speaking part of CH

Renata Grünenfelder, Hipp Mathis Halbbild Halbton LLC, Zürich

> **Contracting authorities**

Swiss Federal Office for Agriculture (FOAG),

Federal Office for the Environment (FOEN)

All cantons of Switzerland (agriculture and/or soil protection)

Organisations of agriculture: Swiss Union of farmers, IP Suisse, Biosuisse

Private Organisations
> First step: Accompanying group with all relevant actor groups
Second step: 9 short films

1: From Ploughing to Direct Drilling
2: Mulch Seeding
3: Strip Tilling
4: Direct Drilling (3 short films)
5: Soil Regeneration with Compost and Green Manure
6: Soil conservation and Fodder production: Valley to Mountain Region
7: Viticulture
why film?

film is an ideal means to record farmer know-how which is usually spread verbally

the „image language“ is the most common communication measures today

fundamental elements of nonverbal communication are transported (original dialect, original gesture, clothing, etc.)

these allow a high degree of identification
> Third step: Enable discussions within networks

Films are shown within farmer networks

Swiss association of technical equipment in agriculture (SVLT)
Swiss Farmers’ Union
IP Suisse
Biosuisse

Agricultural schools
etc

→ Enhance social learning in groups!
## Farmer Arguments concerning No-Tillage

<table>
<thead>
<tr>
<th>Thematic dimensions</th>
<th>Farmers who reject no-tillage</th>
<th>Farmers who adopt no-tillage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Economic dimension</strong></td>
<td>No-tillage causes additional expenses for pesticides, slug pellets and fertilisers  &lt;br&gt; No-tillage requires investments in specialised equipment or involves costs for no-tillage contractors  &lt;br&gt; No-tillage leads to reduced yields  etc</td>
<td>No-tillage saves working time, fuel and thus money because there are less working steps  &lt;br&gt; No-tillage does not necessarily mean lower yields  &lt;br&gt; No-tillage can increase income even if yields may be reduced, since expenses for fuel and working time are lower  etc</td>
</tr>
<tr>
<td><strong>Ecological dimension</strong></td>
<td>No-tillage requires (higher loads of) herbicides  etc</td>
<td>No-tillage prevents soil erosion and improves soil structure  &lt;br&gt; No-tillage is conducive for soil organisms such as earthworms  etc</td>
</tr>
<tr>
<td><strong>Agronomic dimension</strong></td>
<td>No-tillage provokes problems such as slug invasions, weeds, slower germination and the European corn borer.  &lt;br&gt; With no-tillage, manure cannot be worked into the soil and lanes of the combine harvester cannot be levelled out  etc</td>
<td>No-tillage facilitates cultivation of stony soils and increases crop quality (e.g. protein content in corn)  &lt;br&gt; In dry areas no-tillage reduces evaporation by guaranteeing continuous surface cover  etc</td>
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Schneider et al. 2009
> Farmer Arguments concerning No-Tillage

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| **Social dimension**| No-tillage means giving up ploughing, an activity described as one of the most beautiful moments in the agricultural year  
                      No-tillage leads to dependency on no-tillage contractors  
                      It is nice to have one’s own equipment on the farm  
                      No-tillage means estranging oneself from established social contexts in cases where family members or neighbours are against the new cropping system  
                      Etc.                                                                                         | No-tillage is a cropping system for innovative farmers.  
                                                                                                 | There is a very encouraging atmosphere among the community of no-tillage farmers.             |
|                     | No-tillage requires less working time, thus leaving more time to be spent with the family   | No-tillage requires less working time, thus leaving more time to be spent with the family      |
|                     | Etc.                                                                                         | Etc.                                                                                         |
| **Aesthetic dimension** | No-tillage fields are irregular, disorganised and not cultivated properly  
                      Etc.                                                                                         | With no-tillage you have to learn to see differently  
                                                                                                 | ‘Burned’ fields please the eye with their green lines on yellow  
                                                                                                 | Etc.                                                                                         |
4 | Conclusions

The approach „from farmer – to farmer“ helps to bridge the gap between agricultural and environmental institutions, measures and approaches:

By establishing an accompanying group including the relevant actor groups and inducing a learning process (Communication, Coproduction)

By developing several short films in collaboration with these actor groups (Boundary object)

By triggering discussions within farmer networks as well as among policy makers
> How can we connect soil protection with agriculture?

- Talk about concrete and practicable actions like no-tillage etc.
- Establish personal networks with intermediaries like contractors etc.
- Elaborate farmer arguments
- Activate farmer networks
Thank you for your attention

Literature:

Ingram, Julie; Fry, Patricia; Mathieu, Ann (in press): Revealing different understandings of soil held by scientists and farmers in the context of soil protection and management. Land Use Policy. (available online 10 September 2008 doi:10.1016/j.landusepol.2008.07.005)


Project From Farmer to Farmer: www.vonbauerfuerbauern.ch