Organic farming as the possibility of developing rural areas in an enlarged EU

1st & 2nd March 2002,
Zamek Ujazdowski,
Warsaw / Poland
The Importance of organic farming –
ecologic, economic, social
and health aspects

Prof. Dr. H. Vogtmann, President
of the Federal Agency for Nature
Conservation, Germany
The three Pillars of the Convention on Biodiversity (CBD, Rio 1992)

- Conservation of Biological Diversity
- Sustainable use of its components
- Fair and equitable sharing of the benefits
Principle Aims of Organic Production and Processing

- To produce food of high quality in sufficient quantity.
- To interact in a constructive and life-enhancing way with natural systems and cycles.
- To consider the wider social and ecological impact of the organic production and processing system.

IFOAM 2000
Principle Aims of Organic Production and Processing

- To encourage and enhance biological cycles within the farming system, involving micro-organisms, soil flora and fauna, plants and animals.

- To develop a valuable and sustainable aquatic ecosystem.

- To maintain and increase long-term fertility of soils.

IFOAM 2000
To maintain the genetic diversity of the production system and its surroundings, including the protection of plant and wildlife habitats.

To promote the healthy use and proper care of water, water resources and all life therein.

To use, as far as possible, renewable resources in locally organised production systems.
Principle Aims of Organic Production and Processing

- To create a harmonious balance between crop production and animal husbandry.
- To give all livestock conditions of life with due consideration for the basic aspects of their innate behaviour.
- To minimise all forms of pollution.
Principle Aims of Organic Production and Processing

- To process organic products using renewable resources.
- To produce fully biodegradable organic products.
- To produce textiles which are long-lasting and of good quality.
To allow everyone involved in organic production and processing a quality of life which meets their basic needs and allows an adequate return and satisfaction from their work, including a safe working environment.

To progress toward an entire chain of production, processing and distribution which is both socially just and ecologically responsible.
Biodiversity in Grass Land

Frieben 1997

Shannon-Wiener-Index

<table>
<thead>
<tr>
<th></th>
<th>conventional (dry-fresh)</th>
<th>biological (dry-fresh)</th>
<th>conventional (humid)</th>
<th>biological (humid)</th>
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<tr>
<td></td>
<td>2.4</td>
<td>2.7</td>
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</table>

Frieben 1997
Biodiversity in Grass Land

Shannon-Wiener-Index

- conventional (dry-fresh)
- biological (dry-fresh)
- conventional (humid)
- biological (humid)

Frieben 1997
Selected impact categories for LCA of different grassland management systems (intensive, extensive, organic) (Haas et al. 2001)
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### Added Value in Rural Regions

#### Upländer Dairy Farm (Usseln, Hesse)

<table>
<thead>
<tr>
<th></th>
<th>1997</th>
<th>1998</th>
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<tr>
<td><strong>Production</strong></td>
<td></td>
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<tr>
<td>milk biol.</td>
<td>2.0</td>
<td>4.0</td>
<td>10.0</td>
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<tr>
<td>milk conv.</td>
<td>7.0</td>
<td>6.0</td>
<td>7.0</td>
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<td><strong>Added value</strong></td>
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<td></td>
<td></td>
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<tr>
<td>Dairy conv.</td>
<td>2.1</td>
<td>1.8</td>
<td>2.1</td>
</tr>
<tr>
<td>Dairy biol.</td>
<td>1.0</td>
<td>2.0</td>
<td>5.0</td>
</tr>
<tr>
<td>Eco-farmers</td>
<td>0.2</td>
<td>0.4</td>
<td>1.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>3.3</td>
<td>4.2</td>
<td>8.1</td>
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</table>
Added Value in Rural Regions: Upländer Dairy Farm

Added value in 1999: 8.1 m DM

- Farmers (in addition to conventional production): 1.0 m DM
- Staff costs (21 jobs in the region): 1.5 m DM
- Taxes, levies, insurances (community, Land, Federal): 0.7 m DM
- Energy, water (community, EVU): 0.7 m DM
- Transport, registration (regional service firms): 1.5 m DM
- Write-off & maintenance of buildings (regional service): 2.7 m DM

8.1 m DM (0.48 DM/kg milk) provide for 37 additional jobs:
- Dairy (21), agriculture (6), input/service firms (10)
Source separated biogenic waste composting in the county of Waldeck-Frankenberg (Hesse)

Organic waste of 22 large communities

Facility A
input: 6,500 t/a

14 chopper places
(aim: 1 per community)

Facility B
input: 16,000 t/a
20 farmers have an additional income of 16.- €/h
plus the machine cost
on at least 2 and at most 3 days/week

⇒ compost sold

40 % to agricultural farms
30 % to gardening and landscape firms
20 % to private consumers
10 % to communities
Person and Labour Force on Organic Farms in Germany

n=118 (Vogtmann 1998)

Number per farm:

<table>
<thead>
<tr>
<th></th>
<th>Persons</th>
<th>Labour Force</th>
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</thead>
<tbody>
<tr>
<td>Before conversion</td>
<td>5.7</td>
<td>3.6</td>
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</table>
Person and Labour Force on Organic Farms in Germany

n=118  (Vogtmann 1998)
Common dairy barn for three Farmers (hillfarming area in Hesse)

Problems with three dairy barns in the middle of the village:

- cows driven through the village twice a day (spring, summer, fall)
- cow dung on the road (smelly, slippery)
- slurry and manure transport through the village (smell, drippings)
- slurry and manure on nearby fields (overfertilization, run-off)
Common dairy barn for three Farmers (hillfarming area in Hesse)

Problems with three dairy barns in the middle of the village:

- animals tethered at night and over winter
- unacceptable housing conditions for animals as well as unacceptable working conditions for men
- social problem: 365 days of work with the cows (young farmers wives)
- if farmers give up animals, problems with maintenance of landscape
Farming and sustainable Regional Development

Common dairy (hillfarming area in Hesse)

Positive effects for farmers, the environment and the region:

- cows longer on pastures, loose housing
- better working conditions for men (only every 3rd week)
- cows, manure and slurry off the road (and biogas production)
- maintenance of landscape through utilization by ruminants
Farming and sustainable Regional Development

Common dairy
(hillfarming area in Hesse)

Positive effects for farmers, the environment and the region:

- restructuring and new use of farm buildings in the village (kindergarten, café, tourism)
- training of farmers`wives for rural tourism
- stabilization of farm jobs and creation of new job opportunities in the village
Organic farming and sustainable Regional Development

Regio-Bunt Lützelstrauh
(colourful region Lützelstrauh)

- Nature conscious tourism
- Organic agriculture
- Traditional crafts

- two organic farms with bakery and cheese production and a food delivery service to village groceries
- a basket maker
- a carpet maker
- ecological country school and conference house
- „Persephone“ - a social-therapeutic pedagogic organic farm
Organic farming and sustainable Regional Development

Regio-Bunt Lützelstrauch
(colourful region Lützelstrauch)

Aims of the group are:

- joint marketing of self-produced agricultural and crafted goods
- to offer a specific joint educational programme for interested visitors
- to teach traditional crafts and the connected ecological cycles
- to realize an action orientated education concept (learning through experience)
HEALTH: Nitrate leaching

Content of nitrate in drainage water

Conventional Farming

- Ø 47.9 ppm NO₃

Organic Farming

- Ø 8.8 ppm NO₃

(Schüpbach 1986)
HEALTH : Nitrate leaching

High Fertilizer input versus Environment

- High N-fertilization: 130 kg N/ha
- From rain fall to ground water: 200 mm/ha*a
- 44 kg N/ha load to the ground water: 2000 m³ → 22.5 g N/m³
- 99.6 mg NO₃/liter (ppm)
- EU-tolerance: 50 ppm

- Drinking water: Costs for NO₃-removal: 0.5 €/m³
- 1000 € per ha and year

(Schüpbach 1986)
### HEALTH : Pesticide residues in food

![Image of a field with a blue sky and white clouds.](image)

<table>
<thead>
<tr>
<th></th>
<th>Conventional</th>
<th></th>
<th>Organic</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>total</td>
<td>fruits</td>
<td>vegetables</td>
<td>total</td>
</tr>
<tr>
<td>Number of samples</td>
<td>856</td>
<td>30</td>
<td>143</td>
<td>173</td>
</tr>
<tr>
<td>Without residues (%)</td>
<td>60.9</td>
<td>100</td>
<td>96.5</td>
<td>97.1</td>
</tr>
<tr>
<td>With residues</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>&lt; legal max. (%)</td>
<td>32.9</td>
<td>0</td>
<td>3.5</td>
<td>2.9</td>
</tr>
<tr>
<td>&gt; legal max. (%)</td>
<td>6.2</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

(Schüpbach 1986)
“There is hardly anything in this world that some man cannot make a little worse and sell a little cheaper, and the people who consider price only are that man’s lawful prey.”

John Rustin (1819-1900), engl. painter, composer and social reformer
Money spent for consumers clarification and information

Ministry of Consumers protection, Nutrition and Agriculture

0.03 € / consumer

Food industry (processing and trade)

13.8 € / consumer
healthy soil

healthy plants

healthy environment
Healthy animals through animal just management
Healthy Food of highest Quality
Taxpayers money not thrown away, but used for ecologically and socially sound agriculture
The Importance of organic farming
– ecologic, economic, social
and health aspects

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