Measures for reducing impacts from agriculture

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  - animals
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- Prospects agriculture (expanding or in decline)

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Overview farming in the Netherlands

Types of agriculture

<table>
<thead>
<tr>
<th>Types of agriculture</th>
<th>2012</th>
<th>2000</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL</td>
<td>68,810</td>
<td>97,389</td>
<td>-29%</td>
</tr>
<tr>
<td>Arable farming</td>
<td>12,016</td>
<td>14,799</td>
<td>-19%</td>
</tr>
<tr>
<td>Horticulture</td>
<td>11,122</td>
<td>19,283</td>
<td>-42%</td>
</tr>
<tr>
<td>Grazing farms (&lt;17,000 dairy)</td>
<td>35,379</td>
<td>43,488</td>
<td>-19%</td>
</tr>
<tr>
<td>Intensive husbandary</td>
<td>6,994</td>
<td>12,058</td>
<td>-42%</td>
</tr>
<tr>
<td>Mixed farming</td>
<td>3,329</td>
<td>7,751</td>
<td>-57%</td>
</tr>
</tbody>
</table>
### Overview farming in the Netherlands

#### Animals

<table>
<thead>
<tr>
<th>Category</th>
<th>2012</th>
<th>Former years (mln)</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Dairy cattle</td>
<td>1,484,000</td>
<td>2.367 (1985) 1.504 (2000)</td>
</tr>
<tr>
<td>- Fattening cattle</td>
<td>908,000</td>
<td>0.783 (2000)</td>
</tr>
<tr>
<td>Sheep</td>
<td>1,043,000</td>
<td>1.293 (2001)</td>
</tr>
<tr>
<td>Goats</td>
<td>397,000</td>
<td>0.221 (2001)</td>
</tr>
<tr>
<td>Poultry</td>
<td>95,273,000</td>
<td>104.015 (2000)</td>
</tr>
</tbody>
</table>
Overview farming in the Netherlands - numbers

Agriculture
- 10% of the Dutch employment
- 10% of the value of the Dutch economy

Environmental impact
Overview farming in the Netherlands - numbers

**Agriculture**
- 10% of the Dutch employment
- 10% of the value of the Dutch economy

**Environmental impact**

- NH3 emission
- GWP: 16%
  - CO2: 4%
  - CH4: 7%
  - N20: 5%

106 kton/year (2011)
Overview farming in the Netherlands - numbers

Prospects agriculture
- expiring European milkquota
- abolishment limits to the amounts of animals
  - pigs
  - poultry
- small grow of cattle
  - 15% milkproduction
- small decline of pigstock
- same level of poultry
- scale enlargement
Challenge...
Agricultural measures - 1

Agreement agricultural sector
- ↓ NH3-emissions 10 kton/yr in 2030
- Decline of 9.4%
- Work on N2000 goals & economic growth near N2000

Dutch standards for housing & spreading of manure
- already among the most strict in Europe
- air quality & National Emission Ceilings
- a densely populated area with many animals

Most measures of the UNECE guidance document
- Already implemented in the Netherlands (except for feeding).
Agricultural measures - 2

How are we planning to lower emissions even further?

1. **Housing**: lower maximum emission levels

2. More strict standards for **manure application**

3. More efficient **feeding and management** in dairy farming
Agricultural measures - 3

Ad 1. Housing

- lower maximum emission levels
- for pigs, poultry and dairy cattle

Lower ammonia emission per animal category

- Best available technique (social & economically acceptable)
- Only for new & reconstructed stables

Result: 5 kton

Measures are enforced by law (environmental law).
Agricultural measures - 4

Ad 2. Manure application
- More strict standards → 2 kton

- Present regulation
  - aboveground land treatment is not allowed for animal manure
  - only emission reducing land treatment is allowed

For example
- Manure directly into the ground
  - Grass on clay
  - Peat soils
- Forbidden to use dragshoe

http://www.youtube.com/watch?v=Jivdtwjbhdg&sns=em
http://www.youtube.com/watch?v=1R_F7L3I9qc
Agricultural measures - 5

Ad 3. Feeding and management
- More efficient feeding and management in dairy farming
- Less ammonia emissions → 3 kton
- Reduction 10% per farm

Examples:
- Cattle in the field: > 120 days / 6 hr
- Rubber floors in the stable
- Feeding: using the “Annual Nutrient Cycling Assessment”

some indicators
Agricultural measures - 5

ANCA – Indicators

1. Manure production
2. Efficiency of feeding
3. NH3 emission
4. Yield grassland & maize land
5. Efficiency of fertilisation
6. Soil surplus N, P2O5, C
7. NO3 in groundwater
8. Emission greenhouse gases
9. Farm surplus
10. Efficiency farming

Figure 1. Position of the ANCA indicators in the cycle
Agricultural measures - 5

More efficient feeding strategies
- win-win situations
- especially dairy farms with land AND a surplus of manure
  - Less transportation of manure (very costly in NL)

Agreement agricultural sector – government
- unions, milk cooperation's, agricultural contractors, feeds suppliers).

Innovation
- Additionally innovation is stimulated