Sociological aspects of sludge use in agriculture

Sewage sludge Conference, Brussels

October 31\textsuperscript{th}, 2001
Contents

• Methodological approach
• Key conclusion
• Position of the stakeholders on agricultural recycling and other routes
• Options to encourage sludge recycling to land
Understanding the non-rational aspects

• **Social acceptance analysis**
  – Analysis of each stakeholders’ position concerning sludge disposal and recycling
  – State of the debate in each Member State

• **Scientific analysis**

• **Regulatory analysis**

• **Economic analysis**
Information comes from many interviews, questionnaires and literature

- Answers to questionnaires sent to 150 players involved (esp. European and national professional organisations)
- Direct contacts and interviews with more than 20 key contacts
- Use of the material collected through more than 150 interviews for previous Andersen assignments (esp. for the French EPA and Water agencies - published in October 99)
- Literature and surveys review
- European press review
Debate originate from general food safety concerns

• The debate originates from Northern Europe in the early 90’s
• Recent scares related to GMO, dioxins, BSE… have raised concern about sludge use in agriculture
• Concern is expressed about food safety, and farmers are often perceived as too production-oriented
• At local level, debate also focuses on odors
• According to the intensity of the national debate, Member States may be divided in several categories presented hereafter
# Debate is more advanced in Northern Europe

<table>
<thead>
<tr>
<th>State of the debate</th>
<th>Over</th>
<th>Mostly over</th>
<th>In progress</th>
<th>Limited</th>
</tr>
</thead>
<tbody>
<tr>
<td>Countries</td>
<td>• Netherlands</td>
<td>• Denmark</td>
<td>• Austria</td>
<td>• Spain</td>
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<td></td>
<td>• Flanders</td>
<td>• UK</td>
<td>• France</td>
<td>• Italy</td>
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<td>• Walloon</td>
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</table>

- **Tighter regulatory provisions do not imply a greater acceptance** (ex: Sweden)
- **Increasing number of agreements, with variable success** (ex: UK, Sweden)
A consensus appears between the stakeholders

- The increasing sludge amount should be treated keeping both environmental risks, health risks and economic costs as low as possible
- Waste water and sludge pollution should be reduced at source
- Practices should be improved (odors, monitoring, traceability)
- Additional research is needed to increase confidence in sludge
Social acceptance is the main obstacle for the use of sludge in agriculture

• Sanitary risk itself is not the first driver for positions against sludge use in agriculture

• Stakeholders are reluctant when benefits < economical and political risks

• Acceptance could be positively influenced by
  – improved information to stakeholders
  – voluntary agreements
  – evidence of safe and sound management of sludge
  – setting up of a guarantee fund or insurance system
Social acceptance is a local issue

- Solutions implemented in some countries may not be applied or adapted to other countries (guarantee fund, agreements etc.)
- Huge variability in positions depending on numerous factors, such as
  - previous health “scares” and how they have been handled
  - strength of each stakeholder in the national debate
  - pressure from various fertilizing materials (animal manure, sludge, mineral fertilizers)
Position of the stakeholders
Heterogeneous positions within categories of stakeholders and countries

- Attitudes favorable and unfavorable to agricultural recycling may appear within one category of stakeholder
  - ex: local representatives might be reluctant for political and social acceptance reasons, while national representatives consider sludge use in agriculture as the best option

- Differences are observed within one category from one country to another
  - ex: farmers’ unions support agricultural recycling in Sweden and France, and are hostile to it in Finland, Luxembourg, and the Netherlands
Overall, 3 category of stakeholders see very little or no interest in sludge use in agriculture

Simplified stakeholder’s position concerning use of sludge in agriculture

<table>
<thead>
<tr>
<th>Farming community</th>
<th>Industries</th>
<th>Water and waste industry</th>
<th>Local authorities</th>
<th>National authorities</th>
<th>Citizens</th>
</tr>
</thead>
<tbody>
<tr>
<td>Landowners</td>
<td>Food companies</td>
<td>Water treatment plants and companies</td>
<td>Communities, towns</td>
<td>Ministries and other relevant bodies</td>
<td>Consumer organisations</td>
</tr>
<tr>
<td>Farmers professional representatives</td>
<td>Retail companies</td>
<td>Waste management companies</td>
<td>Regions</td>
<td></td>
<td>Nature protection organisations</td>
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<tr>
<td>Individual Farmers</td>
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<td></td>
<td>Local inhabitants organisations</td>
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</tbody>
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Legend:

- : officially favourable
- : favourable under certain conditions
- : reluctant
Landfilling is perceived as wasting fertilizing value but should remain possible

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**Advantages**

- Low cost (esp. compared to incineration)
- Limited risks for environment and health
- Remains an important route (in some cases no other possibility)

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**Constraints**

- Wasting fertilising value of sludge
- Expected restrictions on the access to this route
Most actors are reluctant to sludge incineration for economic and environmental reasons

Advantages

- Exclusion of sludge-borne pollutants from the food-chain
- Best available route for highly polluted sludge

Constraints

- Wasting fertilizing value of sludge
- Expensive route, implying high investments in non-equipped countries
- Air pollution
- Resistance of local inhabitants and environment protection associations
Major advantages are mentioned concerning use in silviculture, but knowledge is limited

<table>
<thead>
<tr>
<th>Advantages</th>
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<tbody>
<tr>
<td>• Fertilizer value of sludge</td>
</tr>
<tr>
<td>• Low cost</td>
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<tr>
<td>• Reduced risk of transfer to the food chain</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Constraints</th>
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<tbody>
<tr>
<td>• Uncertainties concerning environmental impact</td>
</tr>
<tr>
<td>• Forest owners associations contacted are in general against this route</td>
</tr>
<tr>
<td>• Administrative allowances</td>
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</tbody>
</table>

• Only few positions taken concerning this route
• Positions vary greatly among and within the different actors categories
Use in land reclamation is seen as a useful way of using the organic matter supplied by sludge

<table>
<thead>
<tr>
<th>Advantages</th>
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<tbody>
<tr>
<td>• Recycling of organic matter and nutrients</td>
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<tr>
<td>• Reduced sanitary risks</td>
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<td>• Low costs and traceability</td>
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</table>

<table>
<thead>
<tr>
<th>Constraints</th>
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</thead>
<tbody>
<tr>
<td>• Possible soil and groundwater contamination</td>
</tr>
<tr>
<td>• Administrative allowances</td>
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</tbody>
</table>

- Only few positions taken concerning this route
- Positions vary greatly among and within the different actors categories
Use in green area has a good acceptance provided public is not exposed

Advantages

- Recycling of organic matter and nutrients
- Reduced food chain contamination
- Low costs and traceability

Constraints

- Social acceptance
- Administrative allowances
- Reduced fertiliser needs
- Risks for children

- Only few positions taken concerning this route
Options to encourage sludge recycling to agriculture
Several options have been identified to improve confidence in sludge

- **Improve sludge quality and landspreading practice:**
  - Implementation of a pollution prevention policy
  - Monitoring of sludge quality
  - Certification of sludge production and treatment processes
  - Certification of sludge recycling practices

- **Setting up of a guarantee fund or insurance system, addressing the issue of liability:**
  - May have an impact on farmers’ and landowners’ acceptance, not on other actors
  - May be efficient if it maintains the economic advantage of the landspreading route

- **Encourage relationships between farmers and food industry and retailers in order to facilitate agreements:**
  - Setting up of working groups
  - Develop agreements at European level
Several options have been identified to improve confidence in sludge (continued)

- **Promotion of research and of research results dissemination**
  - Privilege current areas of uncertainties such as organic compounds, impact on human health etc.
  - Make research results available to public and stakeholders

- **Effort of communication:**
  - Communication and improvement of recycling practices
  - Publication of codes of practices
  - Promotion of high quality sludge (labels…)
  - Research dissemination