Renewable Energy and Biodiversity
Developments in the last years in Germany

Norbert Metz, German Association of Landcare

Biofuels for Sustainable Transportation 26.-27. November 2007, Findhorn
Landcare Associations in Germany

1. 143 associations all over Germany
2. regional cooperation between farmers, communities and nature conservationists
3. 20,000 farmers as partners / year
4. priorities: landcare, environmental education, regional marketing, rural development, compensation projects, a growing number of projects with relevance to renewable energy

Norbert Metz, German Association of Landcare „bioenergy and biodiversity“
The “Renewables”-Project

Objectives: „Qualification of local protagonists on renewables and development of communication strategies from environment and nature conservations point of view“

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http://www.lpv.de/index.php?id=305
Development of electricity production from renewable energies, 1990-2006

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27.11.2007
Cultivation of renewable-energy crops in Germany

About 17% of arable land in Germany (2007)

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Renewable Energy sources 2005

4.6% of the energy use 2005
5.8% in 2006
The situation of renewable energies in Germany

In 2007 we used about 1,75 Mio hectare for energy-crops, its about 17% of the arable land (1,56 Mio. hectare 2006).

1,1 Mio. hectare for cultivation of rape.

The land for cultivating energy-crops has grown nearly twenty times in the last three years (4,810 ha in 2003, 86,600 ha in 2005).

The land for cultivating maize for energy use has grown from 70,000 ha in 2005 to 160,000 ha in 2006, (prognoses for 2007: 260,000 ha),

The whole land for cultivating maize has increased in 2006 over 60,000 ha (3,6%) to 1,75 Mio. ha. In 2007 a similar increase is expected.
Development in the regions

Share of maize on arable land in the districts of Bavaria

Percentages given for districts with above average biogas-plants

Quelle: Amt für Landwirtschaft und Forsten, Ansbach

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Development in the regions

Schleswig-Holstein: Valley of the river Bollingstedter Au
• an important Natura 2000 site

red colour: arable land with maize in 2007
Development in the regions
Bioethanol facility in Schwedt (East Germany)

21.12.2004
„50 Million Euro investment for a new facility to produce bioethanol. Good prospects for the whole region“

14.09.2007
„Facility for bioethanol in Schwedt is going to stop production. Cheap imports of bioethanol from Brasil, high prices for corn and less demand are the reasons for the decent. Management is asking for political help“

Annually required material: 600.000 t rye,
Total rye production in Brandenburg 2003: 504.199 t
Current results of the development:

"With the massive growth of bioenergy, the risks for soil, water and biodiversity have grown as well. This puts the given and expected ecological advantages of renewables into perspective.

Growth and use of biomass therefore have to be arranged both nationally and internationally in such a way, that the protection of the foundations of life is guaranteed. They should meet the criteria of strong sustainability."

SRU, July 2007

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Report of the board of experts on enviromental questions

1. "Renewable energy: Is the medicine worse than the disease?" (OECD)
2. "Biofuels: Biggest attack against biodiversity" (E. U. von Weizsäcker, Scientist)
3. "Biofuels = Deforestation Diesel" (J. McNeely, Chief Scientist, IUCN)
4. "Crime against humanity" (UN-Official for food rights)
Conversion of grassland into arable land:
ploughing of wet grassland in North- und West-Germany to grow maize; often in ecologically sensitive regions (NATURA 2000).
=> fertilisation, erosion and nutrient and nitrate load.

Conversion of grassland to grow maize near Birgel in the Natura 2000 area „Obere Kyll und Kalkmulden der Nordeifel“, Rheinland-Palantine

Source: NABU
Risks from nature conservation point of view

Intensification of grassland use:
To compensate less grassland for feeding cows or for direct use of the grass in biogas facilities, the use of extensive grassland gets more intensive (South Germany).

Example: sheep farm in the district of Ansbach
It grazes valuable extensive meadows with 1000 sheep in a dry limestone Natura 2000 area. Traditionally, in autumn, he grazed the rich meadows of other farmers in an adjacent river-valley. This year, the Farmers did a fourth cut of grassland in October for a biogas facility. Now there is no more grass on the autumn meadows for the sheep. The shepherd intents to reduce his flock which has devastating effects on the Natura 2000 site (this will be undergrazed).
Risks from nature conservation point of view

earlier harvesting times:
first harvest in “two cultivation systems” (for example green rye) is in the main hatching time of June
=> high loss of ground breeding birds and small game,
endangered arable plants can’t reproduce

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Risks from nature conservation point of view

Narrowing of crop-rotation:
standardization of arable crops by an increase of the proportion of maize and rape; diversity of usage and structure gets lost.
=> increase of plant diseases (demand for genetically modified organisms GMO can increase), humus layer gets damaged

Landscape changes:
The appearance of our cultivated landscapes can change with the standardization of crop-rotation and with new crops (fast growing wood, Sudan-grass etc.)
Risks from nature conservation point of view

Competition between food and energy production and nature conservation:
- increase in prices and land leases
- shortage of land
- agri-environmental schemes can't compete;
  -> they aren't attractive any more

=> pressure on nature conservation sites increases
=> Acceptance of biogas-plants declines
Opportunities from nature conservation point of view

The growth of biomass can also create new chances for supporting biodiversity:

- Potential for varied **crop-rotation**
- Less use of **pesticides** (and fertilizer)
- Use of a greater number of **species and varieties**
- **Mixed cultivation**
- Planting of **structural elements** in the landscape (i.e. Agro-forestry-systems) enriches the landscape

=> **however, current trends do not yet point in that direction**

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Conclusions

To ensure that the growth of renewables doesn't harm nature and environment, basic ecological standards have to be met:

To qualify for funding by the government

- The proportion of a single crop (e.g. maize) in the biogas-plant should not exceed 50%,
- Proof that ecological compensation exists (e.g. set aside, hedges, extensive grassland) in a certain amount for example 5 ha per 100 kW plant capacity,
- No use of fungicides and insecticides,
- No conversion of grassland into arable land,
- No use of genetically modified organisms (GMOs)
Result:

Renewable energies? Of course, but moderately!

Thank you for your attention!

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