The macro-effects of biomass production for energy purposes: key Dutch experts share their views with Both ENDS & IUCN NL (2009)

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Identification of macro-effects, monitoring and the role of CSOs

1) Set up of the survey
2) Perceptions about macro-effects
3) Perceptions about monitoring of macro-effects
4) Perceptions about the roles of different stakeholders
5) Some general conclusions

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Set up of the survey

Inventory of the possible macro-effects and the role of CSOs in monitoring them, based on the stakeholders' interviews and brainstorm sessions.

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Set up: What are macro-effects?

Effects that are difficult to establish at the individual company level and will only become visible at the regional, national and sometimes even at the supranational level.

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Set up: 8 macro-effects in 'Testing Framework for Sustainable biomass' (2007):

- Land prices
- Food prices
- Ownership land
- Availability of food
- Relocation of food production and cattle breeding
- Deforestation and loss of nature reserves in relation to the supply of food, construction material, fertilizers, medicines etc cetera
- Changes in the type of vegetation and share of vegetation and crops

'The testing for prosperity must be worked out further. Important data for this are, for instance, the migration flows in a certain region.

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Set up: additional macro-effects, mostly within the 'prosperity theme' (1):

- Migration
- Infrastructural changes (roads, ports, canals)
- Service changes (agricultural extension, agricultural innovation & technology institutes)
- Local investments ex-situ agroenergy crop production
- Impoverishment
- Reduced rural and urban food security
- Changes in local energy provision
- Loss of employment through conversion of small-scale, labour-intensive to large-scale, labour-extensive

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Set up: additional macro-effects, mostly within the prosperity theme (2):

- Displacement of people without land tenure
- Changed position of power of rural people
- Changed position of power of women
- Conflict
- Depletion of natural resources (i.e. fresh water/fish supplies)
- Loss of biodiversity

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Set up: questionnaires

- Do you think that biomass can contribute to a more sustainable energy mix?
- What do you consider to be the most important macro-effects of the demand and production of biomass (both positive and negative)?
- Could you please indicate in which way you think macro-effects have played a role in biomass production for energy purposes?
- What do you consider to be the 3 most important negative macro effects of the increasing demand and production of biomass? And why?
- How could these 3 important (negative) effects be monitored?

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Set up: questionnaires

- What would you absolutely not like to see happen within the next 5 years if the demand for biomass for energy purposes in Europe/the Netherlands continues to grow?
- What role do you think the corporate world could play to avoid negative macro-effects?
- What role do you think the government could play to avoid negative macro-effects?
- What role could Non-Governmental organisations (NGOs) play to prevent negative macro-effects?
- What specific role could your organisation play to help prevent negative macro-effects?

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Set up: inventory of the experts in The Netherlands

131 Experts were identified from:
Business
Government
Knowledge institutes
Non-Governmental Organisations

22 Respondents could participate in the interviews.

Report
≠ an inventory of (monitoring of) macro-effects
= a picture of the perceptions of a number of Dutch experts
BUT serves as input for discussion

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Perceptions: Loss of biodiversity (ecosystems, varieties and genes)

- Deforestation (Cramer)
- Changes in vegetation type and share of vegetation and crops (Cramer)
- Loss of biodiversity/ agrobiodiversity

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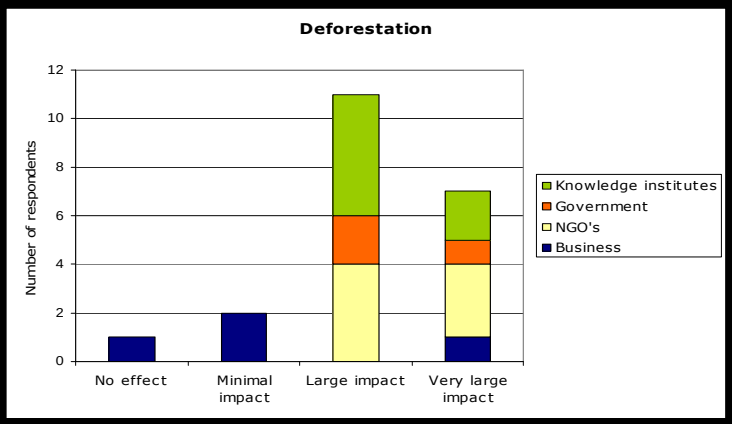
Perceptions: Loss of biodiversity (ecosystems, varieties and genes)

- Deforestation (18 large - very large impact)



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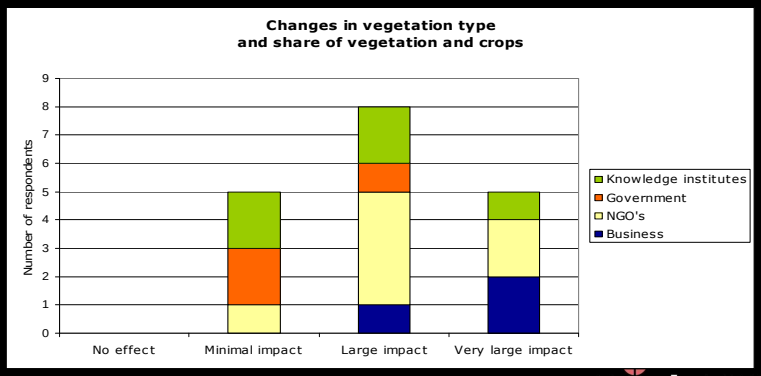
Perceptions: Loss of biodiversity (ecosystems, varieties and genes)

- Changes in vegetation type and share of vegetation and crops (13 large - very large impact)



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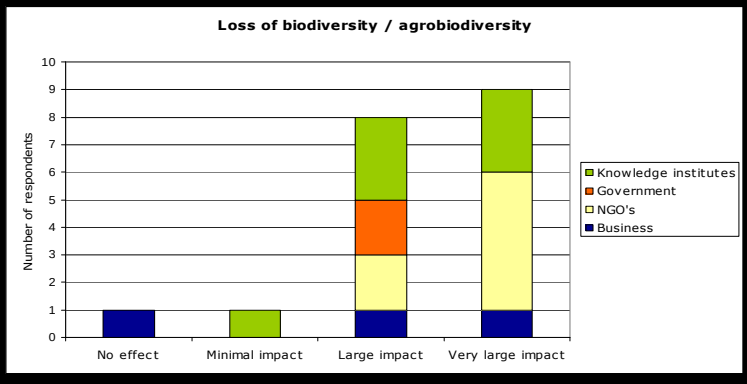
Perceptions: Loss of biodiversity (ecosystems, varieties and genes)

- Loss of biodiversity/ agrobiodiversity (17 large - very large)



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Perceptions: food production and food supply

- Food prices (Cramer)
- Availability of food (Cramer)

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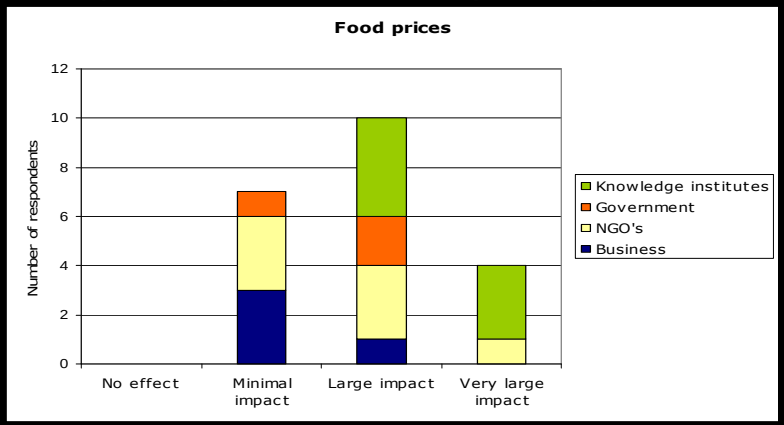
Perceptions: food production and food supply

- Food prices (14 large - very large)



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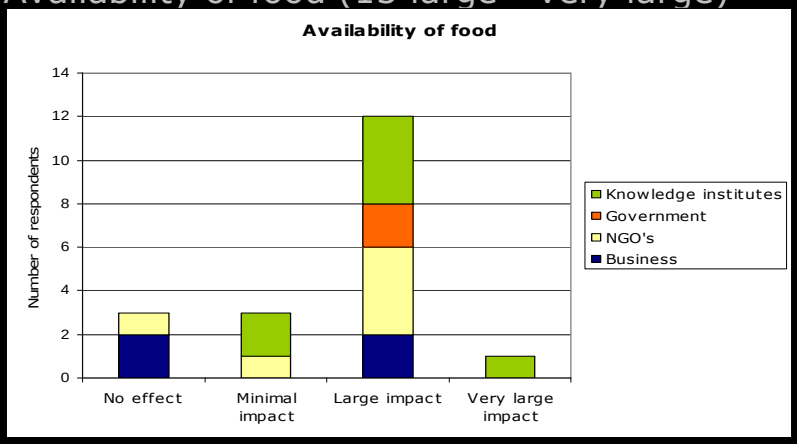
Perceptions: food production and food supply

- Availability of food (13 large - very large)



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Perceptions: conflicts over natural resources

- Depletion of natural resources (fresh water, fish stocks)
- Conflicts

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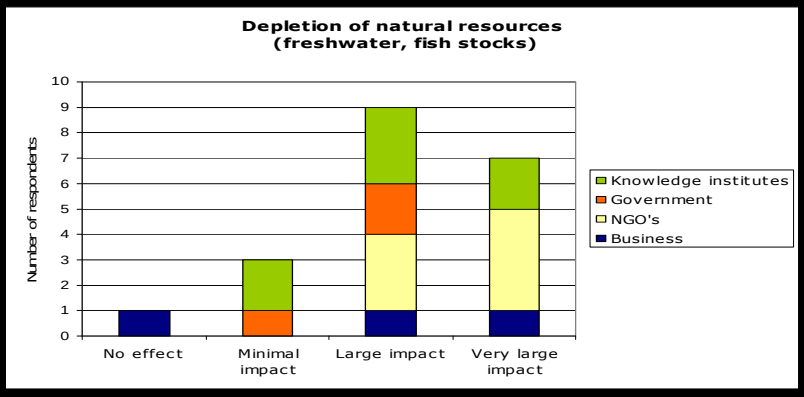
Perceptions: conflicts over natural resources

- Depletion of natural resources (fresh water, fish stocks) (16 large - very large)



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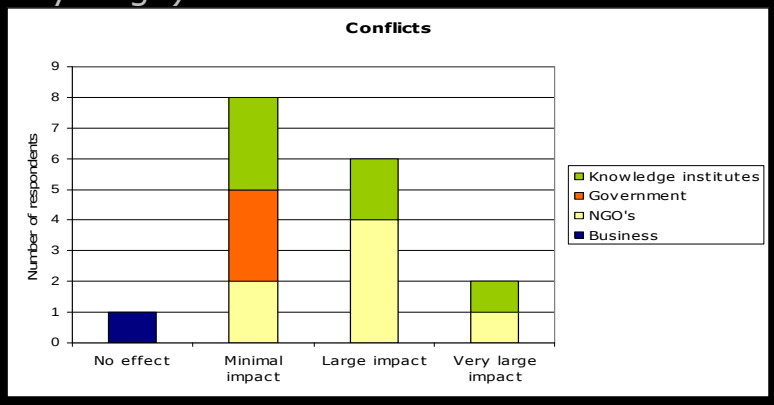
Perceptions: conflicts over natural resources

- Conflicts (9 no - minimal effect and 8 large - very large)



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Perceptions about macro-effects

Most important possible macro effect to happen

- Increased green house gases (6 respondents)
- Disrupted nutrient cycles (5 respondents)
- Unequal development opportunities (2 respondents)
- Migration (1 respondent)
- Undermining development opportunities (1 respondent)
- Dependence on subsidies (1 respondent)

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Perceptions about macro-effects

In 5 years, what should not have happened:

- The law of the retarding lead
- Increasing greenhouse gases
- Degradation of ecosystems
- Unbalanced nutrient cycles
- Unsustainable biomass
- Loss of biodiversity and human rights violations
- High food prices and less food production
- Poverty and economic inequality
- Conflicts

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Perceptions: Monitoring of macro effects

Majority responded:

Monitoring ≠ a safeguard to protect against negative macro-effects

'The focus should be placed far more on risk analysis and preventative measures'

However,
Monitoring = an instrument that can provide important information.

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Perceptions: Monitoring of macro effects

How to do?

Centrally managed at a global level
Satellite images

At national level
Economic statistics
Population census

Verification
Groundtruthing

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Perceptions about macro-effects

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Perceptions: the roles of different stakeholders

Commercial actors in the entire chain:

- Because macro-effects, by definition, don't occur at company level, but requires a macro approach, it is not the corporate world's place to deal them; it is up to the government for legislation
- Self-governance through sector-wide certification of sustainable biomass.

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Perceptions: the roles of different stakeholders

Biomass producers should:

- Map their sphere of influence
- Take steps to mitigate these negative macro-effects

Agro-energy producers should:

- Follow a cascading system: first the waste/residual waste/by-products, then the most efficient biomass crops
- Exclude certain crop/country combinations based on high risk factor for Indirect Land Use Change

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Perceptions: the roles of different stakeholders

Automotive industry should:

- Work on improving on-road fuel efficient and accelerate the development of electric cars

Other energy producers should:

- Focus on alternative energy sources, such as solar power, water power, wind energy

The right government incentives could lead to more investment in this sector.

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Perceptions: the roles of different stakeholders

In consuming countries, governments should:

- Develop a strict sustainability criteria and verification/monitoring system that used biomass must comply with. These criteria should ensure that negative macro-effects are avoided.
- Not create artificial demand, e.g. subsidies on agro-energy or obligatory mixing directives
- Exclude product chains with a bad track record or specific product-country combinations.

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Perceptions: the roles of different stakeholders

In producing countries, governments should:

- Ensure development and compliance with environmental-, labour- and land ownership legislation. Developed countries can support developing countries with the implementation of such legislation.
- Implement integral land use planning where diversity is the norm: food agriculture, energy agriculture, High Conservation Value Areas. Sustainability, employment opportunities, food for the local population, and (in)direct GHG output are key concepts.

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Perceptions: the roles of different stakeholders

At international level, governments should:

- Stimulate the dialogue between production- and consumption countries about the development of international macro-monitoring, in terms of both policies and financing.
- Stimulate flanking policies for biomass production: deforestation legislation and mandatory investment in agricultural productivity stimulation and rural development in order to counteract undesirable macro-effects.
- Stimulate electric cars.

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Perceptions: the roles of different stakeholders

Advocate NGOs should:

- Lobby on the effects of demand and supply of agro-energy crops;
- Start a discussion about the necessity of a governmental legislation for the production and consumption of agro-energy crops as 1 of the new energy sources.

Watchdog NGOs should:

- " cry wolf when something is off (but be careful not to overuse it).": identifying abusive situations, negative developments and effects per area.
- Check whether the government and industry keep to sustainability guidelines, including rural development

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Perceptions: the roles of different stakeholders

Grassroots NGOs should:

- ensure ground truthing: conducting research on macro-effects, developing case studies and indicators through NGO networks and their links to the population.
- pass on information to consumers, citizens, media and certification processes.

National NGOs should:

- Brainstorm about macro level solutions for the limitation of negative macro-effects with the government and corporate world.

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Perceptions: the roles of different stakeholders

Bridge builder NGO should:

- Build bridges between academics and policy makers and creating knowledge networks in production- and consumption countries, so that scientific knowledge is linked to local knowledge and practical experience.

Capacity building NGO should:

- Strengthen the NGO community in production countries, so that local NGOS will become actively involved in advocacy, informing the local population and gaining a voice with their governments.

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