

## Fuelling knowledge on the social and ecological impacts of agrofuel production



## Colophon

This document reports on the process entitled 'Fuelling knowledge on the social and ecological impacts of agrofuel production' which is being carried out within the framework of the Development Policy Review Network (DPRN) and organised by Both ENDS, IUCN-NL, University of Amsterdam/AISSR and other organisations that make up The Agrofuels Platform. With a view to stimulating informed debate and discussion of issues related to the formulation and implementation of (Dutch) development policies, DPRN creates opportunities to promote an open exchange and dialogue between scientists, policymakers, development practitioners and the business sector in the Netherlands. For more information see [www.DPRN.nl](http://www.DPRN.nl) and [www.global-connections.nl](http://www.global-connections.nl).

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# Report on ‘Fuelling knowledge on the social and ecological impacts of biofuel production’

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**Period:** 15 February 2009 – 1 March 2010

**Responsible organisations:** Both ENDS, IUCN NL, University of Amsterdam/AISSR & The Agrofuels Platform

## Introduction

This one-year process, organised within the framework of the Development Policy Review Network, was a joint effort carried out by Both Ends, the IUCN Netherlands Committee, the University of Amsterdam/AISSR, VU, Alterra, ETC, Cordaid, Mekon Ecology and the Law and Governance Group of Wageningen University. The process initially aimed to generate intersectoral debate and interdisciplinary analysis of the social and ecological effects of agrofuel production and expansion, with a view to enabling informed decision-making which would minimise the negative effects. The idea for this process came from the fact that the debate on the effects of biofuels includes strongly opposing views which are often based on biased information. First and foremost, therefore, there is an urgent need for more scientific information on the issue. Secondly, because policymakers at national and international levels seem to be impatient and may have to take decisions on the basis of assumptions, there is a need to clarify these assumptions and their underlying values and motives. A key goal of the project was also to overcome fragmentation in the field of knowledge development on agrofuels.

## Background to the theme

One of the most powerful economic and social dynamics of the early 21<sup>st</sup> century is related to the rapid expansion of biofuel production. Although it was considered to be an industry without prospects at the end of the 1990s, many national governments have recently developed new biofuel policies that directly or indirectly provide incentives to companies and banks to invest in biofuel production and processing plants. Some economists believe that the boom in biofuels marks the beginning of an agricultural renaissance, with farmers earning higher incomes due to increased demand for agricultural crops for energy production. Expectations are high as regards the prospects of using marginal land for energy cropping. Other scholars believe that the adoption of biofuel policies and blending targets has kick-started a new scramble for land that will push aside food production, food producers and eco-systems. They question what exactly is meant by marginal land and expect that private investors will prefer to invest in energy farming on fertile land in order to reach break-even points as soon as possible.

## Justification

During the last 2–3 years biofuels have emerged as a key topic for public debate and the issue has moved to the centre of development discourse both internationally and in the Netherlands. Unfortunately, however, this debate has not been enriched by field comments on the effects of biofuels. As a result, existing policy discourse remains limited to a simplistic either/or debate and runs the risk of becoming further polarised due to being reduced to a poorly understood paradox based on whether biofuels – in view of policies on climate change abatement, poverty alleviation, gender equity and biodiversity – represent a cure or a curse. At least two high profile Dutch policy papers have attempted to come to grips with this dilemma. These were the Cramer report on criteria for sustainable biomass production and Minister Koenders' white paper which focused on the environment, energy and climate as a new priority cluster within Dutch development cooperation.<sup>1</sup>

At the same time, biofuels are perceived in a growing number of biomass-producing developing countries as becoming the single most pressing issue that causes food insecurity (amongst other things through higher food prices), ecological deterioration and land conflicts. Unfortunately, not much information has yet been exchanged between countries on current effects and on how this information was or could be gathered. The missing link in the current Dutch and European policy debates is the degree to which they are informed by the immediate experiences and local-macro analyses generated by scholars. This process was carried out to correct the resulting imbalance by engaging Dutch civil society organisations and researchers in debates with each other and with policymakers, by discussing their preliminary findings and by discussing what they consider to be rewarding methodologies to gain (better) insights into social and ecological effects of biofuel policies and expansion.

The Netherlands has a wide range of knowledgeable institutes, academics and NGOs with relevant networks in Southern countries which are well placed to tackle this subject. The knowledgeability, diversity and specialisation of these institutions make it highly worthwhile to link expertise, define a shared research agenda, and produce policy relevant information applicable in the Netherlands as well as in Europe and Southern (potential producer) countries.

## Activities realised

The process started with an internal kick-off meeting on 27 February 2009, in which the organisers of this process officially presented themselves as the agrofuels platform whose aim was defined as being to contribute to an overview of the available (scientific) knowledge, as well as the interests and motives of the various stakeholders. The platform shares knowledge with, and provides information to, a broader audience though the IUCN hosted

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<sup>1</sup> Letter to Parliament: Een Zaak van Iedereen 10/10/2007.

wiki <http://np-net.pbworks.com/Agrofuels-Knowledge-Platform>.<sup>2</sup> During the meeting the decision was taken to write a position paper which gives a broad overview of the current state of play with regard to scientific information and stakeholders' positions. Scientific information that has been integrated into the paper was gathered from the wiki and from policymakers at the various ministries (LNV, EZ, DGIS, VROM) who were interviewed in order to obtain information concerning the assumptions on which they based their policies. A draft version of the paper was discussed by the platform members during a second meeting on 17 June 2009. As input to this meeting additional documents (research reports, policy notes, position papers of various organisations) were gathered and made available on the wiki.

After this initial phase of internal discussions and paper writing, two events were organised to discuss the issue with other stakeholders. Firstly, the organisers held two workshops at the CERES summer school on 3 July 2009, in which Dutch researchers presented case study material, discussed approaches and methodologies, and questioned and identified the role of knowledge in policymaking processes. The meeting was attended by 32 participants, most of whom were researchers (75%). Practitioners (15%) and people from the corporate sector (6%) figured to a lesser extent, and unfortunately no policymakers were present.<sup>3</sup> With a view to intensifying the dialogue with policymakers, the organisers participated in a study day at the Ministry of VROM on 20 August 2009 during which the macro-effects of bio-mass production for energy purposes were discussed, with particular attention for the perceptions of Dutch, Brazilian and Indonesian experts.

The last stage of the process was the expert meeting in The Hague on 18 February 2010, in which researchers, policymakers and practitioners discussed policies regarding biofuels in relation to current scientific knowledge. A key issue during this meeting was the question of to what extent and in what ways policy development on agrofuels relies on scientific knowledge. The meeting revealed that uncertainties in scientific models, the gaps between different schools of knowledge and the incoherence between ministries are taken seriously in policy circles, but that sustainability is difficult to guide and control. The meeting was participated in by policymakers from VROM and DGIS, as well as people from the Commission Corbey and Agentschap NL (EZ). The summary of the discussion is included in Appendix 3 to this report.

The input paper entitled 'Burning questions - Certainties and uncertainties concerning agrofuels' is available at:

[http://np-net.pbworks.com/f/Kusters+et+al+\(2010\)+Agrofuels+Burning+Questions-draft+for+DPRN.pdf](http://np-net.pbworks.com/f/Kusters+et+al+(2010)+Agrofuels+Burning+Questions-draft+for+DPRN.pdf)

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<sup>2</sup> This wiki is part of the website <http://www.natureandpoverty.net>, the overall knowledge network of the IUCN Netherlands Committee. It was decided to use this website, because the wiki facilities and many documents on the subject were already available. The Global Connection website for this process <http://www.agrofuelsplatform.nl/> therefore functions as a gateway to the wiki, and generally outlines the activities of the process.

<sup>3</sup> This may be due to the event itself which is an academic event, although this time specifically targeted at the science-policy interface.

The paper highlights a striking difference between various stakeholders regarding the appropriateness of policies to stimulate the use of agrofuels (i.e. blending targets). The report shows that there is a growing consensus among scientists as regards the fact that the blending targets lead to significant agricultural expansion, with negative effects on biodiversity and food prices. However, the responses of other actors differ. Notably, policymakers remain in favour of such policy instruments, using the argument that they provide an opportunity to implement strict sustainability criteria, with potential positive effects on the sustainability of agriculture as a whole. At the same time, an increasing number of NGOs and researchers emphasise the risks and advocate more sustainable alternatives. The expert meeting was used to discuss these different perspectives.

The agrofuel consortium drafted a project proposal for designing a methodology and to experiment with participatory environmental planning in the palm oil industry of West Kalimantan, Indonesia. This proposal was submitted at Global Sustainable Biomass Fund, and will be submitted to other donors in the course of 2010.

An international follow-up meeting on the issue with southern experts is already planned for 26–27 April 2010, and is to be organised by IUCN. The meeting will also be used to discuss sustainable sourcing.

## Results

The main result of the process was to bring together experts and policymakers at the event on 18 February 2010 during which the gaps that exist between policy and science were discussed. During this period, the topic was the focus on considerable attention by the media, the EU, and many civil society organisations (CSOs). The urgency of the topic, and our contribution in policy circles, certainly did not go unnoticed. The input document was distributed to the various ministries and we received positive comments from individuals at the Ministry of Housing, Spatial Planning and Environment (VROM), the Ministry of Agriculture, Nature and Fisheries (LNV) and the Ministry of Economic Affairs (EZ). The fact that four ministries<sup>4</sup> were represented at the meeting is testimony to the importance attached to its contents.

Both ENDS is now consulted more frequently by the ministries of VROM and LNV regarding matters of sustainability criteria. One example is Both ENDS' complementary membership of the working group on the bio-based economy.

The consortium members from Wageningen University, the University of Amsterdam and IUCN are now involved more often in events concerning biofuels. The agro-consortium project has therefore resulted in the active involvement of consortium members in policy circles.

DGIS has granted the consortium a new project fund in relation to the agro-ecological zoning of biofuels in West Kalimantan.

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<sup>4</sup> In addition to the aforementioned ministries also the Ministry of Foreign Affairs was represented.

## Contribution to the DPRN objectives

### **Stimulating informed debate**

Before the event on the 18 of February 2010, all the invited guests were informed about the topic in the form of the input document entitled 'Burning Questions'.

### **Involvement of relevant partners**

Invitees were able to respond and contribute to the contents of the input document beforehand. The document is therefore a product of a process which involved and informed the various parties.

In addition, the day's programme was prepared by a team of experts who were given the opportunity to prioritise topics for discussion. The event itself was therefore completely in tune with the expectations of the key participants. This resulted in a lively, properly informed and topical debate which also covered present and future concerns.

Experts from a number of ministries, universities and NGOs participated in the process of preparing the input document, the programme and the final summary of the discussion.

### **Relevance for policy and practice**

Whether biofuels should be promoted or not is a very topical issue. Several ministries are developing policies but the activities they support are not coordinated very well. There is no coherence between the core ministries (EZ, LNV, the Ministry of Foreign Affairs and VROM). This was also clear at the conference. One outcome of the debate may be that communication between the ministries concerning sustainability criteria will intensify.

### **Enhancing cooperation and synergy**

After the joint activities, the agrofuel consortium informs each member about news, activities, conferences, and other topical issues relating to biofuels.

The majority of consortium members were involved in drafting and submitting a new project proposal.

## Reactions and evaluation

25 people participated in the discussion. The participants' responses during and after the discussion are detailed below.

### **Aspects appreciated by the participants ('tops'):**

We received compliments from participants during the course of the day itself. The discussion was moderated very successful. The chosen form, with an inner circle of active discussants, and an outer circle of audience members who were able to move to the inner circle if they felt so inclined, worked very well. The resulting discussion in the inner circle was fast-flowing, open and did not skirt around difficult issues.



Other participants responded by email later. These are quoted below.

- “Terugkijkend vond ik het een prima debat... goede vorm; zeer geëngageerd en goed perspectief voor vervolgstappen. Nu nog even afwachten of het kabinet uit de crisis komt anders komt veel weer on hold.”
- “Gisteren was een DPRN dag zoals we die graag zien. De vorm was een geweldige vondst (die moeten we ook in andere situaties maar gaan gebruiken!) en de inhoud was rijk en degelijk. Iedereen was moe op het eind, en zo hoort het ook. Indicatief was de afwezigheid van twee ministeries die er eigenlijk hadden moeten zijn (LNV en EZ), maar indirect waren ze er natuurlijk wel (de man van LEI heeft bijna dagelijkse contacten met LNV en de dame van Agentschap NL, het oude SenterNovem, kan gezien worden als vooruitgeschoven post van EZ).”<sup>5</sup>
- “Dank voor een interessante bijeenkomst waar we op voort kunnen borduren”.

### **Suggestions for improvement ('tips')**

The involvement of policymakers in a discussion should be prepared with more caution. If policymakers see each other's names on the list of 'invitees' they may feel that they can stay away. We were aware that the policymakers had contacted each other beforehand, to discuss their own input, presence or absence.

### **Plan for follow up**

The agrofuel consortium drafted a project proposal for designing a methodology and to experiment with participatory environmental planning in the palm oil industry of West Kalimantan, Indonesia. This proposal was submitted to the Global Sustainable Biomass Fund, and will also be submitted to other donors during the course of 2010. Several agrofuel consortium members are participating in this proposal. If it is funded, 3 years of very intensive cooperation, project activities and document writing will follow.

An international follow-up meeting ('The Great Escape') with Southern experts on the issue has already taken place on 26-27 April 2010 in Amsterdam, organised by IUCN. The private sector was also represented at this meeting, as a starting point for new cooperation.

New activities are going to start this year. Each consortium partner has existing and new links with this topic, and will continue to pursue these.

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<sup>5</sup> “Reflecting on the debate, I think it went well. It had a good form, it was engaged, and it is a good basis for further steps. If the government will be in crisis however, things will delay again.” “This was a day as DPRN likes to see. The form was great, and is an example to replicate, the contents was rich and thorough. It was indicative that LNV and EZ were not there, although they were represented by the other agencies SenterNovem. LEI and Planbureau”. “Thanks for the interesting meeting on which we can build in future”.

## Reflection

The agrofuel consortium project was an experiment which easily brought together NGOs and scholars as regards approach, theme and type of activities. The link with policymakers was more difficult to establish. The gap is still large and it took time to discuss and prepare the meeting in a way that policymakers thought was relevant and interesting to devote time to. The idea to interview policymakers was a good one, because it caught their attention and facilitated a follow up on private discussions. It made the connection easier, and this will be replicated in the future.

Policymakers were alerted to the even more urgent need for biofuels since the 18 February event. The EU has now agreed not to target fossil fuel blending with biofuels above 5.5 %, which was one of the aims that featured during the discussion.

Our hope for a very lively discussion on biofuels during the event in April at the IUCN office – which was fully booked – completely fulfilled our expectations.

## Appendix 1 – Programme

### **Brandende vragen. Zekerheden en onzekerheden in wetenschap en beleid omtrent biobrandstoffen.**

Den Haag, 18 februari 2010

#### OCHTEND

9.30 – 10.10	Inloop en koffie
10.10 – 10.40	Introductie van doelen, proces en deelnemers, en presentatie van brandende vragen door Heleen van den Hombergh
10:40 – 11:10	Eerste ronde discussie: zekerheden en onzekerheden m.b.t. tot noodzaak
11:10 – 11:55	Tweede ronde discussie: zekerheden en onzekerheden m.b.t. kansen en risico's. Incl. korte koffie pauze op geschikt moment
11:55 – 12:30	Derde ronde discussie: zekerheden en onzekerheden m.b.t. governance
12:30 – 13:00	Inzichten van de ochtend m.b.t. consensus en verschillen? Wat nemen we mee naar vanmiddag? Rapporteurs doen verslag

#### LUNCH

#### MIDDAG

14:00 – 14:10	Inloop en koffie, verwelkomen nieuwe deelnemers door Paul Wolvekamp.
14:10 – 14:30	Presentatie inzichten ochtend
14:30 – 16:00	Discussie(s) m.b.t. 3 hoofdthema's, incl. thee en/of sapje
16:00 – 17:00	Gegeven deze inzichten in zekerheden en onzekerheden, wat staat ons te doen. En hoe leggen en verspreiden we verslag.

<http://www.agrofuelsplatform.nl>

*The Development Policy Review Network ([www.DPRN.nl](http://www.DPRN.nl)) promotes informed debate and synergy between scientists, policymakers, development practitioners and entrepreneurs. DPRN has a web portal which provides searchable access to development expertise in the Netherlands and Belgium ([www.global-connections.nl](http://www.global-connections.nl)) and a repository for publications of Dutch development organisations ([www.Search4Dev.nl](http://www.Search4Dev.nl)).*

## Appendix 2 – List of participants who attended the event on 18 February 2010

	<b>Name</b>	<b>Surname</b>	<b>Email</b>	<b>Organisation</b>	<b>Sector</b>
1	Martha	Bakker	martha.bakker@wur.nl	WUR	Science
2	Prem	Bindraban	prem.bindraban@wur.nl	WUR	Science
3	Sjaak	Conijn	sjaak.conijn@wur.nl	WUR	Science
4	Ralph	Brieskorn	ralph.brieskorn@minvrom.nl	VROM	Policy
5	Ton	Dietz	a.j.dietz@uva.nl	UVA	Science
		Van den		IUCN NL Nature and	
6	Heleen	Hombergh	heleen.vandenhombergh@iucn.nl	poverty.net	NGO
7	Otto	Hospes	otto.hospes@wur.nl	WUR	Science
8	Peter	De Koning	pdk@mekonecology.net	DGIS/Mekon Ecology	Policy/consultant
9	Koen	Kusters	k.kusters@uva.nl	UVA/WiW	Science
10	Madelon	Meijer	madelon.meijer@oxfamnovib.nl	OXFAM/Novib	NGO
11	Dicky	De Morree	dicky.de.morree@cordaid.nl	Cordaid	NGO
12	Kor	Voorzee	kor.voorzee@cordaid.nl	Cordaid	NGO

13	Tim	Mulder	t.mulder@etcnl.nl	ETC	Consultant
14	Ella	Lammers	ella.lammers@agentschapnl.nl	Agentschap NL	EZ/Science
15	Hans	Van Meijl	hans.vanmeijl@wur.nl	LEI/WUR	Science
16	Danielle	De Nie	danielle.denie@iucn.nl	IUCN NL	NGO
17	Jan	Ros	jan.ros@pbl.nl	Planbureau voor Leefomgeving	Policy
18	Theo	Van de Sande	theo.sande@minbuza.nl	DGIS	Policy
19	Sarah	Stattman	sarah.stattman@wur.nl	WUR	Science
20	Pita	Verweij	p.a.verweij@chem.uu.nl	Copernicus Institute, UU	Science
21	Willem	Wiskerke	w.wiskerke@natuurenmilieu.nl	SNM	NGO
22	Karen	Witsenburg	kw@bothends.org	Both ENDS	NGO
23	Paul	Wolvekamp	pw@bothends.org	Both ENDS	NGO
24	Leo	Van der Vlist	leo.vandervlist@nciv.net	NCIV	NGO
25	Gerrie	Van de Ven	gerrie.vandeven@wur.nl	WUR	Science
26	Kim	De Vries	kim.devries@dprn.nl	UVA/ DPRN	Science

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### List of consortium members

	Name	Surname	Email	Organisation	Sector
1	Karen	Witsenburg	kw@bothends.org	Both ENDS	NGO
2	Paul	Wolvekamp	pw@bothends.org	Both ENDS	NGO
3	Heleen	Van den Hombergh	heleen.vandenhombergh@iucn.nl	IUCN NL/Nature and poverty.net	NGO
4	Koen	Kusters	k.kusters@uva.nl	UVA	Science
5	Ton	Dietz	a.j.dietz@uva.nl	UVA	Science
6	Otto	Hospes	otto.hospes@wur.nl	WUR	Science
7	Coen	Ritsema	coen.ritsema@wur.nl	WUR	Science
8	Denyse	Snelder	snelder@cml.leidenuniv.nl	VU	Science
9	Dicky	De Morree	dicky.de.morree@cordaid.nl	Cordaid	NGO
10	Peter	De Koning	pdk@mekonecology.net	Mekon ecology	Consultant
11	Tim	Mulder	t.mulder@etcnl.nl	ETC	Consultant

## Appendix 3 – Background papers

**‘Burning questions – Certainties and uncertainties concerning agrofuels’ by Koen Kusters.**

Available online at [http://np-net.pbworks.com/f/Kusters+et+al+\(2010\)+Agrofuels+Burning+Questions-draft+for+DPRN.pdf](http://np-net.pbworks.com/f/Kusters+et+al+(2010)+Agrofuels+Burning+Questions-draft+for+DPRN.pdf)

**‘Summary of the discussion at a DPRN expert meeting on 18-02-2010, The Hague’**

Available online at: [http://np-net.pbworks.com/f/DPRN+\(2010\)+Burning+Questions+Summary+of+Debate+on+Agrofuels+Feb+2010.pdf](http://np-net.pbworks.com/f/DPRN+(2010)+Burning+Questions+Summary+of+Debate+on+Agrofuels+Feb+2010.pdf)

### Introduction

Within the framework of the Development Policy Review Network (DPRN), the Dutch Agrofuels Platform organised a meeting between scientists, NGO representatives and policymakers in The Hague on 18 February 2010. The purpose of the meeting was to bring scientists and policymakers together and to enable scientists to present and discuss the status of science, and discuss uncertainties and assumptions related to agrofuels among policymakers. The central question was:

*What are the certainties and uncertainties related to agrofuel production and its effects, and how can policymakers deal with these?*

In the morning session, the discussion focused on the findings of science, while the afternoon session focused on their implications for Dutch and European policies. The meeting was closed and held under Chatham House Rule so as to encourage all participants to speak freely and from a personal and professional perspective. The 25 participants (see Appendix 1) included 11 scientists, 10 NGO representatives, 1 consultant and 2 senior policymakers. Some participants are also members of the Committee for Biomass Sustainability Matters (Commission Corbey). This report summarises the main discussions that took place during the meeting.

### The scope of the discussion

Although the discussion also touched on the use of biomass for other purposes (*e.g.* electricity generation and production of bioplastics), it focused primarily on agrofuels, *i.e.* liquid fuels produced from agricultural commodities. The reason for this is because the Renewable Energy Directive (RED) of the European Union is the main driver for the production and use of agrofuels. The reasons for Dutch and European governments to stimulate the use of agrofuels are: (i) to meet the policy objectives of reducing GHG emissions in the transport sector; and (ii) the need to become less dependent on fossil oil reserves. An *underlying* motivation for this policy is related to the assumption that agrofuel production will revitalise the agricultural sector in various European countries (*e.g.* the Netherlands, UK, Germany and France).

The debate was organised around three key themes: (i) Necessity of agrofuels from a Green House Gas (GHG) reduction and energy scarcity perspective (ii) Opportunities and risks; and (iii) Governance and governability.

## 1. Necessity of agrofuels

### *Demand*

Even though electricity is likely to become more important in the transport sector, the demand for liquid fuels is not going to disappear in the short or medium term (*vis-à-vis* current engines used). The demand for energy in the transport sector is still growing fast and the dependency on fossil fuels is high. Moreover, energy diversification is a policy goal of the Dutch and European governments, which implies that biofuels will be part of the energy mix, especially in the transport sector. First generation biofuels (mostly agrofuels) are not, in theory, indispensable since the alternatives are electricity and hydrogen. However, at the moment battery-based vehicles have a limited range and are therefore not suitable for long distance transport by trucks. For the moment, biodiesel would be necessary.

Reference was made to the Scientific American (November 2009), which outlines a scenario whereby 100% of global energy needs can be met from wind, solar, geothermal and hydro in 2013 at costs which are competitive in relation to current price levels of fossil fuels. This would solve our electricity needs, but not the need for transport fuels. Moreover, in practice there are strong vested interests in the production and processing of first generation biofuels (*e.g.* biodiesel and ethanol plants throughout Europe and in the Netherlands in the harbours of Rotterdam and Amsterdam). This creates a so-called 'lock-in effect' which makes a shift to second and third generation biofuels more difficult.

In addition to biofuels, biomass is used for co-firing in electricity production. Furthermore, demand for biomass for the production of higher value products, such as bioplastics, is expected to grow. The agrofuel debate should therefore also be discussed in the wider context of a bio-based economy, *i.e.* including purposes other than energy.

Various countries (both in the North and in the South) are working to make their own bio-based economies less dependent on the import of (expensive) fossil fuels. Currently, however, most agrofuel producing countries tend to focus on export rather than the use of agrofuels for their own domestic purposes. The demand for agrofuels is artificially triggered by policy measures. However, as soon as the price of fossil fuels increases, demand will naturally increase as well. The question is how much additional demand is triggered by European Union countries – for which import of agrofuels is necessary – and is this additional demand desirable from a land-use perspective? Another question is to what extent can the Dutch government realistically envision to positively influence agrofuel developments?

During the discussion it was mentioned that the FAO estimated that, in 2050, an additional 70 million hectares are to be converted into agricultural production to meet the demand for food based on 120 million ha in the South and approximately 50 million in the North. This raises the question of why the North would take 50 million ha out of production given the rising demand for food, fuel and fibre and given the worry of triggering negative social and biodiversity impacts in the South. A recent WAB<sup>6</sup> study by Wageningen University estimates

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<sup>6</sup> Wetenschappelijk Assessment en Beleidsanalyse klimaatverandering.



that replacing 10% of all liquid fuels (globally) with biofuels would require between 100 and 170 million ha. There is serious doubt as to whether such an amount is or will become actually available without endangering food production or loss of biodiversity.

In general, participants are not opposed to the 'bio-based economy' reducing dependence on oil, but note that smart choices will need to be made (*i.e.* for which end uses are we going to use what type of biomass), given the fact that the amount of biomass that can be sustainably produced is limited. Multiple uses of biomass sources will be indispensable. However, the Renewable Energy Directive – even though it is unique as an obligatory standard for biofuels at EU level – does not appropriately control undesired effects and there is therefore a risk of it not achieving its goal of reducing GHG emissions.

### *Reduction of GHG emissions*

Although the main economic reason for agrofuel demand is to diversify the energy strategy, the second main reason is the need to reduce GHG emissions in the transport sector. However, the question is whether the use of agrofuels actually contributes to reducing GHG emissions? Scientists highlight two problems with the methods currently used to calculate GHG emissions. First, when calculating the GHG balance of direct land-use change, there is no accepted method for including changes in N<sub>2</sub>O emissions from the soil. Second, there is no unambiguous and widely accepted method for measuring the GHG effects of indirect land-use changes (ILUC). The scientists present at the discussion expect virtually all agrofuels with a direct land claim (mainly the first generation agrofuels) to have a negative GHG balance if all effects of ILUC are taken into account. The use of waste and residue streams (to produce agrofuels and generation of electricity) has more potential to contribute to climate change mitigation. Participants agree that, while the bio-based economy is here to stay, most first-generation agrofuels are not GHG efficient, given that they trigger indirect land-use changes. This leads to the question of opportunities and risks.

## *2. Opportunities and risks*

### *Models*

The outcomes of models concerning the potential of global biomass production vary enormously. A small percentage change in meat consumption can have a huge impact on the calculated outcomes. In the first place, the models differ as regards the type of information they aim to present. One type of model examines the maximum biomass potential. Such a model assesses land suitability and finds a theoretical maximum, but does not include information on whether it is realistic and within what time frame. Such models do not incorporate one of the main drivers of expansion, which is infrastructure. Moreover, most do not include actual or expected land use and social factors, or exclude protected high biodiversity areas from exploitation as production areas. In general, the potential is seriously overestimated and basing policy decisions on such models is considered risky.

For models of the global potential of biomass production to become realistic, a wide range of considerations would need to be included, like those mentioned above. Including more considerations generally translates into downsizing the outcome. This is not to say that

there is no potential for agricultural growth. Globally, an estimated 18% of the land is used for agriculture, while 10% is protected and no less than 72% lies somewhere in between.<sup>7</sup> Participants agree that there is (at least some) room for both agricultural intensification and agricultural expansion without threatening biodiversity or livelihoods. The key question is how this should be regulated. At various moments participants remarked that 'good governance' and 'strong governments' are *the* crucial factors which ensure a sustainable agricultural intensification or expansion.

Other models, referred to as *effect models*, examine the implications of current demand and trends. These models are based on calculated trends in the global increase of demand for food and feed and assume a certain increase in agricultural productivity. Outcomes are very sensitive to small changes in predictions of agricultural intensification or changing diets. Basically, models are used to describe IF-THEN relationships, but most of the models that are currently used were not set up or suitable to answer policy questions related to indirect land-use changes. Numerous models seem to rely on overly optimistic trends, using predictions of food demand based on linear extrapolations of data that are outdated (although the FAO have adjusted their predictions models are still based on the old FAO data). Scientists emphasise that models should not be perceived as predictions of the future and do not present a certain truth. Many of the parameters used in models are in some way or another related to policy decision-making and scientists urge policymakers to read these studies more carefully as they would help them to base their policy decisions on more solid ground and take uncertainties into account. For their part policymakers stress the fact that they need scenarios that lay out the options: "If you want to attain this, you will have to do this".

A major disadvantage of effect models is that they seldom take account of short-term socio-economic impacts such as a rise in food prices. This could lead to an underestimation of such impacts. Another flaw is that some models assume agricultural expansion on 'marginal' or 'degraded' lands. Given the commercial realities of investors this is highly unlikely (as they require huge inputs to become productive). Furthermore, inputs such as fertiliser (*i.e.* nitrogen) may have serious GHG emission consequences. Furthermore, such lands are quite often used for other purposes, such as temporary pasture lands, or may contain unique biodiversity (c.f. the Brazilian *cerrado* (savannah)).

#### *Agrofuel production in the wider agricultural context*

The extent to which increased future demand for agricultural products will ultimately lead to the expansion of agricultural lands depends strongly on technological improvements (intensification) and land-use regulation, including the protection of natural areas.

Some participants stress that the importance of agrofuel production is limited when seen from the perspective of total global agricultural production. Using the argument that crops grown for biofuels presently account for only 2% of the global agricultural acreage, they claim that the production of energy crops "plays only a minor role, when compared to, for

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<sup>7</sup> In the future, some lands may become more or less suitable for agricultural production due to climate change.

example, global meat consumption". However, while virtually all the scientists present at the meeting acknowledged the huge effect of meat production, they also agreed that the use of crops for biofuels is likely to contribute *significantly* to the growth of the global agricultural acreage in the near future, and warned about downplaying the potential impacts.

Some participants questioned the usefulness of distinguishing between the production of crops for biofuels and crops grown for other purposes. "To a farmer producing oil palm, it makes no difference whether the raw material is used for food or fuel". The production systems are part of the same agricultural realities and impact upon each other. Therefore, all purposes should be taken into account and brought into a wider debate on the implications and sustainability of agricultural development and, if you wish, a bio-based economy. Other participants argue that a distinction between energy crops and other crops is necessary in order to understand that the production of crops for energy purposes is flawed in relation to its objective, *i.e.* reducing GHG emissions. "The production of biofuels results in extra agricultural expansion, which leads to extra GHG emissions through, among other things, deforestation and the release of greenhouse gasses from soils, and it therefore fails to meet its objective."

Increased production of agricultural crops for biofuels may lead to a further increase in food prices. While this would mean higher incomes for net food producers, it would have negative effects for the food security of the majority of people, as most people in the world are net food consumers. When talking about food security a distinction needs to be made between short-term effects on food security in developing countries and food security of the world population in the long term. Furthermore, whether or not agrofuels pose a direct threat to food security clearly depends on technological developments. Some claim that increased demand for biofuels triggers agricultural innovations. Others note that the demand for agricultural commodities is rising spectacularly anyway and stress that the possibilities of intensification are not endless, especially because of the limited availability of essential inputs (nutrients, water) .

### 3. Governance

#### *Governability and sovereignty*

To what extent are effects controllable and/or is there a political will to control effects to begin with? When considering this question, it is important not just to focus on production in the South, but to address production in Europe as well. Europe should not take land out of production and shift the burden to the South. Moreover, Europe should not impose demands on Southern countries which it does not apply to its own member states. For example, the Netherlands refuses to dictate what crop is grown where and leaves that to the commercial farmer. In addition, short-term economic profits mostly prevail over the protection of biodiversity (reference is made to the Prime Minister who stated that protection of Natura 2000 areas is hindering economic development).

Worldwide, there tends to be a significant gap between rules and realities. We can develop norms and criteria, but the reality is that implementation is more difficult and often lags behind. In fact, we are still at the very beginning of the process of implementing sustainability standards in practice. This issue becomes even more relevant in countries that

lack a properly functioning government. Many agreements and rules cannot be implemented due to unforeseen situations, such as disasters, failing governments and wars. In some countries the juridical framework is paralysed as a result of thousands of land conflicts. Governments of producing countries do not always act in the interest of its citizens.

Our discussion of criteria therefore bypasses the land-use and political realities in producing countries, not least because it is impossible to oblige non-EU producing countries to adhere to criteria which are intended to control indirect land-use changes and also because it directly affects countries' sovereignty. It is argued that the principle of national sovereignty is often raised (by political-economic elites from both producer developing countries and OECD importing countries) for self-serving reasons, for example as an argument for non-interference with complex issues such as trade regulation (non-trade concerns), land rights and land-use planning. The current renewable energy directive (RED) criteria used for biofuels are straightforward and acceptable when they relate directly to the product and direct land-use change. Under the WTO ruling such a direct demand on product quality and sustainability is allowed if it applies to all countries and producers. However, certification is more complicated as soon as indirect land-use changes (ILUC) criteria are introduced, as these refer to a country's wider agricultural policies and therefore its sovereignty. This creates a dilemma. ILUC concerns are considered legitimate but demands concerning ILUC might not be acceptable under World Trade Organisation (WTO) rules. Including spatial planning requirements (*e.g.*, making an enforced zoning system mandatory to protect areas mentioned in RED, but not stating what to produce, where and how) in sustainability criteria might be a way forward as regards solving the dilemma of sovereignty, sustainability and GHG reduction.

Does sovereignty imply that the Netherlands cannot take a clear stand? Does it mean that the Netherlands should not get involved in trying to improve the governability of effects? Some stress that WTO rules are not the only governing principle because they allow for international and bilateral agreements. Reference is made to existing agreements such as those on climate change, nature conservation (*e.g.* Convention on Biological Diversity), human rights and labour (*e.g.* ILO). The question is then to what extent agreements (at global, European, or bilateral levels) can be used to address the negative effects of land-use changes. The Global Bio-Energy Partnership (GBEP) might lead to an international agreement between nations on what sustainability entails. Moreover, the Netherlands might facilitate – through the European Union – bilateral agreements with non-EU producing countries (similar to the 'Everything but Arms' – agreement).

#### *Pros and cons of blending targets*

*Pros:* According to some, legally defined blending targets offer a unique and unprecedented legal opportunity to implement obligatory sustainability criteria for agrofuels. This, in turn, should have positive effects on wider agricultural production. Proponents of the blending targets therefore hope that (elements of) the biofuel regulation will spill over to the wider agricultural sector, *i.e.* setting sustainability criteria for the bio-based economy. The question, therefore, is how similar arrangements can be used for other commodities. Furthermore, proponents of the blending targets note that the regulations can be adjusted to create extra incentives for second-generation biofuels (which has already happened in the

Netherlands). Finally, it is argued that the unwanted effects of the current imports of biofuels in the Netherlands should not be exaggerated, based on the observation that most of the ethanol imported into the Netherlands comes from Brazilian sugarcane (performing relatively well in terms of its GHG balance) and that about half of the biodiesel used in the Netherlands is derived from residual fats.

*Cons:* Other participants are of the opinion that the current blending targets form a poor policy tool, as the sustainability criteria are weak and risks associated with agricultural expansion are large. Some participants argue in favour of abolishing the blending targets all together. They are not convinced by the argument that blending targets provides an entry point to implement sustainability criteria. “Why would you want to increase the demand for agricultural products artificially if you know that the use of agrofuels will not contribute to significant GHG emission reductions, has unacceptable social implications (*e.g.* human rights and land rights violations), while it will inevitably lead to extra agricultural expansion, possibly at the expense of biodiversity, food security and smallholder agriculture?” They argue that it is better to invest in productivity and sustainability of the agricultural sector as such, and in various initiatives that are already in place to pursue sustainability of trade chains.

#### *The need to make adjustments*

All participants agree that, within the European context, it is necessary (and possible) to adjust the current regulations. The Netherlands should play an active role in improving the Renewable Energy Directive criteria and guidelines (even if this implies confronting WTO regulations), as they are currently insufficient. There is an urgent need to include the following in the RED sustainability criteria: (i) indirect land-use changes (ILUC); (ii) N<sub>2</sub>O emissions; and (iii) social criteria (*e.g.* ILO related). Moreover, incentives for second/third-generation biofuels can be developed in more detail. Some participants note that Member States are currently not allowed to set higher sustainability criteria than the EU RED (for biofuels and bioliquids), which translates into a lack of incentives for producers to raise their standards.

Though everyone agrees that ILUC needs to be included in the criteria, scientific models to measure ILUC have not yet been agreed upon and are therefore inappropriate. Some insist that currently the variations in methods are simply too large, making it impossible to implement in the short term. Others advocate rapid implementation of ILUC criteria, leaving room to improve the method along the way. The use of stricter criteria means it becomes questionable whether national blending targets can be attained. A serious evaluation is therefore required in a couple of years. Empirical fact finding on the ground is needed to assess the effects of the policies. A possible outcome of the evaluation could be that the blending targets need to be lowered or abandoned.

#### *Beyond the targets*

As soon as the production of agrofuels becomes commercially more profitable compared to fossil fuels (oil price), the blending targets will become irrelevant. How should sustainable agrofuels then be promoted? Some believe that, ideally, the Netherlands should stop the import of uncertified agrofuels via the Port of Rotterdam. However, this is considered a trade

barrier and is not allowed by WTO regulations. Many participants agree that the Netherlands should take a bold and clear position concerning social and environmental principles in discussions on WTO regulations. The Netherlands could decide only to import certified biofuels, regardless of the blending targets. This would be opposed by economic parties and so far there is no political will to do this. On the contrary: the Netherlands promotes the port as the main gateway to Europe and wants it to become a biofuel hub.

*Some points of concern raised at the meeting*

Bearing in mind current social and political conditions in producing countries (notably in the South, but also in the North), experiences so far show that one cannot be overly confident about the potential to alter current modes of biofuel production so that they become more sustainable. In addition, 'producing countries', 'governments' and 'societies' are not homogenous entities. The key questions that need to be addressed in order to achieve sustainable biofuel development are: Who decides? Who represents who? and Who wins and who loses? The position of smallholders, indigenous people and women needs to be addressed since they are most likely to suffer the possible negative effects (deforestation, land grab, dismal labour conditions and social tensions) in anonymity. One option could be appropriate and enforced spatial land use planning as a pre-condition for preventing negative effects of agricultural expansion for local livelihoods and biodiversity. However, this cannot be enforced by the importing countries. One cannot rely too much on certification if accompanying pre-conditions, such as good governance and appropriate land-use planning in producing regions, are not being met.

It is regrettable that the departments for agriculture (LNV: responsible for the bio-based economy) and economic affairs (EZ: responsible for domestic energy use) did not attend the discussion. That would have enriched the discussion perspectives. Several participants feel that the Dutch government is failing to be sufficiently coherent, and is not taking the risks of biofuel production seriously enough. Could the Netherlands calculate what its biofuel policy implies for its ecological footprint? In addition, the EU should examine its evaluation milestones and create earlier opportunities to review the impacts – positive and negative – of the EU Renewable Energy Directive which would facilitate timely measures.

The biofuel dossier should be approached within the wider context of a bio-based economy, which includes the use of biomass for purposes other than energy and which will result in additional pressure on land. Biomass needs to be reconsidered in the light of opportunity costs. It is crucial that investment choices promote energy options and technological routes which are truly future proof and help avoid lock-in effects.

We should ask ourselves what is constraining the development of a truly sustainable energy sector using solar and wind energy? In the face of a growing population and its consumption levels, land is increasingly scarce. Even when good governance is in place, potential negative indirect effects of agricultural expansion are not fully controllable. The need to invest in alternatives that are not land-use intensive was emphasised by several participants, so as to relieve pressure on the world's scarce resources. It can be argued that, as a matter of principle, biological substance should not be used for energy. Instead, all energy needs should be met with the physical energy that is available in huge quantities (solar, wind,

hydro). However, if biomass for energy is still needed which most experts expect, its use for energy could be combined with various other uses.

Scientists should join forces to discuss each other's methods and assumptions since this would allow for greater consensus and clarity. At the same time, policymakers should take account of the assumptions made – and often explained – in studies before using them as a basis for policy without further discussion.

#### *Final remarks*

While some believe “the train (*i.e.* policy-induced agrofuel production) should be stopped”, others argue that “the train should be steered in the right direction”. Although the discussion clearly revealed these two different positions, there is a consensus that sustainability criteria urgently need further improvement, and that blending targets will need to be re-evaluated based on their actual effects on the ground. Existing sustainability criteria will need to account for indirect land-use changes. The Netherlands and the EU should put quality before quantity and, if it is clear that quality does not permit an increase in quantity, the blending targets will have to be adjusted.

## Appendix 4 – Relevant literature

NatureandPoverty.net, initiated by IUCN–NL and of which Both ENDS is a member, plays the role of supporter of this process, and facilitates online knowledge exchange within this platform's network. By locating this webpage within the existing WIKI for knowledge exchange for a wider NGO/researchers audience, NatureandPoverty.net hopes to stimulate mutual enrichment with good materials and insights. This material is on the website and freely accessible at:

<http://np-net.pbworks.com/Agrofuels-Knowledge-Platform>

Relevant background literature available on this website includes:

- [Recommendations](#) of the Corbey Commission
- [Bringezu, S. et al. Towards sustainable production and use of resources: Assessing biofuels.](#)
- [Bindraban et al. \(2009\) Can biofuels be sustainable by 2020? An assessment for an obligatory blending target of 10% in the Netherlands. Scientific and policy analysis](#)
- Fairbiotrade (2010). Various country reports and other reports on sustainable [international](#) bioenergy Trade.
- Action Aid (2010). Meals per gallon. Industrial biofuels and [hunger](#).
- IUCN (2009). Statement in the context of the European Commission's pre-consultation on "Indirect Land Use Change – Possible Elements of a Policy Approach" Available at: [http://np-net.pbworks.com/f/IUCN+\(2009\)+Statement+on+EC+ILUC+Pre-Consulation+31Jul09.pdf](http://np-net.pbworks.com/f/IUCN+(2009)+Statement+on+EC+ILUC+Pre-Consulation+31Jul09.pdf)
- [Oxfam \(2008\) Another inconvenient truth. How biofuel policies are deepening poverty and accelerating climate change.](#)
- WBGU (2009). Bioenergy Factsheet
- [Schimtz, T. \(2008\) Both ENDS Policy Note. Agrofuels and land distribution: Towards a rights based approach to food security.](#)
- [Colchester, M., Jiwan, N. et al. \(2006\) Promised land and land acquisition in Indonesia: Implications for local communities and indigenous peoples. Moreton-in-Marsh/Bogor: FPP and Sawit Watch.](#)
- [Wicke, B., Faaij, R. et al. \(2008\). Drivers of land/use change and the role of palm oil production in Indonesia and Malaysia. Utrecht: Copernicus Institute.](#)
- [IUCN, Both ENDS, Natuur en Milieu, Milieudefensie & Greenpeace \(n.d.\) Factsheet 2e generatie biobrandstoffen.](#)
- [Searchinger, T. et al. \(2008\). Supporting materials for "Use of U.S. croplands for biofuels increases greenhouse gasses through emissions from land use change". \*Science Magazine\* 7 February 2008.](#)
- [SenterNovem \(2008\) Biomassa, Hot Issue, Slimme keuzes in moeilijke tijden.](#)



## Appendix 5 – Policy paper

- Bearing in mind current social and political conditions in producing countries (notably in the South, but also in the North), experiences so far show that one cannot be overly confident about the potential to alter current modes of biofuel production to make them more sustainable. In addition, ‘producing countries’, ‘governments’ and ‘societies’ are not homogenous entities. The key questions that need to be addressed in order to achieve sustainable biofuel development are Who decides? Who represents who? and Who wins and who loses? There is a need to address the position of smallholders, indigenous people and women since they are most likely to suffer the possible negative effects (deforestation, land grab, dismal labour conditions and social tensions) in anonymity. One option could be appropriate and enforced spatial land use planning as a pre-condition for preventing negative effects of agricultural expansion for local livelihoods and biodiversity. However, this cannot be enforced by the importing countries. One cannot rely too much on certification if accompanying pre-conditions, such as good governance and appropriate land-use planning in producing regions, are not being met.
- The Dutch government is failing to be sufficiently coherent and is not taking the risks of biofuel production seriously enough. Could the Netherlands calculate what its biofuel policy implies for its ecological footprint? In addition, the EU should examine its evaluation milestones and create earlier opportunities to review the impacts – positive and negative – of the EU Renewable Energy Directive which would facilitate timely measures.
- The biofuel dossier should be approached within the wider context of a bio-based economy which includes the use of biomass for purposes other than energy and which will result in additional pressure on land. Biomass needs to be reconsidered in the light of opportunity costs. It is crucial that investment choices promote energy options and technological routes which are truly future proof and help avoid lock-in effects.
- We should ask ourselves what is constraining the development of a truly sustainable energy sector using solar and wind energy? In the face of a growing population and its consumption levels, land is increasingly scarce. Even when good governance is in place, potential negative indirect effects of agricultural expansion are not fully controllable. The need to invest in alternatives that are not land-use intensive is emphasised by several participants, so as to relieve pressure on the world’s scarce resources. It can be argued that, as a matter of principle, biological substance should not be used for energy. Instead, all energy needs should be met with the physical energy that is available in huge quantities (solar, wind, hydro). However, if biomass for energy is still needed, which most experts expect, its use for energy could be combined with various other uses.
- Scientists should join forces to discuss each other’s methods and assumptions since this would allow for greater consensus and clarity. At the same time, policymakers should take account of the assumptions made – and often explained – in studies before using them as a basis for policy without further discussion.
- Sustainability criteria urgently need further improvement, and blending targets will need to be re-evaluated based on their actual effects on the ground. Existing sustainability

criteria will need to take account of indirect land-use changes. The Netherlands and the EU should put quality before quantity and, if it is clear that quality does not permit an increase in quantity, the blending targets will have to be adjusted.

