

# DPRN PHASE II – REPORT NO. 10

## GM Soy Debate: Creating common sense on genetically modified soy

**Solidaridad**



## **Colophon**

This document reports on the process titled ‘GM Soy debate: creating common sense on genetically modified soy?’ which was carried out within the framework of the Development Policy Review Network (DPRN) and organised by Solidaridad, Wageningen University, WNF and AidEnvironment. 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 ‘GM soy debate: creating common sense on genetically modified soy’**

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**Period:** July 2008 – June 2009

**Responsible organisations:** Solidaridad, Wageningen University and Research Centre, WWF Netherlands, AidEnvironment

## **Introduction**

In July 2008 Solidaridad, Wageningen University and Research Centre, WWF-Netherlands (WNF) and AidEnvironment started a one-year process within the framework of the Development Policy Review Network. The objective of this process was to initiate a constructive, informed and science-based debate on the benefits and drawbacks of GM soy from an environmental and rural development perspective. The idea was that this process would lead to practical and broadly supported recommendations for:

- The inclusion of GM-related risks and benefits into the Round Table on Responsible Soy (RTRS) standard;
- The prevention and mitigation of GM-specific sustainability risks of soy production; and
- The promotion of GM-specific sustainability benefits of soy production.

The GM Soy Debate consisted of two simultaneous processes, namely scientific research and consensus building. The research aims to clarify and validate stakeholders' claims regarding risks and possibilities of GM soy. Consensus was to be built through a Stakeholder Conference and online discussion through the GM Soy Debate Web Community.

This report documents the results of the process, the theme addressed, the activities realised, the target groups reached, and the output and outcome realised, particularly in relation to the DPRN objectives.

## **Background to the theme**

The debate about the impacts of genetic modification is highly polarised. Proponents and opponents rarely enter into a direct discussion with each other, but instead try to convince policymakers and the public using opposing scientific claims. The quality of scientific work on GM is generally secondary to its outcome. As a result, there is no real science-based debate about the research findings. Such a debate is, however, a condition for a growing consensus on the risk and benefits of GM soy. In turn, this consensus is a condition for the creation of sustainability standard for soy cultivation.

Although the theme seems at first sight to have limited relevance to development policies, the issue of GM is closely interknit with rural development. This is shown by the following examples. Proponents of GM claim that herbicide-tolerant GM increases yields for farmers, while reducing the need for labour input. They also claim that more land remains for poor farmers as the yield per unit area of GM soy is higher and therefore requires a smaller production surface. Another claim is that glyphosate has negative impacts on human health in soy production areas. On the other hand, opponents claim that farmer dependence on seed suppliers is increasing and that seed suppliers are taking advantage of this lopsided relationship at the expense of farmers. Opponents also claim that the use of herbicide-tolerant crops has environmental downsides and leads to health problems among the rural population. Moreover, they argue that crops do not remain herbicide-resistant. It is claimed that, in the longer term, this forces farmers to spend more on herbicides instead of less.

These issues are at the core of structural rural poverty alleviation and they are relevant to food production systems and human rights. The GM Soy Debate tried to make these issues debatable by examining the existing scientific support base for claims relating to the sustainability impacts. These claims mostly address agro-ecological impacts, as this is the field in which most peer-reviewed studies have been done so far. However, these agro-ecological impacts can easily be translated into socio-economic impacts on family farmers, farm workers and rural communities.

## Activities

In order to achieve informed debate, policy review, common agenda setting and inter-sectoral cooperation, the process was targeted at bringing together the various sectors and identifying opportunities for cooperation. To this end the process included the following activities:

### *Research*

Plant Research International performed literature research in cooperation with the University of Buenos Aires and Embrapa Soybean (Brazil). The literature research focused on:

- Determining the current and near future commercial application of GM technology in soy production;
- Collecting and validating claimed impacts, risks and opportunities of current and near future application of GM technology in soy production. The Research Report was compiled by Prem Bindraban *et al.* (2009) and entitled 'GM-related sustainability: agro-ecological impacts, risks and opportunities of soy production in Argentina and Brazil. A link to the scientific report can be found on <http://gmsoydebate.global-connections.nl/>.

### *Steering committee meetings and stakeholder involvement*

In order to embed the scientific work into the public discussion, the GM Soy Debate organised three discussion forums:

1. *Steering Committee*: The role of the Steering Committee was to help increase the relevance of the research and project outcomes. The Steering Committee advised the research and project teams and their members then used this advice in accordance with their insights. The Committee members came from a variety of backgrounds, as shown in the table below.

Name	Organisation, position	Country
Prof. Dr ir. Gerard de Vries (president of the SC)	Department of Philosophy, University of Amsterdam	The Netherlands
John N. Landers	Director, Associação de Plantio Direto no Cerrado (APDC)	Brazil
Richard Holland	WWF International	Switzerland
Ulises Martinez Ortiz	Department of Conservation and Sustainable Development, Fundación Vida Silvestre	Argentina
Frans Köster	Trade Policy and Biotechnology, Product Board MVO	The Netherlands
John Fagan	Chief Scientific Officer, Global ID	USA
Agustin Bianchini	Technological Prospective, AAPRESID	Argentina
Jan Maarten Dros	Sustainable Agri-commodities Programme, Solidaridad	The Netherlands

The Steering Committee met five times during the project period, four times in the form of telephone conferences and once in the form of a physical meeting. Discussions concerned the research outline, the stakeholder conference, the draft report and the organisational set-up of the GM Soy Debate. The Steering Committee wrote a Cover Letter to the scientific report, outlining their major comments. This cover letter can be found in Appendix 1.

2. *Stakeholder Conference*: A conference was organised to discuss the preliminary outcomes of the literature research by Wageningen University and Research Centre. The Conference, which was attended by about sixty people (see Appendix 2 for the programme and Appendix 3 for the list of participants), was an important step forward in the sense that it brought together opposing parties and prepared them to listen to each other's arguments. It continued to be difficult to reach a consensus, but some notions were shared. These are outlined in the letter of thanks which was sent to the conference participants and which can be found in Appendix 4

3. *Interactive website*: a website was created to inform stakeholders about the process and to start a web-based discussion. Although over a hundred people from all over the world registered for the newsletter and other web services, we did not manage to initiate a web-based discussion. Very few subscribers uploaded studies and other material.

The organisers were invited to present the outcomes and methodologies of the project on several occasions:

4. *Interdepartmental government meeting:* Following an invitation by the Ministry of Housing, Spatial Planning and the Environment (VROM), the organisers presented the project to representatives of the Ministry of VROM, the Ministry of Agriculture, Nature and Food Quality (LNV) and the Ministry of Foreign Affairs. The discussion focussed on how to integrate the project's methodologies of public discussion into the ongoing debates at government level (e.g. development of socio-economic criteria for admitting GM crops into the EU).
5. *Speech:* Based on the above event, Solidaridad director Nico Roozen was invited to address a large (200) and diverse group of stakeholders at an seminar organised by the Ministry of LNV on genetic modification and sustainability. His speech can be found in Appendix 5.

#### *Reporting and communication*

Public communication about the GM Soy Debate and its outcomes was provided via various channels:

- Website: <http://gmsoydebate.global-connections.nl/> with 1,237 unique visitors by mid-March 2009. The website was developed in close cooperation with DPRN and filled with content and maintained by Aidenvironment.
- E-Newsletter: Four newsletters were sent out to the more than 100 subscribers to the website on important moments in the process.
- The scientific report by Prem Bindraban *et al.* (2009): GM-related sustainability: agroecological impacts, risks and opportunities of soy production in Argentina and Brazil Downloadable from the GM Soy Debate website (see <http://gmsoydebate.global-connections.nl>) and also available as a hard copy.
- A public summary of the research report entitled: Agro-ecological impacts, risks and opportunities of soy production in Argentina and Brazil was made available in English, Spanish and Portuguese. The public summaries are downloadable from the GM Soy Debate website (<http://gmsoydebate.global-connections.nl>), while the English public summary is also available as a hard copy (1,500 copies).
- Presentations by Wageningen University and Research Centre: Prem Bindraban presented the research outcomes at the Product Board for Margarine, Oils and Fats (Productschap Margarine, Vetten en Oliën – MVO) and René Smulders presented the research outcomes at the prestigious 7th World Soybean Research Conference held in Beijing, China, in August 2009.

## Results

The objective of this process was to initiate a constructive, informed and science-based debate on the benefits and drawbacks of GM soy from an environmental and rural development perspective. This process was set in motion by the GM Soy Debate. It provided high-quality input for discussion and sparked interest at the Ministries of VROM (that agreed

to finance part of the project) and LNV (that invited Solidaridad to present the project at its GM stakeholder seminar). Wageningen University and Research Centre and the Universidad de Buenos Aires have expressed a wish to perform follow-up research on the property rights-related issues and are actively looking for funding. Many people and organisations have come into contact with the debate and the preliminary findings of the research.

The process objectives included practical and broadly supported recommendations for:

- the inclusion of GM-related risks and benefits into the Round Table for Responsible Soy (RTRS) standard. This has not yet happened. Some members of the Steering Committee considered the possibility of introducing the process outcomes in the standard setting discussions at the general assembly of the RTRS in Campinas, Brazil in May 2009. However, as the RTRS process was in an exceptionally fragile state at that time, it was decided not to re-open this highly explosive discussion. The public summary of the research report is going to be introduced by Solidaridad in RTRS at a later stage.
- the prevention and mitigation of GM-specific sustainability risks of soy production and the promotion of GM-specific sustainability benefits of soy production. The research report contains useful recommendations for preventing some of the identified risks (especially weed resistance, co-existence, herbicide drift) and opportunities (zero tillage, conservation agriculture).

The GM Soy Debate clarified the (limited) relationship between increasing economies of scale, the shift to monoculture and the application of GM seeds and technology. This has contributed to a more focused discussion. The project revealed a broadly-shared need to increase the understanding of the socio-economic impacts of GM Soy cultivation. There is almost no scientific research available that would help the issue to depolarise.

The following were the outcomes as far as the Stakeholder Conference is concerned:

*Process issues:*

- Project governance is currently unclear. The process leading up to the stakeholder conference and research as well as research team selection should have been more transparent.
- A more elaborate governance structure and moderator staff are required in order for all stakeholders to participate fully in the governance of this project.
- There is a lack of unbiased studies on the environmental, socio-economic, health, institutional and other impacts of GM soy. This is partly due to the relative absence of publicly-funded research in this field.

*Content issues:*

- The use of the word sustainable should be avoided in relation to GM soy. It is more appropriate to discuss the relevant socio-economic and environmental impacts directly;

- The scope of the research should be widened, at least to the level of including socioeconomic impacts of GM soy production. Subjects such as food safety and ethics should also be included in the future;
- Participants expressed the need to discuss the current global agricultural production model and overconsumption as root causes of GM soy and to explore alternatives to it;
- Technologies have built in social-technical codes. In case of Roundup Ready Soy those codes may reflect and preserve unequal social and economic relations;
- Alternatively, technological development can be organised in a way that puts various social actors in control, including disadvantaged people or groups.
- The following practices have been put forward to limit the environmental impacts of RR soy cultivation: crop rotation, herbicide rotation, rotation with pasture, biological pest control and agroforestry. These practices can also have a positive influence for non-GM soy cultivation.

We acknowledge that a lot more has been said, particularly in the afternoon working sessions. However, in the absence of consensus on a lot of those issues, we chose not to describe them here.

## Contribution to the DPRN objectives

### *Stimulating informed debate*

The project has contributed to an informed debate in terms of content as well as structure. The work by WUR is the only scientific publication that reviews a large number of studies concerning sustainability impacts, regardless of the positioning of the authors in the polarised GM debate. It revealed that little is known about those impacts and that there is hardly any monitoring of natural and socioeconomic impacts. When confronted with this observation, Minister Verburg pledged to create a ‘pact of researchers and other stakeholders’ to increase our understanding of those impacts. This is very much in line with the approach taken by the GM Soy Debate. Although this approach is not unique as such, it is innovative in the field of GM controversy. We believe this process has contributed to a breakthrough in the way the debate about biotechnology has been held.

The outcomes of this discussion and research are mainly used outside the direct realm of development policy. Nevertheless, they can be expected to contribute to the formulation of GM-related criteria for sustainable soy under the RTRS framework and of sustainability criteria for EU admission of GM-crops. Still, these schemes can have far-reaching impacts on the lives of (poor) soy producers and rural communities around the world, a substantial number of which are located in poorer regions of Latin America.

### *Involvement of relevant partners*

The objective of the seminar was to bring together academics, policymakers and development practitioners, including the private sector, with a view to initiating discussions and setting the agenda for the years to come. Appendix 3 lists the seminar participants and their respective backgrounds. This overview shows that the conference was attended by 74 people, 30 percent of whom were researchers, 8 percent were policymakers and embassy staff, 27 percent represented the business sector and 35 percent belonged to NGOs. A total of 1,237 people visited the website to download and upload information and to find out more about the debate.

In the various activities which made up this project, we aimed to ensure a solid representation of scientists, representatives from the corporate sector (users and producers), nongovernmental organisations and governments. These were well-represented in the stakeholder conference, the web-community, and the Steering Committee. It was noticeable that corporate parties were somewhat hesitant to engage fully and directly in this sensitive discussion, but they were represented through product boards (e.g. AAPRESID, MVO). This hesitance was also reflected in the unwillingness of corporate sector parties to co-finance this debate.

It was disappointing to notice that representatives from DGIS chose not to participate in the process, based on the argument that such a discussion should be organised in soy-producing countries instead of the Netherlands. We fully agree with the need to develop such a debate in producing countries. However, this requires a much greater effort and budget and the political cultural setting in those countries is such that a process like this could be counter-productive if not well managed. To address the valid argument that the voice of producer countries should be heard in the GM Soy debate, we actively invited proponents and opponents from Argentina and Brazil to take part the research team, the Steering Committee and the Stakeholder Conference and supported their participation financially.

The Ministry of VROM was, however, positive about the approach of the GM Debate. Discussions are ongoing on how they can include it in their operations. This ministry also decided to finance the GM Soy Debate, thereby making up for the lack of financing from the corporate sector.

### *Relevance for policy and practice*

As mentioned before, the outcomes of this debate are expected to find their way to the RTRS standard setting process, which is financially supported by the Dutch ministries of Foreign Affairs and LNV, as well as to the development of sustainability criteria for admission of GM crops to the EU (that the Ministries of VROM and LNV have to propose to the European Parliament by December 2009).

One of the outcomes of this project is the notion that technology-development has built-in socioeconomic codes. Herbicide-resistant GM Soy varieties have been developed to benefit scalable high-tech agriculture. This particular biotechnology may not be very beneficial for poor farmers, but there is considerable potential for biotechnology to help improve the resilience of the poor in the face of climate change, water and soil depletion, rising food

prices, etc. It would be interesting if the Ministry of Foreign Affairs could follow up on this important issue.

### *Enhancing cooperation and synergy*

First of all, the project contributed to direct contact between proponents of GM soy (mostly the corporate sector) and opponents (mostly the NGO sector). This is a relatively new feature of the debate on this issue. Common agenda-setting and direct cooperation are therefore not realistic during this stage of the debate. Nevertheless, there is consensus that there is a need for more research and monitoring of the impacts of GM (soy) cultivation on the natural and social environment. This is now being discussed at senior political levels and is something that Solidaridad will pursue.

### Reactions and evaluation

This project has not been formally evaluated. However, the project evoked a lot of responses which ranged from positive to very negative. Both WWF and Solidaridad received hundreds of e-mails from opponents of the GM Soy Debate who felt that opening the discussion on the sustainability of GM soy legitimizes genetic modification. This position was reaffirmed by a number of NGOs during the Stakeholder Conference in December. There was even a street protest by NGOs like Corporate Europe Observatory and XminY Solidariteitsfonds in front of the conference venue.

At the same time, various corporate parties felt that questioning the sustainability of GM soy would undermine its legitimacy in the market. In the course of the process, their trust and support slowly increased due to the professional approach of both Wageningen University and Research Centre and Aidenvironment. This was symbolised by the offer of the Production Board on Margarine, Oils and Fats to sponsor the catering at the Stakeholder Conference. The Productschap MVO actively participated in the Steering Committee and in promoting the process at the Ministries of VROM and LNV at a later stage, with a focus on a renewed and constructive debate on this topic.

On several occasions, both ministries acknowledged that the approach taken during the GM Soy Debate could serve as a good example for creating a more constructive public discussion about GM.

However, the Steering Committee and the organisers of the Stakeholder Conferences felt that this debate merits a wider scope and more institutional and international embedding. All stakeholders are called upon to use the GM Soy Debate model to discuss the environmental, trade, socioeconomic and health impacts of soy and other crops and other geographical locations. Governments should provide substantial support and funding for such an effort, as they may be expected to be the least partial stakeholder group. Governance of such a debate should take the form of an independent Steering Committee which represents the various stakeholder groups (chain players, including farmers, academia, seed companies, etc.). This Steering Committee should have more responsibilities than it had in the GM Soy Debate, for example regarding the formulation of research questions, the selection of

research teams and public communication. Such a debate should be practically managed by an internationally renowned institute with a long track record in natural resource affairs. It can build on the limited status but considerable experience that has been developed in the GM Soy Debate.

## Plan for follow up

The process has inspired various participants to devise follow-up steps based on its outcomes:

- *The European Union GM Stakeholder Conference:* Solidaridad has been invited to share the lessons learned in a EU Conference on socioeconomic aspects of genetic modification. This includes shaping the conference and the debate. The Dutch Ministry of LNV is organising this conference on behalf of the European Commission. The conference should feed a framework for testing socio-economic impacts in order to agree on the acceptance of GM varieties on the EU market.
- *The 7<sup>th</sup> World Soybean Research Conference:* René Smulders presented the research results at the prestigious 7<sup>th</sup> World Soybean Research Conference in Beijing, China in August 2009.
- *The Round Table on Responsible Soy (RTRS):* Solidaridad is going to contribute the findings of this debate to the RTRS negotiations and others are expected to do the same.
- *Follow-up research:* Plant Research International and Aidenvironment are looking for opportunities to extend the process to more socio-economic impacts as well as institutional aspects of GM (soy) cultivation.
- Solidaridad is going to translate its improved understanding of the subject into concrete activities in its strategic plan for 2011 – 2015, which is currently being drafted.

## Appendix 1 – Cover letter to the scientific report by the Steering Committee

Amsterdam, 9 June 2009

Dear Madam, Sir,

The GM soy Debate initiative started in 2008 with the aim of facilitating a constructive public debate about the application of genetically modified (GM) soy. It is based on an understanding that a common knowledge basis that responds to key stakeholder concerns may provide a platform for discussions among companies, policy makers and multi-stakeholder initiatives and may help promote responsible decision-making on this complex topic. The first project of the GM soy Debate consisted of two simultaneous processes: a scientific research project carried out by Plant Research International of Wageningen University and a process of consensus building among the stakeholders.

The GM soy Debate included a Steering Committee. The Steering Committee functioned as a panel of experts and consisted of an international group of professionals representing NGOs, the soy supply chain and academia. The tasks and responsibilities of the Steering Committee are to help increase the relevance of the research and project outcomes. In this capacity, the Steering Committee delivered a comprehensive set of recommendations on the draft research report to be taken into account in finalizing the report. The final report, however, remains the full responsibility of the authors.

The research report has been published on the GM soy Debate website (<http://gmsoydebate.global-connections.nl/>). This website also allows you to discuss the contents of the research report and I heartily invite you to participate in the spirit of the GM soy Debate: constructive and building consensus. Finally, I would like to thank the Steering Committee members for their valuable contributions and the researchers of Plant Research International who have taken part in the publication of the research report.

Sincerely yours,

Prof. dr. G.H. de Vries  
Chair of the Steering Committee

## Appendix 2 – Programme of the Stakeholder Conference

9 DECEMBER 2008 – AMSTERDAM – THE NETHERLANDS

**Location:** Aristo Amsterdam, Teleportboulevard 100, 1043 EJ Amsterdam

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# PROGRAMME

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**9:00 Registration and tea and coffee**

**9:15 Welcoming address**

*Dr. Mirjam Ros-Tonen, DPRN coordinator, Amsterdam Institute for Metropolitan and International Development Studies (AMIDSt), University of Amsterdam*

**9:20 Introduction to the GM Soy Debate and the conference programme**

*Conference moderator: Peter de Haan, Director SNV Ghana*

**9:30 Social shaping of biotechnology: moving beyond the pro - contra debate on GM Soy**

*Prof. dr. Guido Ruivenkamp, Athena Institute, Free University Amsterdam & Critical Technology Construction, Wageningen UR*

**10:00 Preliminary outcomes literature review of Wageningen UR**

*Dr. Prem Bindraban, Team leader Natural Resources Plant Research International, Wageningen UR*

**10:40 Reaction by scientific review panel**

**11:00 Tea and coffee break**

**11:30 Plenary discussion about literature review**

**12:30 Lunch break**

**13:30 Managing risks and opportunities of GM Soy through Chain of Custody Certification**

*Dr. John Fagan, Chief Scientific Officer, Global ID (USA)*

**14:00 Two working sessions:**

1. Environmental impacts and management options.

Introduction by John Landers (APDC – Brazil)

*Group discussion*

2. Poverty impacts and management options.  
Introduction by Jan Maarten Dros (Solidaridad - Netherlands)  
*Group discussion*

**15:30 Tea and Coffee Break**

**15:45 Plenary reporting of working sessions, discussion and formulation of consensus**

**17:00 Closing and drinks**

**Solidaridad**



### Appendix 3 –List of participants

	Last name	First name	Organisation / Institution	Country	Category
1	Arippol	Josiana	Arippol & Associates–Desenvolvimento Humano e Social	Brazil / Netherlands	Business
2	Assum, van den	Bart	Ministerie LNV	Netherlands	Policy
3	Backus	Gé	WUR-LEI	Netherlands	Science
4	Beek, van	Barbara	Fairfood International	Netherlands	Practice
5	Bekkem, van	Herman	Greenpeace Nederland	Netherlands	Practice
6	Bianchini	Agustin	Aapresid	Argentina	Business
7	Bijvoet	Liesbeth	Aidenvironment	Netherlands	Practice
8	Bindraban	Prem	WUR-PRI	Netherlands	Science
9	Bos	Miep	Natuurwetmoeders	Netherlands	Practice
10	Boswijk	Alec	Energieregie	Netherlands	Practice
11	Bresser	Hanneke	VROM/PorM/DRB	Netherlands	Policy
12	Calker, van	Klaas Jan	CONO Kaasmakers	Netherlands	Business
13	Claassen	Frans	Product Board MVO	Netherlands	Business
14	de Sousa	Ricardo	ABRANGE – Bra Assoc NON GMO Grain Producers	Brazil	Business
15	Deffune	Geraldo	Associação Brasileira de Agricultura Biodinâmica	Brazil	Practice
16	Dortmundt	Janine	Fairfood	Netherlands	Practice
17	Dros	Jan Maarten	Solidaridad	Netherlands	Practice
18	Dungen, van den	Sanne	student (WUR)	Netherlands	Science
19	Fagan	John	Global ID	United States	Practice

20	Franke	Linus	PRI – WUR	Netherlands	Science
21	Geelen, van	Michiel	Milieudefensie	Netherlands	Practice
22	Ghersa	Claudio	IFEVA–CONICET, Universidad de Buenos Aires	Argentina	Science
23	Glint, de	David	Nevedi	Netherlands	Business
24	Glover	Dominic	Wageningen University	Netherlands	Science
25	Haan, de	Peter	<i>Conference president</i>	Netherlands	Practice
26	Haring	Michel	University of Amsterdam	Netherlands	Science
27	Heine	Merel	Fairfood International	Netherlands	Practice
28	Holder	Helen	Friends of the Earth Europe	Belgium	Practice
29	Holland	Richard	WWF	Netherlands	Practice
30	Knol	Jan	Royal BUNGE Company Ltd	Netherlands	Business
31	Köster	Frans	Product Board for Margarine, Fats and Oils (MVO)	Netherlands	Business
32	Landers	John	Associação de Plantio Direto no Cerrado	Brazil	Business
33	Leegwater	Marieke	Product Board MVO	Netherlands	Business
34	Lorch	A.	Ifrik	Netherlands	Practice
35	Lotz	Bert	Plant Research International	Netherlands	Science
36	Lugt, van der	Hans	NRC Handelsblad	Netherlands	Other
37	Malaver	Leonor	Stichting voor LAT Sociaal en Economisch Onderzoek	Netherlands	Science
38	Manjunath	T. M.	Consultant – Agribiotech & IPM	India	Practice
39	Mes	Jan	Anti gmo	Netherlands	Practice
40	Mohr	Tamara	Both ENDS	Netherlands	Practice
41	Mooren	Monique	Ministerie LNV, Directie Kennis	Netherlands	Policy

42	Moraes	Paulo	Solidaridad	Netherlands	Practice
43	Nepomuceno	Alexandre	EMBRAPA Soybean – Londrina	Brazil	Practice
44	Nieukerken-de Wilde, van	Jeanine	Foundation Mothers for Natural Law	Netherlands	Practice
45	Oostra	Menno	Stichting voor Latijns Amerikaans Sociaal en Econ	Netherlands	Practice
46	Pluimers	Jacomijn	Stichting Natuur en Milieu	Netherlands	Practice
47	Ros	Mirjam	DPRN/University of Amsterdam	Netherlands	Science
48	Ruivenkamp	Guido	WUR/ Critical Technology Construction	Netherlands	Science
49	Sande, van de	Theo	ministry of foreign affairs/DGIS	Netherlands	Policy
50	Schuiling	Gezinus	Grupo André Maggi	Netherlands	Business
51	Schuring	Matthijs	Aidenvironment / GM Soy Debate	Netherlands	Practice
52	Shorney	Carole	SE Essex Organic Gardeners	UK	Business
53	Sielhorst	Sven	Aidenvironment / GM Soy Debate	Netherlands	Practice
54	Smulders	René	WUR-PRI	Netherlands	Science
55	Spiertz	Huub	Wageningen University – Plant Sciences	Netherlands	Science
56	Staarinck	Inez	Hivos	Netherlands	Practice
57	Stam	Remco	WUR / Wageningen University	Netherlands	Science
58	Sterren, van der	Marc	De Molenaar	Netherlands	Business
59	Storms	Jan	Storms (ico)	Netherlands	Practice
60	Ton	Peter	Aidenvironment	Netherlands	Practice
61	Tromp	Theo	Stichting Ekopark	Netherlands	Practice
62	Uzor	Amanda	Stichting MAFED	Netherlands	Practice
63	Vaandrager	Pieter	Ministry of agriculture, nature and food quality	Netherlands	Policy

64	Verkerke	Bram	Solidaridad	Netherlands	Practice
65	Vermast	Paul	Natuur en Milieu	Netherlands	Practice
66	Visseren-Hamakers	Ingrid	Aidenvironment / GM Soy Debate	Netherlands	Practice
67	Vloed, van der	Helene	Landgoed de Reehorst	Netherlands	Practice
68	Vries, de	Gerard	WRR	Netherlands	Science
69	Vries, de	Kim	DPRN	Netherlands	Practice
70	Wambach	Christoph	Euregio Analytic BioChem GmbH	Germany	Business
71	Weldam, van	Arthur	Producer	Netherlands	Business
72	Wiel, van de	Clemens	Wageningen UR Plant Breeding	Netherlands	Science
73	Wisse	Jan	Niaba	Netherlands	Practice
74	Wolters	Jaap	WUR	Netherlands	Science
75	Zwart	Ronald	CKade Consultancy	Netherlands	Practice

Business: 20,0%

Policy: 6,7%

Science: 22,7%

Practice: 49,3%

Other: 1,3%

## Appendix 4 – Letter of thanks to the Stakeholder Conference participants

Dear participant,

Thank you for your interest and participation in the GM Soy Conference on December 9<sup>th</sup> 2008 in Amsterdam. As organizers, we have become even more aware of the sensitive nature of the subject of this conference. We will work to integrate your remarks into the current and follow-up research. In this respect, we feel that the major take-aways from this conference are the following:

Process issues:

- Project governance is currently unclear. The process leading up to the stakeholder conference and research as well as research team selection should have been more transparent.
- A more elaborate governance structure and moderator staff are required in order for all stakeholders to fully participate in the governance of this project.
- There is a lack of unbiased studies on the environmental, socio-economic, health, institutional and other impacts of GM soy. This is partly due to the relative absence of publicly funded research in this field.

Content issues:

- The use of the word sustainable should be avoided in relation to GM soy. It is more appropriate to discuss directly the relevant socio-economic and environmental impacts;
- The scope of the research should be widened, at least to the level of including socio-economic impacts of GM soy production; subjects such as food safety and ethics should also be included in the future;
- Participants expressed the need to discuss the current global agricultural production model and overconsumption as root causes of GM soy and to explore alternatives to it;
- Technologies have built in social-technical codes. In case of Roundup Ready Soy those codes may reflect and preserve unequal social and economic relations. Alternatively, technological development can be organized in a way that puts various social actors in control of it, including disadvantaged people or groups.
- The following practices have been put forward to limit the environmental impacts of RR soy cultivation: crop rotation, herbicide rotation, rotation with pasture, biological pest control, agroforestry. These practices can also have a positive influence for non-GM soy cultivation.

We acknowledge that much more has been said, particularly in the afternoon working sessions. However, in the absence of consensus on a lot of those issues, we chose not to

outline this here. We will upload the working session report to the gm soy debate website soon.

We also like to confirm the importance of widening the research scope and increasing the level of influence that stakeholders have on the debate process. We like to point out that such broadened approach should be matched by appropriate funding in order to work and that it will require a considerable amount of time. We do feel that some degree of focus remains necessary for the debate to come up with outputs that can contribute towards a positive change.

Please keep uploading any peer-reviewed research material that you might have to [www.gmsoydebate.global-connections.nl](http://www.gmsoydebate.global-connections.nl).

We would once again extend our special gratitude to all speakers and those participants that travelled from far to join the conference.

Kind regards, on behalf of the GM Soy Debate,

Sven Sielhorst

## Appendix 5 – Speech Nico Roozen

Seminar: Framework for the assessment of genetically modified crops; in consultation due to restructuring

9 June 2009/ The Hague  
Solidaridad / Nico Roozen

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Ladies and gentlemen,

I have been asked to say something about the debate around Genetic Modification (GM) in relation to the soy sector. What weight does GM carry and what role does it play within the soy sector and what is its meaning for a strategy for making the sector more sustainable? This is Solidaridad's ambition; making soy cultivation more sustainable.

You undoubtedly know the figures; the well-known fact that GM soy is dominant. Based on figures from 2007, 91% of the soy production in the US happens on the basis of a genetically modified herbicide tolerant soy variety. The figure for Brazil is 63% and for Argentina it is 99%. With this, over 70% of the global production is GM.

That is reality. A strategy that is focussed on sustainability will have to take this reality as a starting point.

Subsequently, an important question seems to be: how is the relationship between this dominant position of GM crops and the sustainability agenda? Would the soy sector look any different with regard to sustainability when cultivation is based on conventional varieties?

Sustainability has to do with three dimensions: the economic dimension, the social dimension and the ecological dimension. It is after all about a new notion of quality. Product quality is no longer only the physical quality of the product, but is thought inclusively with the social and ecological quality.

In concrete: the social agenda.

This is about subjects such as labour conditions based on the ILO-standards, a healthy workplace because of controlled use of pesticides, banning of child labour and slavery, equal positions for men and women, etc.

The environmental agenda is about the protection of the quality of soil and water, integrated crop management, banning damaging pesticides, about the biodiversity and deforestation dilemma's and about climate change. Expansion only on the basis of proven land rights, a tree-felling ban for areas with high natural values, bringing down CO<sub>2</sub> emissions, etc.

It seems inevitable to conclude that due to the similarity of the associated problems and thus the coherent ambition for change, the social and environmental impact of the production conventional – and GM – soy can and should be addressed by a single standard. Solidaridad concluded from this that a sustainability strategy in the sector needs to be related to any kind of crop type, despite the underlying improvement techniques. In both cultivation systems improvements are necessary and possible.

If you aim for sustainability in the GM soy sector – thus rights for labourers, controlled expansion, environmental precautions – do you then legitimate GM? That is what activists have blamed us for.

The legitimacy is given by the fact that there is social acceptance. The Netherlands annually import 8.2 million tons of soy. 90% of that is GM soy. Our farmers feed their livestock with this soy and we subsequently export or consume the meat and dairy products. This factual behaviour legitimates. After this, not sticking your head in the sand but working really hard on a sustainability framework for the entire sector is the only way.

We are doing this already by participating actively in the Round Table on Responsible Soy, among other things. We are impartial concerning the technology; we are analytical concerning the concrete effects of different types of cultivation and we are working with a dedication that is focussed on solutions in those areas where a difference has to be made. Being at the table with all actors in the sector is only possible if we want to debate with each other well-informed. Working towards a partial problem analysis, surveying all interests correctly and agreeing on a strategy for change that is well-fit commercially; which farmers and markets can use. In the field, the change should get shape.

For a well-informed debate, a first research project has been finished; from the conviction that an effective debate is only possible based on a shared information basis; a publication in which twelve claims about GM soy have been analyzed. The publication is available to you. The research gives us a more nuanced image of a number of contested issues.

- GM soy is not the critical factor in the increasing scale of soy production..
- There is no evidence that GM soy has reduced the genetic diversity of soy.
- GM soy cultivation is no threat to the GM-free soy production, if precaution is taken.
- The question whether GM soy facilitates monoculture remains unanswered. It is certainly not the only driver.
- GM soy has contributed to increased adoption of zero-till systems that conserve soil carbon, prevent erosion and reduce fuel usage by farm machinery.

But also:

- GM soy productivity is not structurally higher than that of conventional soy.
- GM soy can encourage the expansion towards natural areas.
- GM soy leads to a strong change in the type of herbicide used. The negative environmental effects are however comparable or even higher than with conventional soy.
- The introduction of GM soy most likely contributes to the development of herbicide resistant weeds.

A recent British research study concludes similarly in terms of productivity, but shows a decrease of the production costs by which the income for the producers raises substantially. Besides that, this study indicates that there is indeed a decreased use of herbicides and insecticides.

The debate thus continues. An active management of the debate does however seem to be necessary. An inspiring example is the IPCC and its role to reach a consensus about the climate problems. Such a process in order to come to an analysis that is based on facts could help.

May I conclude my speech with some more general remarks?

I suspect that the GM discussion should mainly be a discussion about on the level of impacts. Does a similar technique contribute to the sustainability of agricultural production: yes or no? And is this contribution substantially better than that of other improvement techniques or agricultural systems?

An ideological or ethical rejection of GM won't take us any further. Just only because the proverbial train thunders past and we are offside if we don't talk along, study along and steer along. Steering the research agenda seems to be the most important issue, I think. Privately driven technological research serves private interests; socially driven technological research serves public interests.

And the public interest is huge. We are facing an enormous challenge: 9 billion people in 2050 have a right to a balanced food basket. Regarding the land use, there are competing claims for food, feed, fibre, fuels and forests.

Which agricultural system do we need? It is certain that we are near the availability limits of natural resources. For example water. We are facing scarcity. A part of the cultivation will have to be intensified. This is connected with the issue of infection pressure. New technologies can contribute importantly. Within a broad scale of technological possibilities, the opportunities of modified crops cannot be left out of consideration beforehand. There is a possibility that modified crops might be better resistant to external stress factors such as salty soils, drought or even waterlogging or might have specific characteristics that are health improving.

For a development organization such as Solidaridad, the key question is whether a pro poor technology based on modern biotechnological research is possible. Can farmers in the Third World not only be receivers of this technology but even co-developer so that the technology supports the solution of their urgent needs?

It is important that we think about the social economic effects of the existing GM technology this afternoon, but it is possibly even more important that we develop a new technology from urgent social needs for sufficient, safe and responsible agricultural products for everyone. We cannot settle with less.

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