Subject: EU submission in reply to CBD Notification 2008-100: Request for submissions of information on experiences on the development and application of tools relevant to the sustainable production and use of biofuels

The EU welcomed COP Decision IX/2 to further examine the issue of biofuels in the preparation of the 10th meeting of the Conference of the Parties (COP 10) and the recognition of the role of the Convention on Biological Diversity (CBD) in biodiversity-related aspects of the sustainable production and use of biofuels. We believe that the issue has to be addressed as a matter of urgency and priority. Concerns regarding conservation and sustainable use of biodiversity and ecosystems have to be properly evaluated and duly taken into account in relation to the production and consumption of and trade in biofuels and biomass for energy use. COP 10 will be an important landmark to decide on ways and means to promote the positive and minimise the negative impacts of the production and use of biofuels on biodiversity on a global level. The EU sees the need to prevent and minimise potential negative impacts of bioenergy production and consumption on biological diversity.

The Czech Republic as Presidency of the European Union and the European Commission therefore welcome the opportunity provided by notification 2008-100, to submit on behalf of the European Union a compilation of experiences in the development and application of tools relevant to the sustainable production and use of biofuels with regard to biodiversity together with relevant information on research on, and resulting from monitoring of, the positive and negative impacts of the production and use of biofuels on biodiversity and related socio-economic aspects, including those related to indigenous and local communities and gender perspectives.

Global demand for biofuels is set to increase substantially in the coming years with potential positive and adverse effects on biodiversity. The EU has recently agreed on two pieces of legislation that will have an impact on biofuels production worldwide. The Fuel Quality Directive requires fuel suppliers to reduce the lifecycle emission of the fuels that they put on the EU market by at least 6% in 2020. The Renewable Energy Directive sets a mandatory target of 10% of renewable energy in transport by 2020. Biofuels used for the purposes of either directive have to respect a common set of sustainability criteria, including a minimum greenhouse gas saving compared to fossil fuels, and other requirements designed to avoid major environmental and socio-economic harm. Biodiversity protection is explicitly addressed by the criteria. Monitoring and reporting is also foreseen. The Renewable Energy Directive foresees the possible extension of the sustainability criteria to biomass for energy use. The European Commission will report on that by end of 2009. If appropriate, the report will be accompanied, by concrete legislative proposals. The text and information on the experiences on the development of these pieces of legislation will be presented in the first substantive part of this submission. At the same time concrete and practical work is under way in many Member States of the European Union. Information on these activities is also presented in the second substantive part of this submission.

The EU hopes that the intersessional process in the run-up of COP 10 will provide a sound factual basis for discussions at the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) 14 and subsequently at the 10th Conference of the Parties. We would encourage the Secretariat to compile the submissions to this notification and the results of the regional workshops on the sustainable production and use of biofuels and make them available in a timely manner as a basis for the discussion on ways and means to promote the positive and minimise the negative impacts of the production and use of bio-fuels on biodiversity, with a view to developing guidance related to the development of biodiversity related sustainability criteria.

The EU considers it essential that the CBD develops by COP 10 guidance related to the development of biodiversity related sustainability criteria in relation to production and consumption of biofuels and measures to promote and/or to integrate these sustainability criteria into the relevant policy framework by informing existing and emerging standards and certification schemes of relevant bodies relating to the production and consumption of sustainable bioenergy. The EU believes that the sustainability criteria contained in the recently adopted EU directives are a helpful contribution in this process. The EU would also like to see decisions by COP 10, specifying the future work of the CBD on this complex issue.

Annex - Responses of:

1. Belgium
2. the Czech Republic
3. the European Commission
4. Finland
5. France
6. Germany
7. the Netherlands
8. Portugal
9. the United Kingdom

ANNEX TO THE CBD NOTIFICATION NO. 2008-100 ON BIOFUELS – COMPILATION OF INDIVIDUAL RESPONSES BY EUROPEAN UNION MEMBER STATES AND THE EUROPEAN COMMISSION:

BELGIAN SUBMISSION to CBD notification 2008-100: Request for submissions of information on experiences on the development and application of tools relevant to the sustainable production and use of biofuels

Brussels 30th January 2009

Introduction

The development of biofuel production pathways/chains is conditioned by the application of a system of sustainability criteria. These criteria are explicitly included in the recent European directives on Renewable Energy and Fuel Quality (approved in December 2008) and represent the main measures to allow reasonable use of biofuels while limiting negative impacts on biodiversity. According to the law of 10 June 2006, which promotes biofuels in Belgium, the approval of biofuel production units is based on certain criteria, such as: (1) a short distance between biomass cultivation site and biofuel production unit; (2) the most favourable CO_2 balance; (3) the energetic efficiency of the production unit; and (4) reduced use of fertilizers and/or pesticides. Decision rules with respect to the approval of production units also take into account the global CO_2 balance, in order to assure that biofuel production leads to a significant reduction of greenhouse gases. However, apart from the use of fertilizers and/or pesticides, no biodiversity-related criteria are included in the attribution criteria. Moreover, these criteria are fixed until 2013.

Belgium has followed the European Commission's lead by implementing the two directives issued in 2003 and introducing the relevant tax changes. All service stations in Belgium are now required to offer biofuel. Belgium uses two methods to encourage the production and sale of biofuels.

- The first encourages fuel blends with a high biofuel content. These fuels are taxed at a lower rate if they are based on pure rapeseed oil. This does not (yet) apply to all other blends.
- The second method encourages biofuel production. Eight manufacturing facilities in Belgium have been approved to produce a certain quota of biofuel. Blends that use these quotas are automatically taxed at a lower rate. The biofuel production volumes have been set for six years and should help Belgium move towards the target of 5.75% by 2010. The biomass used in these manufacturing facilities meets a set of specifications that lay down requirements for various aspects, in particular environmental criteria (optimum greenhouse gas balance, improving the energy efficiency of the entire sector), agronomic criteria (minimal use of pesticides and fertilizers), fuel miles (shortest distance between the biomass cultivation site and the manufacturing facility), etc.

In addition to these two incentive schemes, there is nothing to prevent a manufacturer from introducing biofuel onto the market (provided that it meets minimum fuel quality standards). This fuel will be available from service stations but will not attract any tax breaks.

Providers of 'bioliquids' that are used for the production of *green power* in the Flemish part of Belgium, have to submit each biofuel to an audit in order to quantify the energy used for its production. In this framework it is also verified whether or not the energy used for producing these biofuels is derived from renewable energy sources. This in turn generates the information which is used for calculating the number of grantable green power certificates for electricity production based on these biofuels.

Belgian legislation
Belgian legislation defining biofuels The Royal Decree of 22 November 2006 (.PDF) and conditions for tax exemptions The Royal Decree of 10 March 2006 (.PDF) allow operators to:

- introduce onto the market fuels with a biofuel content higher than that authorised by European standards for petrol and diesel (for regional transport companies or any other project); and
-sell pure rapeseed oil to regional transport companies and individual drivers.
However, there are currently no European standards for either of these cases.

Exemption conditions
The Royal Decree of 4 March 2005 (.PDF) – RD 4 March 2005 (.PDF) – links authorisation to introduce biofuels onto the Belgian market to compliance with European standards established by CEN (European Committee for Standardisation). However, the Royal Decree allows for exemption from the rule specifying that a CEN standard must exist for a biofuel:

- if both the Minister for Energy and the Minister for the Environment consent (see procedure);
- in two particular cases, i.e.:

1. **exemption procedure for projects (HTML)**: for the sale or supply of non-standard biofuels between a limited number of parties in the context of a specific project. Purchases of fuel with a higher biofuel content and of pure rapeseed oil by regional transport companies that use them in their own vehicles fall into this category.

2. **exemption procedure for rapeseed oil (HTML)**: the supply of pure rapeseed oil to the end user by the farmer who grew the crop or the agricultural cooperative that processed it into oil. There is as yet no European standard for pure rapeseed oil used as a fuel. It is a replacement for diesel, but can only be used in diesel vehicles that have been modified to run on rapeseed oil. The authorities will grant an exemption for the supply of pure rapeseed oil as a fuel to applicants who register and sign a quality certificate relating to the supply of pure rapeseed oil as a fuel. By signing this certificate, the applicant agrees:
    - to supply good-quality, stable pure rapeseed oil; its quality must meet the specifications of the German pre-standard (the DIN standard, specially developed for rapeseed oil used as fuel for modified diesel vehicles);
    - to undergo inspections;
    - to participate in the development of a Belgian standard for this biofuel;
    - to mark the pump very clearly to indicate that it delivers pure rapeseed oil intended for use only in modified diesel vehicles;
    - to give the end user correct information on the properties of pure rapeseed oil, how diesel vehicles can be converted, etc.

Exemptions are granted for renewable periods of three years. They can be withdrawn if the applicant does not comply with the conditions for exemption. Even though no tax is levied on pure rapeseed oil, potential producers and vendors must still identify themselves to the customs and excise authorities. This latter condition is particularly important for consumers who will be able to submit a receipt showing that the oil came from an approved producer and not from a major retail outlet.

Activities, studies and projects
In the following, an overview is given of the most relevant activities, studies and projects in Belgium with respect to the sustainable production and use of biofuels.

I. The Belgian federal scientific policy financed the study LIBIOFUEL (de Ruyck *et al*., 2006) which was concluded in 2006. This study:

1. evaluated the possible biofuels for transport in the short and medium long term;
2. compared the potential biomass production for biofuels in Belgium with imported biomass;
3. presented a complete life cycle analysis of three biofuel production chains (ethanol, grains and beets, and colza diester); and
4. analysed the disturbances of a system (in this case Belgium) through the investigation of the impacts of incoming and outgoing biomass fluxes in terms of energy utilization, CO_2 balance and costs.

II. In the framework of the research programme Science for Sustainable Development (SSD), the federal scientific policy currently supports a research project focused on the study of a series of processes that enable the production of bio-energy based on agricultural production. This project is being executed under the name TEXBIAG: decision tools for the development of bio-energy in agriculture. This study appraises the costs brought along by these processes, as well as the resulting economic and environmental externalities. The final goal of this project is to reach a significant contribution of bio-energy from agriculture to: (1) a reduction of greenhouse gas emissions; (2) a guaranteed en diversified energy supply; (3) an increase of agriculturists' incomes; and (4) rural development.

To achieve these goals, the TEXBIAG project will develop three specific tools:

- a database of primary quantitative data related to the environmental and socio-economic impact of bio-energy from agriculture, including logistic aspects of the use of biomass;
- a mathematical model that monetarises the externalities of bio-energy from agriculture;
- a tool that is able to predict the impact of policy decisions related to the development of bio-energy on different economic sectors (energy, agriculture, industry and environment).

III. The project 'Biofuels Sustainable End uSe' (BIOSES), which is also financed by the SSD-programme (2007-2010), analyses the impact of different scenarios for market introduction of biofuels in the Belgian transport system in the short, medium long, and long term (2010, 2020 and 2030). The project will assess the practical feasibility and ecological, socio-economic and macro-economic consequences of the introduction of biofuels in Belgium.

IV. The Federal Public Service Health, Food Chain Security and Environment - DG Environment is currently financing an ongoing study that is aimed at evaluating the biodiversity impact of the development of agro-fuels, including genetically modified plants, in Belgium. This study comprises three main parts:

1. study of the environmental (biodiversity) impacts;
2. analysis of the socio-economic impacts; and
3. policy recommendations.

The report will be published in February 2009.

VI. The Research Institute for Nature and Forest (INBO; www.inbo.be) investigates short rotation forestry (SRF) directed at the production of woody biomass for green energy, including biofuels. One of the topics within the breeding and selection department is focused on the creation of clones of poplar and willow adapted to multiple conditions of soil and climate and directed at multifunctional use such as phytoremediation. This research is financed by the Institute for the promotion of Innovation by Science and Technology in Flanders (www.iwt.be), in the framework of the project 'Energy crops on

agricultural land contaminated by heavy metals: research of multifunctionality by phytoextraction and/or biomass production as a valuable alternative of classical agriculture.' At present, INBO selected material is undergoing tests for several criteria on national and international level.

V. In the upcoming months, a new federal biodiversity plan will be launched which aims to integrate biodiversity in four main sectors, i.e. economy, development co-operation, science policy and transport. The action plan underlines the need to take into account biodiversity with regard to biofuel and concrete measures are defined to this end.

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Prague, 18th December 2008

THE CZECH REPUBLIC SUBMISSION to the Notification No. 2008 - 100 – Request for submissions of information on experiences on the development and application of tools relevant to the sustainable production and use of biofuels

There is the decree of the Ministry of the Environment No. 482/2005 Coll.: "On the determination of biomass types, methods of use and parameters in supporting the generation of electric energy from biomass." The decree contains the Annex II, which contains the list of invasive and expansive species of higher plants which could harm the ecosystems and cause economic problems in the Czech Republic. The list contains, e.g. all three *Reynoutria sp*. occurring in the Czech Republic. The energy, obtained from the listed species is therefore not a subject to economic subsidies. On the other hand, the decree does not mention other potentially invasive species such as weeds (*Coriandrium sativum*), (*Crambe abyssinica*), *(Euphoria legascae), (Lupinus albus), (Sida hermophrodit).*

The National Energy Policy of the Czech Republic supports higher use of the alternative fuels in the transportation, where the biofuels play a substantial role. Their importance is related to the goals of tackling the climate change, diversification and security of the energy supplies, support of the renewable energy sources and support of the national agriculture.

Presently, the support is focused on the first generation of the biofuels, which are blended into mixtures with the traditional fossil fuels. For their production, the Czech Republic has adequate production capacities as well as available arable land. Gradually, the industrial expansion and commercial availability of the second generation of biofuels are counted upon. These are not manufactured from the food commodities and thus are not competition to the food industry and do not pose danger to the global food prices. The Czech Republic will be therefore in the future oriented on the production of biofuels from the non-food feedstock, while utilizing the best available technologies and also taking all the environmental aspects into account.

Sustainable Criteria for Biofuels

The Czech Republic, as the EU Member State, has participated in the discussion concerning the development of the sustainability criteria for the biofuels, which determine the conditions under which the biofuel feedstock shall be cultivated. They include environmental as well as social aspects and set minimum limits of greenhouse gas emission savings.

These criteria have been applied to two directives. Firstly, it is the just approved Directive of the European Parliament and of the Council on the promotion of use of renewable energy sources (5421/08,) (2008/0016 (COD)), which includes a 10% target for the use of biofuels in transport by 2020. Secondly, the adoption of the sustainability criteria is the basic condition for adoption of the revised Fuel Quality Directive (98/70/ES), (2007/0019 (COD)) which aims to strengthen the quality standards for fuels (petrol, diesel and gas-oil) that may be placed on the market and introduces a

mechanism to monitor and reduce greenhouse gas emissions from the use of road transport fuels.

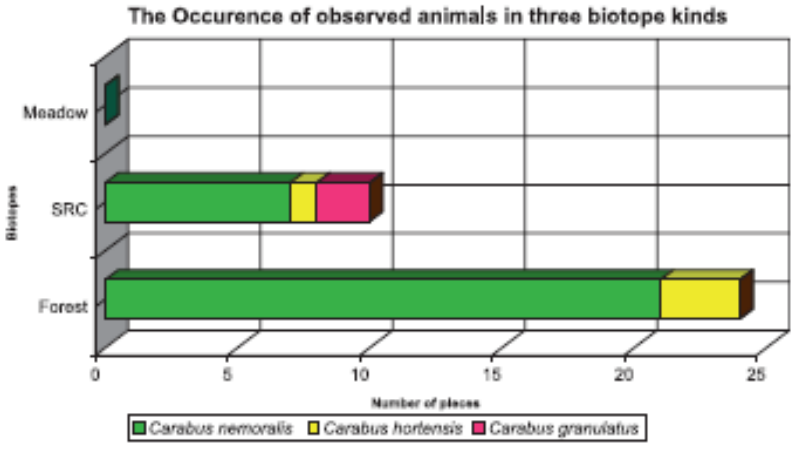
Studies and Projects on the energy crops

One of the most complex studies on the potential impact of biofuels in Europe, including the CZ indicates that 44% out of 1200 assessed species (vascular plants, butterflies, freshwater fish, amphibians, reptiles, birds) could be negatively influenced by cultivation of plants for the biofuels production (ECNC 2008). To the contrary, 7% of assessed species can benefit from species cultivation at the abandoned and agriculture land. Monocultures of fast growing forests provide a place for more numerous populations of majority of bird species then common cornfield (SAGE et.al 2006)

Following what is mentioned above, there is the grant project currently being carried out by the Silva Taroucy Research Institute for Landscape and Ornamental Gardening called "**Biodiversity and energy crops**". (I. Zánová, K. Havlícková). Initial hypothesis said, that the soil of woody plantations short rotation coppices (SRC), shaded and covered with leaf debris should be suitable for gradual propagation of forest species, some of which display a tendency to migrate into the plantation. Species *Carabus hortensis* and *Carabus nemoralis* are classified as "A" group species inhabiting more or less natural habitats or habitats near natural conditions. They also occur on secondary, well-regenerated habitats. It is evident, that propagation of these species to the SRC plantation biocenose indicates favourable development aiming towards establishing stable conditions.

SRC stands are harvested several times during their existence. When a part of the stand is cleared, an increase in species diversity may manifest. Increased diversity of *carabid* species after clearing is usually explained as a consequence of more favourable microclimatic conditions for species of open sites and site generality, and by increased species diversity of vegetation on the clearances, which affects the carabid associations both directly (more food for herbivore species) and indirectly (more herbivorous invertebrates as food for raptatory carabids).

It is also necessary to consider ploughing between lines or prevention of ploughing and plant debris formation, which contributes to differentiation of vertical distribution of carabids and to prevention of interspecies competition. Carabid occurrence depends on many abiotic and biotic factors, namely humidity, vegetation character, temperature, geological substrate, species migration ability, predation and human influence.



Other authors (Syrovátka) have shown, that in case of favourable changes in soil, vegetation and humidity conditions, important positive changes of composition of this invertebrate complex, can take place rather quickly. This idea including the results obtained so far indicates that SRC stands do not predetermine and promise establishing conditions for existence of real forest associations, but rather of specifically much more diverse transition associations. In consequence of intense landuse and cultivation, ecosystem degradation and decrease in biological

diversity takes place. Similar temperature and humidity conditions are established inside SRC stand with closed canopy (in 3rd – 4th year) as in permanent vegetation stands or in forest stands, which are proved to be a desirable site and a new niche for a broad assortment of animals such as small game, birds and insects. Low intensity of management of this new landscape structure element, compared to conventional plant production or fruit orchards, also contributes to its attractiveness.

Activities, Studies and Projects of the Czech Technology Platform

The Czech Technology Platform (CTPB) for the usage of bio-compounds in transport and the chemical industry is a body which consists of representatives from relevant ministries; agriculture subjects; companies aimed at agriculture production, transport biofuels production; research institutes, etc. The vision is to identify (upon expert background information and analysis):

- real chances of the Czech Republic to reach the EU targets and means to achieve them;
- 10% of biofuels in fuels for vehicles by 2020;
- offer the basis for long-term strategy of the Czech Republic in the field of using biofuels for transport purposes.

The mission is to create and grant expert environment for the preparation, development, application and advancement of the use of biofuels in transport and the chemical industry of the Czech Republic.
The main activities focus on the analysis and evaluation of:

- availability, quality, economic evaluation and sustainability of biomass production;
- commercial availability, including pre-administration and logistics;
- social and environmental aspects of cultivation of biomass for bio-compound conversion.

In 2007, two studies on the availability of biomass and possibilities of conversion to biofuels in the Czech Republic were carried out by the Ministry of Industry and Trade and the Ministry of Agriculture.

Furthermore, Chemoprojekt a.s. has carried out its own study. The Technology platform is currently developing cadastral map of bio-potential and current combustion plants in the Czech Republic. The purpose of this map is to define possible alternatives for fossil fuels (RRD, energy crops, and remains of timber-harvesting) available in given soil conditions. To optimize environmental impacts, this map should, according to given air pollution (imission) conditions, help to make a recommendation for the right kind of biomass and technology.

The current plans of the CTPB focus to identify the possibilities of usage of second-generation biofuels usage in the Czech Republic according to the commitment of the replacement of biofuels by 2020 which requires:

- identification of right technologies (kind, scope, localization)
- identification of biomass (potential, availability, utilisation)
- development of activities in the field of sustainability - environmental assessment and biomass certification processes

Expected outcomes of the CTPB in its first years of its existence are the development of:

- biomass-potential maps (divided by criterion of: fast-growing wood species, wood species, energy crops, waste)
- analysis of available technologies of the 2nd generation
- product economics
- strategic goals till 2030 in the field of use of biomass for transport

Nonetheless the progress in the development of such platform which should respects the national as well as the EU and international laws and procedures and guidelines, the more complex and cross-sectoral studies which would deal with the impacts of cultivation of plant species which are used for the biofuels production of 1st or 2nd generation and its development for transport is not adequate.

Refernces:

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THE EUROPEAN COMMISSION SUBMISSION ON THE EXPERIENCES ON THE DEVELOPMENT AND APPLICATION OF TOOLS RELEVANT TO THE SUSTAINABLE PRODUCTION AND USE OF BIOFUELS

1. Current biofuels policy framework

The European Union has been promoting biofuel use in the EU as a way to reduce its dependence on imported oil and to reduce GHG emissions from the transport sector since 2003. The first Directive on renewable energy in transport (Directive 2003/30), which will remain in place until 2011 (the time of entry into force of the new Renewable Energy Directive) required Member States to set targets for the share of renewable energy replacing petrol and diesel in transport in 2005 and 2010, taking as their starting point reference values of 2% and 5.75% respectively

This Directive contains certain basic provisions on the sustainable production of biofuels, asking Member States to consider the overall climate and environmental balance of the various types of biofuels and other renewable fuels and giving priority to the promotion of those fuels showing a very good cost-effective environmental balance. Within the overall reporting and monitoring framework, the European Commission is currently reporting in its bi-annual reports on the life-cycle perspective of biofuels and other renewable fuels produced and consumed in the EU, with a view to indicating possible measures for the future promotion of those fuels that are climate and environmentally friendly; on the sustainability of crops used for the production of biofuels, particularly land use, degree of intensity of cultivation, crop rotation and use of pesticides and the assessment of the use of biofuels and other renewable fuels with respect to their differentiating effects on climate change and their impact on CO2 emissions reduction.

In 2007, the overall share of biofuels in road transport in the EU reached 2,6%.

For the text of Directive 2003/30 please see the following URL

http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2003:123:0042:0046:EN:PDF

2. The new Biofuels sustainability scheme

In 2008 the Council and European Parliament reached agreement on the revised Fuel Quality Directive, which includes a mandatory reduction of 6% on the lifecycle emissions from fuels supplied to the EU, and the new Renewable Energy Directive, which includes the binding targets of a 20% overall share of renewable energy, and a 10% share of renewable energy in transport, in 2020. Biofuels will contribute to both these targets. Both directives therefore contains a pioneering and far-reaching **sustainability scheme for biofuels,** which will for the first time oblige all EU biofuel producers or importers to comply with clear environmental criteria, and to report on a number of additional impacts, including possible economic and social impacts within the EU and in third countries. The Directives completely harmonises biofuel sustainability criteria for all Member States to the EU.

The European biofuel sustainability criteria include:

- Provisions to prevent that biomass from primary forest, nature protection areas or highly biodiverse grassland are used for the purpose of the directive. Article 17 of the directive sets out the following biodiversity criteria

  "Biofuels and other bioliquids taken into account for the purposes referred to in paragraph 1 of this Article shall not be made from raw material obtained from land with high biodiversity value, that is to say land that had one of

the following statuses in or after January 2008, whether or not the land still has this status:

a) primary forest and other wooded land , that is to say forest and other wooded land of native species , where there are no clearly visible indications of human activities and the ecological processes are not significantly disturbed ;

b) (i) areas designated by law or by the relevant competent authority for nature protection purposes; or

ii) areas for the protection of rare, threatened or endangered ecosystems or species recognised by international agreements or included in lists drawn up by intergovernmental organisations or the International Union for the Conservation of Nature, subject to their recognition in accordance with the second subparagraph of Article 18(4); unless evidence is provided that the production of that raw material did not interfere with those nature protection purposes;

c) (i) highly biodiverse natural grassland, that is to say grassland that would remain grassland in the absence of human intervention and which maintains the natural species composition and ecological characteristics and processes; or

ii) highly biodiverse non natural grassland, that is to say grassland that would cease to be grassland in the absence of human intervention and which is species-rich and not degraded, unless evidence is provided that the harvesting of the raw material is necessary to preserve its grassland status ."

Criteria and geographic ranges to determine which grasslands shall be covered by point C above will be established by the European Commission. The Commission may also recognise areas for the protection of rare, threatened or endangered ecosystems or species recognised by international agreements or included in lists drawn up by intergovernmental organisations or the International Union for the Conservation of Nature for the purposes of Article 17 of the Directive.

- A ban for carbon stock reasons on using biomass from land that was previously wetland, forest or undrained peatland. While these provisions explicitly aim to protect carbon stocks, it will also reap biodiversity benefits in areas where high-carbon stock areas overlap with areas rich in biodiversity.

- A minimum greenhouse gas saving of 35%, rising to 50% in 2017 (60% for new installations).

- A requirement for companies to report on a wider range of environmental and social impacts, such as measures taken for soil, water and air protection and the restoration of degraded land.

The EU Member States are responsible for enforcing the sustainability criteria. The Commission can accredit international agreements and voluntary schemes as providing reliable evidence that the criteria have been fulfilled. Member States must accept this evidence.

In addition to these rules, the European Commission has undertaken to monitor and regularly report on the impacts of increased demand for biofuels on social sustainability in the EU and third countries, including on the impacts on the availability of foodstuffs at

affordable prices, in particular in developing countries. The Directive obliges the European Commission to report, not later than 2012, to the European Parliament and to the Council on the effectiveness of the system in place for the provision of information on sustainability criteria. Similarly land and labour issues related to increased demand for biofuels will be monitored in the EU and in third countries.

By the end of 2010, the Commission will also make a report accompanied by proposals on emissions caused by indirect land use change.

The Directive also lays out that the Commission shall report on requirements for a sustainability scheme for energy uses of biomass, other than biofuels and bioliquids, by the end of 2009.

For the draft text of the future Renewable Energy Directive please see the following URL

http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+TA+P6-TA-2008-0609+0+DOC+XML+V0//EN&language=EN#BKMD-1

3. Experiences gained in the development of the new biofuels sustainability scheme

A public consultation for the review of the EU Biofuels Directive was held from April to June 2006 and a summary of the responses to the public consultation can be found here

http://ec.europa.eu/energy/res/legislation/doc/biofuels/contributions/2006_08_23_summary_responses.pdf

The initial proposal for the EU sustainability scheme was made subject to a wide ranging public consultation, involving governments from the EU and various third countries, private sector and non-governmental organisations.

Throughout the entire process of adoption of the new Renewable energy directive, the European Commission remained open to a dialogue with potential exporter countries such as Brazil, Malaysia and Indonesia. A number of meetings were also held with farmer and civil society organisations representing African countries, as well as numerous national and international environmental organisations. This process substantially affected the final result.

The European Commission has also commissioned a study on Sustainability Criteria and Certification Systems for biomass production that can be found here

http://ec.europa.eu/energy/renewables/studies/doc/2008_sustainability_criteria_and_certification_systems.pdf

THE SUBMISSION OF FINLAND TO NOTIFICATION NO. 2008 -100 – REQUEST FOR SUBMISSIONS OF INFORMATION ON EXPERIENCES ON THE DEVELOPMENT AND APPLICATION OF TOOLS RELEVANT TO THE SUSTAINABLE PRODUCTION AND USE OF BIOFUELS

Outline of the national and regional experiences on the sustainable production and use of biofuels

Background

In Finland bioenergy and renewable energy sources represent about a quarter of the total primary energy consumption. In Finland biomass is used to manufacture fuels, biofuels, which can be produced from field biomass and waste, as well as forest biomass. The biofuels produced and used in Finland are:

- Wood-based fuels (industrial waste liquids and wood residues such as black liquor, bark, chips and process waste; forest chips, crushed and chopped wood, wood pellets and briquettes, stumps, energy willow, pyrolysis oil)
- Field biomass (e.g. reed canary grass, oilseed plants, straw)
- Liquid biofuels (ethanol, biodiesel)
- Biogas (biowaste gases from landfill sites, water purification plants and farms)
- Biodegradable components in recycled and wastefuel material
- A further fuel to be mentioned is peat, which is widely used for fuel in Finland, even if it is not considered as renewable biomass.

Almost half of the biomass harvested from Finnish forests ends up in energy use, either directly as forest chips and fuelwood or as by-products from the forest industry. The internationally high bioenergy production volume in Finland is founded on the high utilisation rate of forest biomass for energy production in industrial plants. Instead, the energy use of field biomass and biowaste is still very low in Finland.

In Finland biofuels are primarily used in the combined production of electricity and heat, where Finland is one of the leading countries in the world. Instead, up until 2008 the use of biofuels for transport was very low. However, Directive 2003/30/EC of the European Parliament and of the Council on the promotion of the use of biofuels or other renewable fuels for transport and Directive of the European Parliament and of the Council on the promotion of the use of energy from renewable sources (5421/08)(2008/0016 (COD)) have made it necessary for Finland to reconsider the perspectives on transport biofuels. These directives set clear and specific objectives for the minimum proportions of renewable fuels in transport fuels in the EU Member States: in 2010 5.75% of transport fuels must be biofuel or other renewable fuel and by 2020 renewable energy should in each Member State represent at least 10% of the total amount of motor gasoline and diesel oil sold. In Finland an Act was passed in 2007 on increasing the use of biofuels in transport (446/2007), which obligates the liquid fuel distribution companies to mix a certain percentage of biomass fuel to the amount of fuel for transport they sell in a year. The percentage is calculated from the total energy content of all transport biofuels the distributor has sold in one year, and it increases gradually from 2% in 2008 to 5.75% in 2010.

In Finland the use and production of transport biofuels has started off through fuels derived from agricultural biomass. Considering the current motor vehicle fleet and fuel distribution network in Finland, both ethanol and vegetable and animal fat based biodiesels are the most feasible transport biofuels in the near future. In Finland the possible arable crops for this purpose include barley, turnip rape and, perhaps, sugar beet. The use of the so-called first generation biofuels derived from these is restricted by the fact that the current motor vehicles can use them only when mixed with petrol or diesel. In most cases the maximum proportion of biofuel is about 10%. To improve this as well as the energy and cost efficiency, work has been started to develop so-called second generation transport fuels, which do not involve any significant use restrictions. The range of raw materials that can be used for these is also wider than in the case of the first generation, including e.g. wood and waste based raw materials. Biorefineries using various kinds of biomass to produce feedingstuffs, chemicals and other materials and electricity and heat promote energy efficiency particularly well. In addition to raw materials available in Finland, imported raw material can be used for both first and second generation fuels (e.g. sugarcane, palm oil). In 2008 most of the transport biofuel used in Finland was ether imported (bioethanol) or manufactured in Finland from imported raw material (biodiesel).

In Finland the production and use of bioenergy from agricultural sources has started to increase significantly only in the 2000s. The agriculture sector offers numerous potential raw materials for the production of renewable energy: Plant mass can be burned directly for energy production, plant and animal products can be processed into liquid fuels and animal and plant based biomass can be processed into biogas. These can be used to substitute for unrenewable energy raw materials both on farms and in other energy production. When estimating the bioenergy potential of agriculture, besides the available agricultural area we should take account of the bioenergy potential of manure, plant residue and other waste material, different efficiency ratios obtained from using different raw materials as well as development prospects of production technologies.

Of the agricultural raw materials the large Finnish energy establishments covered by the emissions trading of the EU now use mainly reed canary grass as the solid fuel. In 2008 the production area of reed canary grass for energy purposes totalled about 17,500 hectares. Because of the rise in fodder and bread cereal prices, the growth in the cultivation area of reed canary grass has slowed down, at least temporarily. The prospects for the energy use of straw are good. The most common raw materials for biogas used on Finnish farms and in rural enterprises are manure, various animal by-products and other organic waste material, but there is growing interest in also using various types of plant mass for biogas production. Biogas production can be increased by using, among others, plant mass, food industry by-products or organic waste materials as additional raw materials in the process.

In promoting transport biofuels the priority is on second generation biofuels, whose raw material supply is founded on products other than those used as food. Of these the most significant raw materials used in Finland are wood, waste and field biomass. In Finland the objective is to develop second generation transport biofuels through systematic research, product development and demonstration activities, with the aim to start production on a relatively large scale in Finland.

The use of forest-based biomass is mainly restricted to electricity and heat production, while its use as raw material of liquid biofuels for transport is a thing of the future. However, as even now a significant share of the biomass harvested from forests ends up in electricity and heat production, there has also been wide interest in Finland in how this will impact on, for example, biological diversity and waters.

The lifecycle of using wood-based energy comprises forest management and timber harvesting operations. In 2004 about 27% of the renewable energy produced in Finland

was produced from wood fuels of industry and energy production (wood residue, recycled wood, forest chips and other by-products and waste from the wood processing industry). The solid forest industry by-products are the most advantageous alternative among the wood-based fuels.

Long-term climate and energy strategy of Finland

Increasing the use of bioenergy and biofuel production are essential elements of the Finnish energy and climate policy. On 6 November 2008 a new, quite ambitious climate and energy strategy was adopted for Finland, with a very detailed account of the climate and energy policy measures until 2020 as well as indicative outlines up until 2050. The aim of this long-term climate and energy strategy is to increase the share of renewable energy to 38% by 2020, in accordance with the obligation for Finland set by the European Commission. Besides other actions, in order to fulfil the obligation regarding renewable energy the use of wood-based energy, waste fuels and biogas must be increased. The use of, for example, forest chips will be increased two to three fold from the present.

Sustainable production and use of biofuels in Finland

The basic premise in producing bioenergy and biofuel in Finland is that the assessment of sustainability takes account of the economic, social and ecological dimensions of the different bioenergy production systems. Secondly, bioenergy should not be dealt with alone but as part of the energy system as a whole. In other words, bioenergy production can promote sustainability only as part of a more sustainable energy system.

The study of the bioenergy production methods is founded on lifecycle thinking. Lifecycle assessment also allows the comparison among different production methods. For lifecycle assessment the production of bioenergy and biofuels comprises the growing, harvesting, handling, storage and transportation of the biomass as well as the manufacture, transportation, storage and use of the fuel. Each stage in the production chain, i.e. stage in the life cycle, calls for energy and various raw materials. Emissions into the waters, air and soil as well as waste are created in all stages of the life cycle: in arable farming or when growing forest, harvesting a crop or timber, processing the raw material, and use. In addition, through land use the actions in the different stages of the life cycle have impacts on biological diversity and occupy land areas so that they are not available for other uses. Lifecycle thinking also takes account of import flows and their impacts.

The manufacture and use of transport biofuels is growing rapidly, both in Finland and internationally. Only part of the transport biofuel to be used in Finland in the future can be produced in Finland. Rapid growth in the production causes ecological and social problems in countries which produce the raw material. Finding the right balance between domestic production and imported raw material requires thorough knowledge and understanding of the environmental impacts of the whole lifecycle chain and the economic and social impacts of the different alternatives. One question to be taken into account is whether biomass should be used for energy production or as material for food or feed, paper, building or medicinal substances.

The environmental impacts of field energy and biofuels derived from this are mainly due to land tillage, fertilisation (incl. manufacture of fertilisers) and use of pesticides as well as harvesting and handling of the crop (e.g. drying of cereals). Fertilisation of arable lands causes nutrient discharges, leading to eutrophication of waters. Studies made in Finland have shown that cereal processed into bioenergy as such does not burden the waters any more or less than cereal used for food, but in both cases the burden depends on the cultivation practices. Nutrient leaching and erosion can be considerably reduced by means of e.g. direct sowing. In Finland the cultivation of energy crops on arable lands which at its best could be quite extensive (400,000 ha) could lead to a significant

reduction in erosion and nutrient loading, by as much as 25-25% from the current loading. Intensive cultivation of energy crops may also have negative impacts on soil productivity (soil compaction, decrease in the amount of soil organic matter and erosion). Energy plants (e.g. reed canary grass) may also reduce the diversity of field ecosystems.

Forestry measures have impacts on the loading of waters due to biofuel production based on forest biomass and on the nutrient balance of forests. The harvesting of crown mass from final felling sites reduces the leaching of nutrients into waters but, on the other hand, nutrients are removed from forests along with the logging residue. The long-term impacts of the removal of nutrients along with the logging waste from the final felling sites on the tree growth and productivity of forests and functioning of the ecosystem are not yet known. Logging residue and especially stumps have been removed on a larger scale only during the 2000s, which is why long-term experiences or research information on its impacts on forest biodiversity, soil nutrient loss and deterioration of the humus layer as well as soil productivity are not available as yet. Research on the impacts of the harvesting of energy wood on forest ecosystems has been started under the Bioenergy from forest research programme of the Finnish Forest Research Institute. Harvesting of energy wood may increase the need for forest fertilisation, which may in turn increase the risk of nutrient loading.

The profitability of biofuel production and energy and greenhouse gas balances of the whole life cycle depend a great deal on the yield level of materials used for transport biofuels.

In the bioenergy sector research and development activities have been supported very strongly for decades, for example, through research programmes concerning wood-based energy. Research and development work in the public sector and its financing has had and will continue to have significant impacts on the future production practices.

Practical evaluation of whether bioenergy and biofuel production promote more sustainable development requires criteria that are suitable for assessing the different dimensions of sustainability. In Finland, however, such national criteria have not been defined. The need for these has been recognised, for example, in the National Strategy for Sustainable Development (2006). Finland has also been active in the preparation of the sustainability criteria for biofuels of the EU, which will also provide suitable criteria to be applied in Finland. As regards biomass production, the sustainability criteria must be the same regardless of whether the biomass ends up in industry or as food or energy. The criteria to be established for energy wood must be the same as those for wood used to make paper, pulp or sawn goods.

In Finland various kinds of indicators have been developed to concretise the social dimension of sustainable development. These concern, among other things, the possibilities of local population to influence the policies and decisions and their employment and working conditions, developing the skills and competence of the labour force, economic dimensions of multiple use, recreational opportunities, functioning of the local social systems and continuity of local culture. Basically the different forms of bioenergy and biofuel production rest on a sustainable basis when they reinforce the above-mentioned factors compared with the other forms of energy production.

Studies conducted in Finland relating to bioenergy and biofuel production and its sustainability

1 The aim of the so-called BIOAGRE project completed in 2008 was to produce research information to be used as the basis for the assessment of the profitability of bioenergy production and use from both private and socioeconomic perspective. The project focused on agricultural bioenergy sources, where the technical applications for their use are available. Of the bioenergy raw materials the project covered reed

canary grass, straw, turnip rape, energy cereals, animal manure and energy grass. The production methods were heat production, combined electricity ad heat production and production of transport biofuel. The environmental impacts of agricultural bioenergy sources (emissions into the air from small production plants, water loading from cultivation and animal husbandry, environmental impacts of transport) compared to unrenewable energy sources were also examined, as well as what kind of reductions in greenhouse gas emissions can be achieved by means of agricultural bioenergy production.

2 Study on bioenergy crop production and climate policies; case of reed canary grass in Finland. The study was conducted at the University of Helsinki in 2006.

3 In 2004 the agroenergy programme study on the potential of both production and use of agroenergy in eastern Finland was carried out by the Business Management Group of Electrowatt-Ekono Oy in co-operation with the Faculty of Forestry, University of Joensuu. The programme deals with the most important agrobiomasses and their upgrading possibilities into different fuels (pellets, briquettes and liquid fuels) and, using these fuels, in direct combustion of as transport fuel. The programme also comprises a target for the utilization of agroenergy by 2010, the species with the greatest potential and development actions, as well as a proposal for practical organization.

4 In 2005 the Ministry of Labour drew up an estimate for the long-term target for the introduction of alternative transport fuels as well as for the extent to which the use of alternative fuels in accordance with the target can be based on Finnish raw materials that can be processed into transport biofuels.

5 In 2006 the Department of Biological and Environmental Sciences of the University of Jyväskylä carried out a study on the energy potential of farms from the ecological perspective. The study examined the national and regional potential for bioenergy production on farms and the environmental impacts of the production with the aim to assess an ecologically acceptable potential for the use of resources in the short and long term.

6 The research programme Bioenergy from forests (2007-2011) of the Finnish Forest Research Institute produces information on the grounds for the production and utilisation of forest and peatland biomass and the impacts of this on forest resources. The programme studies the impacts of the harvesting of logging residue and stumps on e.g. biodiversity of forest species and groundwater quality. A report on the environmental impacts of the harvesting of energy wood was published in 2008. (http://www.metla.fi/ohjelma/bio/esite-en.pdf)

Ongoing biofuel projects in Finland

- In 2007 Neste Oil started a biodiesel production plant with an annual capacity of 170,000 tonnes. The construction of another plant has been started and it should be ready in 2009.
- In 2007 St1 Biofuels Oy started the building of a production plant network that utilises waste from food and bakery industry to manufacture bioethanol to be used as transport fuel. The network will consist of 5 to 10 production plants connected to food industry plants. The 85% bioethanol produced in these will be refined for fuel use in a specialised enrichment plants. In the beginning of 2009 there were four production plants and one enrichment plant in operation.
- In 2009 St1 Biofuels Oy constructs a bioethanol plant whose production is based on the processing of biowaste from households collected specifically for this purpose.
- Neste Oil and Stora Enso are building a test plant for refining biodiesel from wood residues. Wood raw material will be used to produce biofuel in the near future. Neste Oil, which is aiming to be the world's leading producer of biodiesel, and the forest industry company Stora Enso are cooperating in developing new-generation production technology. Stora Enso will produce wood-based biomass for raw

material and utilize the heat generated from this. Neste Oil will carry out the final refining and marketing.

- UPM has announced that it will strongly increase its stake in second generation biodiesel and prepares to become a significant producer of renewable biofuels. Business concepts and technical solutions are currently being developed. Locating biofuel production plants adjacent to existing UPM pulp or paper mills would further enhance the company's ability to utilise the wood raw material efficiently. Even now UPM uses wood extensively and efficiently both for the manufacture of various products and for energy production.

Biodiversity and production and use of biofuels in Finland

In Finland some studies have been conducted on the impacts of bioenergy and biofuel production on biological diversity. Essential indicators identified in these contexts include: 1) total biodiversity, 2) number of species, number of declined and threatened species, 3) vascular plants, butterflies, beetles, birds (agriculture) and, in addition to these, polypores, fungi, lichens, mosses and liverworts (forests) and amount of decayed wood (forests), 4) amount of soil organic matter, 5) soil fertility and productivity, and 6) landscape structure.

The most significant biodiversity impacts of the lifecycle of bioenergy relate to the first stages in the chain: agriculture and forestry operations. In the following stages, for example, the refining and energy production plants occupy lands and thus weaken the possibilities of species to live in these areas. The use of the fuels may also have indirect biodiversity impacts on the species composition through acidifying and eutrophic emissions. Below a brief account is given on the biodiversity impacts of the raw material production.

Production of field biomass

In general we can say that arable farming has very little significance as regards the declined and threatened plants (with the exception of certain "traditional" weeds spread along with the sowing seed) or insects. Instead, cultivation measures and crop rotations have impacts on declined and threatened bird species living in agricultural environments. Decrease in perennial grassland areas is one of the most significant changes in Finnish agriculture which has impoverished the biological diversity of agricultural environments. In most cases perennial (permanent) grasslands are used for grazing or set aside and thus they have a positive impact on the biodiversity of agricultural environments. This means that all energy plants have negative environmental impacts when permanent grassland areas are converted to energy production.

Taking annual fodder grass areas into energy production has no clear negative impacts on biodiversity, because these are usually poor in terms of species diversity, in most cases much poorer than cereal areas. Compared to perennial grasslands the impact of reed canary grass is the most negative of the energy plants because few other plants are able to grow under the high and thick mass of reed canary grass. There is also the risk that reed canary grass may spread to the field margins and impoverish their species diversity. In addition, reed canary grass has negative impacts also when converting cereal areas into reed canary grass production because there are few other species under the high and thick mass of reed canary grass, while cereal areas host a quite rich variety of weed species. On the other hand, reed canary grass may provide shelter for overwintering pheasants and, in the spring, for willow grouse before the plants start to grow on the neighbouring parcels used for feeding. Reed canary grass does not offer any feed for the birds. Reed canary grass plantations are in most cases quite poor as regards avifauna, and the harvesting time of reed canary grass causes further problems. In southern Finland dominated by cereal cultivation the areas under reed canary grass enhance the landscape diversity, but this benefit is lost in cases where the alternative to reed canary grass would be set aside land. So far there is so little land under reed canary

grass in Finland that no information on the species diversity has been accumulated as part of other studies on the biodiversity of agricultural environments.

Production of forest biomass
All forestry measures undertaken in forests, including thinnings, final felling, land tillage, etc. influence the species and their diversity one way or the other. This also applies to the harvesting of energy wood. The impacts on the species can be studied as regards e.g. flora, organisms depending on decayed wood and soil organisms. Decrease in the amount of decayed wood is the most significant single factor that reduces the biological diversity of commercial forests. A major share of Finnish forest species (about 20–25%) depend on decayed wood, and the amount of these has been decreasing due to forestry operations. The plans to significantly increase the harvesting of logging residue cause further pressures on the state and trends in forest biodiversity.

In recent years a large number of research results and literature reviews on the impacts of harvesting energy wood on the biological diversity of forest species have been published both in Finland and in the other Nordic countries. In spite of the abundance of research information on the biodiversity impacts of the harvesting of logging residue, we obviously do not as yet have a sufficiently clear picture of the rapidly growing scale in the harvesting and its long-term impacts on the species. So far few research results are available on the impacts of lifting stumps. The objective is to prevent the potential negative impacts in advance and urge those harvesting energy wood to comply with the recommendation for this. In forest management recommendations special attention has been given to increasing the amount of decayed wood from large diameter trees by leaving, where possible, living shelter trees in forests and by taking measures to protect the existing decayed wood from large trees during harvesting operations. According to the recommendations, 30% of the logging residue should not be harvested and e.g. valuable forest habitats are excluded from harvesting. The recommendations will be reviewed during 2009.

It is estimated that the biodiversity impacts of the increased harvesting of forest chips are greater in southern Finland than in the north, because the species diversity is greater in the south. The pressures relating to endangerment are more serious, in particular, as there is less decayed wood and natural-state forest and the surface area of the forest protection network is also smaller in southern Finland.

Finnish development cooperation policy and biofuels
Finnish development policy (2007) is based on a consensus - which emerged at the Conference on Environment and Development in Rio as long ago as 1992 - that all development must be ecologically sustainable. The ways in which we meet our own needs must not reduce the possibilities available to future generations to meet their needs.

In energy production Finland supports programmes and projects aiming at saving energy, increasing energy efficiency and producing renewable energy. These will target specifically poor countries and regions. Production of renewable energy, especially bio-energy, provides work and income for the local population.

Bio-energy projects can be linked with the promotion of sustainable forestry and wood from thinnings and logging residues utilized in power generation. Local production of renewable energy and linking it with forestry generates sustainable economic growth.

Reference:
Suomen ympäristökeskus (2007): Bioenergian uudet haasteet Suomessa ja niiden ympäristönäkökohdat – Nykytilakatsaus / Finnish Environment Institute (2007): New challenges for bioenergy in Finland and environmental considerations – Review of the current situation

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NOTE DES AUTORITES FRANÇAISES

SUJET : CONTRIBUTION NATIONALE DE LA FRANCE EN REPONSE A LA NOTIFICATION 2008-100 DU SECRETARIAT DE LA CDB : DEMANDE D'INFORMATIONS SUR LES EXPERIENCES MENEES POUR LE DEVELOPPEMENT ET L'APPLICATION D'OUTILS PERTINENTS A UNE PRODUCTION ET UNE UTILISATION DURABLES DES BIOCARBURANTS

Version du 27 janvier 2009

Les biocarburants produits en France sont issus de cultures agricoles « classiques » : colza, tournesol, blé, betteraves, maïs. Ces cultures sont produites selon les mêmes itinéraires techniques et les mêmes contraintes que les cultures qui sont ensuite orientées vers un marché alimentaire. Dès lors, les mesures prises en agriculture pour protéger la biodiversité s'appliquent aussi aux cultures destinées à la production de biocarburants.

Trois types de mesures peuvent être distingués :

1) les mesures générales existantes sur le territoire français pour protéger la biodiversité (et qui s'appliquent aux productions agricoles en général) ;
2) les mesures visant à protéger la biodiversité qui s'appliquent aux grandes cultures dans le cadre de la Politique Agricole Commune ;
3) les mesures spécifiques ayant été mises en place dans le cadre du développement des biocarburants en France.

Ces mesures sont détaillées ci-dessous :

1) Mesures générales pour la protection des espaces et des espèces :

Ne sont pris en compte que les dispositifs visant à protéger la biodiversité et où les productions agricoles sont susceptibles d'être concernés. Hors Natura 2000, les mesures concernent les systèmes de protection des espaces sont : les parcs nationaux, les parcs naturels régionaux, les réserves naturelles (nationales ou régionales). Ces espaces offrent, à différents degrés, des systèmes de protection de la biodiversité dans les espaces agricoles en encadrant de manière stricte les activités agricoles, à la fois dans leur extension et leur fonctionnement.

2) Mesures dans le cadre de la PAC :

●Bonnes Conditions agricoles et environnementales (BCAE) : mise en place d'une surface minimale en couvert environnemental de 3% de la surface de l'exploitation en certaines productions (SCOP principalement) et maintien des terres en pâturage.

●Les mesures agroenvironnementales (MAE) du Programme de développement rural hexagonal (PDRH) visent à soutenir les exploitants agricoles qui s'engagent dans une démarche volontaire permettant la mise en place de pratiques agricoles compatibles avec la protection de l'environnement. Parmi ces MAE, les dispositifs suivants permettent une meilleure préservation de la biodiversité en système grandes cultures et, par là-même, les exploitations productrices de biocarburants :

- Le dispositif B dit MAE rotationnelle vise à participer à l'amélioration de la qualité de l'eau et à protéger la biodiversité en favorisant la diminution de

l'utilisation d'intrants et autres produits phyto-pharmaceutiques en zones de grandes cultures.

- le dispositif I dit MAE territorialisées répondent aux enjeux de préservation de la biodiversité dans les zones Natura 2000 en proposant des cahiers des charges adaptés aux enjeux locaux identifiés.
- En dehors des zones Natura 2000, les enjeux de protection des espèces sont définis dans le Plan National de Restauration. Ceux-ci visent à protéger et restaurer des espèces animales et végétales en danger. Les MAE constituent l'outil privilégié permettant d'accompagner les exploitations agricoles dans le cadre du Plan National de Restauration

3) Mesures spécifiques mises en place dans le cadre du développement de l'utilisation des biocarburants en France :

●dans le cadre du processus du Grenelle de l'environnement, le principe d'une production durable de biocarburants, reposant sur le respect de critères de performances environnementaux, a été introduit dans le projet de loi de programme relatif à la mise en œuvre (article 18).

●Tous les producteurs de biocarburants qui livrent sur le marché français et qui bénéficient de l'exonération partielle de taxe sur les produits pétroliers doivent fournir tous les ans un rapport à l'Etat sur les matières premières agricoles utilisées. Ce rapport doit préciser l'origine des matières premières et fournir des informations sur les rotations culturales pratiquées par les agriculteurs, les engrais et pesticides utilisés et la présence ou non d'intercultures. Aucun indicateur spécifique sur la biodiversité n'a été jusqu'à présent demandé.

●Dès l'entrée en vigueur de la directive européenne sur les énergies renouvelables, des mesures seront prises pour évaluer la conformité des biocarburants mis sur le marché français aux critères de durabilité prévus dans la directive, et notamment ceux concernant la biodiversité. Une étude va être prochainement lancée au niveau français pour préparer cette mise en œuvre.

Bonn, 06 March 2009

Convention on Biological Diversity (CBD)
Notification 2008-100

Germany's report on the sustainability of biofuels – Status of research on biofuels and biodiversity

1) Background

In CBD Notification 2008-100, the CBD Secretariat requested submissions of information from Parties and other stakeholders pursuant to decision IX/2 (Agricultural Biodiversity: Biofuels and Biodiversity) of the 9th Conference of the Parties on the CBD in May 2008 regarding their experiences with the sustainable production and use of biofuels, in particular, the impacts on biodiversity.

The Notification refers to research findings and other national experiences on the development and application of tools relevant to the sustainable production and use of biofuels with regard to biodiversity.

2) Biofuels and biodiversity – Introduction of sustainability requirements

Biofuels can make a significant contribution to climate protection, if cultivation and processing of biomass conforms to effective sustainability requirements.

Germany's draft Biofuel Sustainability Ordinance in 2007 was pioneering in its formulation of binding sustainability requirements for biofuels to be credited against the biofuel quota. Binding sustainability requirements must make allowance for the conservation of biodiversity. For example, land with high biodiversity value must be protected from conversion into arable land for the purposes of biomass cultivation for biofuels.

The national ordinance on the introduction of sustainability requirements is currently being adapted in line with the EU agreement of December 2008 on the Renewable

Energy Directive and Fuel Quality Directive[1], and will be put into force at national level as soon as possible. Parallel to this, efforts are ongoing to establish a reliable accreditation and control system which will effectively ensure the compliance with sustainability criteria with minimal administrative input for producers and processors. Certification will play a central role in this connection.

3) Biofuel production and biodiversity in Germany

The production of biofuels in Germany focuses to date mainly on the cultivation of energy crops (field crops). Wood crops for biofuels are not currently cultivated on a significant scale.

In Germany, positive effects for the conservation and sustainable use of biodiversity are to be anticipated where the cultivation of bioenergy crops leads to higher rates of crop rotation and an increase of crop diversity. Sustainable management of grasslands and the utilisation of biomass from landscape management measures such as mowings can also result in synergy effects with conservation goals. Wood crops and material from landscape management measures might in the future become an interesting resource for BtL biofuels, which are however, still at research stage and therefore not yet on the market.

The Cross Compliance regulation under the framework of the EU Common Agricultural Policy addresses standards for sustainable agricultural production in the EU, also regarding environmental concerns. This also applies to energy crop cultivation. Furthermore, agri-environmental measures funded through the Act on a Joint Task for the Improvement of Agricultural Structures and Coastal Protection can potentially be used to further support the development of sustainable bioenergy production schemes in regards to energy crops on the national level.

Conversely, from a national perspective, the following negative effects of the cultivation of energy crops on biodiversity are to be mentioned:

[1] For details of relevant EU regulations, particularly sustainability requirements for biofuels within the Renewable Energy Directive and Fuel Quality Directive, please refer to the introductory chapeau of this submission by the EU Presidency.

Both the overall ecological impacts and the greenhouse gas balance of biofuels depend on the choice of cultivation site and its former use.

- Direct changes of land use, such as the ploughing up of grassland, the utilisation of formerly decommissioned land or the use of areas of high natural conservation value for the cultivation of energy crops may pose a threat to biological diversity, as well as adversely affecting the climate balance of biofuels. Similarly, converting agricultural land that was formally extensively farmed to an intensive production of energy crops (or food) may adversely affect biodiversity.
- Indirect competition over land use can arise if former agricultural land is used to cultivate energy crops for biofuels, but as a result of this, food or animal feed needs to be produced elsewhere at a new location (indirect land use change). This too can have a negative impact on biodiversity.

A concentration on few energy crops (in particular rapeseed and corn) can lead to shorter crop rotation periods, which may result in a decrease of biological diversity and diversity of cultivated species, an therefore a monotonisation of the landscape.

A table summarising relevant national research projects and results is enclosed as Appendix 1. As well as providing details of the funding bodies and participating research institutes, this table also outlines the content and status of each project, and provides Web links to the results, where available.

Overall, there are a large number of research projects that address bioenergy and biodiversity, whereby the degree of consideration given to biodiversity aspects varies. The majority of projects discuss the effects of bioenergy on biodiversity based on overall agricultural, economic or planning aspects of energy crop production and use, rather than as a central topic. However, all of the projects listed also address nature conservation issues.

4) Further research requirements

From a nature conservation viewpoint, further research is needed in particular to identify a suitable method for recording and, where applicable, minimising the indirect

effects of biomass production (e.g. indirect changes in land use) and the implications for biodiversity of biomass cultivation for biofuel production, particularly in biodiversity-rich areas such as tropical rainforests and other natural forests or extensively used landscapes such as natural grassland areas with a large variety of species.

Appendix 1: List of national research projects into the effects of bioenergy on biodiversity

Research projects focussing on bioenergy and biodiversity

Title	Contents / results	Status	Supporting institution	Research institutes
Nature conservation standards for biomass cultivation	**Contents:** The main aim of this project is the systematic summarization, quantification and modelling of current and future effects of biomass cultivation on nature conservation interests (direct and indirect impacts) in Germany. A politically and practically enforceable concept for nature conservation standards will be developed as the outcome of this project. **Results:** The project focuses primarily on trend assessments and potential measures for remedying existing mistakes and averting possible problems. Regarding the debate surrounding the *de facto* environmental impacts of biomass cultivation (particularly in Germany), the project elucidates the fact that in Germany, older / more traditional forms of usage (such as extensive grassland) are tending to be displaced by more intensive usage forms for biomass (competition between "new" intensive land use and traditional usage forms which were once "protected and preserved"). Furthermore, the competition over land has led to the intensification of “normal” sites, at the expense of preserving biodiversity.	On-going	BfN (Federal Agency for Nature Conser-vation)	Hochschule für Forstwirtschaft Rottenburg (*Rottenburg Silvicultural College*) Prof. Dr. Rainer Luick Nature Conservation, Landscape Management and Regional Economics Faculty
Potential of genetic engineering with energy crops	**Contents:** This project analyses the breeding objectives for crops destined for energy recovery, particularly with regard to genetic engineering methods, potential environmental impacts, and regulatory mechanisms for sustainable use. The project also discusses the environmental impacts of a genetically modified maize variety with pest resistance (Bt maize) which is licensed in the EU and Germany. Bt maize is not a dedicated energy crop, but can also be used to generate biogas. **Results:** Based on an Internet search and a survey of companies and institutes, an analysis of on-going research projects in Germany and the EU revealed that genetic engineering techniques are not yet being used in energy crop cultivation.	12/2006 to 12/2007; publication in 2007	BfN (Federal Agency for Nature Conser-vation)	FSP BIOGUM, Forschungsgruppe Landwirtschaft und Pflanzenzüchtung der Universität Hamburg (*Agriculture and Plant Cultivation Research Group at Hamburg University*)

	By contrast, marker-assisted selection techniques are already widely used. Conventional breeding, supplemented by marker-assisted selection, is thought to be a more suitable means of increasing polygenetic properties such as dry mass yield. Among publicly funded projects into the use of biomass for energy recovery in Germany, research has tended to focus primarily on the conventional breeding of new biomass genotypes, particularly for biogas use (whole plants), and on the optimisation of energy crop rotation practices.			
Land-effective bioenergy use from a nature conservation viewpoint	**Contents:** As the requirements placed on various types of land use continue to escalate, this project highlights the need for greater land efficiency in the cultivation of renewable raw materials at both national and international level. The aim is, firstly, to preserve biological diversity, and secondly, to achieve a positive climate balance. **Results:** In particular, the project aims to represent the effects on nature and the landscape of more widespread and more intensive cultivation of energy crops, with due regard for efficiency targets. It will also illustrate the greenhouse gas balances of various different forms of cultivation and usage, based on current research results. The project will conclude with a nature conservation assessment of various land, cultivation and utilisation options viewed in a national context.	Ongoing (until February 2010).	BfN (Federal Agency for Nature Conser-vation)	Peters Umweltplanung, Berlin; TLL (*Agricultural Research Centre of Thuringia*); Ifeu (*Institute for Energy and Environmental Research*)
Conservation-friendly production and use of biomass to generate heat and electricity	**Contents**: In this completed research project, the Institute for Landscape Management and Nature Conservation at Hanover University examined the various usable biomass fractions with due regard for the principles of good agricultural practice as well as the national and regional requirements for sustainable forest management (as per 2004). The project focuses primarily on Germany and on the generation of electricity and heat from biomass. Some of the cultivation issues relating to biomass can also be applied to biofuels. The research project is based on an extensive evaluation of the current specialist literature in the biomass/renewable energies sector in conjunction with conservation-related aspects.	Completed in 2005	BfN (Federal Agency for Nature Conser-vation)	Hanover University

	Results: From a nature conservation viewpoint, increasing the use of renewable energies is to be welcomed as a way of averting large-scale climate change, since the long term aims of nature conservation cannot be achieved without effective climate protection. However, we cannot allow these climate protection objectives to be implemented at the expense of meeting nature conservation targets, nor must they be allowed to have an adverse impact on habitat conditions. A significant portion of the electricity generated from renewable energy sources is ascribed to the use of biomass. However, this must not be allowed to exacerbate the existing conflicts between nature conservation and agriculture / forestry. Mindful of this fact, the project also aimed to highlight potential synergy effects. The results were outlined in the concluding report. (BfN-Skripten 136)			
Effects on species diversity of increasing biomass use (Renewable Energy Sources Act, EEG) – Formulation of recommendations to protect birds in agricultural landscapes	**Contents:** This completed project analysed the effects on species diversity of the increasing cultivation of energy crops for biogas production. Birds were chosen as an indicator, as they respond quickly to changes in agricultural use and are readily recorded. The study covered sites in various regions of North Germany, which offered a variety of different agricultural structures and soil and climate conditions. **Results:** Based on selected key species of farmland bird, the energy crops covered by the project and their various harvesting times were assessed to evaluate their suitability as breeding bird habitats. *Inter alia*, the project authors proposed the following measures for the sustainable production of energy crops: ▪ Observe at least triple crop rotation ▪ Restrict the proportion of any one crop (e.g. maize) for biogas production ▪ Maximise the opportunities for energy crop diversity ▪ Cohesive areas of maize should not exceed 5 ha. Where appropriate, create ecological compensation areas and corridors ▪ No mowing of winter grains before the end of June. ▪ In forage grass and grassland, the second mowing should be at least partially	Completed December 2007, follow-up project planned	BMU (Federal Ministry for the Environ-ment, Nature Conser-vation and Nuclear Safety)	Projektbüro Dziewiaty & Bernardy

	delayed by 7-8 weeks from the first cut ▪ The cutting height for forage grass and grassland should be raised to at least 14 cm ▪ Extensively used strips, where the mowing of grassland and forage grass is delayed or partially suspended, should be conserved. ▪ Concentration of work operations to cultivate the main crop in spring ▪ Careful spreading of fermentation residues, possibly using towed hoses ▪ In wet years, waterlogged areas should be exempt from management (limicole conservation). Flexible contract variants in case of crop failure are required			

Other research projects with relevance for biofuels and sustainability (not specifically biodiversity)

Topic	Contents / results	Status	Supporting institution	Research institutes
Criteria for sustainable bioenergy use on a global scale	Fundamental principles and criteria for bioenergy sustainability, set of default values for traded biofuels, methodology for preparing biogas balances http://www.umweltdaten.de/publikationen/fpdf-l/3514.pdf Published as UBA Text 30/08	Completed 1/2008	UBA (Federal Environment Agency)	IFEU (*Institute for Energy and Environmental Research*), FSC AG Germany, Germanwatch
Fuel wood production in agriculture	Conference in 11/08 and brochure on fuel wood production in agriculture: Opportunities and risks from the viewpoint of environmental and nature conservation http://www.landnutzungsstrategie.de/fileadmin/userdaten/dokumente/ELKE/08-11_Energieholzproduktion_Lawi_NABU.pdf	Completed 11/2008	UBA (Federal Environment Agency)	NABU (*German Society for Nature Conservation*), Göttinger Bodeninitiative GBI e.V (*Göttingen Soil Initiative*)
Aspects of water conservation and water use in the cultivation of energy crops	Report with land use recommendations for the cultivation of energy crops and the storage of fermentation residues which have direct impacts on biodiversity, see http://www.vti.bund.de/de/institute/lr/publikationen/bereich/ab_03_2008_de.pdf (PDF/1 MB) Documentation of the workshop can be found at: http://www.umweltbundesamt.de/wasser-und-	Completed 3/2008	UBA (Federal Environment Agency)	Von Thünen Institut, Institute of Agricultural Technology and Biosystems Engineering

	gewaesserschutz/veranstaltungen.htm			
Optimisation measures for the sustainable expansion of biogas production and use in Germany	This project examined the ecological impacts of various biogas production and utilisation options within the context of the economic and legal framework. It also made recommendations for the sustainable production and use of biogas in Germany. http://www.ifeu.de/index.php?bereich=lan&seite=biogas	Completed 8/2008	BMU (Federal Ministry for the Environment, Nature Conservation and Nuclear Safety)	IFEU (*Institute for Energy and Environmental Research*), IE Leipzig, Prof. Dr. S. Klinski, Öko-Institut, Berlin Technical University
Identification of strategic barriers and development of potential solutions for reducing usage competition associated with the continuing expansion of biomass use for energy recovery	The sub-project "Land use and nature conservation" assesses the effects of biomass expansion on nature conservation interests from a nationwide perspective (identification and evaluation). It formulates problem-solving strategies and discusses specific policy-making measures. www.dbfz.de/aktuelle_Projekte/downloads/Workshop1%20Infos.pdf zum ersten Workshop im Mai 08	On-going	BMU (Federal Ministry for the Environment, Nature Conservation and Nuclear Safety)	Hanover University, DBFZ (*German Biomass Research Center*), Institut für Umweltplanung IP (*Environmental Planning Institute*)
Joint project "EVA" (development and comparison of optimised cultivation systems for the agricultural production of energy crops under Germany's varied site conditions)	This joint project, involving a large number of scientific institutions in the agricultural sector. Its main target is to develop and to optimise argricutural practices for energy crops. Ecological research is part of it, aiming at abiotic and biotic impacts of energy crop production. Overarching aim is to widen the spectrum of cultivated crops. Results for the first three years of the project are available, whilst the project will be running for another three year period. www.tll.de/vbp/pdf/vetter_tll.pdf http://www.energiepflanzen.info/cms35/index.php?id=1552&idtitel=335&idkat=&pflanzen=0&verarbeitung=0&gruppen=0&titelsuche=anbausystem	On-going (ends 2012)	BMELV (Federal Ministry of Food, Agriculture & Consumer Protection) FNR (*Agency for Renewable Resources*)	TLL (*Agricultural Research Centre of Thuringia*) Julius Kühn-Institute - Federal Research Centre for Cultivated Plants ZALF (*Leibniz Centre for Agricultural Landscape Research*) Justus Liebig University Giessen Kassel University

Certification of Biomass and Bioenergy – ISCC Pilot Project	Biodiversity aspects should be addressed within the context of the certification process, and methodological issues still need to be clarified. http://www.iscc-project.org/results http://www.iscc-project.org/news	On-going	BMELV (Federal Ministry of Food, Agriculture & Consumer Protection) FNR (*Agency for Renewable Resources*)	meó-Consulting
Bioenergy and Food Security	For policy-makers and other stakeholders, it is vitally important to understand the impacts, positive and negative, that biomass and bioenergy schemes may have on food security. Analyzing competition for land, water, food production, food availability and access, and in turn food security, and elaborating initial guidance on these types of analytical issues are thus central to this phase of the project http://www.fao.org/nr/ben/befs/	On-going	BMELV (Federal Ministry of Food, Agriculture & Consumer Protection)	Food and Agriculture Organization of the United Nations (FAO)
Bioenergy Village Jühnde: Experiences in rural self-sufficiency	The first bioenergy village in Germany. The village that meets its own electricity demand and the heat or cooling requirements with local biomass which has been produced in accordance with ecological farming standards. www.bioenergiedorf.info	Completed in 2008	BMELV (Federal Ministry of Food, Agriculture & Consumer Protection) FNR (*Agency for Renewable Resources*)	Georg August University Göttingen
Nature conservation perspectives in the face of changing agro-political framework conditions – Approaches to the conservation-friendly	In collaboration with three Brandenburg farms, the project explores the possibilities for eco- and conservation-friendly energy crop cultivation. It identifies potential obstacles, and formulates practical solutions. http://www.dbu.de/projekt_23559/_db_1036.html http://lis4.zalf.de/programs/zalf_fprojekt/zhome_detail.aspx?fid=945&idx=1&idz=2&lang=deu&text=	Completed in 2008	DBU (*German Environment Foundation*)	ZALF (*Leibniz Centre for Agricultural Landscape Research*)

cultivation of energy crops for biogas production: Processes, facilities, framework conditions				
Bwplus project – Renewable energy carriers and biodiversity – Development and evaluation of cultivation scenarios from a conservation and economic viewpoint (NawEnNat)	This research project focuses on incorporating the requirements of species and biotope conservation into the use of renewable raw materials for energy recovery, and employs economic modelling of scenarios to estimate their economic "trade-off". http://energie-aus-biomasse.uni-hohenheim.de/html_templates/Inhaltsseite/Allg_NawEnNat.html	On-going	Hohenheim University	Universities of Stuttgart and Hohenheim
Ecological optimisation of the production and use of biomass for energy recovery – Eco-friendly expansion of energy production from biomass in line with regional planning policy (SUNREG II)		On-going	State of Lower Saxony, DBU (*German Environment Foundation*), VW-AG	Hanover University
Effects on the fauna of the agricultural landscape associated with the large-scale cultivation of energy crops (SUNREG III)	http://www.tiho-hannover.de/einricht/wildtier/sunreg3.htm	On-going	State of Lower Saxony	Hanover University
Dimensions of eco-friendly energy crop production	As part of the series of projects “Opportunities and challenges facing new energy crops”, this study provides a comprehensive overview of the environmental impacts associated with the cultivation of relevant energy crops, identifies critical points, and formulates options for eco-friendly energy crop production. The project considers the entire spectrum of one-year and multi-year energy crops and agricultural wood.	Completed in 2008	TAB (*Office of Technology Assessment at the German*	Hanover University

	http://www.tab.fzk.de/de/projekt/zusammenfassung/ab121.htm		*Parliament*)	
Cultivation, harvesting and use of fast-growing tree species on agricultural land in the Freiberg (Saxony) region and in the "Schradenland" (southern Brandenburg) area (AGROWOOD)	This project centres around the cultivation of plantations with a short rotation period (200-400 ha in the regions of Freiberg (Saxony) and Schradenland (Brandenburg)). In both of these model regions, the project aims to explore the economic and ecological opportunities of this form of land use, and encourage social acceptance among all interest groups. http://www.agrowood.de/index.php	On-going	BMBU	Dresden Technical University
DENDROM – Dendromass, a future oriented raw material Module "Landscape-ecological aspects of dendromass production – Analysis and assessment of the risks and benefits"	This project aimed to devise a model for cultivating plantations with a short rotation period in Brandenburg and examined the agricultural, ecological, economic and infrastructure aspects of cultivation. It concluded that the cultivation of 200,000 hectares of fuel wood in Brandenburg was feasible. www.dendrom.de http://dendrom.de/content/index_2.cfm?id_bereich=22&id_nr=87&CFID=5994133&CFTOKEN=54885537	Completed in 2008	BMBF (Federal Ministry of Education and Research	BTU (*Brandenburg University of Technology*), ZALF (*Leibniz Centre for Agricultural Landscape Research*)

Recent projects – Results not yet available

Topic	**Term of the research project**	**Research institution(s)**
Establishing an extensive land use strategy based on a more flexible range of compensation mechanisms under the intervention regulations (ELKE) – Phase II	01/06/2008-31/05/2009	Fachhochschule Trier - Institut für angewandtes Stoffstrommanagement (IfaS) (*Trier University – Institute for Applied Material Flow Management*)
Optimisation of sustainable biomass supply for thermal recovery from representative permanent grassland types	01/06/2008-30/04/2011	Thüringer Landesanstalt für Landwirtschaft (TLL) - Abteilung Tierproduktion - Referat Grünland und Futterbau (*Agricultural Research Centre of Thuringia – Animal Production Department – Grassland and*

		Feed Production Division)
Joint project: Environmental influences of fast-growing plantations – Logging, evaluation and derivation of recommendations for sustainable management (ERA-NET Bioenergy RATING-SRC); sub-project: Effects on soil ecology of short rotation plantations	01/09/2008-31/08/2011	Universität Rostock, Agrar- und Umweltwissenschaftliche Fakultät, Institut für Landnutzung, Professur für Bodenkunde (*Rostock University, Agricultural and Environmental Sciences Faculty, Institute for Land Use, Chair for Soil Science*)
Joint project: Environmental influences of fast-growing plantations – Logging, evaluation and derivation of recommendations for sustainable management (ERA-NET Bioenergy RATING-SRC); sub-project: Influence on biodiversity of short rotation plantations	01/10/2008-30/09/2011	Johann Heinrich von Thünen-Institut Bundesforschungsinstitut für Ländliche Räume, Wald und Fischerei - Institut für Waldökologie und Waldinventuren (*Federal Research Institute for Rural Areas, Forestry and Fisheries – Institute of Forest Ecology and Forest Inventory*)
Joint project: Economic and ecological evaluation of agro-forest systems in agricultural practice; sub-project: Recultivation land in Brandenburg	01/07/2007-31/03/2010	Brandenburgische Technische Universität Cottbus - Fakultät Umweltwissenschaften und Verfahrenstechnik - Institut für Boden, Wasser, Luft - Lehrstuhl für Bodenschutz und Rekultivierung (*Brandenburg University of Technology Cottbus – Environmental Sciences and Process Engineering Faculty – Institute for Soil, Water, Air – Chair for Soil Conservation and Recultivation*)
Joint project: Economic and ecological evaluation of agro-forest systems in agricultural practice; sub-project: Grassland and arable land in Lower Saxony	01/09/2007-30/04/2010	Julius Kühn-Institut Bundesforschungsinstitut für Kulturpflanzen (JKI) - Institut für Pflanzenbau und Bodenkunde (*Federal Research Institute for Cultivated Plants – Institute for Plant Cultivation and Soil Science*)
Joint project: Analysis of crop rotation practices with energy crops as a way of helping to reduce the use of pesticides in arable farming	01/03/2008-28/02/2011	Universität Rostock - Agrar- und Umweltwissenschaftliche Fakultät (*Rostock University – Agricultural and Environmental Sciences*

		Faculty) Georg August University Göttingen
Joint project: The breeding of fast-growing tree species for the production of renewable raw materials with a short rotation period (FastWOOD); sub-project 2: Breeding, genetic characterisation and assessment of potential and risk with Leuce poplars and robinia	01/10/2008-30/09/2011	Johann Heinrich von Thünen-Institut Bundesforschungsinstitut für Ländliche Räume, Wald und Fischerei - Institut für Waldökologie und Waldinventuren (*Federal Research Institute for Rural Areas, Forestry and Fisheries – Institute of Forest Ecology and Forest Genetics*) Technische Universität Dresden - Fakultät Forst-, Geo- und Hydrowissenschaften (*Dresden Technical University – Forestry, Geosciences and Hydrosciences Faculty*) Philipps-Universität Marburg - Fachbereich Biologie (*Biology Faculty*)

NATIONAL CONTRIBUTION BY THE NETHERLANDS TO THE CBD NOTIFICATION 2008-100 ON BIOFUELS

The Netherlands is committed to the realization of sustainable production and use of biofuels. Opportunities for new activities in the field of biomass must not be at the expense of other important values for nature, environment and society anywhere in the world. Therefore, the Dutch government has undertaken and planned several activities to promote sustainable production of biofuels, which can be divided into the following 4 subjects:

1. Standard setting
2. Support schemes for pilot projects
3. Bi-lateral cooperation with developing countries
4. Knowledge development concerning the (indirect) effects of biofuels

1. Standard setting

In February 2007 the Dutch project group 'Sustainable production of biomass', with representatives from trade & industry, knowledge institutions, NGO's and the Dutch Government under the Chairmanship of Prof. Dr. Jacqueline Cramer published the "Testing Framework for Sustainable Biomass" otherwise known as the "Cramer Criteria". The project group formulated a list of minimum criteria and attuned as much as possible to the existing conventions and quality marks. The criteria and indicators in the testing framework have been divided into six themes: greenhouse gas balance; competition with food, local energy supply, medicines and building materials; biodiversity; economic prosperity; social well-being and environment. Furthermore a distinction is made between criteria that can be met on a consignment level and aspects that need to be covered at a higher level like displacement effects or effects on prosperity. These themes clearly underline the way in which The Netherlands did take into account the possible implications of an EU biofuels policy on developing countries.

In April 2008 the European Committee for Standardization (CEN) created a new CEN Technical Committee (TC) in the field of sustainability criteria for biomass after positive voting of the CEN members for the Dutch proposal based on the "Cramer Criteria". CEN/TC 383 will elaborate on a European set of standards for sustainably produced biomass. This means the set shall include definitions, basic requirements, principles, criteria and possibly indicators for sustainability assessment.

At the request of Dutch bio-energy stakeholders, the Dutch standardization institute NEN is working on a Dutch Technical Agreement (NTA). The Dutch stakeholders would like to start working with certified sustainable biomass as soon as possible. However the European standard for sustainable produced biomass will not be available before mid 2010. In the meantime the NTA can be used. In the NTA the "Cramer criteria" will be converted into generic and verifiable criteria.

2. Support schemes

The Dutch Government offers several support schemes for companies and organizations wanting to contribute to the development of sustainable biomass chains abroad. The "Cramer Criteria" are the guiding principle for these programmes.

In this respect, examples of initiatives to which the Netherlands is very committed - both as a donor and facilitator - are the Round table on Sustainable Palm Oil (RSPO) established in 2004, and the Round Table on Responsible on Soy (RTRS) established in 2006. These were established by companies and NGO's as multi-stakeholder initiatives with the objective to advance the production, procurement and use of sustainable oil palm and soy bean products. In 2007 the Principles and Criteria for sustainable palm oil, including indicators and guidance, were accepted by the RSPO's General Assemblee. The first shipment of certified RSPO-palm was transported to Europe in the second half of

2008.

In 2009 the Dutch Government will start a support scheme for the establishment of sustainable biomass production in certain developing countries through collaboration in the fields of policy development, local application of criteria, certification and field testing and monitoring of secondary effects. In addition the Dutch Government is developing a support programme concerning sustainable biomass import. This programme is meant to support pilot and demonstration projects in major producing countries. Further the PSI, or the Private Sector Investment Programme offers opportunities as it aims at stimulating innovative investments (Business to Business projects) in emerging markets.

3. Bilateraal cooperation

The Dutch government has developed an Biomass Action Plan for its international engagement. This action plan fully takes into consideration the respective EU policy development and the Dutch ambition to invest in the sustainability of biofuels. The action plan details the cooperation with developing countries in drafting policies on sustainable biofuels and the development of implementation capacity. The support considers both biofuels for local use and/or for export.

For example the Netherlands and Mozambique are engaged in an intensive policy dialogue concerning sustainable biomass production. This has among others, resulted in a joint programme aiming at policy development, capacity building and certification. Specific attention is given to the opportunities and constraints to address poverty reduction. Furthermore, cooperation is set up with Brazil, Malaysia and Indonesia.

4. Knowledge development

The Netherlands Environmental Assessment Agency published its report "Monitoring Macro-impacts of Bioenergy" at the end of 2008. This report, commissioned by the Dutch Government, gives an overview of existing monitoring systems and relevant data regarding the macro-indicators identified by the project group 'Sustainable production of biomass' covering environmental as well as social and economic aspects, both at a macro and meso levels. Further the report gives recommendations for the further development of macro monitoring. With the possible impact of EU biofuel policies on development countries in mind, The Netherlands will invest in the development of ionaternational accepted methodologies and systems to monitor indirect effects.

Malaysia and The Netherlands operate a joint research program to clarify the greenhouse gas balance of oil palm cultivation on former peat land forests. Extrapolations suggest that peat oxidation is strongly correlated to water table depth, but this has not yet been checked for oil palm cultivation on peat. Work has commenced to develop best practice guidance for oil palm cultivation on peat, to reduce GHG-emissions in existing plantations. Additionally, an overview of current land use will be given. First results are expected in 2010.

SUBMISSION BY PORTUGAL IN REPLY TO NOTIFICATION NO. 2008 - 100 – REQUEST FOR SUBMISSION OF INFORMATION ON EXPERIENCES ON THE DEVELOPMENT AND APPLICATION OF TOOLS RELEVANT TO THE SUSTAINABLE PRODUCTION AND USE OF BIOFUELS.

In reply to notification 2008-100, Portugal would like to transmit its national circumstances.

In Portugal, the Decree Law 62/2006 of March 21 on the promotion and use of biofuels defines biofuels as "liquid or gaseous fuel for transport produced from biomass". This Decree law transposes Directive 2003/30/EC of the European Parliament and of the Council of the EU of 8 May 2003 on the promotion of the use of biofuels or other renewable fuels for transport.

Portugal has a set of instruments which determine, from the environmental point of view, the conditions of production of biofuels / biomass and ensure that it is done within the framework of sustainable development and respect for biodiversity conservation, even though they are general and have not been set up specifically for this purpose.

In fact, potential negative impacts may derive, on the one hand, from unwanted changes in soil use, which are protected by existing legislation, and on the other hand from inadequate agricultural and forestry practices, namely intensive and unsustainable exploitation, which are also largely regulated (for example in land use planning of classified areas or in the management plans of the areas included in the Natura 2000 Network of Protected Areas) or are object of voluntary measures.

It does not seem possible to establish top-down criteria that are appropriate in all situations since in the case of forestry, the appropriate practices vary depending on the conditions of the years season and of the settlements - there is no model applicable to all situations - because a good practice in a given situation may not be a good one in another. This is very obvious in a country like Portugal, where variations in climate, soils, structure and system of property offer a huge variety of agricultural and forestry ways to use the territory.

Portugal has adapted the operational level guidelines of the process of Ministerial Conferences on the Protection of Forests in Europe (MCPFE) to the national level and they are the basis of the portuguese rule. These guidelines are used by forest certification systems and set the basis of best practice to be followed by forestry projects supported with public funds. The framework is always a sustainable forest management as defined by the MCPFE in Europe.
Relevant legislation relating to:

Spatial planning: Portugal has a system of land-use planning, particularly at the municipal level, which aims to optimize the spatial distribution of various types of use, classifying and describing the soil. This system is based on the identification of any easements and restrictions of public utility that may constitute limitations and impediments to uses, including the national agricultural reserve and national ecological reserve, which occupy about 50%

Protection of habitats and sensitive areas for the conservation of biodiversity through the Fundamental Network of Nature Conservation (Rede Fundamental de Conservação da Natureza) and the National System of Classified Areas (Sistema Nacional de Áreas Classificadas) (Decree Law No. 142/2008 of July 24). Special Areas of Conservation (SAC) and Special Protection Areas (SPAs) cover about 25% of the continental territory of Portugal.
Forestry planning: the organization of forests takes place in each region through the Regional Plans for Forestry Development (Planos Regionais de Ordenamento Florestal), in a multiple use perspective, and always based on meeting the present and future social

needs in what relates to goods and services provided by forests. On the other hand, areas of intervention in the forest are booming, as a grouped form of management that allows for forest planning at the landscape scale in regions of small scale agricultural explorations. Also booming are the plans for the use of people-owned estate and forest management plans for public and private property.

Non-native species: the introduction in nature, possession and use of non-native species is regulated by Decree Law 565/99 of December 23.

Species of rapid growth - the use of fast growing species has a specific legal regime since 1988 (Decree Law 175/88 of May 17, and complementary legislation). There is also a legal regime proctecting the natural topography and the vegetation cover (Decree Law 139/89 of April 28) and legislation regarding environmental impact assessments (Decree Law 69/2000 of May 3, and complementary legislation).

Special status of protection for some species – cork oak, holmoak and spontaneous holly are protected by specific legislation, in the entire territory;

With regard to instruments of voluntary nature, it should be stressed:
- adoption of good agricultural and forest practices by the private sector and conditioned support for projects subject of public support;
- criteria and indicators for sustainable forest management (which include the maintenance and enhancement of biodiversity);
- forest certification systems;
- development of studies and research on the impacts of the various management systems;
- tests on various options for energy crops and demonstration of actions (eg BioEnergia - teaching camp on bioenergy plants).

UNITED KINGDOM RESPONSE TO CBD NOTIFICATION NO.2008-100

INFORMATION ON UK EXPERIENCES ON THE DEVELOPMENT AND APPLICATION OF TOOLS RELEVANT TO THE SUSTAINABLE PRODUCTION AND USE OF BIOFUELS;

Defra has part funded a project with the Joint Nature Conservation Committee (JNCC) called the Global Impacts Programme. This work is centred on developing a database and website to provide access to a range of information that is relevant to global biodiversity issues but which is not easily available to Government. Under the Global Impacts programme JNCC undertook a review of potential impacts on biodiversity of use of biomass for energy. There will be a biofuels footprint report out in April and new material on the project website (http://www.ukglobalinfluence.org/bioenergy/index.cfm). This work is being lead by Tony Weighall at JNCC email:Tony.weighll@jncc.gov.uk.

Relevant information from research on, and monitoring of, the positive and negative impacts of the production and use of biofuels on biodiversity

The UK is working with other European member states to develop European sustainability criteria for biofuel and biomass production. This will take into account potential social and environmental issues and seek to set standards that ensure production is sustainable.
The UK work has also considered the impacts of biofuel production on sustainability under the Gallagher review. This review by the independent UK Renewable Fuels Agency has been prepared for the UK Government in response to concerns about the sustainability of biofuels. The aim of the review has been to examine the scale of the indirect effects of current biofuels production, and to propose solutions. The report made a series of recommendations relating to the sustainable production of biofuels. Please see link http://www.dft.gov.uk/rfa/_db/_documents/Report_of_the_Gallagher_review.pdf

The UK is also heavily involved with international initiatives such as Global Bio Energy Partnership (GBEP) – see http://wwwglobalbioenergy.org/. We are currently in the process of working with other partners to develop robust sustainability criteria. The application of the precautionary approach, ecosystem approach is being incorporated where relevant into the sustainability criteria.

Current research:
AEA technology is currently undertaking research for UK Government looking at the current gaps in evidence in respect to biofuels research. An international workshop was held on 24 February 2009 to discuss the initial findings of this research and priorities future research funding, bringing together policy-makers, researchers and NGOs. This was co-chaired by Professor Bob Watson (Chief Scientific Adviser for the Department for Environment) and Brian Collins (Chief Scientific Adviser for the Department for Transport). The final report will be available at the end of March 2009

In 2007 Defra commissioned AEA Technology to review current scientific evidence and ongoing work on the greenhouse gas emissions and environmental sustainability of biofuels production and consumption, with the aims of informing policy development, assessing the need to strengthen the evidence base and identifying Defra's research priorities in this area. For more information please see link below.
http://randd.defra.gov.uk/Document.aspx?Document=GA01105_7190_ABS.pdf

Other research on biofuels:
Defra's Central Science Labs are currently carrying out a study on Indirect Land Use Effects of Bio energy Groups in. This began in December 2008 and will be finalised in June 2009. The project seeks to identify the available land suitable for the production of crops for energy, fuels and other non-food uses, which was identified as 'idle or marginal' land in the Gallagher Review. It will investigate what crops and on what yield would be expected on these land types, and what economic returns farmers would need to be

incentivised to used this type of land. The environmental effects of using these lands to grow cops for energy will be explored, and the change in the carbon balance that would result. It is envisaged that a second phase would compare options for using this land for non-food crops and how this relates to achieving our objectives for renewable energy and sourcing sustainable feedstock.

Further UK based Government and academic research:

Department for Energy and Climate Change (Decc):
Market analysis and technology analysis being done through NNFCC (see notes on NNFCC).
Ongoing research interests include incentivising second generation biofuels (follow on from the
NNFCC barriers of biofuels work) and economic study of how to meet biofuels targets after 2020.

Defra:
Key studies:
Deconti, M. (2008) Estimating the Cost Effectiveness of Biofuels, Defra Economics Group, April 2008.
http://www.defra.gov.uk/ENVIRONMENT/climatechange/uk/energy/renewablefuel/pdf/biofuels- 080414-2.pdf
Deconti, M. (2008) Estimating the Value for Money of Government Support for Biofuels, Defra
Economics Group, April 2008.
Pfuderer, S. & del Castillo, M.(2008) The Impact of Biofuels on Commodity Prices, Defra Agricultural Economics Unit, April 2008.

RFA:
RFA provides monthly and annual reporting (due in January 2010) on progress of the RTFO. In addition the RFA reports annually as part of the post regulatory impact assessment process. Apart from providing figures for quantity of biofuels the annual report examines economic and social impacts as well as progress towards sustainability. Part of this work will involve a number of discreet studies examining the data in more depth.

University of Essex

European level research headed by Mark Harvey

1. Collaborative partnership between social scientists in Essex and Manchester and the Bioscience for Business Knowledge Transfer Network. (October 2008 to March 2010). ESRC Research award
2. Foresight for European Biofuels Futures- A 2020 Vision (December 2008- 09)