Response to European Commission Consultation on Biofuel

Q1 How should a biofuel Sustainability system be designed?

Q 1.1: Do you think the "possible way forward" described above is feasible?

The basic approach seems to be sound - ie to judge the biofuel against criteria to determine sustainability and avoid giving incentives if they fail to meet the criteria. However there are a number of issues that need to be addressed:

1. The criteria given do not cover the full range of environmental sustainability. Reference needs to be made to other criteria – eg Social impact, Pollution, excessive use of water and other natural resources, avoiding use of subsidies etc. Reference can be made to the RSPO criteria and indicators for sustainable palm oil or the Cramer Principles to broaden the list of criteria.

2. The criteria given in box 1 need to be elaborated and refined especially Criterion 1. In order to be classified as a sustainable biofuel the life cycle emission should be significantly less (at least 50% less) than the life cycle emission from equivalent amount of Fossil fuel.

3. The issue of "leakage" where the net emission reduction from production of biofuel is offset by expanded production of oil crops in other areas.

4. The need to look at sector wide emission levels at national or industry level rather than just at the site or project base.

Q 1.2: What do you think the administrative burden of an approach like the "possible way forward" would be? (If possible, please quantify your answer)

The administrative burden of such an approach would include the cost of developing criteria, certifying against the criteria, monitoring, reporting and tracking the oil in the trading system.

Q 1.3: Please give your general comments on the "possible way forward", and on how it could be implemented. Does it give an adequate level of assurance that biofuels will be sustainably produced?

The proposed system could be administered by way of a certification scheme – such as the proposed certification system for sustainable oil palm. The cost of such a certification should be met by the suppliers/consumers. Such a certification scheme is well advanced for palm oil and with relatively minor changes could be adapted for biofuel sustainability.

For other biofuel crops such as rape seed or soy oil such certification schemes would need to be set up before the related oil could be certified as being produced sustainable.

The system should be implemented based on a combination of a sector wide approach and a site based approach. The eligibility of a proposed biofuel should be determined by a sector wide determination of life cycle emissions from the global production or the production in a particular country of a particular biofuel. If the

average lifecycle emission is greater than that of fossil fuel then the biofuel should not be used as a biofuel. Secondly an assessment is needed at the particular production site to determine that the emissions from that specific production is the same or less than the overall industry average and less than the life cycle emissions of fossil fuel.

If you think the problem should be tackled in a different way, please say how, giving details of the procedures that would be used.

Since the reason that incentives are being provided is to reduce net greenhouse gas emissions compared to fossil fuel – then these incentives should only be given based on the degree of emission reduction.
For example if biofuel A gives a 30% reduction in life cycle emission compared to fossil fuel and Biofuel B gives a 60% reduction. The biofuel B should get should get twice the incentive.

It is believed that the target of 5.75% biofuel mix by 2010 was developed on the understanding that biofuel had no GHG emissions compared to fossil fuel. Thus it was thought that this would lead to a 5.75% reduction in net greenhouse gas emissions in the transport sector. With the knowledge that that some biofuels have significant GHG emissions – this potential saving will need to be reviewed and targets adjusted accordingly.

In addition it now known that some biofuels – eg those grown on drained peatlands may generate more than 3-5 times more GHG than fossil fuels (see annex 1). Therefore it is important to track the net GHG emission of biofuel and give penalties for those that are worse than fossil fuel as well as incentives for those that are better. This will meant that if a use combines the same amount of biofuel of a type which leads to a 30% increase in emission with that providing a 30% reduction – then the net benefit will be zero – so that no incentive should be paid. In the current proposal no incentive will be provided for the high emission biofuel – wheras incentive will be given for lower emission fuel. The net effect is that an incentive will be given when there is no net reduction in emissions. In order to prevent the industry from circumventing regulations by not declaring use of biofuel with high emissions and still claiming incentives for those with low emissions – it will be necessary to have sector-wide assessment and tracking.

Questions relating to individual criteria in box 1

Q 1.4: Carbon stock differences between land uses would be taken into account under criterion 2. Should they also be taken into account under criterion 1? If so, what method should be used to determine how the land in question would have been used if it had not been used to produce raw material for biofuels?

Two separate criteria as described are appropriate – one dealing with carbon stocks and one on net emissions. However where it is known that a particular land use type (such as growing biofuel on drained peatlands) will automatically lead to a large emission of greenhouse gasses – then there should be an automatic restriction on biofuels produced from such a land use.

Q 1.5: As described in the “possible way forward”, criterion 3 focuses on land uses associated with exceptional biodiversity. Should the criterion be extended to apply to land that is adjacent to land uses associated with exceptional biodiversity? If so, why? How could this land be defined?

The regulations should stipulate the need for adequate buffer zones between biofuel production areas and areas of exceptional biodiversity. This will depend on the exact site and nature of the catchments (whether the plantations are upstream or downstream of the sites of biodiversity importance). A minimum buffer zone of 500m or 1 km should be considered.

Q 1.6: How could the term "exceptional biodiversity" (in criterion 3) be defined in a way that is scientifically based, transparent and non-discriminatory?

Some definitions have been made for High Conservation Value by the Round table on sustainable palm oil and Forest stewardship council. However biofuels are also grown in non-forest habitats – such as grasslands, savanna, wetlands etc. Any area designated as a formal conservation or protected area or hosting one or more species of globally, regionally or nationally significant species of biodiversity. The criteria should consider this. Reference can also be made to guidance from the Convention on Biological Diversity and the World Conservation Union or the UNEP World Conservation Management Centre (WCMC).

Q 2.1: Please give your comments on the "possible way forward" described above. If you think the problem should be tackled in a different way, please say how.

One major problem with a site based approach is the leakage or displacement of emissions to other production sites and other products. For example large-scale development of biofuels in Indonesia is leading to large scale deforestation (eg government earlier planed to hand out 9 million ha of forest land for biofuel plantations). Now that concerns on GHG emissions have been raised there are proposals to reduce the biofuel production in forests and peatlands and transfer food production to these areas. Thus the sector wide emissions would be growing but incentives may still be given for expanding biofuel production in non-forest land which will contribute to forest clearance for the food sector.

Consideration should be placed on the efficiency of the production of the biofuel – ie more incentive to biofuels which can be produced cost effectively, without subsidies, bringing social benefit and in an efficient manner.

Palm oil produces much more oil per ha compared to other crops and all other factors being equal should have some advantage to those biofuels which take up large areas of land with lower low efficiency of production – eg rapeseed or soy.

Q 2.2: Do you think it is possible to link indirect land use effects to individual consignments of biofuel? Is so, please say how.

Indirect land use affects can be linked with particular plantations. Individual consignments can be tracked through appropriate tagging and chain of custody measures. Such are proposed by RSPO. An alternative option is to look more broadly at the sector wide emission and then use it to determine average emissions for a particular site.

Q. 3.1: How should second-generation biofuels be defined?
Should the definition be based on:

a) the type of raw materials from which biofuels are made (for example, "biofuel from cellulosic material")?
b) the type of technology used to produce the biofuel (for example, "biofuels produced using a production technique that is capable of handling cellulosic material")?
c) other criteria (please give details)?

Second generation biofuels should be ones that:
a) are significantly more cost effective to produce and have significantly better environmental sustainability especially with lower GHG emission
b) Second generation biofuels should preferably focus on materials currently considered as wastes whose conversion to biofuel would reduce current environmental impacts.

Q 3.2: Please give your comments on the "possible way forward" described above. If you think the problem should be tackled in a different way, please say how.

Caution should be taken that new problems are not generated through use of second generation biofuels – particularly those that require establishment of new biofuel plantations to be established rather than using waste products for existing sources.
Use of biofuels should not be used as an option to avoid the introduction of other GHG mitigation and control measures – especially energy efficiency.

There should be very close monitoring of GHG emission from land use directly or indirectly affected by biofuel production.

Equivalent levels of incentives as are being provided for biofuel production should be provided to measures to maintain and enhance significant carbon stores – especially forests and peatlands (see annex 2 for information on the value of peatlands for carbon storage.

The EC should develop clear safeguard policies for biofuel production and usage and provide direct funding support for capacity building in developing countries to introduce such standards and also to monitoring the impacts. Resources should also be provided to monitor and promote best practices in biofuel production, maintenance of carbon stocks and reduction of associated environmental impacts.

Q 3.3: Should second-generation biofuels only be able to benefit from these advantages if they also achieve a defined level of greenhouse gas savings?

Yes 2nd generation biofuels have to lead to significant GHG reduction compared to fossil fuel and First generation fuel.

Q 4.5: Should the legislation ask the Commission to review, by a given date, whether it is possible to be confident that the 10% target can be achieved through:

a)Rules that allow 10% blending by volume of ethanol in ordinary petrol, plus
b)Rules that allow 10% blending by volume of biodiesel in ordinary diesel, plus
c)The four options listed under 'other options for solving the problem';
If so, what should the date be?

If the review were to conclude that the target is unlikely to be met, what action should the Commission take?

At minimum there should be a review at the end of 2008, in 2010 in 2015 and 2020.

If targets are not being met from biofuel then they should be met from additional measures to reduce GHG emissions such as enhanced fuel efficiency etc.

Q 4.6: More generally, what role should taxation play in the promotion of biofuels (considering different situations such as low blends, high blends and second-generation biofuels)?

Tax incentives should be directly related to the level of environment and social benefits from a crop – especially the reductions in GHG emissions.

Incentives should be used as an incentive for sector wide emission reductions rather than just for incentives for individual consignments. For example – those countries that take measures to protect peatlands and forests to prevent them from being converted to biofuel production areas should be provided with positive incentives.

Annex 1: GHG emissions from Biofuel grown on peatlands

Greenhouse Gas (GHG) emissions from the production of biofuels such as palm oil or soy oil on peatlands are much larger than those in the production and burning of fossil fuels. Development of biofuel crops on peatlands leads to large emissions of carbon dioxide as well as the destruction of some of the world's most important natural sinks and stores of carbon. The example of emissions for palm oil grown on peatland is given below. Similar assessments need to be made for soy oil grown on peatlands

GHG Emissions from drainage and degradation of peatlands in South east Asia, Latin America and NE Asia are currently one of the major sources of greenhouse emissions from land use worldwide**.** A recent study by Delft Hydraulics, Wetlands International and Alterra has indicated that carbon dioxide emissions from drainage and fires in peatlands in Se Asia (covering 0.2% of the worlds land surface) are responsible for emissions of 2 billion tonnes of Carbon dioxide/year equivalent to 8% of global fossil fuel emissions (Wetlands International, November 2006, Delft Hydraulics December 2006).

Peatlands are natural wetland ecosystems which play a critical role in absorbing carbon dioxide and moderating global climate. Peatlands in Se Asia cover 30 million ha and store more than 42 billion tonnes of carbon or about 150 billion tonnes of carbon dioxide (see Table 1).

Region	Area of peatland (ha)	Estimated Carbon stock in peat (billion tonnes)
Sumatra (Indonesia)	7,204,300	18.810
Kalimantan (Indonesia)	5,769,200	11.270
Papua (Indonesia)	7,976,500	3.620
Papua New Guinea	6,500,000	2.923
Malaysia	2,630,000	5.260
Other countries/areas	525,000	0.42
Total	30,475,000	42.31

Table 1: Estimated area and minimum carbon stock in peat soil in Se Asia (Global Environment Centre and Global Carbon Project, 2006)

The development of peatlands for palm oil involves clearance of existing peat swamp forests and the drainage of the peat soil. Drainage of the peat soil leads to the drying and breakdown of the peat soil releasing carbon dioxide into the atmosphere with approximately 1 tonne of carbon dioxide released for each cm of drainage (see Figure 1). Fires which generally occur when peat is drained more than 40cm are also a major source of emissions. Recent analysis has indicated that peatland drainage and fires in Se Asia lead to an emission of 2 billion tonnes of carbon dioxide per year – comprising one of the largest source of greenhouse emissions globally from the land-use sector. The emissions from peat drainage alone in the region are expected to be approximately 50 billion tonnes of carbon dioxide over the next 100 years (Delft Hydraulics 2006).

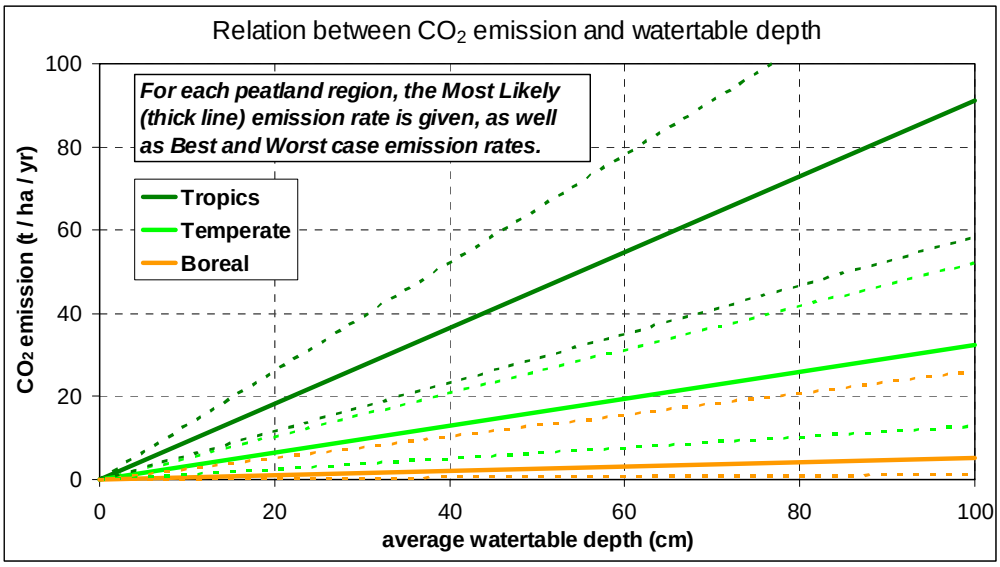

Figure 1 Emission of carbon dioxide from peatlands according to drainage depth (from Alterra)

Oil palm plantations on peat are normally drained to a depth of 70cm to 1m and thus the CO2 emission from one ha of oil palm on peat soil will be approximately 70-100 tonnes per year. Given that one ha can produce enough biodiesel to replace at most 3.5 tonnes of diesel, the CO2 emissions will be 15-25 tonnes CO2/tonne of palm oil biodiesel or 3-5 times more impact on global climate compared to fossil fuel diesel. In addition the development of peatlands for palm oil removes one of the most important long term sinks of carbon dioxide. A similar but lesser problem is found for oil palm replacing other forest types.

A simple solution may be to source biodiesel from already established plantations on mineral soil. However the life cycle analysis for renewable fuels needs a sector-wide approach. It is necessary to average all emissions from the whole sector rather than select only low emission products for biofuel and the high emission products for other sectors such as food. If the emissions from oil palm on peat is averaged over the whole sector the emission will still be 5-6 tonnes of CO2/tonne of biofuel – and this similar to than fossil fuel diesel..

What can be done? There are three possible approaches to reduce the sector-wide emissions:

- Stop any further conversion of peatlands (and other forest types) for palm oil production.
- Improve the water and land management in existing plantations on peatland to reduce the existing emissions or increase production/tonne of CO2
- Rehabilitate abandoned and degraded peatlands in adjacent areas to reduce or prevent emissions from fire and drainage and offset emissions from plantations.

References :

- Delft Hydraulics (2006) PEAT-CO2: Calculating current and future CO2 emissions from SE Asia's drained peatlands. Draft report.
- Global Environment Centre and Global Carbon Project (2006) Vulnerabilities of the Carbon-Climate System: Carbon Pools in Wetlands/Peatlands as Positive Feedbacks to Global Warming. Report to APN.
- Wetlands International (2006) Peatland degradation fuels climate change.