Brussels, 23 July 2009

Response to the European Commission's consultation on policy options to address indirect land use change

Introduction

The lack of provisions to take into account the greenhouse gas (GHG) emissions from indirect land use change (ILUC) has created a significant loophole in the recently adopted biofuels legislation. This loophole should be closed, in order to prevent the growth of GHG emissions from increased biofuels production and respective potential negative impacts on biodiversity.

Last year the EU set itself an ambitious target to replace 10% of the energy in transport with renewables, a move that is widely expected to lead to a large increase in the use of biofuels. The EU is not alone in setting such mandates. The US and many other countries have set significant targets for domestic biofuels use.[1] Overall, the estimated global impacts on land use change are very significant. Meeting a goal of 10% substitution of liquid transportation fuels globally would require a combination of a large increase in the area of land devoted to biofuels crops, as well as an unprecedented increase in the yield of biofuel crops per unit of land, water, and fertilizers (SCOPE report 2009: 2).

Indeed, estimates of the additional agricultural land required to meet a global target of 10% biofuels substitution range from 118 to 508 million hectares, depending on the crop type and assumed productivity level. This compares with the current area of arable land in the world of 1,400 million hectares (SCOPE report 2009: 2). Because of critical constraints on the productivity of biofuel crops, such as water availability, the higher end of estimates for land-use needs may be more realistic. With such extensive additional land requirements, displacement onto

[1] The Renewable Fuel Standard program in the USA will increase the volume of renewable fuel required to be blended into gasoline from 9 billion gallons in 2008 to 36 billion gallons by 2022.

valuable carbon and biodiversity-rich areas must be avoided through robust and coherent policy safeguards to address ILUC.

Despite the research that increasingly indicates that GHG emissions released through indirect land-use changes arising from biofuels production could be substantial (as outlined in the Gallagher Review, 2008), and could outweigh any savings from using biofuels, the EU Renewable Energy and Fuel Quality Directives do not take them into account. With ILUC emissions omitted from calculations, many biofuels will be promoted with the belief that they are reducing net GHG emissions whereas the opposite may be the case, thereby contradicting one of the key objectives of the promotion of biofuels and worsening climate change. It is therefore essential that this issue is properly addressed by EU policy-makers and included in the GHG emissions calculations associated with biofuels feedstocks.

PART 1: A coherent and robust policy framework for ILUC

The organisations submitting this paper have all been actively engaged in the debate about the role that biofuels can and should play in climate change mitigation, and in particular in the debate regarding damaging land use change effects. The evidence shows that the risks – both direct and indirect – to the climate, to people and to biodiversity from land use change effects driven by biofuel mandates and obligations are significant and real.

It is therefore vital that European and national policy frameworks are designed and implemented in a way to avoid damaging environmental and developmental impacts, now and in the longer term. This includes indirect effects. To achieve this, the policy framework must incorporate three important elements, all of which must be pursued concurrently:

1. The sustainability of the overall policy is ensured through the setting of appropriate targets, and revising these in line with robust and independent evidence of direct and indirect impacts at a global and regional level, taking account of the effects of other countries' mandates and policies. ILUC impacts, whether on GHG emissions, food, biodiversity or on communities, may well bring into serious question whether the 10% target can be met in a sustainable way. A downward adjustment of the EU target would therefore be the easiest and most effective measure to reduce ILUC. A thorough review of the sustainability of the EU target at the earliest possible opportunity must focus on the reality of indirect effects of biofuel expansion on GHG emissions, biodiversity and communities. A reduction or the dropping of the target must remain a serious option if evidence demonstrates that the agreed safeguard measures fail to solve the serious problems caused by biofuel expansion.

   The review in 2014 must be used, if necessary, to revise overly ambitious targets and align them with European commitments and objectives on climate change mitigation and biodiversity conservation.

2. **Robust ILUC factors** must be developed and incorporated into the GHG calculation methodology for biofuels. The ILUC factor, as suggested in the policy option G, is (besides the above-mentioned revision of the target) the only short- and mid-term option that is practically feasible and would under certain conditions provide safeguards against the GHG implications of ILUC.

   ILUC factors should be based on a robust scientific evaluation, using modeling with the input of the best available data to assess the impacts biofuels have on ILUC and therefore on GHG emissions. Modeling should focus on the impact of additional demand from biofuels production and should hence attribute the GHG emissions to biofuels and not average them over the entire agricultural production. In contrast to the production of food, we produce biofuels to reduce global climate change. The reason to calculate ILUC is simply that only then do we know if biofuels actually reduce global warming and if so by how much. We outline our core principles for modeling in appendix A.

   The development of these factors should be crop/region specific, based on the results of modeling. As in any environmental policy, a precautionary approach should be used in the selection of ILUC factors, which should provide a high level of assurance that the ILUC effects will not exceed estimates (i.e. they will be fit for purpose). This precautionary approach recognises that the world cannot afford to pursue strategies that present a realistic risk of increasing GHG emissions or that supersede more effective and sustainable strategies for reducing them. Based on this approach, only those biofuels that deliver significant net GHG savings should be produced and count towards EU targets and receive public support.

   In addition, the Commission should identify in legislation a list of feedstocks that do not cause land use change and would thus have an ILUC factor of "0". Such lists should not be based merely on name (so-called "second generation" feedstocks can also cause displacement) or on unrealistic assumptions (e.g. within the next five years there will be an effective global agreement on land management), but must be based on research and set out the specific characteristics needed to avoid ILUC.

   Such a list could include biofuels from waste materials that have no other use. However, there are some basic biophysical constraints on the amount of biomass that can be removed from forests or fields without leading to soil degradation, loss of fertility and other problems. It is also important not to confuse waste with byproducts that might have little economic value at present but actually have more efficient uses (for soil improvement, stationary energy production, animal feed, building material etc).

3. Addressing the problem of ILUC through **integrated and robust sustainable land use planning and management** at a local, national and global level. This means

identifying and protecting carbon stores and areas of high social, developmental and natural value and enforcing the protection of these. This element is crucial since ILUC will not only have a damaging effect on carbon savings. Biodiversity, natural resources and local people will suffer if natural, semi-natural and other valuable habitats are converted for agriculture through displacement. Biofuels will also have an indirect impact on food security, for example through higher prices or competition for land that could be used for food production.

It is clear that certification schemes, as required to demonstrate the compliance with the sustainability criteria for biofuels in the RED, will not help in tackling ILUC. By definition, a sustainability certification scheme can only certify what happens on the actual plantation providing the feedstock. Displaced production will in most cases move to places that are unknown to or out of the control of the plantation owner. **Bilateral and multilateral deals with producer countries must stipulate minimum standards of production for all commodities, and clear actions and progress in sustainable land planning and management of agricultural production.**

Ultimately, land management should be established through global governance, preferably in the form of an international agreement, which would introduce a mandatory accounting system at a global level for all emissions occurring from land use and land use change, in combination with ambitious targets to reduce these emissions. This would mean that any net emissions from land use and land use change will be capped and will have to be compensated in other sectors, in case they exceed the cap. If such a system is properly implemented and verified, indirect emissions would essentially disappear, as all countries would have to account and reduce emissions occurring from land use. Of course such global agreement will need to be integrated with agreements on biodiversity conservation and measures to guarantee the rights of local populations and sustainable use of resources, to avoid one sided policies that aim at stabilising countries' carbon stocks at the expense of other elements of sustainability. However, such an agreement is a long-term option, which is unlikely to be negotiated soon enough to have any relevance for addressing the impacts of existing biofuels policies.

Taking concerted action on all three levels and different time frames is critical. An ILUC factor is necessary in the short- and mid-term by providing the right market signals for producers to shift away from the most climate damaging biofuel feedstocks. Land planning and better land management in producing countries would bring improvements in the agricultural practices in general, increasing protection for biodiverse and high carbon stock land. Global land management agreements are an ultimate long-term solution, which could probably solve the question of ILUC, under the right political commitment and implementation.

Also, we would like to further underline the necessity that the precautionary principle takes precedence, when addressing ILUC, particularly where data deficiencies or uncertainties

persist (which is clearly made more likely by the shortened timescales for delivering legislative proposals on ILUC). Such uncertainties and data deficiencies must not be used as a justification for doing nothing.

As the pre-consultation debate among stakeholders on 16 July has shown, the ILUC factor is the only viable short term policy option and uncertainties must not be exploited as an excuse not to go ahead with it - while still forging ahead with the 10% target which suffers from exactly the same uncertainties. None of the other options presented in the Commission's paper were supported by meaningful arguments that demonstrated they would make any sense in the short to medium term. On the contrary, the continuously repeated 'uncertainty and immature science' argument against an ILUC factor is in fact not an argument against an ILUC factor but against the biofuels policy as a whole. Giving that argument any validity would necessarily imply an abandonment of the 10% target for renewables in transport.

Therefore, as a final recommendation for the official consultation process that the Commission will organise in autumn we would strongly suggest to focus this consultation on the ILUC factor. As the pre-consultation has already shown, because the ILUC factor is the only short term solution (which can be combined with longer term additional tools), the Commission's consultation should now focus on how to deliver a robust factor and meaningful longer term accompanying measures, rather than simply re-running the pre-consultation exercise.

PART 2: Specific comments on the different policy options suggested by the Commission in the public consultation on 16 July 2009

Both options A and B which address land use change on a general level provide important ideas. Policy element B should be actively pursued as a key element of the Commission's work on reducing GHG emissions from land conversion. Neither are however likely to materialise in the foreseeable future and therefore can not be taken as a realistic and serious option to deal with the very real and immediate impacts of indirect land use change resulting from existing biofuels policies.

Policy element A

Extend to other commodities and countries the restrictions on land use change that will be imposed on biofuels consumed in the EU.

This proposal is simply a red herring. It is unrealistic and unlikely to happen in the mid-term, as decision-makers are still struggling with provisions to take into consideration land use change emissions related with biofuels production. The meagre outcome of the CSD-17 discussions in May in New York underline this.

More importantly, we do not produce food or cosmetics in reaction to government policies designed to reduce global warming, as we do with biofuels. We produce food to feed people despite the fact that it generates GHG emissions. By contrast, biofuels have been sold to EU voters and consumers as a means to combat climate change. The reason to calculate ILUC is simply that only then can we have an idea of whether they can and do deliver.

Furthermore, the idea that the restrictions should be based on a voluntary basis makes the whole exercise irrelevant for tackling land use change. It is unlikely to be widespread and enforceable and would also not prevent displacement effects to non-participating countries or leakage related with commodities outside these schemes or commodities traded outside the EU.

Policy element B

International agreements on protecting carbon-rich habitats

Again, in the short to medium term, this is clearly not a viable option. An international agreement on protecting carbon-rich areas would be a valuable tool in fighting climate change. The net loss of mainly forest vegetation and of soil carbon (mainly peatlands) account for about a third of global carbon dioxide emissions and these emissions are increasing. However, such an agreement is not expected in the coming years. Moreover, it is not only the total loss of

carbon rich habitats that is causing huge net carbon dioxide emissions. It is also the large scale loss of vast areas, such as grasslands, even though they have average carbon content per hectare.

A new international agreement on climate change (post Kyoto) should indeed address all these currently mainly unaccounted emissions from land use. Only a global system of full accounting of net emissions from land use and land use change would address indirect land use change sufficiently. This is however not expected even for the Annex 1 countries in a second commitment period of the Kyoto Protocol and not even the EU delegation is proposing to include these largely ignored emissions for mandatory accounting in a revised version of the Kyoto Protocol (LULUCF article 3.4). Proposing such a system for addressing ILUC at this stage is therefore ignorant and a bit cynical.

Developments towards a serious system for addressing land use and land use change emissions outside Annex 1 countries are even more modest (AWG-LCA process under UNFCCC). Current Climate negotiations are trying to address land use related emissions, mainly through the introduction of a REDD (Reducing Emissions from Deforestation and forest Degradation). This is a crucial first step towards a wider global approach to the problems of land use emissions and potentially towards some form of global sustainability system for land use. However, even if the negotiations in Copenhagen are successful on this, we are at best going to have a strong, voluntary incentive payment system and only for areas under the UNFCCC definition of forests. Although highly uncertain at this stage, this may address (previously) forested peatsoils (only when it is decided that also below-ground forest carbon stocks will be incorporated), however other major carbon sources like the loss of unforested wetlands will not be addressed under the REDD. As REDD is voluntary, only countries that see a potential drop in emissions compared to a baseline will have an incentive to reduce these emissions to some extent. Therefore, REDD is just a modest step that will not solve land emission problems, while biofuels could further undercut these efforts by adding additional demand, consequently leading to higher prices of commodities and greater attraction to convert land. The REDD incentives to prevent forest land conversion would then have to increase accordingly to compete with this – or the effectiveness of fixed incentives would be reduced.

International agreements on global land management should be part of a long-term solution for agriculture. However, this scenario is so incredibly far from present realities that it must not deflect responsibility and immediate action on displacement that is already taking place as a consequence of biofuels policies.

As the Commission already points out in the consultation paper, policy elements C and D are missing the point as the whole purpose of the exercise is to identify and support only those types of biofuels which actually have positive environmental effects.

Policy element C

Do nothing

This would assume that ILUC risks are zero – which is clearly an erroneous assumption, as ILUC effects are nothing "magical" or "virtual", but real: the GHG effects of increasing agricultural land are measurable, and have been monitored for decades. If agricultural production is displaced by biofuel crop production, and demand for agricultural products remains, then direct land use change will occur somewhere else. The "indirectness" of these displacement effects is only a result of restrictions in the scope – in reality, there is no indirect effect, but only direct ones.

Few people disagree that lifecycle analyses should count these direct releases. The Renewable Energy and Fuel Quality Directives include direct emissions in the GHG calculation methodology in order to provide disincentives to convert land. But regulating only these direct emissions is futile because producers can freely convert new land while avoiding direct emissions for biofuels simply by managing their supply chains. For example, palm oil in South East Asia supplies both vegetable cooking oil and biodiesel. Under the rules from the Directive, the producer would be able to meet the criteria by supplying palm oil from already cleared forests and selling this for biodiesel. Then the same producer could clear more forest to replace the vegetable oil for food. Clearly the legal principle of the directives would be violated and environmental impacts would be negative.

Therefore, doing nothing is not a valid option, as it misrepresents GHG impacts of biofuels, is contrary to the precautionary principle and fails to recognise scientific evidence. The current 35% threshold for GHG savings in no way provides an adequate "cushion" for the direct land use change impacts of biofuels production, let alone the possible indirect effects.

In addition, the assumptions and methodology within the RED for calculating the GHG savings of a biofuel are not the most conservative and the 35% figure therefore already provides insufficient "cushioning" for the massive ranges and uncertainties implicit in, for examples, the length of time that emissions from land use change occur and the nitrous oxide emissions associated with fertilizer use, which is the case at least for crops grown in the EU.

Last but not least, such a decision would institutionalize a biased accounting, which takes into consideration only the benefits of land and not the costs. This would also go against growing scientific evidence that has drawn attention to the extent of ILUC and its damaging environmental impacts.

Policy element D

Increase the minimum required level of GHG savings

Increasing the general minimum required level of GHG savings as a policy response to address ILUC is irrelevant and might even be counterproductive. A high GHG threshold not accounting for ILUC has no correlation with the actual life cycle emissions from biofuels. On the contrary, it might penalise biofuel feedstocks that do not cause ILUC, but have lower life cycle GHG savings.

With a fixed threshold taking into account direct LUC emissions, economic operators are inclined to use biofuels which have low GHG emissions from direct LUC, i.e. using arable or low carbon pasture land. The higher the required GHG emission threshold, the more this would be the case. But using arable and low carbon pasture would increase indirect effects, as displacement of food/feed occurs exactly on those lands.

The policy should thoroughly analyse ILUC-related emissions that actually occur as a result of displacement of different crops in different countries and at the same time impose a high required level of GHG savings to ensure that the policy actually contributes to tackling climate change. In this respect, support policies based on decarbonisation potential of different biofuels (i.e. Low Carbon Fuels Standard, article 7a of the Fuel Quality Directive) provide an additional incentive to encourage higher GHG emissions savings from biofuels.

An analysis of indirect impacts should take into consideration the impact of biofuels mandates and support policies around the world on commodity prices and resulting pressures to convert new land for agricultural production as well as include realistic assumptions about demand increases driven by population growth and changing consumption patterns. Impacts of EU biofuels targets cannot be assessed in isolation.

Policy element E

Extending the use of bonuses

The existing sustainability scheme provides a bonus of 29 g CO2/MJ in calculating the GHG impacts attributed to biofuels from land that is severely degraded or heavily contaminated. One of the Commission's proposed policy responses is that this bonus could be extended to biofuels that do not come from land or which are grown on idle land. This will not be effective as it continues the current biased accounting, whereby we do not take into consideration the carbon costs, but add questionable bonuses. This means that the biofuels that would not meet the GHG threshold if ILUC was accounted for, would still count towards the target. As these biofuels are usually also cheaper and more readily available on the market, they would probably account for the majority of production, while the "better" biofuels would be too expensive and hence economically marginal, even with the bonus.

This proposal also ignores the substantial problems associated with defining and then identifying idle and degraded land (these terms have also become synonymous with marginal and exhausted land). Redirecting biofuel crop production onto land that is considered degraded, idle or marginal in agricultural terms could be just as disastrous in environmental, social and developmental terms as this land often has significant value for biodiversity, carbon storage, natural resource protection, or indeed as land that is or could be used for food production.

Therefore, this policy option would not address the problem of the majority of feedstocks causing ILUC and might promote further arbitrary bonuses, which are not based on scientific data.

Policy element F

Additional sustainability requirement for biofuels from crops/areas whose production is liable to lead to a high level of damaging land use change

On its own, this idea is also irrelevant, because it misses the whole point that displacement effects can come from anywhere and can shift to anywhere. Restricting production from certain countries and/or regions for biofuels would mean that their exports could shift to meet the increased demand for food, while other countries would be growing biofuels. If, as suggested in the Commission's paper, biofuel producers would have to meet additional requirements in terms of their production practices, this would still just shift the demand from one plantation to another, providing additional burden, but no extra environmental benefits.

Also, this option has limited practical validity, as it would probably be challenged due to imposed trade constraints.

Policy element G

Inclusion of an ILUC factor in GHG calculation methodology for biofuels

This is the only serious short-term approach that could realistically and effectively incorporate GHG emissions from ILUC for all biofuels feedstock, if it meets certain conditions and criteria. Most importantly, the development of these factors should be based on robust scientific evaluation based on sound modeling,[2] using the best available data and appropriate transparent assumptions. Also, given the risks to the climate, the precautionary principle should be applied when deciding on the value of an ILUC factor. This precautionary approach recognises that the world cannot afford to pursue strategies that present a realistic risk of increasing GHG emissions or that supersede more effective and sustainable strategies for reducing them.

[2] We outline our core principles for modeling in appendix A.

Based on this approach, only those biofuels that deliver significant GHG savings should be produced, count towards EU targets and attract public support. Furthermore, such a policy would send the right market signals and encourage the development of biofuels that are more advanced and "sustainable", but more expensive in the medium term (e.g. biofuels from wastes and residues).

The three variants proposed by the Commission should be firmly rejected, as they seem to be specifically designed to neutralise the effect of an ILUC factor. The suggestion that an ILUC factor could justify a lower ambition on GHG saving, as under option D, misses the whole point of the exercise which is to differentiate between biofuels on the grounds of their real emissions including those caused by ILUC. Biofuels only make sense if they save emissions (and do not damage the environment or impact on local people and communities). Dealing with ILUC is needed to ensure that these savings are real and do not just "leak away", therefore the only meaningful thing to do is to add it on top of the minimum GHG savings threshold.

The idea that biofuels producers should be allowed to offset emissions from ILUC by providing evidence of emissions saved in other parts of the primary sector should also be rejected. This would essentially mean that the EU would create another unsustainable industry that will have to buy or encourage emission offsets from somewhere else. Agricultural production will anyway have to become more sustainable in order to meet climate change mitigation targets. Therefore this concept should be rejected and biofuels supported only if it can be proven that their production genuinely brings GHG emissions reductions.

The suggestion that the factor should be weighted on yield per hectare is also problematic, as some biofuels with high yields actually cause the most displacement. Considering yield increase as avoiding ILUC is very problematic as yields increase constantly and these increases are needed to meet surging food demand. Project based, audited investments, strictly linked to the biofuels production, that lead to major productivity gains could be counted as "ILUC free". But it would be a dangerous loophole to factor any yield increase as reducing ILUC (if land stayed in food production, the same increase would have served to reduce global pressure on land). Hence, yields need to be addressed through realistic assumptions considering natural conditions and limitations, such as water shortage. GHG emissions could also increase through the greater application of fertilisers.

Policy element H

Other policy elements that respondents may wish to raise.

See our proposals in Part 1 of this document.

Appendix A

Ten principles for ILUC modeling

The following principles must be followed in evaluating impacts and formulating policy responses:

1. Take into account the land that is likely to be converted due to increased demand and the carbon stock of that land

Modeling should identify the most likely areas to be converted due to increased demand for agricultural commodities, taking into account infrastructure availability ("risk mapping"). When calculating GHG emissions, it is important that both the carbon stored in vegetation and the carbon stored in soil, are taken into account. The IPCC 2006 guidelines[3] on national greenhouse gas inventories provide the appropriate basis for this, as they incorporate all five carbon pools[4] to calculate land use, land use change and forestry (LULUCF) emissions.

Calculations must reflect not only the release of previously stored carbon but the carbon sequestration foregone by devoting land to alternative land uses. When pasture or grasslands are converted, the modeling should address the further indirect effects likely to occur from replacing livestock products generated on that grazing land.

2. Take into account yield responses based on historic trends and future limits to yield improvements

The impact of anticipated increases in the yield of biofuel feedstocks should be thoroughly addressed in the evaluation, linked with historical evaluation and with boundaries of the system (e.g. yield increases do not happen eternally, but have limits). The Commission should provide a transparent explanation of any yield response assumptions. The only meaningful way to deal with yields increase is to assume a continuation of past trends, corrected downward to account for factors like increasing water stress (e.g. Australian productivity is not going to increase this century as it did in the last one) and saturation effects (in the EU increasing yields by adding fertilizer is in many cases no longer possible).

Yield responses are likely to be different in different regions. Potential for yield increases is higher in central and eastern Europe, Africa, etc., but it could only be realised with large investments in the agriculture sector and a significant increase in the use of increasingly scarce

[3] IPCC 2006, National Greenhouse Gas Inventories Volume 4.
[4] Other carbon pools are living biomass divided into above and underground, dead biomass divided into litter and dead wood.

natural resources such as water and soil. Extra yield increases induced by higher prices should be demonstrated on the basis of past trends analysis or specific data, they should not be just assumed to happen in the future. Last but not least, yield increases mostly come at the expense of additional GHG emissions (through increased fertilizer inputs, use of mechanisation, etc.), which should be incorporated in the lifecycle analysis.

3. Take into account future increased demand for food

No credit should be assigned to biofuels for reductions in food demand or changes in diets. Even without additional demand from biofuels, the need for food and animal feed will continue to grow, as world population increases and diets in developing countries shift towards higher consumption of meat and dairy products. These developments can not be controlled at the moment, in contrast to demand for biofuels which is exclusively policy-driven.

Some of these reductions in demand might be acceptable if they occur among richer, well fed people, but it is impossible in a worldwide economy to prevent these reductions in food demand from occurring in poorer countries. The models should be adjusted or run to show the land use change assuming no reduction in food demand. Without this, the analysis will underestimate impacts such as increases in food prices, which could have a devastating impact on the world's poorest peoples.

4. Take into account different risks associated with specific feedstocks

Modeling should ensure separate evaluation of different feedstocks, including whether they are produced domestically or abroad and whether or not they are for biodiesel or bioethanol. The ILUC risk in terms of potential GHG emissions should be determined per hectare of displaced land and then converted to the various biomass feedstocks, taking into account their respective yields. This is essential in order to enable the market to differentiate between feedstocks and to allow those feedstocks with low and high risks of ILUC to be distinguished.

5. Do not assume sustainability criteria will be applied

Sustainability criteria should not be included in the assumptions of the models. They are irrelevant in the case of ILUC because the emissions are occurring away from the area where biofuel is produced and therefore they cannot have any impact on which land will be converted.

The Commission should aim to understand the ILUC risk overall i.e. where are habitat conversions likely to happen under the extra pressure that is created by biofuels mandates? If it is assumed in advance that people will not convert forests, will not destroy biodiversity rich

areas etc, modeling will necessarily give results forecasting that all the demand will be met sustainably (e.g. by increasing yields and using "marginal" land). In reality we have no guarantee that these safeguards will work, especially as they are only in place for safeguarding areas against direct conversion and will thus not prevent the displacement of other agricultural goods (food production, cosmetics and livestock farming). Weak governance and lack of land planning in a number of the major biofuels producing countries mean that even these direct safeguards are more likely to exist only on paper than being implemented on the ground.

6. Do not assume that most biofuels production would move to "marginal" areas

Similarly, it should not be assumed that the majority of biofuels production would move to "marginal" or "degraded" land. We need to try and understand from commodity models where the pressure will flow, what land is most likely to be converted and what are the likely yields. The analysis in the US has shown that the yield of "marginal" land is the crucial factor in determining the extent of land use change, because most of the best agricultural lands are already being used for agriculture. For this reason, the Commission should be transparent in its assumptions and use a conservative approach that takes into account current investments, areas accessible by existing infrastructures etc.

Separate calculations should be done for biofuels if produced on specific "marginal" or degraded lands but the characteristics of those lands need to be clearly specified, and a regulatory regime put in place adequate to assure that biofuels are in fact produced on that land. Moreover, alternative uses of that "marginal" land, both for people and for providing ecosystem services should be considered, when deciding about its suitability for biofuels expansion.

7. Give special consideration to emissions from nitrous oxide (N_2O)

In addition to the carbon emissions arising from ILUC, another big concern is additional emissions of the powerful GHG nitrous oxide (N2O) from greater fertiliser application as more land globally is given over to crop production. This adds a high level of uncertainty to models as there is a lot of debate about actual levels of N2O emissions, with several studies suggesting that IPCC figures are underestimated by up to five times. Increased fertilizer use and consequent N2O emissions will be significant both when "marginal" land is used and also when production on existing arable land is intensified to enable yield increases. This issue is also a factor in arguments that improvements in productivity are a means of avoiding land use change where soil fertility alongside water availability restricts production. Increasing irrigation and fertiliser production both require energy and N2O emissions remain an issue.

8. Split the ILUC factor over no more than 20 years

The correction factor for ILUC should be split over 20 years, as is the case for direct land use change in the Renewable Energy Directive. This is not only consistent with the legislation but also has a relevant time horizon for policy objectives. Using a longer time horizon is flawed for the following main reasons:

- The 2020 target is meant to reduce emissions by 2020, so we cannot count hypothetical reductions in the distant future as offsetting emissions in the short term;
- It is virtually impossible to forecast whether plantations would be still in production in the distant future (especially given the huge climate-related uncertainties toward the middle of this century);
- Given the risk of irreversible climate tipping points, early increases (or indeed savings) in emissions is what really matters for climate mitigation.
- In view of the generally held view that GHG emissions must peak at a global level within the next decade, even the 20 year allocation period can be regarded as too long.

9. Ensure that modeling is transparent and peer reviewed

The evaluation process should be transparent and accessible. The assumptions of modeling should be explained in detail, including what the results depend on. The process should also be opened to public scrutiny, peer review and be based on the best available science.

Uncertainties should be acknowledged. Critics often reproach that economic models needed to estimate GHG emissions from agricultural expansion have significant uncertainties at the detail level, although virtually all modeling analyses find that the emissions are substantial for crop-based biofuels. The uncertainty element in modeling should therefore be made explicit. Although the relationships between agricultural markets and land use are well understood in a general way, it is not clear, how exactly the world will respond to biofuels mandates. Therefore, ILUC modeling must be understood as risk analysis that identifies the range of additional emissions caused by ILUC. A range of plausible numbers should be identified.

We would like a transparency platform to be created on ILUC, where different stakeholders can discuss approaches and assumptions.

10. Ensure regular reassessment and monitoring of the safeguards in place

Monitoring and feedback loops must be established. Safeguards such as the inclusion of an ILUC factor in GHG lifecycle analyses may still fail to prevent harmful ILUC on a large scale. The actual effectiveness of standards and safeguards should thus be monitored and reassessed periodically and swift action must be taken if it appears that the system put in place is failing to prevent harmful conversion of land.

List of references:

Californian Air Resource Board (2009): Proposed Regulation to Implement the Low Carbon Fuel Standard: Volume I. March 5.

Environment Protection Agency (2009): Draft Regulatory Impact Analysis: Changes to Renewable Fuels Standard Program.

International Council for Science (2009): Rapid Assessment on Biofuels and the Environment: Overview and Key Findings. The Scientific Committee on Problems of the Environment (SCOPE).

IPCC 2006, National Greenhouse Gas Inventories Volume 4.

Joint Research Centre (2008): Biofuels in the European Context: Facts and Uncertainties. European Commission.

Contact details of responsible persons:

Ariel Brunner, BirdLife International: Ariel.Brunner@birdlife.org, +32(0)2 238 50 92

Pieter de Pous, EEB: pieter.depous@eeb.org, +32(0)2 289 13 06

Adrian Bebb, Friends of the Earth: adrian.bebb@foeeurope.org, +49 8025 99 19 51

Nusa Urbancic, Transport & Environment: nusa.urbancic@transportenvironment.org, +32 (0)2 893 0846

Tim Rice, ActionAid: tim.rice@actionaid.org, +44 20 7561 7669

Jill Heyde, Wetlands International: jill.heyde@wetlands.org, +31(0)318 660910

Sander Van Bennekom, Oxfam Novib: Sander.van.Bennekom@oxfamnovib.nl, +31 (0)70 3421933