MEETING MINUTES

Meeting:	ILUC meeting with NGOs
Date:	14 November 2013
Time:	09:00 - 12:00
Attendees:	Daan Peters (chair, Ecofys) , Carlo Hamelinck (Ecofys), Hugo Valin, Nicklas Forsell (IIASA), Maarten van den Berg (E4tech) Bettina kretschmer (IEEP), Nusa Urbancic, Laura Buffet, Pietro Caloprisco (Transport & Environment), David Sodade (PANGEA), Robbie Blake (Friends of the Earth), Marc-Olivier Hernan (Oxfam), Sebastian Risso (Greenpeace), Faustine Defossez (European Environment Bureau), Laura Sullivan (Action Aid)

1. Explain and discuss the ILUC modelling project

General points concerning the project and its results

A consortium of Ecofys, IIASA and E4tech has been assigned by the European Commission to model feedstock-specific ILUC emission values associated with the consumption of conventional and advanced biofuels in the EU. The consortium uses the GLOBIOM model, developed by IIASA. Project results are expected by early 2015.

The current meeting is part of a series of stakeholder meetings during which the consortium aims to obtain relevant input and suggestions from stakeholders. This will result in a draft Inventory of changes to GLOBIOM and draft baseline and policy scenarios, which are to be published by the end of January. These draft versions are to be discussed with the Advisory Committee, the Commission and stakeholders. After the final changes to GLOBIOM and final baseline and policy scenarios have been agreed upon, IIASA will update the GLOBIOM model, will subsequently run the model and perform sensitivity analysis.

- Stakeholder: what are the intermediate steps? Will the draft results be discussed?
    - Ecofys: we foresee further consultations with stakeholders later in the project, probably after we developed the inventory of changes to GLOBIOM and draft baseline and policy scenarios.
- Stakeholder: The elephant in the room is that Ecofys recently published some studies and opinions which I think are biased and not-scientific; hope that the current project will be scientific.
    - Ecofys: Ecofys always aims to be objective and scientific, our studies are verifiable and based on literature. While the wide range of stakeholders that we work for may have conflicting interests, we remain consistent in our analysis. It would be good to discuss Ecofys reports unrelated to ILUC-modelling separately after the meeting. We are open to discuss any indications you have that our assumptions or data used are incorrect. Today's meeting aims to provide you an opportunity to contribute our ILUC

modelling study; by discussing with us you don't necessarily endorse the study or its outcomes. We aim to perform the study in a high-quality way and as consistently as possible.
    - E4tech: transparency throughout the project is high priority for the consortium.
    - IIASA: our institute is a research institute and a neutral, not-for-profit organisation. We hope that IIASA participation can reinforce the confidence that work will be done following scientific standards. The team working on the GLOBIOM model relies on peer-review publications to support their research. Note that peer-review publications do not mean that there is a final answer to the debate but that it reflects what can be said best in the current state of knowledge. There is still scientific research needed on many aspects of land use change.
- Stakeholder: with whom are the other stakeholder workshops?
    - Ecofys: with the ethanol supply chain, the biodiesel supply chain and advanced biofuel producers.
- Stakeholder: who will decide on the feedback you receive?
    - Ecofys: we make a long list of suggested changes to the GLOBIOM model and draft baseline and policy scenarios which we will discuss with the AC, the Commission and stakeholders.
- Stakeholder: Who sits on the Advisory Committee?
    - Ecofys: Chris Malins, Jacinto Fabiosa, Richard Plevin, Koen Overmars, David Laborde, Robert Edwards and Andre Nassar.
- Stakeholder: do you plan to expand the AC?
    - Ecofys: that is currently discussed within the consortium.
- Stakeholder: what are the rules regarding potential conflicts of interest, e.g. with the sugarcane ethanol industry?
    - Ecofys: we have a mission statement that defines the role of AC (see www.globiom-iluc.eu). The focus in this project is on improving the GLOBIOM model, AC members are affiliated with research institutions and are not employed by stakeholders in the debate on biofuel sustainability.
    - Stakeholder: can we suggest names to expand the AC? Ecofys: we currently discuss internally a possible extension of the AC, all suggestions are welcome.
- Stakeholder: what about the process, is this a one-time opportunity? Ecofys: we look forward to have on-going discussions.
- Stakeholder: ILUC is a very sensitive topic. I encourage you to be transparent about which data sources are used. Why don't you want the results of the modelling to be reviewed by the AC?
    - Ecofys: the consortium is contracted by the Commission. We ask the AC for advice but they are not part of the consortium and hence don't make the final decisions. That is up to the consortium together with the Commission. We try in this exercise with GLOBIOM to be particularly transparent on the modelling. If you have any suggestions on how we can increase the confidence in the approach taken by us do let us know.
- Stakeholder: what is exactly the role of the AC?
    - Ecofys: we have 3 meetings with them (only 1 face-to-face): kick-off; discussing the long list of suggested improvements; and discussing the draft results. In addition we have individual interviews with them.

2. Discussing the GLOBIOM model and the planned modelling

Land availability, (changes to) area harvested

- Stakeholder: FAOstat does not distinguish between forest fires and deforestation. How will the emissions from slash and burn practices in Malaysia be accounted for in the modelling?
    - IIASA: We would need data to account for this. Note however that in the long run, cleared area due to forest fires are free and can be used by agriculture. That means an "over-deforestation" observed at a given point in time can later come back to a balance where total cleared area (incl. by fire) correspond to area used for agricultural land. However, there is also evidence that deforestation is not only driven by biofuel or agricultural demand in regions such as Malaysia or Indonesia, which makes the attribution of causalities even more difficult. Any reports that you can provide are welcome, especially if it has global data.
    - Stakeholder: CIFOR and Wageningen have recently published a study about drivers of deforestation, also providing information on drivers of forest degradation.
- Stakeholder: Non used land: would be useful to see acknowledgement that models and datasets can capture only some of what happens in reality. Local partners in Mozambique have seen that non-used land in datasets is occupied by small holder farmers. So it *is* used and people rely on it. Classifying as unused and basing biofuel policy on that has clear social consequences. Would like to know how this hiatus is treated in the GLOBIOM model. There are very big differences in figures published. What *can* the model do with that?
    - Ecofys: Ecofys looked at Mozambique (for Low Indirect Impact Biofuels methodology, http://www.liib.org/the-liib-methodology) and indeed we did not find unused land there. It is probably different in Central and Eastern Europe, for example in Romania, where large areas of abandoned land exist. It is difficult to classify all land correctly as for example in the EU; abandoned farmland is often classified as agricultural land and ploughed annually in order to obtain EU subsidies. We can point out this uncertainty in our report.
    - IIASA: we are aware of the uncertainties. A large project at IIASA aims to compare and reconcile three global land cover datasets and verify the information with satellite data and crowd sourcing exercise. Steffen Fritz (IIASA) is leading this exercise (www.geo-wiki.org). But still, today, the state of the information is not satisfactory. In GLOBIOM, we use one of these datasets (Global Land Cover 2000). We want to be prudent and if land is classified as 'unused land' it does not mean necessarily that it will be cultivated in the model, because there are some conversion costs. We look at historical developments to get a better idea of these constraints of conversions. Note that set aside land is not a separate land type in GLOBIOM but is incorporated directly in the rotation as a dynamic land management pattern.
- Stakeholder: would be good to have clear definitions of different types of unused lands, a lot of marginal land can be used for agriculture or to increase production.
    - IIASA: currently, we do not distinguish "unused land" from other type of land ("other natural vegetation" that contains "other agricultural land", not harvested in the model). This will be part of the possible improvements to the model.
- Stakeholder: dangerous to go into unused land, we would be concerned this leads to wrong conclusions.
    - IIASA: opportunity for use of this land is indeed ambiguous and depends a lot on the region. What is sure is that, even when considering "unused" land in Eastern Europe, using this land does not come for free, as what has been observed in the past is more expansion of imports from big producing countries, rather than agricultural renaissance in Eastern Europe.

Baseline assumptions and taking into account existing and future policies

- Stakeholder: baseline 2010 is just before biofuels took off in the EU.
    - IIASA: base year calibration is 2000 and baseline is subsequently calculated with exogenous drivers (population, GDP, technological change, non EU (e.g. US+Brazil) biofuel policy changes) and then compared to EU biofuel policy scenarios. Results for 2010 will be compared with 2010 statistics.
- Stakeholder: on what basis will you decide if a region applies sustainable agricultural practices or impactful policies?
    - IIASA: should be part of the baseline and we have to discuss if we can make several baselines to provide different visions of the future.
- Stakeholder: who will decide on the assumptions in the baseline? Stakeholder consultation, Ecofys, AC, Commission?
    - Ecofys: we make draft scenarios (IIASA first) based on feedback from stakeholder consultation. Then we discuss with the AC and the Commission. The Commission and the consortium take decisions, AC has an advisory role.
- Stakeholder: what about various policy options in other regions and post 2020 EU policy? Including them is important for the outcome of the modelling exercise.
    - Ecofys agrees.
- Stakeholder: Are Natura 2000 areas included in protected areas for Europe?
    - IIASA: Will have to check this and if not to put it on the list of improvements. Currently GLOBIOM uses the world protected areas database (WPAD) provided by UNEP.
- Stakeholder: EU set aside land of agricultural policy is 5% and may go to 7% in 2017.
    - IIASA: we don't know what the future % will be but the current 5% will be included. The commission can advise us on inclusion of a higher percentage from 2017 onwards. Ecofys: we can assess what the most likely outcome is. In general use on existing policies, but in cases where it's clear these will change and we have a good idea how a new policy will look like we can include updated or new policies.
- Stakeholder: what is the assumption with respect to possibility of mandatory three crops rotations?
    - IIASA: we will have to look at that policy but not sure what assumption should be made if the policy is not in place today. Technically, it would be possible to implement this type of constraints if we decide it should be part of the baseline.
- Stakeholder: do you take other environmental policies into account (fertiliser, pesticide, etc)?
    - IIASA: we have implicitly a certain number of policies reflected in the base year and will implement some policy changes in the baseline. However, too specific or micro-management policies may not be reflected. For instance, we currently do not represent the impact of changes in pesticide application on yield in the model.
- Stakeholder: what will be the size of the biofuel policy after 2020?
    - Ecofys: The commission is not upfront prescriptive; the consortium will seek to include the most likely outcome in the baseline. For 2020 there are some indications, we will look into that carefully. Currently no policies exist for 2030 so we have to make careful assumptions.
- Stakeholder: policies of G20 can have a significant impact.
    - IIASA: We agree, but we can't look beyond current policy and discussions. So we need a consistent baseline and work with different scenarios.
    - Ecofys: we will look at most likely scenario. E.g. Germany will go to GHG approach. Most countries will stick to mandates (and see what the effects are).
- Stakeholder: biofuels will be important post 2020 to decarbonise fuels but what policy mechanism will be assumed, the FQD approach?
    - Ecofys: we have to come up with the best possible assumption for post 2020.

- Stakeholder: you will have to make assumptions on technological change, e.g. the assumed uptake of electric mobility in the future.
    - Ecofys: indeed, we do have information on that within the consortium.

Changes in food consumption

- Stakeholder: a reduction of food consumption due to a biofuel induced increase in commodity prices can have a large impact on ILUC emissions. What parameters will you check? In the IFPRI study it was assumed that a lot of ILUC was avoided by food consumption reduction. That goes against food security policies. How is that reflected/assumed in GLOBIOM?
    - Ecofys: in the baseline, food consumption will grow (following population and GDP growth). Due to the shock and price effect of that on food consumption, a reduced increase in food consumption can be expected. We will make the contribution reduced food consumption has on the modelling results explicit in our report.
    - IIASA: it is to note that reduction in level of food consumption in the model is not necessarily a reduction in food to mouth. Waste, change in diet, composition of processed food etc. are also part of the adjustment.
- Stakeholder: does the model calculate waste, diet, composition of food etc.
    - IIASA: the model takes these parameters into account in the baseline, where different assumptions can be made on waste levels for instance, although data situation is not really good (FAO data do not identify the total waste in the food supply chain). Assumptions on future diet are also an important dimension for future land requirements. The effect of prices applies on all these components of food demand at the same time.

Yield assumptions

- Stakeholder: will you use the same price demand elasticities as IFPRI?
    - IIASA: not the same but probably similar. We have compared elasticities with many other models and the elasticities in GLOBIOM sit in the middle of the herd. In the short run effects are however expected to be much more inelastic but for GLOBIOM, we consider the long run adjustments. Of course, would we receive substantiated evidence that these parameters should be reconsidered, we would look carefully. This parameter will anyway be subject to a sensitivity analysis.
- Stakeholder: yield is based on suitability, so would like to see assumptions and figures on the yield of marginal land in GLOBIOM.
    - IIASA: this parameter depends of course on where agricultural land expands and is therefore scenario specific. We will ensure to make this marginal yield value more explicit in our results.
- Stakeholder: are there increases of yield because of biofuels above the background yield? In IFPRI they were quite affected. How does GLOBIOM do this?
    - IIASA: Yes, we will have a similar effect because yields respond to price changes in our model. However, we will do some sensitivity analyses on this and also decompose the ILUC effect into its different component (yield response, demand response, coproducts). Choices will be justified but uncertainty on this parameter is difficult to reduce.
    - Stakeholder: the representation (breakdown) of the 'yield changes' of IFPRI extremely useful for non –modellers. Please do something similar for GLOBIOM.

GHG emission accounting

- Stakeholder: how do you calculate the emissions from different management systems? Which data will you use in the model?
    - IIASA: For crops, we take into account N2O emissions using the crop model EPIC and information on the management from the allocation model SPAM (IFPRI), also reconciliated with other datasets (International Fertilizer Association). Soil organic carbon is only included in the EU and comes from a dataset from JRC. The AC suggested sources to extrapolate to the rest of the world. Data quality is a problem but new data is becoming available.
- Stakeholder: question on carbon stocks of land: in the model comparison document you state GLOBIOM uses the IPCC default values for peat land emissions. In MIRAGE they made use of more recent figures. Why don't you use more recent figures?
    - IIASA: We are aware IPCC is not up to date on this indicator and we will discuss in this project what better values can be used, taking into account new literature that comes available.

Commodity prices

- Stakeholder: biofuel production impact on feed prices you say is positive (so price goes down) but livestock producers complain about the impact of biofuel policies on feed prices.
    - IIASA: you are right that the total impact is more complex that what I presented, it is a combination of two effects: price of co-product (protein meals) that tend to decrease and impact on cereal market that tend to increase with land competition. Both are accounted for in the model. Final result depends on the composition of the feed ration for each type of animals. From an historical perspective, biofuels have been blamed for the increase in price of cereals, but there is not scientific consensus at all on the real contribution of biofuels to the price increase.
- Stakeholder: What are the factors that you will use for the calculation of the land conversion costs? Selling the timber is already profitable, IFPRI assumed only managed forests were converted to crop, which have lower carbon stock than primary forests.
    - IIASA: conversion costs are not a type of data for which you would find a consistent global database for all regions. To calibrate our conversion costs, we therefore use qualitative information on the hierarchy land use conversions that are observed. We then compare our land dynamics with historical data. Expansion into managed or natural forest is controlled through the possibilities of the land transition matrix (figure p. 25 of the GLOBIOM/MIRAGE BioF report - IIASA will check the arrows for managed forests).

Processing and production technology

- Stakeholder: What level of 2nd generation biofuels do you assume?
    - Ecofys: we can look at current installations and projects in the pipeline, depending on the assumed future biofuels policy and to what extent this policy will incentivise advanced biofuels we will have to assume a future share of advanced biofuels in the mix.
- T&E will publish a study on GHG emissions from advanced residues shortly.

Sustainability criteria

- Stakeholder: will the current study only looking at GHG emissions from land use change or will you also try to factor in related effects. E.g. ecosystem services, water quality, biodiversity.
    - IIASA: the current study focuses on modelling GHG emissions from LUC, but the full set of output indicators from GLOBIOM can inform on wider range of impact.
- Stakeholder: would like to receive clarification from the Commission why they decided to keep the scope of the study limited to GHG only, other impacts are an important part of the debate around biofuels, e.g. biodiversity. With this narrow scope the results can be used by the Commission to justify the EU biofuels policy while there are detrimental effects in addition to ILUC that are not looked at. If it is clearly out of scope, how can you make sure that your results are qualified and that it is understood that it is an impartial view of reality?
    - Ecofys: we have to make clear in the report what the exact scope of the project is. The study will provide a lot of interesting and relevant results in addition to GHG effects; Many GLOBIOM variables that allow to look at other dimensions (fertilizer use, water requirements, etc) will be made available in our report.
- Stakeholder: impacts of sustainability criteria, are they included?
    - IIASA: currently the criteria are put on the crops used for the biofuels, and not on other uses. Therefore, only a limited share of the global production is concerned and we do not find impacts of the criteria with the current biofuel volumes.

Other points

- Stakeholder: are there external drivers such as climate change that are taken into account?
    - IIASA: Climate Change impact is not included in the baseline, by 2030 its impacts on agriculture are probably small compared to today and it is difficult to include it as climate change is not an average effect but varies per region.
- Stakeholder: modelling will be based on 10,000 grid cells, is your assumption correct that climate change will not have a significant impact on any of those?
    - IIASA: by 2030 you see limited impact on average compared to longer timeframe, but yes, the result will vary per gridcell.
- Stakeholder: drought events in US have had important impacts.
    - IIASA: focus is on LUC from biofuel policy in a long term adjustment perspective. E4tech: climate variability makes factoring in these types of events difficult.
- Stakeholder: How do you incorporate the effects of degradation of land following intensification of the system?
    - IIASA: Not accounted for yet, work on this topic is ongoing at IIASA.
- Stakeholder: Will you include effects from deforestation, with more woody biomass in biofuels this may be expected? CIFOR study shows that 50% of forest degradation is result of logging industry. Right now there is no restriction on type of wood feedstock, how will you construct your scenarios pertaining to this?
    - IIASA: currently all types of woody biomass can be used for biofuels in the model but we do not model illegal logging. Deforestation is represented through the effect of agricultural land expansion and forest degradation is not represented for the moment in GLOBIOM (modelling challenges due to local drivers and problem of data availability on current state of degradation).
- Stakeholder: Which biodiesel/ethanol split will you take into account?
    - Ecofys: we model feedstock specific values and also the impact of a portfolio of feedstocks, to assess non-linear effect of mandating all feedstocks together. As the split will be available, the study outcome will inform on some other possible composition of a bioenergy mandate.

- Stakeholder: there are different types of managed forest (some management practices can be considered sustainable whereas others are associated to forest degradation).
    - IIASA: We acknowledge forest degradation is part of the sequence leading to deforestation. This is currently not represented in the model due to the complexity of underlying drivers and the lack of good data. This gap will be added to the list of improvement.

3. Stakeholder input

- Ecofys: we welcome all info from the stakeholders that they think can be of relevance to this project. Suggestions for changes to GLOBIOM and for baseline and policy scenario's is most useful when submitted by the end of this month.

The consortium welcomes all information and suggestions from the stakeholders that could be relevant to the project. Please send your input preferably by the end of November to: ILUC@ecofys.com

These minutes will be published on: www.globiom-iluc.eu