COMMENTS FROM MALAYSIAN PALM OIL COUNCIL

INDIRECT LAND USE CHANGE IMPACTS OF BIOFUELS – CONSULTATION

---

1. Do you consider that the analytical work referred to above, and/or other analytical work in this field, provides a good basis for determining how significant indirect land use change resulting from the production of biofuels is?

MPOC reiterates its earlier stand on ILUC made to EU in July 2009. These include the following:

1. **There is no general consensus on ILUC effects.**
   This is now seen in the Report on "Indirect land use change from increased biofuels demand" by Robert Edwards et al., whereby when six best known models were tested on the same biofuel scenario, differing and contrasting results on hectares per tonne of oil equivalent(toe) and GHG emission per Megajoule (MJ) were obtained. It is even mentioned that models disagree and sometimes give anomalous results.
2. **More research needed to define ILUC methodology and concepts**
   The lack of general consensus between models calls for the need for further studies and research. Under this topic, the following need to be stressed again, namely:
   - The need to introduce into the model the factor of substitutability between different vegetable oils for use as biofuels. The different vegetable oils can substitute one another and this substitution can affect the amount of land used, and, thus, the ILUC. When biofuel demand increases, there would be a bigger demand for vegetable oils. If palm oil substitutes soya completely to fill up this requirement, ten times less forest /land would need to be cleared and six times less if it substitutes rapeseed. Therefore, the ILUC effect to fill up this requirement, expressed as hectares of new land cleared per toe, would be 6-10 times lower if palm oil substitutes soya or rapeseed. A study carried out by Yusof and Yew (2009) showed that because palm oil substituted rapeseed and soyabean as vegetable oil, a significant additional 53-87 million ha of forest needed to be cleared to plant rapeseed or soya

respectively was prevented or avoided. This "avoided deforestation" prevented 4-6.7 billion tonnes of carbon stock loss.

The consideration of substitutability between vegetable oils and impact on ILUC through savings of land is deemed important because EU's main focus for ILUC is based on changes in area through land use (pg 71 of The impact of land use change on GHG emissions from biofuels and bioliquids: Literature survey). In this respect, the modified version of the MIRAGE model (Global trade and environmental impact study of the EU biofuel mandate by Perrihan Al-Riffai et al.,) which already caters for the substitutability between different sources of energy, may form the basis for the extension of such inclusions.

- Since oil palm has been planted on peat in the tropics, the GHG emission from peat is considered. A recent paper by Yew et al., entitled "Estimation of GHG emissions from peat used for agriculture with special reference to oil palm" showed that GHG emissions on tropical peat is much lower than reported earlier. The need to gather correct scientific data is thus necessary or wrong conclusions may be arrived at.

Since the six best known models cannot arrive at the same or closely similar figures for ILUC effect when given the same scenario, there is no good basis to determine ILUC change impact at present.

b

- **Projected volumes of conventional and advanced biofuels in 2020;**

  No comments. Agree with what EU has projected, since EU knows the scenario best for EU.

- **Assumptions around EU vehicle fleet and infrastructure in 2020, including diesel/petrol split and pace of introduction of new technologies;**

No comments.

- **Model's treatment of crop yield growth 'in the baseline' and in response to growth in demand;**

Much more data gathering and consultation with the crop specialists need to be done. Take the case for oil palm, where a 2.9% improvement in yield is projected (pg 44 of The impact of land use change on GHG emissions from biofuels and bioliquids: Literature survey). MPOC considers this projected yield increase to be achieved in 2020 too low. Based on MPOC's comments on ILUC impacts of palm oil for biodiesel submitted to E4tech in March 2010, it was conservatively estimated that a 10% increase in yield from existing areas can be achieved by 2020. This is attributed to the on-going planting of higher yielding oil palm clonal materials as well as overall improvements and advances in good agricultural practices and agronomy.

- **The underlying land use data:**

Suggest that GIS information be confirmed with ground truth.

- **The carbon stock values used in modelling and the type of converted land;**

Discussions and information exchange between experts dealing with the different crops and EU or JRC is needed to come to agreement on carbon stock values and the type of converted land. Two examples are:

- Page 177 of Literature review: carbon stock of tropical rainforest in Malaysia is 2572 tCO_2/ha. While this is may be correct for the virgin forest, oil palm is never grown on such pristine forest. They are grown on logged over forest, where C stock would be in the order of only 183 to 257 tCO_2/ha. So, in reality C stock loss are 10 times lower. If the figure of 2572 tCO_2/ha is used for calculations of carbon stock loss, the error would be big.
- Page 173 of Literature review: For peat, drainage of peat for agriculture conversion causes CO_2 emission to continue indefinitely. Latest results from Tropical Peat Research Laboratory in Sarawak, Malaysia shows that CO_2 emission from peat grown with oil palm stabilises after some time. Also, it has been pointed out in (1) above, that the emission on tropical peat has been overestimated.

- **Models' treatment of co-products;**
  If EU has now finally decided that the only consideration of ILUC is only land use(area) change , then the choice of co-products as stated in "The impact of land use change on GHG emissions from biofuels and bioliquids: Literature survey" is in order.

- **Significance of the results in terms of hectares of land use change and emissions.**

Need for EU to solicit and use data that can be obtained from producers of biofuel sources. When the EU Directive stipulates the requirement of GHG emission reduction savings, potential biofuel producers e.g. palm oil industry, engaged experts to carry out LCA studies. Thus, there are now many more results from LCA studies which can be added to the results as shown on Page 204 of Literature review. Thus, correct and updated GHG emission savings figures can be used in the future.

2. **On the basis of the available evidence, do you think that EU action is needed to address indirect land use change?**

MPOC reiterates its earlier stand on the following:

- Supportive of the concerns of ILUC
- Calls for the uncertainties regarding ILUC effects and base data to be unravelled by carrying out studies and research
- Defer implementation of ILUC to determine biofuel sustainability until solutions are found for the uncertainties

3. **If action is to be taken, and if it is to have the effect of encouraging greater use of some categories of biofuel and/or less use of other categories of biofuel than would otherwise be the case, it would be necessary to identify these categories of biofuel on the basis of analytical work. As such, do you think it is possible to draw sufficiently reliable conclusions on whether indirect land use change impacts of biofuels vary according to:**
   - **Feedstock type?**
   - **Geographical location?**
   - **Land management?**

If so, please say which and indicate the evidence used to reach your conclusion

Not possible at the present moment. As mentioned in (1) above, the employment of the six best known models in the world cannot arrive at the same or closely similar results on ILUC. The models disagree and sometimes give anomalous results. As such, there is no good basis to determine ILUC change impact at present.

4. Based on your response to the above questions, what course of action do you think appropriate?

A. Take no action for the time being, while monitoring impacts including trends in certain key parameters and, if appropriate, proposing corrective action at a later date.

Please say how the monitoring should be done and what these parameters should be.

B. Take action by discouraging the use of some categories of biofuel.

Please say which biofuels, why and what sort of encouragement should be given.

C. Take action by discouraging the use of some categories of biofuel.

Pease say which biofuels and why, as well as what sort of measures should be taken, for example:

- **increasing the minimum greenhouse gas saving threshold for biofuels**
- **imposing additional sustainability requirements on certain categories of biofuel (these could, for example, require the use of practices that can help mitigate indirect land use change impacts)**
- **attributing a quantity of greenhouse gas emissions from indirect land use change to all biofuels that use land**

If the latter, please say how this should be calculated, and demonstrated – for example:

- **A factor based on the estimated (modelled) land use change from a marginal extra quantity of crop production**

- **A factor based on the average land use change from crops over some recent period;**
- **A factor based on any other consideration.**

Please also say:

- **Whether it should be reviewed and if so how often**
- **Whether it should be implemented with any accompanying measures**.

D. Take some other form of action
Please say what action and why.

MPOC advocates Action D which will include the following:

- Due to uncertainties in coming up with the correct impact of each biofuel on ILUC, more studies need to be done
- Arrive at one model to be used for ILUC
- Interaction needed between EU and biofuel producers to gather information
- Use such information gathered to update database
- Monitor new areas opened for growing vegetable oils and see if any trend can be seen between biofuel demand and expansion
- Defer implementation of ILUC as a sustainability criterion until the uncertainties have found solutions
- Until then, there must be no discrimination on any biofuel source and all of them must be given equal access into EU market.

Malaysian Palm Oil Council
11th October 2010