

GBEP Workshop on Indirect Land Use Change (ILUC): Status of and Perspectives on Science-Based Policies

- Briefing Paper -

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What are Indirect Land Use Change Effects?

The term indirect land use change (iLUC) refers to the **potential** effects which may be caused by cultivating biomass (for bioenergy, biofuels, or biomaterials) on land which **previously** was used for other cultivation, e.g. feed, food or fibre production, or would have been in the future in a business-as-usual (baseline) scenario without the biomass use for bioenergy, biofuels or biomaterials. The previous or projected baseline use is displaced (“crowded out”) by the new biomass cultivation.

Since it is reasonable to assume that the demand for feed, food or fibre formerly produced on the land would remain, the respective production would have to occur **somewhere else**, possibly in **different** areas. These different areas **may** have high carbon stocks (e.g. forests) which are reduced if used for cultivating the displaced production, thus causing CO₂ emissions. These **potential** CO₂ emissions are indirectly caused by the biomass cultivation which displaced the former use, and hence, could be allocated to it. The amount of potential CO₂ emissions may be considerable, depending where and how the displacement might occur. Besides CO₂, indirect land use change might negatively affect biodiversity if displaced production moves into biodiversity-rich areas.

The CO₂ balance of crowded-out land use changes exactly corresponds to that of direct LUC. However, the question is **which** areas are concerned. Since displacement may not only take place within a country, but also **outside** due to global trade, iLUC effects can only be allocated to biomass cultivation through **models**.

By definition, it is impossible to “monitor” indirect effects – one surely can detect land use changes occurring in a given area or even globally, but – as land use changes can have several causes - it is not possible to relate this occurrence to one specific driver. The definition of indicators of iLUC is therefore largely a matter of determining the best methodologies for estimating the LUC causally linked (albeit indirectly) to biomass production for bioenergy, biofuels or biomaterials.

It should be noted, though, that iLUC is **not the only possible reaction** of displacing previous production: the “crowded out” feedstocks might be replaced through higher yields, or produced on underused or unused lands.

Furthermore, the greenhouse gas balance of bioenergy cultivation **including** possible iLUC effects could **still be positive** if high-yielding feedstocks and efficient conversion technologies are applied.

In the long term, it might be envisioned that the global conventions could fully cover all biomass markets, which would eliminate leakage.

In principle, the UN Conventions on Climate Change and on Biodiversity as well as their protocols could be developed further so that potentially negative consequences of indirect land use changes on climate protection and biodiversity would be **generally avoided** if the scope of CO₂ emission caps would also include carbon from any land use change, and all biodiversity-relevant areas were protected.

Key Issues to be discussed during the GBEP iLUC Workshop

In the morning, the **Science Session** will address the following questions:

- Which work has been carried out internationally so far, and with which results (e.g. IEA Bioenergy series of workshops)?
- What is the current state of science in identifying and analysing iLUC effects of bioenergy in the various countries/regions, especially in Brazil, Europe, and the USA?
- What activities would be needed to collaborate on further scientific understanding, and respective exchange?

In the afternoon, the **Policy Session** will address the following key issues:

- Which policy approaches are underway to address iLUC in Europe and the US (California)?
- Which considerations of iLUC exist in the private sector?

After the presentations, the **roundtable** will seek brief interventions (2-5 minutes oral input, no presentation) from GBEP partners and observers to broaden the scope of the discussion, and bring in additional perspectives.

After that, the **panel discussion** will ask representatives of selected GBEP partners to provide initial brief **statements** on their thoughts regarding **possible future activities**¹ of GBEP with respect to iLUC – for example, activities aiming at broader understanding of the issue, strengthening participation of developing country partners, providing policy briefs, etc.

The Session Chair will moderate the panel exchange, and will open up the discussion to the general audience later.

¹ Note that it is assumed here that based on the GBEP mandate, further development of the **scientific understanding and analysis** – i.e. model development etc. – will **not** be the focus of future GBEP activities, as this realm of activities is already addressed in several countries and respective research is carried out by several organisations.