Reducing the risk of Indirect Land Use Change: credible landscape planning as one meaningful approach

This paper has been produced as a discussion paper (draft January 2010[i]) and should not be taken as an official IUCN position or presentation. Comments, thoughts, and questions are welcome and should be addressed to:

Nadine McCormick, Energy Network Coordinator, International Union for Conservation of Nature, Switzerland Nadine.mccormick@iucn.org ; and

Andrea Athanas, Senior Programme Officer, International Union for Conservation of Nature, Switzerland andrea.athanas@iucn.org

Background

Indirect Land Use Change (ILUC) refers to changes in land[ii] use which arise from the displacement of an existing land use practice as a result of a new land use practice coming into place. This can occur on a spectrum from local to global:

- Local – displacement of human uses of a given resource, e.g. land or shoreline;
- Market-based – increasing demand for agricultural commodities which must then be met be increased supply in national, regional and/or global markets.

These issues should be raised and addressed for the range of human activities which risk causing iLUC. For example, poorly designed programmes for Reduced Emissions from Deforestation and Degradation can cause "leakage": another form of iLUC. ILUC has emerged as a key sustainability issues for biofuels, which represent a small but expanding driving force for increased agricultural demand and associated production; pre-existing uses (cropping, grazing, or other) may be displaced to other lands which, in many cases may be forested lands, peatlands (particularly in the case of palm oil production), or grasslands. As well as potential high levels of biodiversity, such lands may retain significant amounts of carbon which, when transformed to provide for the displaced cropping or grazing uses, will be released into the atmosphere. Depending on the land use change in question, such releases may outweigh potential gains in greenhouse gas emission reductions that could be attributed to the biofuel in the first place.

Difficulties in calculating ILUC

Thus rooted in the GHG framework of the biofuels discussion, the positions emerging around the issue of iLUC are polarising. While some argue that the calculations and monitoring systems are not

available (or even feasible) to determine whether iLUC is happening in any specific instance let alone attribute increased GHG emission figures, such as a factor, stemming from iLUC to a biofuel product; others contest that by not addressing iLUC in a meaningful way, the whole biofuels agenda is discredited as iLUC emissions negate any potential GHG savings benefits from biofuels.

This debate is reflected in European, US and Brazilian policy discussions on whether and how to apply penalties for potentially causing iLUC and/or incentives for mitigating against the iLUC risk, as well as disputes over the underlying calculations. In the multi-stakeholder discussions of the Roundtable on Sustainable Biofuels (RSB), for example, ILUC is currently not included in the "Version One" of the principles and criteria, though a working group has been established to explore ways to address iLUC.

Arguably, with full global land use planning and sustainability requirements on all agricultural commodities, iLUC would not occur. Yet such as system will not exist for the foreseeable future, though many governments do have national land use planning in place. In this context, the more robust and credible the land tenure and planning systems, the lower the risk of causing of iLUC – though it can never be eliminated entirely. While responsible biofuel producers should respect such systems, broader land use planning is beyond the control and responsibility of any one producer.

That said, it is imperative that biofuel producers address iLUC in a meaningful way and be held accountable for iLUC due to the fundamental importance and significance of the associated GHG impacts. Furthermore, a significant reduction of GHG emissions in the transport sector is the principal rationale[iii] underlying the promotion of large-scale industrial, globally traded biofuels and biofuel producers receive significant subsidy support. Additional important concerns include the underlying shifts in power over land use, access and tenure and the significant additional pressure on biodiversity in the iLUC "receiving" lands.

Though global tools for measuring, monitoring and avoiding iLUC will not be available within a useful timeframe, companies can already undertake practical approaches to mitigate the risk of causing iLUC.

Practical approaches for reducing the risk of causing ILUC

Assuming iLUC occurs due to the displacement of existing uses of land/resources to meet the incremental increase in demand for feedstock (agricultural product) from biofuel markets, producers can conceivably mitigate against this risk by increasing supply while not increasing land under till. Options include[iv]:

1. Producing biofuel feedstock on "unused land" – land that currently does not provide provision services to humans
2. Increasing land-productivity/integration of multiple uses resulting in sustainable yield improvements
3. Producing biofuels from sustainable harvesting of residues
4. Biofuel production from aquatic biomass

5. Reducing loss/waste in agricultural market supply chains, to enable more product to get to market[v]

Each option for reducing the risk of introducing ILUC has sustainability caveats which need to be managed, from incorporating existing marine users, to use of "waste" with no regeneration functions. Furthermore, as acknowledged in the Ecofys-led work on Responsible Cultivation Areas (Ecofys, 2009), while the concept of not displacing existing uses is valid for reducing the risk of causing iLUC, in a world with over 6 billion people, the reality is that it is rare to find land with *no* provisioning services to humans or of potential high biodiversity value.

BOX: Identifying "unused" land – the case of Imperata grasslands

One increasingly cited opportunity in South East Asia is that of developing Imperata grasslands. Also known as Alang-alang, this invasive plant swiftly takes over formerly forested lands. While such an approach is preferable to converting forests from a biodiversity as well as GHG perspective, it cannot be assumed that as Imperata grasslands are ecologically degraded, that no provisioning services are being obtained. Previous negative experiences from the pulp and paper industry have shown that local communities may use the land for grazing, thatch materials, for example. So while this land and other regional equivalents, such as *prosopis* in South Africa, may be prioritised for development, a process that allows for the framework conditions identified in this document is required to reduce the risk of displacing existing use and jeopardising the sustainability of the biofuel development, and more importantly, exacerbating climate change and causing biodiversity loss.

Framework conditions for successful iLUC mitigation

However, there are ways to manage this risk, which while complex, need not be complicated. Particular framework conditions which increase the potential for reducing the risks of ILUC sustainably. ILUC risks can be more effectively managed in conditions where there are:

- *robust land use management practices*
  Robust land use management practices help to ensure that biofuels developments are located in places which are appropriate from social, ecological and economic perspectives and provide processes for ensuring engagement of the range of stakeholders who need to be engaged in taking decisions about those locations. This means that biofuels developments will be directed away from lands which are providing other values to stakeholders (including biodiversity).

- *equitable and locally appropriate land tenure regimes*
  Equitable and locally appropriate land tenure regimes help ensure that the people who may be impacted by a biofuels development are appropriately compensated.

- *regional planning and landscape management systems*
  Regional planning and landscape management systems help by providing the opportunity for strategically planning where biofuels production happens and where other land uses are given priority, thus avoiding cumulative impacts of multiple biofuels developments in a given landscape.

- *credible stakeholder engagement processes*
  Credible stakeholder engagement helps to ensure that the range of values for a given site are taken into account when decisions about the future use of that site.

- *Effective governance*
  Effective governance can help ensure that strategies, plans and actions are actually implemented, from verifiable investments to reduce crop spoilage to land use agreements that are actually followed.

Where robust land planning schemes are not in place, arguably stakeholder engagement becomes even more important.

Such framework conditions enable local communities and stakeholders to be involved in decisions about where and how biofuel feedstocks are produced, and increase the potential of these actors to benefit financially and otherwise from expanding biofuels markets. These conditions also create the framework to ensure that biofuel feedstock production happens in ways which are compatible with the negotiated and agreed priorities for the landscape, including but not limited to conservation priorities.

Biofuels producers have a central role to play in checking to ensure that such framework conditions are in place where biofuel feedstocks are being produced and, where these conditions are weak or do not exist, in enabling these conditions to emerge through good practice such as robust Environmental and Social Impact Assessments (ESIAs), active and audited Environmental Management Systems (EMSs), and continuous stakeholder engagement practices. Such good practice can be made even more effective by using existing tools and processes developed by the conservation and development communities. IUCN (2009) has compiled 36 such tools and processes which are relevant and useful for the biofuels sustainability agenda.

In order to qualify for sustainability certificates, producers should demonstrate how they actively increase supply while minimising the need for additional land under tillage. To do this in a sustainable way, preference should be given to areas where the above framework conditions are in place. In instances where the risk of causing ILUC is high (i.e. where not all the framework conditions are in place, or where they are weak), such certification could be issued on a fixed term basis, with required management measures spelled out explicitly and pre-established reviews scheduled to measure progress towards achieving the framework conditions and to provide early warning of ILUC occurrence.

Producers who do not take actions to reduce the risk of causing iLUC should not qualify for certification. Moreover, consistent with the IUCN member resolutions[vi] 4.082 and 4.083 on biofuels, they should not be eligible for GHG abatement targets or receive subsidy support aimed at reducing GHGs.

Future ILUC considerations

ILUC is clearly a serious issue for the biofuels community to address not just because of the GHG implications, but also because of its social and biodiversity implications. ILUC is not only a biofuels issue, though. By bringing iLUC into biofuels certification processes such as the Roundtable for

Sustainable Biofuels, the biofuels community could be mapping a way for iLUC to be addressed more widely by others who are driving land use change processes including such sectors as agriculture, energy more broadly (including large-scale hydropower), forestry and even the conservation community.

Addressing iLUC risks in a meaningful way through robust site level management practices which fit into regional planning and management frameworks – all of which can be applied immediately, recognised through certification processes, and monitored for their effectiveness is a better option than not addressing iLUC at all, or through rigid iLUC factors that penalise the people and communities of entire countries for the worst practices in those countries.

Resources

Ecofys (2009) Introduction to RCA and Indonesia case study, Presentation, http://www.bioenergywiki.net/images/5/50/RCA_Indonesia_Ecofys_WWF.pdf

Ecofys (2009) Report on Indirect Impacts, http://cgse.epfl.ch/webdav/site/cgse/shared/Biofuels/Documents%20and%20Resources/09-10-09_Ecofys%20-%20Summary%20of%20approaches%20to%20accounting%20for%20indirect%20impacts%20of%20biofuel%20production.pdf

IUCN (2009) Implementing sustainable biofuel production: a compilation of tools and approaches http://cmsdata.iucn.org/downloads/biofuels____compilation_of_tools_final.pdf

IUCN on iLUC http://www.iucn.org/about/work/initiatives/energy_welcome/energy_impacts/energy_bioenergy/energy_iluc/

RSB Indirect Impacts Expect Group, http://cgse.epfl.ch/page84674.html

RSB Draft Methodological Framework for Addressing Indirect Impacts, http://cgse.epfl.ch/webdav/site/cgse/shared/Biofuels/Expert%20Groups/EG%20on%20Indirect%20Impacts/10-01-14%20RSB%20Indirect%20Impacts%20of%20Biofuels.pdf

[i] This document is "live" and will be updated periodically as the iLUC debate evolves. Please address any comments to energy@iucn.org .

[ii] Note that indirect impacts are an issue for all resources used for biofuels production including water and seascapes (if one is looking beyond the GHG issue) and therefore approaches developed for mitigating the situation with land should be applied to water and seascapes as well.

[iii] Arguably other motivations are at play including agricultural support, rural development and replacement of expensive fossil fuel imports, though these are perhaps less relevant to the iLUC debate.

[iv] Adapted from WWF and Ecofys (2007). This is not a comprehensive list of all the options available for mitigating against iLUC risks, many other options will exist to - from introducing cell phones in developing country supply chains to increasing yields from sustainable agriculture approaches. The critical thing is to establish agreed and credible criteria and processes for determining which mitigation measures are viable and real and sustainable and which are not.

[v] By some estimates between 30 and 50% of food intended for consumption is wasted or lost somewhere along the value chain – from pre-harvest loss and spoilage, to processing waste and at the consumption stage (World Economic Forum *Driving Sustainable Consumption Value Chain Waste Working Group Briefing*).

[vi] See IUCN Resolutions and Recommendations
http://www.iucn.org/about/work/programmes/global_policy/gpu_resources/gpu_res_recs/