The Low Indirect Impact Biofuels (LIIB) Methodology

About us

The **Methodology for Low Indirect Impacts Biofuels (LIIB)** aims to certify biofuels that do not cause Indirect Land Use Change (ILUC) by identifying and describing certain categories of certifiably low ILUC biofuel production practices. LIIB is a collaboration between WWF International, Ecole Polytechnique Fédérale de Lausanne (former host of the Roundtable on Sustainable Biofuels), and Ecofys.

Version 0 of the methodology was published in July 2012, the culmination of a two-year project funded by the Dutch NL Agency, and which involved pilot tests in four countries, namely Brazil, Mozambique, South Africa and Indonesia. Partners who also participated in the development of Version 0 included the University of Sao Paulo (Brazil), Wageningen University (the Netherlands), WWF Indonesia & Mozambique, BioGreen (a South African UCOME producer), and the certification body DNV.

LIIB partly builds on the Responsible Cultivation Area (RCA) methodology (Ecofys, WWF, Conservation International 2010), which contains rules for the identification of unused land and for sugarcane-cattle integration projects.

What is LIIB ?

The Low Indirect Impact Biofuels methodology can be used to identify and certify low-ILUC biofuels. LIIB-compliant biofuels do not cause ILUC because their production results in little or no displacement of existing agricultural commodities.

Indirect impacts can occur if existing farmland is used to produce biofuels. The resulting decrease in available land for food production can contribute to higher and more volatile food prices or to the conversion of new land (such as forests, grassland or peatland) into agricultural land. This land use change (LUC) is termed Indirect Land Use Change because it is partly caused by increased global biofuel production, but it occurs outside the boundary of biofuel and biofuel feedstock operations. If the LUC takes place in biodiverse or carbon-rich lands it can lead to important losses of biodiversity and/or GHG emissions.

For example, if palm oil that was previously used in the food sector is redirected to biodiesel production, reduced availability of palm oil for food can raise palm oil prices. The reduced availability of palm oil for food will be partly met by increased yields and partly by the conversion of new land into agricultural land, causing ILUC. Hence, biofuel feedstock production can have unintended consequences well outside the boundary of production operations. These indirect impacts cannot be directly attributed to a particular farm or plantation.

It is possible, however, for individual farmers to produce conventional biofuels without causing ILUC. The production and use of Low Indirect Impact Biofuels also minimises unwanted effects on food security, since their production does not displace the production of food or feed and thus does not contribute to commodity price hikes.

In practice, the production of Low Indirect Impact Biofuels involves farmers cultivating *additional* biofuel feedstock without displacing current agricultural production. This can be through production on lands without prior existing provisioning services, i.e., "unused lands" (while also meeting biodiversity, carbon stocks and land rights criteria), or by increasing the productivity of the land within sustainable limits, e.g., by integrating food and fuel production or by increasing yields. It can also entail the use of "true waste", i.e., previously discarded materials without alternative uses, as a biofuel feedstock. The Low Indirect Impact Biofuels concept is feedstock-neutral. This means that, depending on the characteristics of production, in principle all feedstocks could meet the Low Indirect Impact Biofuels criteria.

The LIIB methodology

The **Low Indirect Impact Biofuel (LIIB) methodology** presents a practical and cost-effective approach for companies, policy makers and certification schemes that wish to stimulate low-ILUC biofuel production. The methodology contains detailed mitigation approaches in **four different solution types**, which have been field-tested and audited in international pilots:

1. Biofuel feedstocks produced from ***yield increases,*** where the producer must demonstrate yield increases above the trendline. This trendline is calculated based on a producer's own data for the last 5 years or based on data from similar producers in the last 10 years. This category has been pilot tested in Indonesia.
2. Biofuel feedstocks produced by ***increasing the overall system efficiency through integration*** *of sugarcane and cattle* (other integration models will be added to the LIIB methodology in the future). This category has been pilot tested in Brazil.
3. Biofuel feedstocks produced on ***unused land*** with low carbon stocks and low biodiversity values, in countries with an excess or growing amount of unused arable land. This project category requires carrying out a Responsible Cultivation Area (RCA) assessment according to the RCA methodology among other requirements. The RCA methodology was developed by Ecofys, WWF, and Conservation International. This category has been pilot tested in Mozambique.

4. Biofuels produced from ***end-of-life products (waste)***, which would normally be disposed of and which is not used for alternative purposes in the region. The certification scheme adopting the LIIB must define a list of feedstock regions, i.e., a list of feedstocks that are considered to be an end-of-life product in a particular region (though they may not qualify as an end-of-life product in a different region of the world). The LIIB methodology does not specify this *positive list* of waste-regions; ideally, certification and/or regulatory schemes implementing the LIIB will define a consistent list of waste-regions. This category has been pilot tested in South Africa.

The LIIB categories aim to characterise biofuel production models that result in an *additional* amount of biofuel production without displacing existing commodities. In addition, the LIIB methodology has been developed to be user-friendly and cost-effective, avoiding the need for the operator to provide complex proofs of the "additionality" of the implemented best practices.

Q&A

1. **Is LIIB a certification scheme?**
   LIIB is not a sustainability certification scheme. It only addresses indirect impacts and it does not consider the broader environmental and social sustainability aspects of biofuel production (such as water impacts, pesticide use or labour conditions).
2. **Who can certify according to LIIB?**
   The LIIB methodology is designed to be used in conjunction with one of the existing credible sustainability certification schemes (e.g., RSB, Bonsucro, RTRS, RSPO, RTRS, etc.) Only when integrated within a credible certification scheme addressing a wide range of sustainability aspects across the biofuel production lifecycle will LIIB help to deliver sustainable biofuels.
3. **How comprehensive is LIIB in addressing the full scope of environmental and social issues related to biofuels?**
   LIIB only addresses indirect impacts of biofuel production and concretely focuses on indirect land use change (ILUC). It does not address the full environmental and social sustainability issues associated with bioenergy production and use. For instance, it does not address any *direct* impacts of biofuel production such as water use, pesticide and fertilizer use, labour conditions, etc. For this reason the LIIB methodology should only be used in conjunction with a credible certification scheme that addresses the other aspects.
4. **Will there be a Version 1 of the LIIB methodology?**
   Based on feedback obtained after the release of Version 0, during currently on-going testing within the EU, and after a peer review process, Version 1 is expected to be published in early 2014. In addition, the methodology will continue to evolve, and be tested and expanded in subsequent versions. For instance, we plan to add two new categories, one addressing "underused land" and another addressing "integration of energy crops in agricultural rotation systems". The project partners are open to suggestions for expansion of the methodology.

5. **Can LIIB be applied to other biofuel supply chains?**
   LIIB is generally not a feedstock-specific methodology; hence it is applicable to any biofuel supply chain and feedstock. For instance, the category on "yield increase" applies to any biofuel feedstock. Some LIIB categories, however, are designed for a specific biofuel pathway, such as is the case in the "integration of cattle and sugarcane" category.
6. **How expensive is LIIB?**
   The costs are mainly dependent on the quality of the existing data (yields, for example). Our estimates suggest that certification against the LIIB methodology does not add significantly to the cost of certification. However, pilot projects have shown that non-financial barriers often prevent LIIB solution types from being implemented at large scale. Therefore, a policy incentive could stimulate biofuel feedstock producers to use these solution types.
7. **How could LIIB be integrated in policy?**
   The Low Indirect Impacts Biofuel certification module can be incorporated within any policy that aims to incentivise low-ILUC biofuels. The EC could approve voluntary schemes for being able to certify low-ILUC biofuels for the purpose of the RED and FQD. Examples of how the Low Indirect Impacts Biofuels certification module could be used in ILUC policy include, but are not limited to:
   - Inclusion of emissions from ILUC in lifecycle GHG accounting, where LIIB-compliant biofuels are eligible for an ILUC factor exemption;
   - A sub-target or other specific incentive for low ILUC biofuels, including those that are LIIB-compliant;
   - Allowing LIIB-compliant conventional biofuels to be supplied in the EU beyond the proposed cap on conventional biofuels.

For more information

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