



The Role of Sustainability Certification in Mitigating Negative Indirect Impacts of Biofuel Production



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IEA Bioenergy: Quantifying and managing land use effects of bioenergy

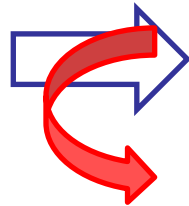
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Why Address Indirect Impacts in Certification?

1. Cause positive change
 - Encourage operators to implement best practices
 - Aim is to affect as many operations as possible
 - Focus is on incentives for improved practices
2. Reflect more truthfully the sustainability of a biofuel
 - Credibility of certification system
 - This is a driver to include ILUC factors in lifecycle GHG calculations

Indirect Impacts of Biofuels: Drivers

- Land being used *before* for production of food/feed/fiber or cattle pasture (or other provisioning services)
- *now* used for biofuel feedstock



Food/Feed/Fibers

Biofuels

DISPLACEMENT

- ...but consumers still need that food/feed/cattle/etc
- Therefore a «gap» results in the market
- driving up market prices of this commodity up short-term → **Food security impacts**

«Closing the gap»

- Demand reduction (due to higher prices)
- Yield and/or efficiency increases: *Intensification*
- Convert additional land for production: *Extensification*

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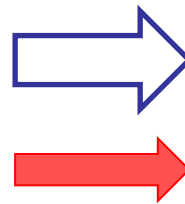
Indirect Land Use Change (ILUC)

- Outside the project boundary
- Unknown location
- Hence unknown effects (carbon stocks, biodiversity impacts etc.)

«Preventing Displacement»

1. Increase system productivity (and ideally also ecosystem services)

a. Increase yields beyond business as usual



**Food/Feed/Fibers
and
Biofuels**

- b. Multi-crop (one crop followed by the other); Intercrop (simultaneous); Agroforestry (mix annuals and perennials); Combine with livestock or fish production
- c. Cascading systems / Integrated food and energy systems (IFES): optimal use of byproducts for food and energy production with the use of technology (e.g., gasification, hydrolization, anaerobic digestion, ...)

Preventing Displacement (Cont'd)

2. Use waste as feedstock

- That would otherwise have been disposed of (landfill/incineration)
- That is not used for alternative purposes in that region



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Biofuels

Preventing Displacement (Cont'd)

3. Produce on unused land

- Land that is not used and has not been used for any provisioning service (food/feed/cattle/firewood/etc.) for the last 5 years
- Low C stock and biodiversity values
- In countries / regions with excess or growing amount of unused arable land

When you cannot prevent displacement...

«Indirect Impacts Fund»

- A type of credit system in which a participant can pay for a «net reduction in indirect impacts risk», implemented outside of their project boundary
- Contribute (money/time) to «indirect impacts fund»
- Allows another farmer to make improvements (capital investment; implementation of best practices) to enhance system efficiency, enhance ecosystem services
- Practical implementation: low-interest loan; grant; capacity-building project, ...



Increased system efficiency
Enhance ecosystem services

Certification system for Low Indirect Impacts Biofuels (CIIB)

- Operator-based methodology
- Straightforward
- Four categories at this time:
 - Demonstrating yield increases
 - Demonstrating additional production in IFES: sugarcane-cattle
 - Demonstrating unused land
 - Demonstrating waste stream
- Outlines required documentation / records required
- Pilot testing
- Additional work required: additional pilots, additional IFES models

Some things to remember about the RSB Standard...

- 12 mandatory Principles & Criteria for biofuel sustainability
 - Soil quality, water quality, water rights, land rights, human & labor rights, biodiversity, legality;
 - Direct impacts on food security;
 - Mandatory GHG accounting; GHG threshold.
- Limited applicability of the Standard
 - Biofuel production chain : farmers & feedstock processors, biofuel producers; biofuel blenders;
 - Limited to scope of operations.
- Feedstock neutrality

Options to address Indirect Impacts in a Certification Std

1. Encourage implementation of **best practices**

- Good/improving yields, compared with «similar operations»
- Increased/optimized efficiency of the system: integration, best use of co-products; rotations, etc.
- Reduce waste throughout supply chain!

2. Encourage **low-indirect impacts feedstocks**: waste, unused land, «low-land» feedstocks

- Waste – e.g., MSW, excess agricultural residues;
- Feedstock that requires little land (e.g., certain algae production models)
- grow feedstock on previously unused land with low C values and low biodiversity – e.g., salicornia irrigated with saltwater in the desert?

Best practices & low-risk feedstocks

How to address in a certification standard?

- Include CIIB as a module in the Standard – if voluntary, operators can make extra «low II» claim
- Include mandatory requirements to implement best practices – applies to all certified operators

Considerations

- CIIB module: strict; does not address all best practices → Making it mandatory would exclude many biofuels; would not recognize certain low-II biofuels
- Mandatory requirements to improve practices applies to all operators → Induces positive change across a wider base

3. Include ILUC factor in the lifecycle GHG calculations

- Simplified ILUC factor for crops grown on arable land
- Or crop-specific factor

Considerations

- RSB Standard has a GHG emissions threshold
- Hence, certain feedstocks could be cut out of the certification system, esp. if an ILUC factor is used
- What ILUC factor to use? Uncertainty, assumptions

4. «Indirect Impacts Fund»

- E.g., require contribution to the fund, «low II credits»

Potential Future Work

- Additional IFES models
- Parameterization : identification of parameters that quantify output, correlation with «land saved», correlation with «additional energy output»
 - Quantitative tool
- Correlation between the above and necessary \$\$\$ investment – Indirect impacts fund
- ILUC factor development

Next steps - RSB

- CIIB to be completed 1Q 2012
- Secretariat to present options to address indirect impacts to RSB membership
 - Chambers
 - Steering Board
- Multi-stakeholder discussion process in Chambers
- Decision by Steering Board

Closing Thoughts

- Based on the right paradigm / framework?
- Regardless of paradigm, do the proposed options work?
- Keeping in mind that we are trying to address (i)LUC and food security:
- «Displacement» and its market effects have an impact, but there are other considerations
 - Regional and local socioeconomic realities
 - Governance & land use planning
- Indirect impacts *can* be addressed through certification standards... but not solved
- Policy is crucial
- Ideally, use a cross-sectoral approach to define how to best produce food, feed, fiber and fuel in a given region

Thank you!



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