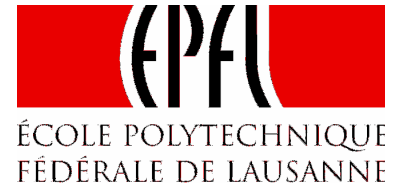


# Roundtable on Sustainable Biofuels

An initiative of the EPFL Energy Center  
*Ensuring that biofuels deliver on their promise of sustainability*



## **Global principles and criteria for sustainable biofuels production** **Version ‘Minus 10’ (on its way to Version Zero)** ***Draft for discussion by Steering Board and Implementation WG***

### ***Preamble (to be published with Version Zero)***

In June 2007, the Steering Board of the Roundtable on Sustainable Biofuels (RSB) published draft principles for sustainable biofuels production, as the basis for global stakeholder discussion around requirements for sustainable biofuels. Interested stakeholders were invited to join Working Groups and suggest criteria for achieving these principles, as well as rewording for the draft principles themselves. Over the past twelve months, stakeholders have discussed the criteria in about fifty Working Group and Expert Group meetings, as well as three in-person stakeholder meetings in Brazil, China, and South Africa (totaling 150 participants), on-line via the Bioenergy Wiki, and via direct emails and phone calls to the Secretariat.

The resulting draft standard – principles and criteria, along with key elements of the guidance for implementation – is presented in the following pages. While not every interested stakeholder has been consulted on its content, the RSB Steering Board feels that a wide variety of stakeholder input has been gathered, such that interested parties could consider this a good first draft, or ‘Version Zero’ of a globally-applicable standard for sustainable biofuels. Throughout this feedback process, the RSB remained **committed to an equitable, open and transparent standards-setting process**, following the ISEAL Code of Good Practice for Standards-Setting and involving various stakeholder interests from many different countries and from all parts of the supply chain.

The standard was largely drafted based on work already conducted by the Forest Stewardship Council, the Dutch Cramer Commission, the Low Carbon Vehicle Partnership in the UK, the Roundtable on Sustainable Palm Oil, the ILO’s Decent Work agenda, the Sustainable Agriculture Network, the Better Sugarcane Initiative, and other sustainable agriculture initiatives. The RSB remains committed to incorporating and recognizing other sustainability standards work, and to harmonize and reduce any eventual reporting burdens as much as possible.

### *Next steps*

The Steering Board is proposing a **further six-month round of global stakeholder feedback** on this draft standard, to ensure that producers, workers, farmers, NGOs, governments, and traders have been given ample opportunities to input into the process. The RSB will be organizing or co-organizing a series of stakeholder workshops around the world through January 2009, and encourages any stakeholder to collect feedback from colleagues, hold their own discussions, and send any suggestions to the RSB Secretariat. The RSB will also be encouraging companies and farmers to field test the draft standard in their own supply chains, and will aim to coordinate the lessons learnt in these pilot projects and field tests through information-sharing in our Implementation Working Group. This will certainly not be the last round of feedback - as the science and understanding of biofuels progress, our understanding of biofuels’ sustainability must be updated.

*A note on direct vs. indirect impacts*

Throughout the course of this first year of standards development, it became clear that many of the concerns about the sustainability of biofuels' production can be addressed by direct behaviours of farmers, traders, and processors. However, three potentially large impacts can result from off-farm, macroeconomic interactions amongst food, fodder, fuel, and fiber markets. Complying with Principle 3 on greenhouse gas emissions and Principle 7 on conservation is compromised if diverting feed or fodder into biofuel production results in high carbon stock or conservation value lands coming into production to meet other markets. Complying with Principle 6 on food security can also be out of control of the producer, if increased demand for biofuels results in higher market prices for feedstocks and increased vulnerability for low-income communities.

As awareness about these potential impacts is only just developing, there is little consensus about their magnitude and what might be done to mitigate them. Recent agricultural commodity price increases can, for the most part, be attributed to factors unrelated to biofuel production, such as increasing food and fodder demand, speculation on international food markets, and incidental poor harvests due to extreme weather events. High oil prices and related high costs of fertilizers also have an impact on the price of agricultural commodities. Deforestation and loss of biodiversity had already reached unsustainable levels before the recent surges in biofuels' demand, and it is difficult to link direct causality of land use changes in one region or country to biofuel production in another. Nevertheless, the potential for negative indirect impacts is high, and within the spirit of the Precautionary Principle, sustainable biofuel supporters should be assured that their good intentions do not have unintended consequences.

Unfortunately, there is to date no scientific consensus as to how to quantify the amount of land use change or food price increases attributable to biofuel production. As stated in the Sustainable Biofuel Consensus<sup>1</sup> reached by a group of biofuels experts who met in Bellagio, Italy in April 2008, "addressing indirect impacts explicitly requires:

- continued global research to identify and quantify links between biofuels and land use change;
- mechanisms to promote biofuels that do not have negative land use change impacts;
- mechanisms that mitigate these negative impacts but do not unduly increase transaction costs for producers; and
- social safeguards at the national level, that ensure that vulnerable people are not further disadvantaged through food and energy price increases and other potential negative economic side effects."

The criteria below aim to address some of these *direct* activities that farmers and producers can undertake to prevent some of these unintended consequences. However, the Steering Board recognizes that many efforts to minimize these risks must be taken by governments in their policies that affect land use, land protection, biofuel promotion, and food security. Over the next year, the RSB will collaborate with governments, international organizations, inter-governmental agencies, and concerned stakeholders to better understand the nature of these impacts and achieve consensus on how to measure and mitigate them.

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<sup>1</sup> Available at :

[http://www.bioenergywebshores.org/236.html?no\\_cache=1&tx\\_ttnews%5Bth%5D=16&tx\\_ttnews%5Btt\\_news%5D=4604&tx\\_ttnews%5BbackPid%5D=235&cHash=3266e2d5cf](http://www.bioenergywebshores.org/236.html?no_cache=1&tx_ttnews%5Bth%5D=16&tx_ttnews%5Btt_news%5D=4604&tx_ttnews%5BbackPid%5D=235&cHash=3266e2d5cf)

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## RSB - Draft Standard for Sustainable Biofuels

Version “Minus 10”, for discussion in the Implementation WG and Steering Board, June 15, 2008

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### Legality

**1. Biofuel production shall follow all applicable laws of the country in which they occur, and shall endeavour to follow all international treaties relevant to biofuels’ production to which the relevant country is a party.**

*Key guidance: Includes laws relating to air quality, water resources, soil conservation, protected areas, biodiversity, labor conditions, agricultural practices, and land rights. This standard can go beyond national law, but cannot contradict or contravene national law.*

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### Consultation, planning, and monitoring

**2. Biofuels projects shall be designed and operated under appropriate, comprehensive, transparent, consultative, and participatory processes that involve all relevant stakeholders.**

**2.a** For new projects, an environmental and social impact assessment, strategy, and impact mitigation plan (ESIA) covering the full life cycle of the project shall arise through a consultative process to establish rights and obligations and ensure implementation of a long-term plan that results in sustainability for all partners and interested communities. The ESIA shall cover all of the social and environmental principles outlined in this standard.

*Key guidance: The ESIA shall include the identification of High Conservation Value areas, biodiversity corridors, buffer zones, and ecosystem services; shall evaluate soil health; shall identify potential sources of air, water and soil pollution; shall evaluate potential impacts on water availability; shall cover a baseline social indicator assessment; shall include an economic feasibility study for all key stakeholders; shall identify potential positive and negative social impacts including job creation and potential loss of livelihoods; shall establish any existing water and land rights.*

*Producers or cooperatives unable to perform ESLAs will need support.*

*‘Relevant stakeholders’ will be defined in the indicators.*

**2.b** For existing projects, periodic monitoring of environmental and social impacts outlined in this standard is required.

**2.c** The scope, length and extent of the consultation and participation must be reasonable and proportionate to the scale, intensity, and stage of the project and the interests at stake.

**2.d** Stakeholder engagement must be active, engaging and participatory, enabling local, indigenous and tribal peoples and other stakeholders to engage meaningfully.

**2.e** Stakeholder consultation shall demonstrate best efforts to reach consensus through free prior and informed consent. The outcome of such consensus-seeking must have an overall benefit to all parties, and shall not violate other principles in this standard.

*Key guidance: Consensus-seeking will be used to find the best solutions and iron out any potential problems that may arise over the lifetime of the project. Consensus can be sought from a group selected from stakeholders, to prevent decision-blocking by any one group or individual.*

**2.f** Processes linked to this principle shall be open and transparent and all information required for input and decision-making shall be readily available to stakeholders.

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## Greenhouse gas emissions

### 3. Biofuels shall contribute to climate change mitigation by significantly reducing GHG emissions as compared to fossil fuels.

- 3.a Emissions shall be estimated via a consistent approach to lifecycle assessment, with system boundaries from well to tank, including carbon embedded in the fuel but excluding vehicle technology.
- 3.b At the point of verification, measured or default values shall be provided for the major steps in the biofuel production chain.
- 3.c Default values from GHG emissions from **direct land use change** shall be estimated using IPCC Tier 1 values. Better performance than IPCC default values can be proven through models or field experiments.
- 3.d GHG emissions from **indirect land use change**, i.e. that arise through macroeconomic effects of biofuels production, shall be minimized. There is no established methodology to determine them. Practical steps that shall be taken will include:
  - o Maximising use of waste and residues as feedstocks, idle land, waste land, improvements to yields, and efficient crops;
  - o Coordinating policies between biofuels and other uses of land to encourage positive indirect effects, which could involve cooperation with specialised agencies; and
  - o Monitoring indirect land use changes within manageable areas.
- 3.e The preferred methodology for GHG lifecycle assessment is as such:
  - o The functional unit shall be CO<sub>2</sub> equivalent (in kg) per Mega Joule [kgCO<sub>2</sub>equ/MJ], including the CO<sub>2</sub> equivalent GHG emissions from the eventual fuel combustion
  - o The greenhouse gases covered shall include CO<sub>2</sub>, N<sub>2</sub>O and CH<sub>4</sub>. Global Warming Potential values and lifetimes from the IPCC shall be used.
  - o Substitution shall be used to treat co- and by-products. Allocation by energy content may be used for energy co-products. Allocation by market value may be used if substitution is not possible.

*Key guidance: The indicators shall include guidelines for how substitution, allocation by energy content, and allocation by market value should be used, as there is a risk of mistakes and variability in results.*

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## Human and labour rights

### 4. Biofuel production shall not violate human rights or labor rights, and shall ensure decent work and the well-being of workers.

*Key guidance: Key international conventions such as the ILO's core labor conventions and the UN Declaration on Human Rights shall form the basis for this principle. Contracted labour and outgrowers shall be accorded the same rights as employees.*

- 4.a Workers will enjoy freedom of association, the right to organise, and the right to collectively bargain.

*Key guidance: In countries where the law prevents collective bargaining or freedom of unionisation, special measures must be developed within the framework of the project implementation plan to ensure that workers can engage with the project owners or partners while being protected from breaking the law.*

- 4.b No slave labour or forced labour shall occur.
- 4.c No child labour shall occur.
- 4.d Workers shall be free of discrimination of any kind, whether in employment or opportunity, with respect to wages, working conditions, and social benefits.
- 4.e Workers' wages and working conditions will respect all applicable laws and international conventions, as well as all relevant collective agreements. They shall also be determined by

reference to, at a minimum, the conditions established for work of the same character or offered by comparable employers in the country concerned.

- 4.f** Conditions of occupational safety and health for workers and communities will follow internationally-recognised standards.

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### Rural and social development

#### **5. Biofuel production shall contribute to the social and economic development of local, rural and indigenous peoples and communities.**

- 5.a** The ESIA carried out under 2a and monitoring required under 2b shall result in a baseline social assessment of existing social and economic conditions and a business plan that will utilize, among other tools, the Decent Work Agenda to ensure sustainability, local economic development, equity for partners, and social and rural upliftment through all aspects of the value chain.

*Key guidance: There should be measured improvements in the social and economic indicators as set against the baseline and targets each year. The following should be aimed for in the projects: Local ownership, diversification of crops if shown to improve local economic conditions of communities, cultivation methods, training, value added products, credit facilities for local communities and small outgrowers (e.g. through micro credit schemes), and/or provision of biofuel or bioenergy to local communities to promote energy security. Appropriate institutional structures should be developed, such as co-operatives that encourage and maximize local involvement and management.*

- 5.b** Local job creation and livelihood opportunities shall be optimized.

*Key guidance: preference should be given to full-time non-seasonal employment opportunities; if not available attempts should be made to identify other non seasonal opportunities for the labour force to create stable local communities. It is preferable to employ local people if they are available for employment.*

- 5.c** Special measures that benefit women, youth, indigenous communities and the vulnerable in the affected and interested communities will be designed and implemented.

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### Food security

#### **6. Biofuel production shall not impair food security.**

- 6.a** Biofuel production shall minimize negative impacts on food security by giving particular preference to waste, residues, and non-staple crops as input, to degraded and marginal lands as sources, and yield improvements that maintain existing food supplies.

*Key guidance: Clear definitions are needed for waste, residues, and marginal/degraded land. ESIA should ensure that these lands were not used for livelihoods support, or that benefits of use for biofuels outweigh any loss of livelihoods. All of these definitions are time-dependent; unused land might come into production anyway given climate change as well as population and wealth growth. These criteria and definitions should be periodically re-assessed.*

- 6.b** Biofuel producers shall access the status of food security and shall not replace staple crops in case if indications of food insecurity.

*Key guidance: To mitigate food security impacts, the biofuel project could, for instance: take the maximum food value from the crop and use the remainder as an energy stock, offset impacts via a food subsidy programme, and/or intercrop food and fuel.*

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### Conservation

#### **7. Biofuel production shall avoid negative impacts on biodiversity, ecosystems, and areas of High Conservation Value.**

- 7.a** High Conservation Value areas, native ecosystems, ecological corridors and other biological conservation areas must be identified and protected.

*Key guidance: Identification and mapping of HCV areas should be undertaken by governmental, inter-governmental, and conservation organizations, as part of larger processes involving non-biofuel sectors. Where such mapping is occurring, the results shall be respected by producers. Where such maps do not exist, large-scale producers shall use existing toolkits.*

*Producers or cooperatives unable to perform an environmental impact assessment and/or a land management plan will need support.*

**7.b** Ecosystem functions and services must be preserved.

*Key guidance: Ecosystem (ecological) functions are described in other systems, for instance FSC criterion 6.3. Ecosystem services are provisioning, regulating, cultural and supporting services obtained by people from ecosystems, as described in the Millennium Ecosystem Assessment. Specific ecosystem functions and services relevant to an area of production shall be locally defined.*

**7.c** Buffer zones must be protected or created.

**7.d** Ecological corridors must be protected or restored.

**7.e** Hunting, fishing, ensnaring, poisoning and exploitation of endangered and legally protected species are prohibited on the production site.

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## Soil

### **8. Biofuel production shall promote practices that seek to improve soil health and minimize degradation.**

**8.a** Soil organic matter content must be enhanced to its optimal level under local conditions.

*Key guidance: The use of agrarian residual products, including lignocellulosic material, must not be at the expense of other essential functions for the maintenance of soil organic matter (e.g. compost, mulch).*

**8.b** The physical, chemical, and biological health of the soil must be enhanced to its optimal level under local conditions

*Key guidance: Soil erosion must be minimized in order to enhance soil physical health on a watershed scale. WHO class Ia and Ib pesticides are prohibited.*

**8.c** Wastes and byproducts from processing units must be managed such that soil health is not damaged.

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## Water

### **9. Biofuel production shall optimize water resource use, including minimizing contamination or depletion of these resources, and shall not violate existing formal and customary water rights.**

**9.a** The ESIA outlined in 2a shall identify existing water rights, both formal and customary.

**9.b** Potential impacts of the project on water availability within the watershed where the project occurs shall be assessed, as appropriate to the scale of the project.

*Key guidance: The use of water for biofuel production must not be at the expense of the daily basic water needs of local communities.*

**9.c** Biofuel production shall include a water management plan appropriate to the scale and intensity of production.

**9.d** Biofuel production shall not deplete water resources.

*Key guidance: Water-intensive biofuel crops and biofuel production systems must not be established in water-stressed areas. The most efficient use of water must be sought.*

**9.e** The quality of water resources must be enhanced to their optimal level under local conditions.

*Key guidance: Adequate precautions must be taken to avoid contamination of surface and ground water resources. Waste water must be adequately managed.*

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## Air

### 10. Air pollution from biofuel production and processing should be minimized along the supply chain.

**10.a** The quality of air must be enhanced to its optimal level under local conditions.

**10.b** Air pollution from agrochemicals, biofuel processing units, and machinery must be minimized.

*Key guidance: the use of ground or aerial pesticides must comply with the FAO's codes of conduct.*

**10.c** Open-air burning shall be avoided in biofuel production.

*Key guidance: Burning of leaves, straw and other agricultural residues must be minimized, with the aim of ultimately eliminating burning practices. In specific situations such as those described in the ASEAN guidelines and other appropriate policies, or in case workers' health and safety is at stake, limited burning practices may occur.*

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## Technology, efficiency, and continuous improvement

### 11. The use of technology must improve production efficiency and social and environmental performance in all stages of the biofuel value chain.

**11.a** Information on the use of technologies along the biofuel value chain must be fully available, unless limited by national law or international agreements on intellectual property.

*Key guidance. The focus shall be on technologies that might pose a hazard to people or the environment.*

**11.b** The choice of technologies used along the biofuel value chain shall minimize the risk of damages to environment, and continuously improve environmental and/or social performance.

**11.c** The use of genetically modified plants, micro-organisms and algae for biofuel production must improve productivity and maintain or improve social and environmental performance, as compared to common practices and materials under local conditions. Adequate monitoring and preventative measures must be taken to prevent gene flow.

**11.d** Micro-organisms used in biofuel processing must be used in contained systems only.

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## Land rights

### 12. Biofuel production shall not violate land rights.

**12.a** Under the ESIA described under criterion 2a, land use rights for the land earmarked for the biofuel project shall be clearly defined, established and documented, and not be legitimately contested by local communities with demonstrable rights whether formal or customary.

*Key guidance: Land use implies any land use, whether it be for commercial, industrial, agricultural, customary, leisure use, right of way, or any land rights. Methods for establishing ownership and land use should include advertising, communication with local leaders, and locally-established methods of data collection.*

**12.b** Local people shall be fairly and equitably compensated for any agreed land acquisitions and relinquishments of rights. Free prior and informed consent and negotiated agreements shall always be applied in such cases.

*Key guidance: Coercion by investors or authorities to change or adapt land use is not allowed. Compensation should be at the true value of the land for the community or household based on existing land uses and livelihood needs.*

**12.c** Appropriate mechanisms shall be developed as part of the ESIA mitigation plan to resolve disputes over tenure claims and use rights.