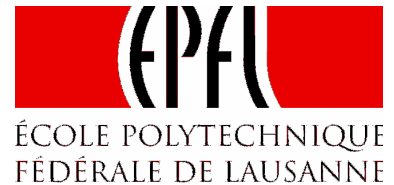


# Roundtable on Sustainable Biofuels

An initiative of the EPFL Energy Center



## Proposal for Draft Principles on Environment

(To be submitted to the Steering Board after approval of the Working Group)

### 1. Overview:

- The term “biomass” is replaced by “biofuel” in all the principles
- Positive rewording seems to add ambiguity to the principles
- Separate principle on biotechnologies, as all possible impacts are not covered yet by other principles
- Principle on biodiversity replaced by a broader principle to protect HCV Areas and wildlife species in general
- Principles on soil, air, water are kept aspirational (with realistic criteria)

### 2. Background:

In April 2007, the Steering Board of the Roundtable on Sustainable Biofuels developed a first draft of principles that sought to promote the environmental and socio-economic sustainability of biofuel channels. The principles are meant to mitigate any negative impacts happening along the biofuel production chain. As principles cannot always be aspirational, **two approaches** are taken regarding these potential damages:

- Some impacts are assessed in terms of an improvement **as compared with other alternatives** (e.g. fossil fuels), for instance GHG emissions.
- Some impacts are to be avoided **absolutely**, such as destruction of HCV areas.

### 3. Participation:

The Working Group on Environment was launched in June 2007 and its first objective is to review the original principles (within the environment category) suggested by the Steering Board, and recommend changes to be made for the second round of stakeholder comments (to take place from October to December of this year). After two teleconferences and many weeks of interactive discussions (emails and bioenergy wiki editing), the Secretariat has integrated all the remarks, comments and suggestions into this new version of the principles. The following table summarizes the history of contributions to the debate:

	Bioenergy Wiki	Emails	Phone and Teleconferences	Questionnaire
<b>Number of contributors</b>	<b>13</b>	<b>21</b>	<b>15</b>	<b>60</b>

The active contributions are much less than would be expected given the number of registered participants in this Working Group (**112** as of the 23<sup>rd</sup> of August!), which is probably due to the contrast in involvement/expertise between all the participants. We did,

however, receive a good diversity of comments, and the questionnaires were sometimes used to feed into the discussion as well.

#### 4. Process:

After the second virtual meeting of the group, several questions were still pending and for each of them, several different positions were defended by the participants. In the process of seeking a **consensus** on the principle, the RSB secretariat had to distinguish between several types of edits: **additions, deletions or rewording**. Some relevant contributions were not incorporated for the following reasons:

- **Wrong understanding** of the RSB's chosen frame (addressing transport biofuels from vegetal origin only)
- The edit was **too specific or too detailed**, hence better to be added as a criterion
- The topic referred to by the edit was already included in another principle, often one being addressed by another working group.

The criteria to accept an edit were:

- **Scientific/technical background** or origin of the comment.
- Relevance of the comment in our work frame.
- Degree of support of the Working Group to the suggestion.

Due to the number of participants, it is impossible to include each suggestion and some choices were made based on the above-mentioned criteria. In every case, the RSB secretariat has sought to work in a fair, transparent and objective way with the ultimate aim of building a consensus within the Working Group.

#### 5. Biofuel instead of biomass?

**The proposal to shift to the term “biofuel” has been validated**, to emphasize the choice to focus on **liquid biofuels** for the moment, whereas “biomass” covers other possible uses. The term “biofuel value chain”, although relevant, is too complicated to be integrated as such, but this concept will be explained in annexes or the preamble to the eventual principles and criteria.

#### 6. Direct and indirect effects:

In order to anticipate indirect effects, “directly or indirectly” was added to all the principles of concern.

#### 7. Aspirational Principles:

The idea of **aspirational principles** seemed to be shared among a majority of participants, as long as the subsequent criteria and indicators are rather concrete, realistic and realisable. **By definition, a principle is an idealistic vision** and this is why the formulation “should” is used at this level. By saying that biofuel production should not contaminate water, we define a frame and send a clear message to the agriculture and industry sectors about our aspiration.

At the criteria level, however, **we must show some realism** about the current situation, taking into consideration the fact that any human activity will have an impact on the environment and that, at a minimum, significant improvement as compared to previous behaviour or a benchmark scenario could be considered positive. With regards to former expert work and consultations, some acceptable levels of contamination have been established that could be integrated in our criteria and indicators. For example, this could give the following wording:

- Principle: “Biofuel production should not degrade or damage soil”
- Criteria/Indicator: “The amount of chemicals (pesticides, fertilisers) used per hectare must comply with the FAO’s guidelines on nutrients use” or “The concentration of metals in soil must not be superior to the limit established by the US EPA”.

Another alternative might be to dictate not an outcome but a practice. For instance, the criteria drafted through the Low Carbon Vehicle Partnership in the UK require “application of best practices to maintain and improve soil quality.”

These various options will be discussed in further ENV WG meetings when we start to draft criteria.

### 8. Positive wording:

Some participants proposed to reword the principles into a positive formulation, so the Secretariat has set a comparison of both formulations, as follows:

Current wording*	Positive wording
Biofuel production should not lead to the destruction or damaging of HCV areas.	Biofuel production should protect HCV areas from destruction and damage.
Biofuel production should not degrade or damage soils.	Biofuel production should protect soils from degradation or erosion.
Biofuel production should not contaminate or deplete water resources.	Biofuel production should protect water resources from depletion or degradation.
Biofuel production should not lead to air pollution.	Biofuel production should prevent air pollution.

As mentioned in the previous draft paper, we need to remember that **biofuels can bring about improvements regarding some impacts** (GHG production for example), whereas some other types impacts only require them to be prevented from happening. For instance, biofuels should not lead to the destruction of HCV areas but do biofuels have the power to conserve HCV areas in general (the positive formulation can be interpreted as such)? Whereas the “negative” wording means that biofuel production should not damage any area, **the positive wording would have to specify** that biofuel production shall only preserve the areas, soil, water resource and air directly or indirectly linked to the production itself, which makes it complicated.

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\* This is not the original wording of the principles suggested by the Steering Board, but the current wording, following recent changes.

To avoid ambiguity for example, we would have to say: “Biofuel production should retain or improve the quality and structure of the soils on which this production happens”. Moreover, **the idea of protection can be interpreted as a requirement of a proactive stance on the part of the producers**, which is different from trying to prevent negative impacts.

Actually, the criteria for both these wordings would probably be the same! For instance, to prevent negative impacts on water, we might require producers to create buffer zones, which is an active contribution to prevent negative impacts. So really, the question is one of semantics and first impressions about the principles. The secretariat concludes that **the formulation at the principles level is simpler, more precise and less ambiguous under the negative wording** and recommends keeping this formulation. However, we will include a broader introduction to the principles, which also emphasizes that they are aspirational.

## 9. GMOs/biotech/technologies:

This point remained as the most controversial within the group and after the second virtual meeting, many options were analysed by the secretariat (cf: [env\_paper 9 - synthesis discussions draft principles.pdf]). Comments ranged from praise that the Roundtable had brought this issue up for discussion (when many other mainstream sustainability standards do not), and confusion as to why the potential negative impacts of biotechnology use should be highlighted at the principle and not, for instance, pesticides or other chemical technologies.

Keeping in mind **all of the beneficial aspects potentially brought about by biotechnologies** (some biotechnologies reduce the need for water or fertilizer, for example), there is no point in completely excluding the use of biotechnologies from our sustainability standards. However, the potential negative impacts of their use must of course be recognized and addressed somewhere in the principles and criteria of sustainable biofuels production.

To see whether biotechnology deserved to be singled out in its own principle, a brief consultation of experts was conducted during the month of August in order to **decide, first of all, whether all the possible adverse effects of technologies were already covered by the other existing principles**. Broadly, these risks include:

- Gene flow to wild species threatening biodiversity and promoting ‘supertraits’, or resistance to antibiotics and herbicides.
- Economic effects on farmers wishing to sell ‘GMO-free’ but whose product is contaminated by drift from neighbours using GMO products.
- Pollution of air, soil and water resources with genetically altered material, which could have negative effects on ecological compartments and/or human health.
- Economic impacts of irreversible ‘locking-in’ farmers into expensive technologies (for instance, if traditional seeds/farming methods are lost).

These potential adverse effects can all be covered via specific criteria (for instance, requiring best risk management practices and communication) underneath the other environmental principles devoted to soil and water quality, biodiversity, and wild species, and the social

principle related to community well-being: “Biomass production should contribute to the well-being of communities, workers and rural populations.” The RSB Secretariat will ensure that these specific risks are included when the ENV and SOC Working Groups discuss criteria for these principles.

However, many stakeholders feel that **biotechnologies might involve other unknown risks**, and that the principle of precautionary use in light of potentially large unknown negative effects should still be followed. These little-understood risks that would represent irreversible damage to species do not exist to the same extent for other technological inputs, and thus it could be argued that biotechnologies deserve a special category or principle. Furthermore, the RSB Steering Board had already highlighted GMOs at the principle level, albeit in a more neutral wording regarding transparency of use.

The Secretariat thus suggests that the ENV Working Group recommend that the Steering Board adopt the following re-wording of the principle related to biotechnologies, which would (along with the specific criteria under other principles) prevent negative effects and require positive benefits when using biotechnologies:

*“The use of biotechnologies for biofuels production should improve their social and/or environmental performance, and always be consistent with national or international biosafety protocols.”*

#### **10. Biodiversity/HCV areas :**

Since areas to be protected are not necessarily only those with high biodiversity (some low biodiversity areas need to be protected as well, for ecosystem services for example), everyone has agreed on the necessity to expand the biodiversity principle to a broader one. The term “**High Conservation Value Areas**”, as defined by the HCV Network, covers a wide range of areas and seems appropriate for this purpose and the notion of ecosystem services is included in the definition. As some worries remained about **definition/indicators of HCV areas, the Working Group will have to specify every important aspect that characterise an HCV area within the criteria.** For instance, one WG participant recommended adding the notion of an “ecological corridor”, which is not clearly mentioned in the definition of HCV areas in the HCV Network. We will most likely need to bring in this concept in the criteria development.

It is important to note that as no global mapping exists of HCV Areas around the world, national or international references combined with field investigation shall **help the producer to identify whether the area of exploitation matches those criteria.** The RSB could consider providing smallholders with a user-friendly tool (some toolkits for identification already exist on the HCV Network website) or third party expertise that would help this identification.

Finally, there is a real concern that wildlife species could suffer from interferences with invasive species and living modified organisms, or could be impacted outside areas of HCV. Hence, we found it necessary to add an element in the principle that can cover this aspect.

Proposal of the Secretariat:

*“Biofuel production should not directly or indirectly endanger wildlife species or areas of high conservation value.”*

### 11. Soil, water and air:

A point of interest was the idea of mentioning an acceptable level of pollution, but this aspect will be better detailed in the criteria (for instance, maintain chemical pollution below the Predicted-No-Effect-Concentration or any other recognised ecotoxicological benchmark).

Finally, it was suggested to mention the notion of “irreversible contamination” (e.g. heavy metals that remain in soil). As mentioned above, we want to make principles aspirational; hence if we mention contamination, it obviously includes reversible and irreversible contamination, whereas **mentioning irreversible contamination only at this level could be understood to accept reversible contamination**, which is not the case. Nevertheless, the notion of reversibility will be clearly mentioned in the criteria.

Proposal of the Secretariat:

- *“Biofuel production should not directly or indirectly degrade or damage soils”*
- *“Biofuel production should not directly or indirectly contaminate or deplete water resources”*
- *“Biofuel production should not directly or indirectly lead to air pollution”*

### 12. Timeline for the setting of criteria and indicators:

**Sept-Nov:** HCV Areas and conservation

**Nov-Jan:** Biotechnologies

**Jan- March:** Soil

**March-May:** Air

**April-June:** Water (as per Kevin Fingerman’s request to use UC Berkeley’s upcoming work)

### 13. Synthesis:

Assuming a consensual agreement from the Working Group, the new set of principles to be submitted to the Steering Board would be:

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|---|
| <b>3) Biofuel production should not directly or indirectly endanger wildlife species or areas of high conservation value.</b>   |
| <b>4) Biofuel production should not directly or indirectly degrade or damage soils.</b>   |
| <b>5) Biofuel production should not directly or indirectly contaminate or deplete water resources.</b>  |
| <b>6) Biofuel production should not directly or indirectly lead to air pollution.</b>   |
| <b>7) The use of biotechnologies for biofuels production should improve their social and/or environmental performance, and always be consistent with national or international biosafety protocols.</b> |

There will be another chance for ENV WG members to comment on these principles during the second round of feedback, and further suggestions for re-wording could be

discussed in other ENV WG meetings, but our hope is that these principles cover the main environmental risks and opportunities presented in biofuels production.