



Type of document: RSB Principles and Criteria

Status: Approved for Certification

Date: March 2011

Version: [Version 2.1]

RSB Principles & Criteria for Sustainable Biofuel Production

RSB reference code: [RSB-STD-01-001 (Version 2.1)]

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Introduction

In June 2007, the Steering Board of the Roundtable on Sustainable Biofuels (RSB) published draft principles for sustainable biofuels production, as the basis for a global stakeholder discussion around requirements for sustainable biofuels. Interested stakeholders were invited to join a Working Group and suggest criteria for achieving these principles, as well as rewording for the draft principles themselves. After considerable stakeholder consultation the RSB released 'Version Zero' of the draft Principles & Criteria for Sustainable Biofuels in August 2008 for a further six-month period of public consultation. From August 2008 to March 2009 in-person outreach meetings were held around the world in which biofuels stakeholders were invited to review and comment on the draft standard. In total, over 900 people participated in these in-person outreach events, and numerous more through email and other electronic means, contributing hundreds of comments and suggestions.

In January 2009 the RSB launched a new membership-based governance structure, in which stakeholders were invited to formally participate in the RSB through a chamber structure. Each chamber represents a different group of stakeholders interested in the promotion and use of sustainable biofuels. During 2009 further revisions to the draft RSB standard were discussed through several series of teleconference calls within the membership. A number of draft revisions were released throughout 2009, culminating in a meeting of the Steering Board in November 2009 in Lausanne, Switzerland to discuss approving the first full version of the standard (Version One). Based on pilot testing of Version One, a new round of public consultation (September 2010) and further discussions among RSB Chambers, Version 2 was approved by the RSB Steering Board on 5 November 2010.

The RSB Governance Structure

Members may apply to participate in the chamber they feel best represents their organization, and after being approved by the RSB Steering Board, may participate in discussions regarding the content of the standard. Additionally, two representatives elected from each chamber serve on the Steering Board, the decision making body of the RSB. The Steering Board members represent the views of their chamber at the multi-stakeholder level, approve changes to the Principles & Criteria and other RSB documents, and are responsible for upholding the overall objectives of the RSB.

The following pages detail the RSB Principles & Criteria, including both minimum and progress requirements. The RSB has also released a glossary of key terms, indicators and numerous other supporting documents, all of which are integral components of the RSB Standard intended to provide greater clarification and detail to this work. Given the tremendous outreach and stakeholder consultation, the RSB Steering Board believes the Standard should be considered a collaborative work of numerous and diverse interested parties. Throughout the consultative process, the RSB has remained committed to an equitable, open and transparent standard-setting process, following the ISEAL Code of Good Practice for Setting Social and Environmental Standards, and involving stakeholder interests from many different countries and from all parts of the supply chain.

The Principles & Criteria described herein include principles – general tenets of sustainable production, criteria – conditions to be met to achieve these tenets, and requirements – differentiated in minimum and progress requirements that further detail the criteria. It is important

to note while reviewing the standard that compliance is required at the criteria level.

Finally, the Principles & Criteria do not attempt to quantify an amount of biofuels which could be sustainably produced, or whether, as a whole, biofuels are sustainable. Biofuels cannot replace all of our fuel consumption and must be accompanied by significant changes in lifestyle and efficiency of use; we hope that these Principles & Criteria will be used in conjunction with an increasing awareness of the importance of efficient energy use to meet humanity's needs.

Next Steps

The RSB seeks to be an operational certification standard and begin to issue its first compliance certificates in 2011. The adoption of Version Two of the RSB Standard will not be the end of the standard development process, but rather the beginning of an ever-evolving standard reflecting current technical, environmental and social realities. The biofuel sector is rapidly changing and the RSB will continue to be open and flexible to integrating new information and technology developments into the Standard to stay relevant into the next decade and beyond.

A note on Greenhouse Gas emissions

In June 2010 the RSB Steering Board reached a consensus agreement on [Principle 3](#) regarding Greenhouse Gas (GHG) emission reductions. This consensus agreement was confirmed by RSB Chamber members through a series of teleconference calls in June and July of 2010. The wording of Principle 3 and associated criteria in Version 2 contains this consensus language, which requires that biofuel blends achieve 50% lower lifecycle GHG emissions compared to a fossil fuel baseline (see [Criterion 3c](#)).

Several key aspects regarding the implementation of Criterion 3c were discussed by the RSB Chambers in October 2010 and by the RSB Steering Board in its November 2010 in-person meeting. Based on recommendations by the Secretariat that reflected these deliberations, the Steering Board agreed by consensus a series of decisions related to the implementation of Criterion 3c, as explained below.

- **Fossil fuel baseline:** The Steering Board agreed on the general attributes the fossil fuel baseline: a global, average fossil fuel baseline will be calculated for different fossil fuel types (gasoline, diesel, and jet fuel) and it will be recalculated every 5 years to reflect changes in the carbon intensity of fossil fuels used in the world. The RSB Secretariat, in conjunction with experts from the fields of Life Cycle Assessment and fossil fuels, will calculate a fossil fuel baseline by the beginning of 2011. The RSB Fossil Fuel Baseline GHG Calculation Methodology (RSB-STD-01-003-02) will be posted on the RSB website.
- **GHG Trading System:** The Steering Board decided that the RSB should move towards developing a GHG Trading System to comply with the GHG emission reduction requirements in Criterion 3c. This trading system is expected to be in operation starting 2012. It will be developed during 2011 with the involvement of experts from different fields of trading, carbon trading, the RSB Chambers and the RSB Steering Boards. Until the trading system is implemented in early 2012, compliance with Criterion 3c will be required, whereby the final biofuel or physical blend of biofuels must have the GHG emission reductions required in the Standard.
- **Claims related to GHG reduction:** It was decided that the final biofuel, which must meet the GHG emission reduction requirements in Criterion 3c, have to be distinguished from

intermediate products (which are not subject to Criterion 3c). In addition, it was decided that all products with an RSB claim should have the GHG performance reflected in the claim.

For more information on Principle 3, including the RSB GHG Calculation Methodology (RSB-STD-01-003-01) and compliance mechanisms for Criterion 3c, please contact the RSB Secretariat.

A note on indirect vs direct impacts

During the course of the development of the RSB Standard, it has become increasingly clear that while changing individual operators' behavior and improving the sustainability of biofuel operations is possible, many large-scale or macro-scale impacts are less easy to address at an individual operator level.

Large impacts can result from off-farm, macroeconomic interactions amongst food, fodder, fuel, and fiber markets and such indirect impacts need to be addressed by the RSB.

Voluntary certification alone may not be the best tool to address indirect impacts, since these macro-level impacts are likely to be beyond the control of the individual farmer or biofuels producer seeking certification. Nevertheless, stakeholders increasingly recognize that indirect impacts could be an unintended consequence of biofuels' expansion, and such effects should be addressed to properly account for biofuels impacts. The potential for negative indirect impacts may be high, and within the spirit of the Precautionary Principle, sustainable biofuel supporters should be assured that their good intentions do not have unintended consequences.

In 2009 the RSB commissioned a study to examine how indirect impacts have been addressed in other settings, and to advise the RSB on how to address indirect impacts in the Standard. The study found that while considerable differences exist in how indirect impacts are addressed, most current regulations take indirect impacts into consideration in some way. Because of the uncertainty about how to best quantify indirect impacts in a certification system for individual operations, the study suggested that the RSB consider developing a mechanism to promote biofuels at lower risk of causing negative indirect impacts. The results of the study commissioned by the RSB on indirect impacts have been made publicly available and can be found on the [RSB website](#).

The criteria below aim to address only the direct activities that farmers and producers can undertake to prevent unintended consequences from biofuel production. The Steering Board recognizes that efforts to minimize these risks should also be taken by governments in their policies that affect land use, land protection, biofuel promotion, and food security, even beyond their national borders. The RSB will continue to collaborate with governments, international organizations, inter-governmental agencies, academics and concerned stakeholders to better understand the nature of direct and indirect impacts.

The RSB recognizes the importance of the issue of indirect Land-Use Change. Further information on the work plan of the RSB on indirect impacts and the relevant decisions of the Steering Board can be found on the [RSB website](#).

Note on use of this standard

All aspects of this version of the standard are considered to be normative, including the scope, standard effective date, note on the use of this standard, references, and requirements, unless otherwise stated. Users implementing this standard shall ensure that the intent of this standard is met. To ensure that the intent of this standard is met users shall implement all of the requirements specified in this standard, and any and all additional measures necessary to achieve the intent of this standard.

Scope

The RSB Principles & Criteria for Sustainable Biofuels (RSB-STD-01-001) provides guidelines on best practices in the production and processing of biofuel feedstock and raw material, and for the production, use and transport of liquid biofuels. The standard described herein specifies requirements for the certification of sustainable biofuel operations along the entire supply chain.

The standard identifies four types of operators subject to different sustainability requirements within the standard. These include 'Feedstock Producers', 'Feedstock Processors', 'Biofuel Producers' and 'Biofuel Blenders'. Throughout the standard the requirements that apply to each of the operators listed above are identified.

Standard effective date

Version 2 of the *RSB Principles & Criteria* becomes effective on 1 January 2011.

References

1. **ISO Guide 59: Code of Good Practice for Standardization. 1994**
2. **ISEAL Code of Good Practice for Setting Social and Environmental Standards. P005 - Public Version 5.01 – April, 2010**
3. **WTO Agreement on Technical Barriers to Trade (TBT) Agreement. Annex 3: Code of good practice for the preparation, adoption and application of standards.**
4. **WTO TBT Second Triennial Review Annex 4, Principles for the Development of International Standards, Guides and Recommendations with Relation to Articles 2, 5 and Annex 3 of the Agreement**

Terms and definitions

Definitions of key terms used throughout the RSB standard are included in a separate document titled *Use of Terms for the RSB Principles & Criteria* (RSB-DOC-01-001). Terms included in the glossary are to be considered binding definitions for the use in the RSB standard.

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Principle 1: Legality

Principle 1: Biofuel operations shall follow all applicable laws and regulations.

Criterion 1. Biofuel operations shall comply with all applicable laws and regulations of the country in which the operation occurs and with relevant international laws and agreements.

Operators who must comply: Feedstock Producer, Feedstock Processor, Biofuel Producer.

Principle 2: Planning, Monitoring and Continuous Improvement

Principle 2: Sustainable biofuel operations shall be planned, implemented, and continuously improved through an open, transparent, and consultative impact assessment and management process and an economic viability analysis.

Criterion 2a. Biofuel operations shall undertake an impact assessment process to assess impacts and risks and ensure sustainability through the development of effective and efficient implementation, mitigation, monitoring and evaluation plans.

Operators who must comply: Feedstock Producer, Feedstock Processor and Biofuel Producer.

Minimum requirements

- *Where an impact assessment is required by national, regional, or local laws, the process shall be integrated with the RSB impact assessment process to avoid duplication of efforts, but the higher and more comprehensive standard shall be applied.*
- *A screening exercise shall be required for all new and existing operations and extensions to operations of all sizes to determine whether an Environmental and Social Impact Assessment (ESIA) or a Rapid Environmental and Social Assessment (RESA) is required. The screening exercise shall be done in accordance with the Screening Guidelines (RSB-GUI-01-002-02).*
- *Participating operators shall conduct the RESA or ESIA, if required, in accordance with the RSB Impact Assessment Guidelines (RSB-GUI-01-002-01), the RESA Guidelines (RSB-GUI-01-002-04) and the ESIA Guidelines (RSB-GUI-01-002-03) respectively, as determined by the scale and intensity of the operations.*
- *The ESIA, if required as determined through the screening exercise, shall be carried out using independent and qualified professionals.*
- *Where biofuel operations will have significant social impacts, as measured during the screening exercise, a social impact assessment process shall be carried out using local experts to ensure that local customs, languages, practices and indigenous knowledge are respected and utilized*
- *The Environmental and Social Management Plan (ESMP), in accordance with the RSB ESMP Guidelines (RSB-GUI-01-002-05), shall be required for all operations and shall ensure compliance with all RSB Principles & Criteria. Where there are progress requirements, they shall be detailed.*
- *Where specifically stated in a criterion the impact assessment process shall extend beyond the scope of the immediate operational area, for instance for food security, water management and use, ecosystem impacts, biodiversity and conservation in accordance with the RSB Impact Assessment Guidelines (RSB-GUI-01-002-01).*
- *Multiple operators applying for certification as one single Participating Operator, as defined in the Standard for Participating Operators (RSB-STD-30-001), shall conduct the RSB impact assessment and management processes jointly.*

Criterion 2b. Free, Prior & Informed Consent (FPIC) shall form the basis for the process to be followed during all stakeholder consultation, which shall be gender sensitive and result in consensus-driven negotiated agreements.

Operators who must comply: Feedstock Producer, Feedstock Processor and Biofuel Producer.

Minimum requirements

- *While FPIC provides the process conditions for stakeholder engagement and negotiated agreements, consensus shall be the decision-making tool applied in all cases and carried out in accordance with the RSB consensus building toolkit in the Impact Assessment Guidelines (RSB-GUI-01-002-01).*
- *The ESIA facilitators shall invite all locally-affected stakeholders, local leaders, representatives of community and indigenous peoples groups and all relevant stakeholders to participate in the consultative process.*
- *The scope of engagement shall be determined by the scale of the operations as set out in the RSB Impact Assessment Guidelines (RSB-GUI-01-002-01).*
- *Relevant government authorities shall be included in the stakeholder process to ensure efficient streamlining of the process with legal requirements.*
- *Those responsible for undertaking the ESIA or RESA shall undertake and document a stakeholder analysis in accordance with the RSB Impact Assessment Guidelines (RSB-GUI-01-002-01).*
- *Participatory methodologies described in the RSB Impact Assessment Guidelines (RSB-GUI-01-002-01) shall be used to ensure meaningful stakeholder engagement. Special attention shall be made to ensure that women, youth, indigenous and vulnerable people can participate meaningfully in meetings and negotiations. Where the need is identified by the ESIA facilitator, there shall be informal workshops to build local understanding in the community of the processes that may impact them directly to aid meaningful engagement.*
- *Documentation necessary to inform stakeholder positions shall be made freely available to stakeholders in a timely, open, transparent and accessible manner through distribution channels appropriate to the local conditions in accordance with the RSB Impact Assessment Guidelines (RSB-GUI-01-002-01).*
- *Management documents shall be publicly available, except where this is prevented by commercial confidentiality, of a proprietary nature or where disclosure of information would result in negative environmental or social outcomes.*
- *Participating Operators shall seek consensus, in accordance with the RSB Impact Assessment Guidelines (RSB-GUI-01-002-01), such that individuals or single-issue groups cannot block consensus. Deadlocks shall be broken in accordance with the RSB Impact Assessment Guidelines (RSB-GUI-01-002-01).*

Criterion 2c. Biofuel operators shall implement a business plan that reflects a commitment to long-term economic viability.

Operators who must comply: Feedstock Producer, Feedstock Processor and Biofuel Producer.

Minimum requirements

- *Participating Operators shall develop and implement a business plan that reflects a*

commitment to long-term economic viability which takes into account the social and environmental principles described in the RSB Standard. This information shall be proprietary and shall not form part of the impact assessment process.

Principle 3: Greenhouse Gas Emissions

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

Criterion 3a. In geographic areas with legislative biofuel policy or regulations in force, in which biofuel must meet GHG reduction requirements across its lifecycle to comply with such policy or regulations and/or to qualify for certain incentives, biofuel operations subject to such policy or regulations shall comply with such policy and regulations and/or qualify for the applicable incentives.

Operators who must comply: Feedstock Producer, Feedstock Processor, Biofuel Producer, and Biofuel Blender.

Criterion 3b. Lifecycle GHG emissions of biofuel shall be calculated using the RSB lifecycle GHG emission calculation methodology, which incorporates methodological elements and input data from authoritative sources; is based on sound and accepted science; is updated periodically as new data become available; has system boundaries from Well to Wheel; includes GHG emissions from land use change, including, but not limited to above- and below-ground carbon stock changes; and incentivizes the use of co-products, residues and waste in such a way that the lifecycle GHG emissions of the biofuel are reduced.

Operators who must comply: Feedstock Producer, Feedstock Processor, Biofuel Producer, and Biofuel Blender.

Minimum requirements:

- *The Participating Operator shall report the lifecycle GHG emissions of the feedstock or biofuel using the RSB GHG Calculation Methodology (RSB-STD-01-003-01).*
 - *In certain instances where the RSB GHG Calculation Methodology is not available for a fuel pathway, the Participating Operator shall report the lifecycle GHG emissions of the feedstock or biofuel using an alternative, RSB-listed methodology, as indicated in the RSB GHG Calculation Methodology (RSB-STD-01-003-01).*
-

Criterion 3c. Biofuel blends shall have on average 50% lower lifecycle greenhouse gas emissions relative to the fossil fuel baseline. Each biofuel in the blend shall have lower lifecycle GHG emissions than the fossil fuel baseline.

Operators who must comply: Biofuel Blender.

Minimum requirements:

- *Lifecycle greenhouse gas emissions of a biofuel blend, calculated following the methodology in Criterion 3b, shall be on average 50% lower than the applicable fossil fuel baseline.*

- *Each biofuel in the blend shall have lower lifecycle GHG emissions, calculated following the methodology in Criterion 3b, than the applicable fossil fuel baseline.*

Progress requirements:

- *The minimum lifecycle GHG reduction of the biofuel blend, starting at 50%, shall increase over time.*

Principle 4: Human and Labor Rights

Principle 4. Biofuel operations shall not violate human rights or labor rights, and shall promote decent work and the well-being of workers.

Criterion 4.a Workers shall enjoy freedom of association, the right to organize, and the right to collectively bargain.

Operators who must comply: Feedstock Producer, Feedstock Processor, and Biofuel Producer.

Minimum requirements

- *In countries where the law prevents collective bargaining or unionization, operators shall not interfere with workers' own efforts to set up representational mechanisms in such cases, and shall provide a mechanism for workers to engage with employers without breaking the law.*
-

Criterion 4.b No slave labor or forced labor shall occur.

Operators who must comply: Feedstock Producer, Feedstock Processor and Biofuel Producer.

Criterion 4.c No child labor shall occur, except on family farms and then only when work does not interfere with the child's schooling and does not put his or her health at risk.

Operators who must comply: Feedstock Producer, Feedstock Processor and Biofuel Producer.

Minimum requirements

- *Schooling age limit is that defined in the national legislation or 14, whichever is higher.*
 - *Hazardous child labor as defined by ILO Convention 138 is not allowed.*
 - *Work by children on family small holdings is only acceptable under adult supervision and when work does not interfere with the child's schooling nor puts at risk his or her health.*
-

Criterion 4.d Workers shall be free of discrimination of any kind, whether in employment or opportunity, with respect to gender, wages, working conditions, and social benefits.

Operators who must comply: Feedstock Producer, Feedstock Processor, and Biofuel Producer.

Minimum requirements

- *Employees, contracted labor, small outgrowers, and employees of outgrowers shall all be free of discrimination as per ILO Convention 111.*
 - *Career development shall be encouraged for all workers*
 - *Work sites shall be safe for women; free from sexual harassment and other discrimination and abuse; and promote access to jobs, skills training, recruitment and career development for women to ensure more gender balance in work and career development.*
-

Criterion 4e. Workers' wages and working conditions shall respect all applicable laws and international conventions, as well as all relevant collective agreements. Where a government regulated minimum wage is in place in a given country and applies to the specific industry sector, this shall be observed. Where a minimum wage is absent, the wage paid for a particular activity shall be negotiated and agreed on an annual basis with the worker. Men and women shall receive equal remuneration for work of equal value.

Operators who must comply: Feedstock Producer, Feedstock Processor and Biofuel Producer.

Minimum requirements

- *Wages shall be provided in cash or in another form acceptable to workers.*
- *Any housing provided by the Participating Operator for permanent or temporary workers shall be built and maintained to ensure good sanitary, health, and safety conditions.*
- *For piecework (pay based on production rather than hours), the pay rate must allow workers to earn at least the legal minimum wage or comparable regional wage, whichever is higher, based on an eight-hour workday under average conditions.*
- *The maximum number of regular hours worked per week must not exceed 48. Workers may work overtime which shall be voluntary, but total working hours shall not exceed 80 per week.*

Criterion 4.f Conditions of occupational safety and health for workers shall follow internationally-recognized standards.

Operators who must comply: Feedstock Producer, Feedstock Processor and Biofuel Producer.

Minimum requirements

- *Workers shall not be exposed to any occupational health or safety hazards without adequate protection and training as defined in national law and international standards.*

Criterion 4 g. Operators shall implement a mechanism to ensure the human rights and labor rights outlined in this principle apply equally when labor is contracted through third parties.

Operators who must comply: Feedstock Producer, Feedstock Processor and Biofuel Producer.

Progress requirements (required within three years of certification)

- *Participating Operators shall identify instances where those working within the scope of their operational function (feedstock producer, feedstock processor, or biofuel producer) are contracted outside of the direct influence of the operation by external parties and shall implement a mechanism to ensure that such contracted workers are afforded the same rights as described in this principle as employed staff within the process.*

Principle 5: Rural and Social Development

Principle 5. In regions of poverty, biofuel operations shall contribute to the social and economic development of local, rural and indigenous people and communities.

Criterion 5.a In regions of poverty, the socioeconomic status of local stakeholders impacted by biofuel operations shall be improved.

Operators who must comply: Feedstock Producer, Feedstock Processor and Biofuel Producer.

Minimum requirements

- *Where the socioeconomic baseline survey undertaken during the social impact assessment process in accordance with the Social Impact Assessment Guidelines (RSB-GUI-01-005-01) identifies an excess of unemployed or underemployed labor in the locality of the operations, biofuel operations shall optimize the job creation potential.*
- *The Participating Operator shall assess ways in which the use of permanent and local labor can be promoted and introduced over the use of migrant, seasonal and casual labor.*
- *If it is determined through the RSB impact assessment or monitoring process that mechanization is the optimal choice from an environmental, economic, and social perspective, the transition from labor intensity to mechanization shall be done in a fair and equitable way for existing workers where as many of the existing workers as possible are retrained and employed in the mechanized process.*
- *Measured improvements in the social and economic indicators as set against the baseline survey carried out under the social impact assessment process shall be targeted for review every three years.*
- *Skills training shall be provided by the operator if necessary to ensure the implementation of this criterion. Cultural sensitivity and respect for existing social structures shall be applied in the development of options for compliance with this criterion.*
- *At least one measure to significantly optimize the benefits to local stakeholders shall be implemented within a three year period of the start of the operations, for instance:*
 - a. *Creation of year round and/or long term jobs*
 - b. *The establishment of governance structures that support empowerment of small scale farmers and rural communities such as co-operatives and micro credit schemes*
 - c. *Use of the locally produced bio-energy to provide modern energy services to local poor communities*
 - d. *Shareholding options, local ownership, joint ventures and partnerships with the local communities*
 - e. *Social benefits for the local community such as the building or servicing of clinics, homes, hospitals and schools*

Criterion 5.b In regions of poverty, special measures that benefit and encourage the participation of women, youth, indigenous communities and the vulnerable in biofuel operations shall be designed and implemented.

5.b.1 Minimum requirement

- *Data for rural poor women in regions of poverty shall be disaggregated in the baseline social*

surveys to assist with the design of special programs for the targeted people.

Operators who must comply: Feedstock Producer, Feedstock Processor and Biofuel Producer

5.b.2 Progress requirements

- *Training and capacity building shall be required to give effect to this principle. Such training is required for both the workers and also for management that oversees employment protocols and supervision.*

Principle 6: Local Food Security

Principle 6. Biofuel operations shall ensure the human right to adequate food and improve food security in food insecure regions.

Criterion 6a. Biofuel operations shall assess risks to food security in the region and locality and shall mitigate any negative impacts that result from biofuel operations.

Operators who must comply: Feedstock Producer, Feedstock Processor and Biofuel Producer.

Minimum requirements

- *Where the screening exercise of the RSB impact assessment process reveals a direct-impact on food security in food insecure regions, Participating Operators shall conduct a food security assessment in accordance with the RSB Food Security Assessment Guidelines (RSB-GUI-01-006-01)."*
- *The scope of the food security assessment shall include additional impacts that the biofuel operations may have on cross-cutting requirements for food security including land, water, labor, and infrastructure.*
- *If the food security assessment indicates a food security risk as a result of biofuel operations, a mitigation plan shall be developed and implemented through the ESMP.*
- *Measures developed under Principle 5 that mitigate food insecurity shall be integrated with the measures developed under Criterion 6a.*

Criterion 6b. In food insecure regions, biofuel operations shall enhance the local food security of the directly affected stakeholders.

Operators who must comply: Feedstock Producer, Feedstock Processor and Biofuel Producer; small-scale operators are exempt.

Minimum requirements

- *In regions where food security is an ongoing risk and concern, operations shall enhance food security of the locally affected community by, for instance, setting aside land for food growing, increasing yields, providing opportunities for workers to carry out household-level food production, sponsoring agricultural support programs and activities, and/or making value-added food byproducts available to the local market.*
- *Measures to enhance regional food security shall be integrated with measures that contribute to rural and social development developed under Principle 5.*

Principle 7: Conservation

Principle 7. Biofuel operations shall avoid negative impacts on biodiversity, ecosystems, and conservation values.

Criterion 7.a Conservation values of local, regional or global importance within the potential or existing area of operation shall be maintained or enhanced.

Operators who must comply: Feedstock Producer, Feedstock Processor and Biofuel Producer.

Minimum requirements

- *Participating Operators shall identify the conservation value(s) within the area of a potential or existing operation during the screening exercise of the RSB impact assessment process (Principle 2).*
 - *Conversion or use of new areas for biofuel operations shall not occur prior to the screening exercise.*
 - *Where conservation values of local, regional or global importance have been identified, Participating Operators shall carry out a specialized impact assessment in accordance with the Conservation Impact Assessment Guidelines (RSB-GUI-01-007-01).*
 - *Biofuel operations shall prioritize areas with the lowest possible risk of impacts to the identified conservation values.*
 - *Areas identified as “no-go areas” shall not be used for biofuel operations after the 1st of January 2009, unless feedstock production or processing operations are legally authorised as part of the conservation management for the area concerned.*
 - *Areas that contain identified conservation values of global, regional or local importance or that serve to maintain or enhance such conservation values shall not be converted after the 1st of January 2009, or earlier as prescribed by other relevant international standards.*
 - *Areas that contain conservation values of global, regional or local importance or serve to maintain or enhance such conservation values shall only be used if adequate management practices maintain or enhance the identified conservation values (e.g. sustainable biomass harvesting).*
 - *Hunting, fishing, ensnaring, poisoning and exploitation of rare, threatened, endangered and legally protected species shall not occur on the operation site.*
-

Criterion 7.b Ecosystem functions and services that are directly affected by biofuel operations shall be maintained or enhanced.

Operators who must comply: Feedstock Producer, Feedstock Processor and Biofuel Producer.

Minimum requirements

- *In accordance with the results of the impact assessment process, Participating Operators shall implement practices through the Environmental and Social Management Plan*

(ESMP) that maintain ecosystem functions and services both inside and outside the operational site, which are directly affected by biofuel operations.

Criterion 7.c Biofuel operations shall protect, restore or create buffer zones.

Operators who must comply: Feedstock Producer, Feedstock Processor and Biofuel Producer.

Minimum requirements

- *In accordance with the results of the impact assessment process, buffer zones shall be protected, restored or created to avoid negative impacts from biofuel operations on areas that are contiguous to the operation site.*
- *In accordance with the results of the impact assessment process, within the operational site, buffer zones shall be protected, restored or created to avoid negative impacts from the biofuel operations on areas that contain conservation value(s) of local, regional or global importance.*

Criterion 7.d Ecological corridors shall be protected, restored or created to minimize fragmentation of habitats.

Operators who must comply: Feedstock Producer, Feedstock Processor and Biofuel Producer.

7.d.1 Minimum requirements

- *Existing ecological corridors within the operational site shall be set-aside and protected with appropriate surrounding buffer zones.*
- *Whenever the operational site impairs the connectivity between surrounding ecosystems, ecological corridors shall be created by the operator.*

7.d.2 Progress requirements (others than small-scale operators only)

- *New ecological corridors shall be created within the operation site if it is surrounded by areas containing wildlife and there is evidence that such corridors would improve connectivity.*
- *Any ecological corridor destroyed between the 1st of January 2004 and the 31st December 2008 on or near the operation site and for which the Participating Operator is directly accountable shall be restored.*

Criterion 7.e Biofuel operations shall prevent invasive species from invading areas outside the operation site.

Operators who must comply: Feedstock Producer and Feedstock Processor.

Minimum requirements

- *Participating Operators shall not use any species officially prohibited in the country of operation.*

- *If the species of interest is not prohibited in the country of operation, Participating Operators shall seek adequate information about the invasiveness of the species to be used for feedstock production, e.g. in the Global Invasive Species Database (GISD)¹.*
- *If the species is recorded as highly invasive under similar conditions (similar climate, and similar local ecosystems, and similar soil types), this species shall not be used.*
- *If the species has not been recorded as representing a high risk of invasiveness under similar conditions (climate, local ecosystems, soil type), Participating Operators shall follow the specific steps:*
 - 1) During the feedstock selection and development, Participating Operators shall conduct a Weed Risk Assessment (WRA) to identify the potential threat of invasion. If the species is deemed highly invasive after the Weed Risk Assessment, this species shall not be used.*
 - 2) During feedstock production, Participating Operators shall set up a management plan, which includes cultivation practices that minimise the risks of invasion, immediate mitigation actions (eradication, containment or management) in case of escape of a plant species outside the operation site (possibly through the provision of a specific fund), as well as a monitoring system that checks for escapes and the presence of pests and pathogens outside the operation site.*
 - 3) During harvesting, processing, transport and trade, Participating Operators shall contain propagules in an appropriate manner on site and during transport.*

¹ <http://www.issg.org/database>

Principle 8: Soil

Principle 8: Biofuel operations shall implement practices that seek to reverse soil degradation and/or maintain soil health.

Criterion 8.a Operators shall implement practices to maintain or enhance soil physical, chemical, and biological conditions.

Operators who must comply: Feedstock Producer

8.a.1 Minimum requirements

- *Soil erosion shall be minimized through the design of the feedstock production site and use of sustainable practices in order to enhance soil physical health on a watershed scale.*
- *Participating Operators shall implement practices to maintain or enhance soil organic matter on the feedstock production site.*
- *The use of agrarian and forestry residual products for feedstock production, including lignocellulosic material, shall not be at the expense of long-term soil stability and organic matter content.*

Where the screening exercise has triggered the need for a Soil Impact Assessment (RSB-GUI-01-008-01), Participating Operators shall:

- *Develop a soil management plan as part of the Environmental and Social Management Plan (ESMP).*
- *Perform periodic sampling of soil on the feedstock production site to evaluate the effect of the soil management plan on the organic matter content. Where the practices included in the soil management plan are not seen during monitoring to maintain soil organic matter at the optimal level, alternative practices shall be investigated.*

8.a.2 Progress requirements

- *Participating Operators shall implement measures to improve soil health, such as Conservation Agriculture practices as defined by the FAO including*
 - Organic direct planting,*
 - Permanent soil cover,*
 - Crop rotation, or*
 - Fallow areas with natural or planted vegetation in order to recover natural fertility and interrupt pest life cycles.*

Principle 9: Water

Principle 9. Biofuel operations shall maintain or enhance the quality and quantity of surface and ground water resources, and respect prior formal or customary water rights.

Criterion 9.a Biofuel operations shall respect the existing water rights of local and indigenous communities.

Operators who must comply: Feedstock Producer, Feedstock Processor and Biofuel Producer.

Minimum requirements

- *The use of water for biofuel operations shall not be at the expense of the water needed by the communities that rely on the same water source(s) for subsistence.*
- *The Participating Operator shall assess the potential impacts of biofuel operations on water availability within the local community and ecosystems during the screening exercise of the impact assessment process and mitigate any negative impacts.*
- *Water resources under legitimate dispute shall not be used for biofuel operations until any legitimate disputes have been settled through negotiated agreements with affected stakeholders following a free, prior and informed consent (as described in 2a and its guidance) enabling process.*

Where the screening exercise has triggered the need for a Water Assessment (RSB-GUI-01-009-01), Participating Operators shall:

- *identify downstream or groundwater users and determine the formal or customary water rights that exist;*
 - *evaluate and document the potential impacts of biofuel operations on formal or customary water rights that exist;*
 - *respect and protect all formal or customary water rights that exist through the Environmental and Social Management Plan (ESMP) to prevent infringement of such rights. No modification of the existing rights can happen without the Free Prior and Informed Consent (as described in 2a and its guidance) of the parties affected.*
-

Criterion 9.b Biofuel operations shall include a water management plan which aims to use water efficiently and to maintain or enhance the quality of the water resources that are used for biofuel operations.

Operators who must comply: Feedstock Producer, Feedstock Processor, and Biofuel Producer.

9.b.1 Minimum requirements

- *Participating Operators shall develop and implement a water management plan and integrate it into the Environmental and Social Management Plan (ESMP).*
-

- *The water management plan shall be made available to the public, unless limited by national law or international agreements on intellectual property.*
- *The water management plan shall be consistent with local rainfall conditions, not contradict any local or regional water management plans, and include the neighboring areas, which receive direct runoff from the operational site. Any negative impact on these neighboring areas shall be mitigated.*
- *The Participating Operator shall undertake annual monitoring of the effectiveness of the water management plan.*

9.b.2 Progress requirements:

- *The water management plan shall include steps for reusing or recycling waste water, appropriate to the scale and intensity of operation.*

Criterion 9.c Biofuel operations shall not contribute to the depletion of surface or groundwater resources beyond replenishment capacities.

Operators who must comply: Feedstock Producer, Feedstock Processor and Biofuel Producer.

9.c.1 Minimum requirements

- *Water used for biofuel operations shall not be withdrawn beyond replenishment capacity of the water table, watercourse, or reservoir from which the water comes.*
- *Irrigated biofuel crops and freshwater-intensive biofuel operations systems shall not be established in long-term freshwater-stressed areas, unless the implementation of:*
 - good practices or*
 - an adequate mitigation process that does not contradict other requirements in this standard**ensures that the water level remains stable.*
- *Participating Operators shall not withdraw water from natural watercourses to the extent that it modifies its natural course or the physical, chemical and biological equilibrium it had before the beginning of operations.*

Where the screening exercise has triggered the need for a Water Assessment (RSB-GUI-01-009-01), Participating Operators shall:

- *Identify critical aquifer recharge areas, replenishment capacities of local water tables, watercourses, and ecosystem needs. The potential impacts of biofuel operations on any of these aspects shall be evaluated, and any negative impacts mitigated.*
- *Define the use and share of water resources for biofuel operations in agreement with local experts and the community; any water user committees shall be consulted.*

9.c.2 Progress requirements

- *The Participating Operator shall demonstrate commitment to the improvement of water efficiency over time through the implementation of water-saving practices*

Criterion 9.d Biofuel operations shall contribute to the enhancement or maintaining of the quality of the surface and groundwater resources.

Operators who must comply: Feedstock Producer, Feedstock Processor and Biofuel Producer.

9.d.1 Minimum requirements

- *Biofuel operations shall not occur on a critical aquifer recharge area without a specific authorization from legal authorities.*
- *Participating Operators shall implement the best available practices which aim to maintain or enhance the quality of surface and ground water resources that are used for biofuel operations to the level deemed optimal for the local system for sustained water supply, ecosystem functioning and ecological services.*
- *Adequate precautions shall be taken to contain effluents and avoid runoffs and contamination of surface and ground water resources, in particular from chemicals and biological agents.*
- *Buffer zones shall be set between the operation site and surface or ground water resources.*

Where the screening exercise has triggered the need for a Water Assessment (RSB-GUI-01-009-01), Participating Operators shall:

- *determine the optimal water quality level required to sustain the system, taking into account local economic, climatic, hydrologic and ecologic conditions.*

9.d.2 Progress requirements:

- *For existing operations, degradation of water resources that occurred prior to certification and for which the Participating Operator is directly accountable shall be reversed. Wherever applicable, operators (except small-scale operators) shall participate in projects that aim to improve water quality at a watershed scale.*
- *Waste water or runoff that contains potential organic and mineral contaminants shall be treated or recycled to prevent any negative impact on humans, wildlife, and natural compartments (water, soil).*

Principle 10: Air

Principle 10. Air pollution from biofuel operations shall be minimized along the supply chain.

Criterion 10.a Air pollution emission sources from biofuel operations shall be identified, and air pollutant emissions minimized through an air management plan.

Operators who must comply: Feedstock Processor and Biofuel Producer.

10.a.1 Minimum requirements

- *An emission control plan appropriate to the scale and intensity of operations shall be included as part of the Environmental and Social Management Plan (ESMP) that identifies regard major air pollutants including carbon monoxide, nitrogen oxides, volatile organic compounds, particulate matter, sulphur compounds, dioxins and other substances recognised as potentially harmful for the environment or human health. The plan shall identify all potential air pollution sources and describe their nature. The plan shall describe any air pollution mitigation strategies that are employed, or else the rationale for not utilizing such strategies.*

10.a.2 Progress requirements

- *The Participating Operator shall investigate and, whenever possible in the local context, implement Best Available Technology (BAT) to reduce air pollution, appropriate to the scale and intensity of operation.*
-

Criterion 10.b Biofuel operations shall avoid and, where possible, eliminate open-air burning of residues, wastes or by-products, or open air burning to clear the land.

Operators who must comply: Feedstock Producer, Feedstock Processor

10.b.1 Minimum requirements

- *A plan shall be put in place to phase out any open-air burning of leaves, straw and other agricultural residues within three years following certification. If workers' health and safety is at stake or when no viable alternative is available or affordable in the local context, if burning may prevent natural fires, or if the cultivation of the crop periodically requires burning for viability in the long term without any equivalent alternatives, limited open-air burning practices may occur.*

10.b.2 Progress requirements

Open air burning of agricultural residues and by-products shall not occur following the phase-out plan (10.b.1).

Principle 11: Use of Technology, Inputs, and Management of Waste

Principle 11. The use of technologies in biofuel operations shall seek to maximize production efficiency and social and environmental performance, and minimize the risk of damages to the environment and people.

Criterion 11.a Information on the use of technologies in biofuel operations shall be fully available, unless limited by national law or international agreements on intellectual property.

Operators who must comply: Feedstock Producer, Feedstock Processor and Biofuel Producer.

Minimum requirements

- *When complying with and auditing against this criterion, proprietary technology shall be protected from competitors and intellectual property rights shall be respected*
 - *The Participating Operator shall disclose technologies with hazardous or potentially hazardous effects when such technology is used, and make this information available to the public upon request.*
-

Criterion 11.b The technologies used in biofuel operations including genetically modified: plants, micro-organisms, and algae, shall minimize the risk of damages to environment and people, and improve environmental and/or social performance over the long term.

Operators who must comply: Feedstock Producer, Feedstock Processor and Biofuel Producer.

Minimum requirements

- *The use of genetically modified organisms shall follow relevant national or international guidelines, laws and agreements, crop-specific stewardship systems, and local and community coexistence agreements or understandings.*
 - *For new operations, Participating Operators shall provide evidence that the hazardous technologies they use do not contradict any of the RSB principles and criteria before the beginning of operations.*
 - *Participating Operators using GMOs shall take measures to prevent migration of genetically modified material and shall cooperate with neighbours, regulatory and conservation authorities, and local stakeholders to implement monitoring and preventative measures. Crop-specific and technology-specific mitigation strategies shall be utilized.*
 - *The Biosafety Clearinghouse established under the Cartagena Protocol on Biosafety, or any other such clearinghouse established by law, shall be consulted before providing information about specific GMOs, including related risk and countries' decisions regarding that technology.*
 - *For new operations, feedstock producers shall use indigenous crops whenever alternative crops reduce yield and/or environmental and/or social performance compared to indigenous crops.*
-

Criterion 11.c Micro-organisms used in biofuel operations which may represent a risk to the environment or people shall be adequately contained to prevent release into the environment.

Operators who must comply: Feedstock producer, Feedstock processor, and Biofuel Producer.

Minimum requirements

- *In no case shall genetically modified micro-organisms or any micro-organisms that pose a risk (pathogenic, mutagenic, contaminant, etc.) to human health or the environment be released outside the processing/production unit. Any such organism used for processing shall be destroyed or adequately neutralised (i.e. loss of any potentially hazardous character) before being disposed of.*
 - *Participating Operators using such technologies shall include as part of their ESMP a plan that includes adequate monitoring and an emergency procedure in case of accidental dissemination of any such micro-organisms into the environment.*
-

Criterion 11.d Good practices shall be implemented for the storage, handling, use, and disposal of biofuels and chemicals.

Operators who must comply: Feedstock Producer, Feedstock Processor and Biofuel Producer.

11.d.1 Minimum requirements

- *None of the chemicals recorded in the WHO's 1a and 1b lists shall be used. The use of chemicals recorded in Annex III of the Rotterdam Convention and in the Stockholm Convention on Persistent Organic Pollutants (POPs) shall be listed (type and annual volume used) and a plan to phase out any such chemical over the three years following certification shall be described in the ESMP.*
- *Manufacturer's safety instructions for the storage, handling, use, and disposal of chemicals shall be followed.*
- *The use of ground or aerial pesticides shall comply with the FAO's Guidelines on Good Practices for Ground and Aerial Applications of Pesticides. Any chemical used in biofuel operations shall be in accordance with the manufacturer's safety instructions.*

11.d.2 Progress requirements

- *None of the chemicals recorded in Annex III of the Rotterdam Convention or in the Stockholm Convention on Persistent Organic Pollutants shall be used within three years after certification.*
-

Criterion 11.e Residues, wastes and byproducts from feedstock processing and biofuel production units shall be managed such that soil, water and air physical, chemical, and biological conditions are not damaged.

Operators who must comply: Feedstock Processor and Biofuel Producer.

11.e.1 Minimum requirements

- *A waste and byproduct management plan shall be included in the ESMP to ensure that wastes and byproducts are handled and/or disposed of in appropriate containers and to prevent any environmental contamination and damage to human health.*
- *These products shall not be in direct contact with soils, water sources and air outside the processing and production units unless their innocuousness to the environment and people is officially stated by manufacturers or the country or regional (e.g. EU, ASEAN, ALENA) guidelines. In all other cases, handling and disposal must follow the manufacturer's recommendation and the country or regional (e.g. EU, ASEAN, ALENA) guidelines.*
- *For new and expanding operations, the design of operations shall integrate the necessary infrastructure for safe burning of processing waste and by-products.*
- *For existing operations, a strategy shall be set to develop the necessary infrastructures for safe burning of waste and by-products.*

11.e.2 Progress requirements

- *Measures shall be taken to implement clean and efficient processes for conversion of residues, wastes or by-products into energy appropriate to the scale and intensity of operation. Such processes shall always occur in an appropriate facility to minimise air pollution from substances recognised as potentially harmful for the environment or human health. Solid residues from fermentation or burning shall be disposed of such that soil and water conditions are not damaged or according to national regulations.*
- *For others than small-scale operators, by-products or wastes shall also be reused by the processing/production unit or transferred to other sectors whenever their use may improve the overall system's energy balance, greenhouse gas emissions, and/or economic viability without impairing the other principles and criteria in this standard.*

Principle 12: Land Rights

Principle 12. Biofuel operations shall respect land rights and land use rights.

Criterion 12.a Existing land rights and land use rights, both formal and informal, shall be assessed, documented, and established. The right to use land for biofuel operations shall be established only when these rights are determined .

Operators who must comply: Feedstock Producer and Feedstock Processor.

12a.1 Minimum requirements

- *Where the screening exercise of the RSB impact assessment process reveals a negative impact to existing land rights and land use rights by biofuel operations, the Participating Operator shall conduct a Land Rights Assessment (RSB-GUI-01-012-01).*
- *Land under legitimate dispute shall not be used for biofuel operations until any legitimate disputes have been settled through Free, Prior and Informed Consent and negotiated agreements with affected land users.*

Criterion 12.b Free, Prior, and Informed Consent shall form the basis for all negotiated agreements for any compensation, acquisition, or voluntary relinquishment of rights by land users or owners for biofuel operations.

Operators who must comply: Feedstock Producer, Feedstock Processor and Biofuel Producer.

12b.1 Minimum requirements

- *No involuntary resettlement shall be allowed for biofuel operations.*
- *The Impact Assessment Guidelines (RSB-GUI-01-002-01) shall be referred to for guidance on Free Prior and Informed Consent.*
- *Where land rights and land use rights are voluntarily relinquished and/or acquired on a willing seller-willing buyer basis, local people shall be fairly, equitably and timely compensated.*
- *Compensation for voluntary relinquishment and/or acquisition shall include appropriate balancing measures needed to preserve the ability of the persons concerned to sustain their livelihoods in an autonomous and dignified manner.*
- *Independent, qualified land valuation specialists shall be used for valuing all land and asset values.*
- *Where land is to be sold it shall be done on a willing-seller/willing-buyer basis.*
- *Coercion to alter existing land rights or land use rights shall not be allowed in biofuel operations*
- *Where the rule of law is not adequately applied, international and regional legal bodies shall be consulted for rulings and information on disputes.*
- *If there are disputes about the tenure agreements of the land among stakeholders, biofuel operations shall not be approved.*
