Needs Assessment
of the Roundtable on Sustainable Biofuels Standard
to the Hawai‘i Context Report

Prepared for:

The Hawai‘i Biofuels Foundation

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AUTHOR'S NOTE

The information presented in this report was gathered through various forms of consultation including individual conversations, comments and group discussions during stakeholder workshops, and detailed written input from technical advisors. Comments varied among individuals - some were at odds with or contradictory to those of other stakeholders. Liz Muller, LLC has treated all comments with the same level of importance and credibility and has made every effort, both during the facilitation of the needs assessment and summarization of the input provided by various stakeholders, to present the information in a balanced, transparent, and candid manner.

EXECUTIVE SUMMARY

Introduction

The state of Hawai‘i has a vision of becoming energy independent by developing a mix of local and renewable energy sources with biofuels seen as one potential locally produced source. Several initiatives support this transition: the Hawai‘i Clean Energy Initiative, a partnership between the state of Hawai‘i and the U.S. Department of Energy, aims for Hawai‘i to use 70 percent clean energy by 2030 with 40 percent coming from locally generated renewable sources, including biofuels. The interest in biofuels is growing. Recently, Hawaiian Electric announced a 20 year contact to purchase approximately 15 million gallons per year of locally produced biodiesel from ‘Āina Koa Pono. This Hawai‘i- based company is developing a 13,000 acre energy farm on the Island of Hawai‘i. In addition, the U.S. Navy has announced intentions of using locally produced biofuels in the foreseeable future. These efforts and initiatives prompted the Hawai‘i Biofuels Foundation (HBF) to begin an open and transparent conversation to discuss how to best accomplish the transition to expanded biofuels production in Hawai‘i.

Hawai‘i is unique in many respects: the islands are remote and geographically isolated with diverse and biologically rich ecosystems; a rich sense of tradition and spirituality guide the local community; resources—such as land and water—are limited, and there is very heavy dependence on fuel and food imports. If Hawai‘i increases biofuels production, operators will face these conditions along with the high operational and input costs in a currently limited biofuels market.

The proper development of a framework or system to ensure that biofuels production in Hawai‘i is done in a sustainable and responsible manner will include many complex challenges, such as competition with food crops, protection of natural resources, and public acceptance—among others. The support of a broad group of stakeholders affected by the transition to locally produced fuels will be needed to successfully overcome these challenges.

HBF, a newly created multi-stakeholder organization, is seeking to support this transition by facilitating the development of a sustainable Hawai‘i -based biofuels industry, specifically utilizing sustainably produced and locally grown agricultural wastes or energy crops. HBF does not endorse any initiatives, policies, projects, or end buyers of biofuels, but aims instead to promote sustainably produced biofuels across all efforts and initiatives. In December 2010, HBF conducted stakeholder outreach to evaluate the Roundtable on Sustainable Biofuels (RSB) Standards as a possible framework that might be used to promote, verify, and possibly market, sustainable, locally grown biofuels. The RSB is an international initiative that has developed a third-party certification system for biofuels sustainability encompassing environmental, social, and economic principles and criteria through an open, transparent, and multi-stakeholder process.

RSB Needs Assessment process

To evaluate its potential applicability to Hawai‘i, HBF sponsored a needs assessment of the geographic adaptation of the RSB Standard (RSB Standard for Adaptation to Geographic Conditions, RSB-STD-15-002) that assessed the legal, socio-economic, ecological, technological, and cultural applicability and appropriateness of indicators and criteria in the context of Hawai‘i. This report presents the process used to conduct the needs assessment, as well as feedback provided throughout.

The needs assessment was done using a two-step process:

1. Individual technical advisors assessed the RSB Principle associated with their area of expertise in the context of Hawai'i. The technical advisors – local subject matter experts – conducted an in-depth examination of the RSB Standards with a focus on evaluating the applicability and appropriateness of the indicators.
2. A wider group of stakeholders provided input and discussed various aspects of the RSB Standard and biofuels in Hawai'i at public workshops. The input from the technical advisors was presented as a starting point for further discussion and input from the workshop participants.

HBF 's intention was not to develop a sustainable biofuels standard or certification system for Hawai'i; rather, the objective of this exercise was to gain input on the applicability of the RSB Standard as a potential certification framework for sustainably produced biofuels in the Hawai'i context.

Stakeholder input

A summary of the input received from stakeholders is presented here, while a more comprehensive overview is provided in the report.

- Additional stakeholders—e.g., farmers, biofuel processors, legislators, public utility commissioners, buyers, and customers—should be engaged as future discussions on sustainable biofuels production moves forward.
- Transparency (e.g., who decision makers are and the process used) will be critical to the credibility of any standard and how it is implemented.
- Many stakeholders felt that existing laws and regulations, as well as the government's capacity to enforce such laws and regulations, provide a basic foundation for many of the RSB's Principles and Criteria; however, there are some areas—namely pest invasion prevention and control, food security, water, and genetically modified organisms (GMOs)—that may warrant additional controls and guidance. Some stakeholders also noted that government, at all levels, has not and is not capable of adequately enforcing current laws and regulations—bringing into question the ability of government to enforce future laws and regulations surrounding biofuels.
- The costs associated with a certification or standards program should be equally shared among all players. Some stakeholders felt that if costs are not considered up front, then the development of a standard may "be like a lot of other documents in this state where things are planned and nothing happens."
- Both small- and large-scale producers are needed. Large-scale production can provide needed resources and scale to develop infrastructure and a market for sustainable biofuels. Yet, given the prevalence of small-scale farmers, their engagement is also vital in mainstreaming the change to biofuels production.
- Any efforts to develop a sustainable framework in Hawai'i should align with local initiatives and partners whenever possible and seek areas of collaboration. Some

initiatives include biofuel requirements under the Energy Independence and Security Act of 2007 and the Sustainable Biofuels Alliance.

- Stakeholders raised concerns that certification requirements of a comprehensive standard such as RSB often require additional documentation, process development, and auditing that could create a burden on operators, distracting them from their core functions with limited business benefits. Leveraging existing social and environmental laws to demonstrate compliance can help minimize additional or redundant requirements.

- The expansion of biofuels should not prevent the state's ability to become more food secure. It should also be recognized that current economics do not encourage farmers to grow biofuels over higher valued food crops. If biofuels production is to be incentivized, it should be done in such a way as to avoid negative impacts of potential land speculation.

- The expansion of biofuels should not violate any rights—legal or spiritual—of the Hawaiian community.

- Some stakeholders support programs that focus on sharing best practices and other resources with the aim of improving the entire Hawai'i biofuels industry, rather than approaching this at an individual operator level.

- Some aspects of a sustainable biodiesel industry are best addressed at the policy level, rather than the individual operator level.

- The added value of locally produced biofuels should be recognized along with other sustainability characteristics. There is a desire among many stakeholders to support the production and purchase of locally grown biofuels. The benefits would include closing the economic loop associated with Hawai'i's massive fuel importation costs, avoiding transportation-related greenhouse gas (GHG) emissions from imported fuels, and supporting local agriculture.

- Avoid creating a default definition of "sustainable biofuels," as it may give the impression that non- RSB certified biofuels are not sustainable, when they may well be sustainable by all other measures.

Moving forward

HBF has achieved its initial objective—engaging interested stakeholders to gain initial input on the applicability of the RSB Standard as a potential framework for sustainable biofuels in Hawai'i. HBF believes the workshops provided an important inclusive and transparent forum for local stakeholders to express their views on the appropriateness of developing sustainable biofuels in Hawai'i. This report provides an initial platform for continued engagement with key stakeholders moving forward.

INTRODUCTION

The state of Hawai‘i has a vision of becoming energy independent by developing a mix of local and renewable energy sources, with biofuels seen as one potential locally produced source. Several initiatives support this transition: the Hawai‘i Clean Energy Initiative, a partnership between the state of Hawai‘i and the U.S. Department of Energy, aims for Hawai‘i to use 70 percent clean energy by 2030, with 40 percent coming from locally generated renewable sources, including biofuels. In addition, significant buyers of fuel in Hawai‘i (Hawaiian Electric Company (HECO) and the U.S. Navy) announced intentions to use more locally produced biofuels in the foreseeable future. These efforts and initiatives prompted HBF to begin an open and transparent conversation to discuss how to best accomplish the transition to expanded biofuels production in Hawai‘i.

Ensuring that the transition to a biofuels industry in Hawai‘i is accomplished in an environmentally and socially sustainable manner will be a top priority for HBF.

Hawai‘i Biofuels Foundation

HBF recognizes that a new energy future for Hawai‘i will require overcoming numerous and significant hurdles. In the short term, research and development of locally grown feedstock will be critical in the cultivation of biofuels crops. HBF aims to support research and development of existing and next generation feedstocks, such as algae, and support the feedstock process (e.g., crushing and oil extraction). HBF also recognizes the need to define the potential economic viability for agricultural stakeholders—both large landowners and smaller farmers.

As a first step to support its mission, HBF sponsored the needs assessment of the Roundtable on Sustainable Biofuels (RSB) Standard — voluntary standards that define sustainably produced biofuels—as a possible framework to guide the development of sustainable biofuels produced in Hawai‘i.

HBF did not intend to develop an RSB Standard for Hawai‘i as part of this process, but rather to gain stakeholder input on the applicability of the RSB Standard as a possible certification framework that can be used to promote, verify, and possibly market sustainable, locally grown biofuels.

The Hawai‘i context

Hawai‘i is a unique region in many respects. Its geographic isolation and diverse ecosystems have resulted in a high level of biodiversity, including many rare and protected species. Culturally, the tightly knit community lives with a rich sense of tradition and spirituality—anchored by the Native Hawaiian host culture’s beliefs and worldview of the interconnectedness of all beings and the natural world.

The Hawaiian Islands have finite resources, such as land and fresh water, which poses a challenge to balancing the development of locally grown biofuels and food products, as well as the preservation of natural ecosystems. The localized topographic and climatic conditions on the islands limit large-scale production of biofuels. In addition, from a market perspective, Hawai‘i suffers from high costs for inputs and labor, limited market, and higher cost for biofuels over fossil

fuels. It is important to consider these factors and engage the community appropriately through the process of developing a framework or standard for the expansion of sustainable biofuels for the state.

The Roundtable on Sustainable Biofuels (RSB)

The RSB (www.rsb.org) is an international initiative that brings together farmers, companies, non-governmental organizations, experts, governments, and inter-governmental agencies concerned with ensuring the sustainability of biofuels production and processing. Since 2007 the RSB has been working on the development of a third-party audited certification system for biofuel sustainability. In 2011 the RSB will release this certification system for public use in biofuel operations throughout the world.

The RSB Standard

The RSB has developed a third-party certification system for biofuels sustainability standards, encompassing environmental, social, and economic principles and criteria through an open, transparent, and multi-stakeholder process.

The RSB Standard is based on 12 principles and associated criteria that define the social and environmental requirements with which biofuel operations must comply to receive RSB certification. The principles are high-level tenets of sustainability, and the associated criteria under each principle indicate the minimum requirements that must be met for compliance to be granted. Associated with each criterion are compliance indicators that help operators and auditors identify how to demonstrate RSB compliance. See Appendix 1: Exhibit A for a complete list of the 12 principles. The full list of RSB Principles, Criteria and Indicators is available on the RSB website.

Project objectives

The objective of this project was to conduct a needs assessment of the RSB Principles, Criteria, and Indicators (Version 1.0) in the context of Hawai'i.

The RSB has created a geographic adaptation standard intended to ensure that the international RSB Standard can be adapted to the political, legal, social, environmental, cultural, ethical, and/or economic conditions of a particular geographic region.

The RSB Needs Assessment is the first step in a process by which the RSB Standard is evaluated for potential modification for a particular geographic region. The needs assessment aims to make the least possible changes to the RSB Standard, by evaluating the specific areas of the standard in need of modification for the unique geographic conditions. It begins by evaluating whether each RSB Indicator is relevant, appropriate, and applicable in the particular region. If it is determined that a particular indicator is not applicable, the associated criterion is evaluated. If the criterion is applicable, an attempt is made to improve the applicability of the indicators by adding to or modifying those that are relevant to meet the intent of the associated criterion. If the criterion is not applicable, then the principle is evaluated. In addition, modification of the relevant criterion can be proposed if it is found that the associated principle is still applicable to the geographic context. If it is determined that modification of an RSB Principle is necessary, the full documentation of the analysis must be forwarded to the RSB Governance Board.

An additional objective of the needs assessment was to identify plans, policies, statutes, and regulations relevant and applicable to the RSB Principles. This was largely achieved by drawing from the *Hawai'i Bioenergy Master Plan: State, County and Federal Plans, Policies, Statutes, and Regulations*[1]. A summary of the applicable laws and regulations is provided in Appendix 4.

The intention of HBF was not to develop a sustainable biofuels standard or certification system for Hawai'i; rather, the objective of this exercise was to gain stakeholder input on the applicability of the RSB Standard as a potential certification framework for sustainably produced biofuels in Hawai'i.

The needs assessment was conducted with the support of subject matter experts (technical advisors) who completed an in-depth review of RSB Principle(s), Criteria and Indicators for their appropriateness and relevance in Hawai'i. Further consultation took place with key stakeholders involved in the Hawai'i biofuels industry through a series of stakeholder workshops. Though HBF sought to be inclusive in this process, it acknowledges that it did not—and likely could not—reach every expert or interested stakeholder in Hawai'i, and that any omission was entirely unintentional.

METHODOLOGY

Overall process

The needs assessment, done in accordance with RSB protocol, assessed the legal, socio-economic, ecological, technological, and cultural applicability and appropriateness of indicators and criteria in the context of Hawai'i. This was done in a two-step process:

1. Individual technical advisors assessed the appropriateness and applicability of each indicator.
2. A wider group of stakeholders provided input and discussed various aspects of the RSB Standard and biofuels in Hawai'i at public workshops.

Technical advisors outreach and feedback

HBF board members identified local subject matter experts as potential technical advisors. These experts were invited to carry out an in-depth examination of RSB Standards, with a focus on evaluating the applicability and appropriateness of the indicators. Technical advisors were provided with an information packet (Appendix 1), which is summarized below. A complete list of technical advisors is provided in Appendix 2.

While it is not HBF's intent to develop a Hawai'i RSB Standard, the needs assessment process was used to assess the overall relevance and applicability of the RSB Standard and its principles and criteria in the context of Hawai'i.

Before beginning their evaluation, technical advisors were invited to an introductory webinar. The presentation (Appendix 3) provided an overview of HBF, RSB and the RSB Standards. The assessment approach was discussed in great detail and participants were invited to ask questions or request clarifications.

[1] This compilation of State, County, and Federal Plans, Policies, Statutes, and Regulations was prepared as part of the Hawai'i Bioenergy Master Plan project based on information available as of April 28, 2009. It was compiled and written by Richelle Thomson and Denise Antolini, April 2009.

All relevant documents were posted to an online resource library (https://public.me.com/lizmuller) readily available to technical advisors as they undertook the assessment of their selected principles.

Technical advisors evaluated each indicator under the principle related to their subject matter expertise for relevancy, appropriateness, and applicability in Hawai'i. If they determined that an indicator was not applicable, the associated criterion was evaluated. If the criterion was applicable, an adjustment was suggested to the indicator to ensure it addressed conditions in the region. If, on the other hand, the criterion was not considered applicable, the governing principle was evaluated. If the principle was found to be applicable, an adjustment to the criterion was suggested. Though modification of a principle *is* possible through this process, it is considered unlikely.

Changes to the RSB Standard for geographic adaptation were prioritized as follows:

I. Keep all principles, criteria & indicators
II. Add indicator
III. Modify indicator
IV. Add criteria
V. Modify criteria

Stakeholder workshops

In order to solicit additional input on the RSB Standard in the Hawai'i context, HBF held workshops on Hawai'i Island, O'ahu, Kaua'i and Maui from December 6th – 9th 2010.

HBF sought engagement of all interested stakeholders. With this core objective in mind, the foundation aimed to have the workshops be fully inclusive and open to anyone interested in, or impacted by, the development of a future sustainable and locally produced biofuels industry in Hawai'i. Stakeholder lists were collected from the Hawai'i Bioenergy Master Plan team at the Hawai'i Natural Energy Institute, the Hawai'i Energy Policy Forum, and the Hawai'i Clean Energy Initiative staff at the State Department of Business, Economic Development & Tourism. HBF Board members reviewed the combined lists and finalized an invitation list. Invitees were asked to RSVP so HBF could provide them with additional information.

Attendees were sent a packet of background materials—including an overview of HBF, RSB, and frequently asked questions (Appendix 5)—to enhance their experience at the workshop and ensure they were able to contribute at the highest level. They were also encouraged to extend the invitation (Appendix 6) to their networks.

Participation in the workshops was encouraging with a total of 107 participants, including 25 at Hilo, 4 in Kona, 41 in Honolulu, 9 in Lihue, and 28 in Kahului. The workshops were the first step in a long-term engagement of stakeholders as HBF works to support efforts to ensure that a biofuels industry in Hawai'i centers on sustainability principles. Stakeholders involved in the needs assessment process also expressed their support for continued engagement in the planning, development, and implementation of a sustainable biofuels framework or standard moving forward.

Workshop presentations

At the workshops, HBF Board members began by providing an overview of the foundation, its current board members, and its mission. Matthew Rudolf, Regional Manager of the Americas for the RSB, presented on the organizational and governance structure of RSB, as well as the RSB Standards and Certification systems. With this framework in place, Liz Muller facilitated the engagement of attendees in their discussion of the RSB Standard and the needs assessment process. Ms. Muller shared the input from the technical advisors to spur conversation and solicit input from the workshop participants. The full PowerPoint presentation can be found in Appendix 7.

FEEDBACK AND DISCUSSIONS

Comments regarding RSB Standard in the Hawai'i context

Feedback from technical advisors and workshop participants is provided below. Significant points— as well as those repeatedly mentioned or those that evoked a robust conversation— are presented as "key messages" with other input captured under "additional input." A complete list of comments from technical advisors can be found in Appendix 8. Notes from each workshop are available upon request[2].

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

Key messages
Principle 1 is generally intended to assure that all RSB certified operators are in compliance with all applicable laws and regulations.

There was general agreement that biofuels operators understand and can comply with applicable laws and regulations and that enforcement mechanisms are sufficient and effective; however, a few stakeholders felt that existing regulations and enforcement may not be adequate to ensure sustainable biofuels production—primarily in the areas of pest invasion prevention and control, food security, water, and genetically modified organisms.

Additional input
It was also noted that on some islands, such as Kaua'i, noise is an issue that should be addressed since regulatory frameworks are not always sufficient in dealing with these impacts on neighboring communities. Additionally, on Maui in particular, it was noted that government at all levels, has not and is not capable of adequately enforcing current laws and regulations—bringing into question the ability for government to enforce future laws and regulations surrounding biofuels.

[2] HBF and Liz Muller, LLC value, and have summarized, the input provided by all stakeholders equally—both from public workshops and directly from technical advisors. Technical advisor input has been included in written form, as it was provided, in the appendices. Due to the volume and format of stakeholder input, comments from workshop notes were summarized in the body of the report and original notes are available on request.

Principle 2: Planning, Monitoring, and Continuous Improvement
Sustainable biofuel operations shall be planned, implemented, and continuously improved through an open, transparent, and consultative Environmental and Social Impact Assessment (ESIA) and an economic viability analysis.

Key messages
Most stakeholders believed that current environmental assessment and impact statement requirements and processes adequately address the intents of the RSB Standard's Principle 2. They also agreed that programs such as Hawai'i Clean Energy Initiative, Hawai'i Bioenergy Master Plan and Energy Feedstock Program support the intent of Principle 2.

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

Key messages
Principle 3 was considered appropriate and applicable as written; however, it was suggested that a special provision might be appropriate for algae-based biomass as that industry advances, including the carbon sequestration potential of algae. It was also recommended that GHG emissions and life cycle assessments should be periodically reevaluated as technologies that reduce impacts advance.

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

Key messages
Virtually all stakeholders felt that human rights and labor rights are adequately addressed by existing laws and enforcement programs.

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

Key messages
Most stakeholders believed that current programs and laws are adequate in addressing the intent of Principle 5. Some regulations and programs that support the intent of Principle 5 include: State Land Use Classification and Management System and Regulations, the Bureau of Land and Natural Resources Conservation District Use Assessment, the Department of Land and Natural Resources, and its State Historic Preservation Division regulations.

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

Key messages

Though Hawai'i is not classified as a food insecure region according to United Nations Food and Agriculture Organization's definition[3], it is most definitely food "fragile." The islands import the vast majority of their food and there is only a 5 to 10 day supply of food on the islands at any given time. A natural disaster—or even a shipping strike—could render Hawai'i a food insecure region. Nevertheless, some stakeholders felt that holding an individual operator responsible to "ensure" food security is not practical.

The bigger issue is how to balance local biofuel production with local food production—considering the availability of agricultural land and fresh water. Stakeholders thought this issue is best addressed through proper legislation, zoning, and other system-wide frameworks.

Stakeholders felt a standard, such as RSB, should include requirements to minimize biofuels impacts on food production, but also recognized that additional support mechanisms would be necessary.

It was also noted that current economics do not encourage farmers to grow biofuels over higher valued food crops.

Additional comments

- Evaluate if biofuels replace existing agriculture (including livestock) activity. For example, would the biofuel production displace food production?
- Include flowers, foliage, landscape plants, and other critical products. Other stakeholders felt that these crops do not hold critical value to the local population and, therefore, should not be addressed beyond protection of biodiversity.
- Economic benefits of locally produced products (e.g., creating a closed loop economic cycle in the islands) should be considered when balancing biofuels with food production.
- The community or government, not by individual operators, should decide Land use. [Note: currently government restricts land use; however, within those restrictions owners, lessees, investors, developers, and farmers decide land use.]
- Any incentives to bolster agriculture or biofuels production in Hawai'i should seek to minimize negative impacts of potential land speculation. For example, tax breaks or other financial incentives provided by the state should include requirements to implement sustainability measures.

Principle 7: Conservation

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

Key messages

Invasive species prevention and environmental protection is critical in Hawai'i and should receive the utmost attention and care. While the state has robust restrictions and systems to prevent the introduction of invasive species, additional measures should be taken for new biofuel crops. These measures may include:

[3] The UN FAO definition of food security rests on three general concepts: 1) is food available and accessible (is it present and affordable), 2) does it meet the dietary needs of the local population and 3) is it available consistently (i.e., not subject to routine shortages due to natural disasters).

- Prevent the introduction of invasive species—weedy plants, in the seed, or as a potential contaminant.
- Crops with host potential for invasive species (e.g., pathogens or insect pests) should be avoided or prohibited.
- Potential vectors and vector pathways (e.g., windblown seeds, vegetative spread, roadways and watercourses, animals consuming and defecating seeds) should be considered when permitting a crop and zoning.
- Dispersal pathways and each crop in specific geographic locations should be considered when determining required buffer zones.
- Ensure the proper destruction, monitoring and remediation after crop termination.

Conservation plans for agriculture are common tools—and at times required under programs such as certain U.S. subsidies—that help farmers manage and protect natural resources and minimize environmental impacts holistically across many issues (natural resource conservation, soil health) and mediums (soil, water, air). These plans, if applied correctly, can adequately address much of the conservation impacts during operations, as well as address many of the requirements within the RSB Standards and should be required. Care should be taken, however, to ensure that conservation plans are comprehensive and include both proper farming practices (e.g., soil management) as well as natural resource protection (e.g., invasive species prevention) components.

Additional input

- The only way to enforce the mitigation of damages post-operations will be through issuance of up front bonds that can be drawn upon should future work be required.

Principle 8: Soils

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

Key messages

Soil health is vital to the future of Hawai'i's agriculture potential and proper care of the soils should be promoted. Conservation Plans, if applied correctly, help protect or enhance soil health and should be required.

While soil health metrics are not clearly identified, many stakeholders felt they should still be required even if left to the farmer to determine. Specific parameters and thresholds were not explicitly defined by the RSB.

Additional input

- Crop rotation may not make sense if working with a perennial grass or tree crops.
- Some stakeholders consider fallow areas with planted vegetation under arid, irrigated conditions to be a waste of water use.
- Pesticides are covered under the U.S. Federal Insecticide, Fungicide and Rodenticide Act, as well as state requirements. Since these are adequately covered under state and national regulation, using the World Health Organization standard is not appropriate.
- Crop variation and rotation should be promoted.
- Biofuel production should not contribute further to sedimentation of streams and reefs from soil erosion.

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

Key messages
Water is a critically limited natural resource often under dispute in Hawai'i. Water rights and impacts are a bigger issue than can be solved by most individual operators; however, the use of water for expanding biofuels in Hawai'i must be properly addressed. The water requirements of various biofuels crops must be considered with a preference for more drought resistant crops. A ban of overly water-intensive crops may be warranted.

According to RSB, operators must not use water under legitimate dispute. Virtually all stakeholders who provided input on Principle 9 consider all the fresh waters in the state to be under dispute. As such, virtually no biofuel project in the state could meet this requirement. Resolving water allocation and water rights must be done at the community or legislative level, not by individual operators.

Additional input
- Under the Hawai'i Water Code, all water resources are a trust obligation of the state and individuals do not have ownership over water resources. A possible alternative is "Biofuel operations shall respect existing water rights."
- Many large landowners control waterways and water flows in some locations; they must be engaged in this process and the development of any standard.
- An in-stream flow standard already exists, so there is no need to adopt a new definition.
- Recycled water has a large potential to supply the biofuel industry here and should be promoted.

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

Key messages
The vast majority of stakeholders felt that air pollution is adequately addressed with existing regulations and compliance programs.

Additional input
- Stakeholders felt emission control plans should be updated every 5 years as technology continues to advance and emissions could be lowered. They also recommended using "Best Available Control Technology (BACT)" instead of "Best Available Technology (BAT)" to ensure technologies are available and not cost prohibitive.
- While some stakeholders felt the three-year requirement to phase out open air burning should be deleted until alternative technology is available, others felt that it might be possible to eliminate open air burning today or certainly within three years.
- One stakeholder stated that companies should not be able to use air emission levels resulting from naturally occurring pollutants (e.g., volcanoes) as their baseline; they should be held to regulated permissible levels.

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

Key messages
GMOs received much of the attention related to Principle 11. There was great concern over how GMOs are regulated and used in biofuels and the potential impact of their release on the ecosystems of Hawai'i. While a few stakeholders would like to see a ban of GMOs, many felt that full transparency around the use of GMOs and requiring appropriate engineering standards to control the unintended dispersal of GMOs was adequate.

One technical advisor recommended that the standard should reference U.S. rather than international rules, because the United States Department of Agriculture (USDA) adequately regulates GMOs. Many stakeholders, however, felt the USDA does not adequately protect communities and the environment from the potential negative impacts of GMOs.

Additional input
- Delete the need for technology to provide "social benefits"—this is an unreasonable burden on the operator and metrics are not defined.
- Byproduct management should be part of the risk assessment**.**
- GMO restrictions should apply down to the seed-production level of the supply chain.

Principle 12: Land Rights
Biofuel operations shall respect land rights and land use rights.
Key messages
Similar to Principle 5, most stakeholders believed that current programs and laws are adequate in addressing the intent of Principle 12. Some such programs include: State Land Use Change laws, the Board of Land and Natural Resources Conservation District Use Application review, along with the Department of Land and Natural Resources and its State Historic Preservation Division regulations.

Input provided on the overall RSB system or the future of biofuels in Hawai'i
In addition to assessing the appropriateness and relevance of the RSB Principles, Criteria and Indicators, some stakeholders provided input for HBF to consider, including—but not limited to—the following:

- **Costs and benefits should be equally shared among all players**. At least one stakeholder posed the question of how much it costs to get certified and who pays for this. Matt Rudolf (RSB) responded that RSB is unsure of costs to be certified and the operator seeking certifications generally pays.

  Another advisor stated that economics are totally missing from this standard and the thresholds on the non-economic parameters may not be achievable.

- **Small- and large-scale producers are needed**. At least one technical advisor agreed that large-scale producers must support any future initiative to help build needed infrastructure, create volumes, and institutionalize standards in a cost-efficient manner. Even so, given the prevalence of small-scale farmers, their engagement is vital to the

success of any initiative aimed at mainstreaming the change to biofuels production on all islands.

One technical advisor found the RSB Standard much too cumbersome for small entities. They felt a *one size fits all* approach, from large to small producer, from crop to crop type, does not work in agriculture.

- **The RSB Standard should not compete with existing standards or mandates**. HBF presented overviews of the following two initiatives they hope to complement:
    - Hawai'i Energy Policy Forum – a consensus-based multi-stakeholder forum that supports sustainable energy in Hawai'i by enabling information sharing, stakeholder collaboration and civic participation.
    - Hawai'i Clean Energy Initiative – aims to meet 70 percent of Hawai'i energy needs with clean energy by 2030, with a vision of future energy independence.

  RSB mentioned that its standard aligns with the following—and other—standards and regulations. They are also working with local initiatives and partners when possible, seeking areas of collaboration to define and certify sustainable biofuels.
    - Green Initiative for Fuels Transition Pacific
    - Compliance with Energy Independence and Security Act (EISA): Including the Renewable Fuels Standard and Section 526
    - Sustainable Biodiesel Alliance – 13 Principles and Baseline Practices for Sustainability for Biodiesel

- **Certification should be streamlined**. One person who reviewed the RSB Standard suggested it would take three days to become certified. Stakeholders raised a concern that certification requirements of a comprehensive standard, such as RSB, often require additional documentation, process development, and auditing that could create a burden on operators and distract them from their core functions with limited business benefits.

  It was suggested that HBF should consider the potential role of the Natural Resource Conservation Service (NRCS) in supporting farmers' implementation of conservation plans. It was also suggested that a system could "certify" a farmer as sustainable if the farmer implemented an NRCS Conservation Plan.

- **Native Hawaiian community and their rights must be respected.** While it is likely that future biofuels will be produced on land already designated for agricultural use, the expansion of biofuels should be done in a manner that does not violate any rights— legal or spiritual—of the Hawaiian community**.**

- **Encourage continuous improvement and the sharing of business plans, technology, contingency plans and so forth.** A few technical advisors stressed their support for programs that focus on sharing best practices and other resources with the aim of improving the entire Hawai'i biofuels industry rather than approaching this at an individual operator level. It was recommended that promoting continuous improvement should be a priority. The Keystone Alliance effort (Field to Market) is appealing as it centers on a *measure, act, improve* model. Under the Field to Market program, producers and others can engage at a lower threshold and improve over time, while the RSB Standard expects all participating operators to meet a very high threshold from the onset.

This could disadvantage and prohibit the participation of many smaller operators who may not have advanced systems and additional resources necessary to meet all RSB requirements.

Another technical advisor recommended that HBF find some way to ensure continued compliance through on-going review and/or certification without creating a scheme that discourages technological innovation and diversification. They felt we are in a field of rapidly evolving biocrops and processing technology that will hopefully produce increasingly clean and sustainable bioenergy. Any policies or initiatives should be designed to continually push producers toward better environmental performance. We should have them periodically reassess and defend their environmental practices.

It was also suggested that any future standard use a weighting system that would put more emphasis on issues or criteria of higher importance. For example, if it were agreed that protection from invasive species was of higher importance than minimizing GHG emissions, the criteria corresponding to protection of invasive species would receive a higher relative weighting than GHG emissions reduction.

- **Engage a broad range of committed stakeholders.** One technical advisor located on Hawai‘i Island cited that there are on-the-ground experiments related to biofuel crop production capacity and impacts (e.g., soil health, pests) of a practical nature that should be wove**n** into this process. This stakeholder would like to see more engagement by folks who are actually growing and studying biofuels crops and less reliance on ”folks whose experience come[s] from reading about the field or listening to someone else [talk] about ”shoulds" and ”coulds," since they may not know the practical limitations or real potential for a feedstock if they have not tried growing it themselves. Currently the discussions appear to be Oahu-centric.

  There was positive feedback that the workshops provided a helpful introduction to the RSB and how it could be used as a framework for sustainable biofuels in Hawai‘i; however, many felt that the workshops were not nearly long enough to discuss the RSB Standard and how best to promote and support sustainable, Hawai‘i-based biofuels. Many workshop participants indicated an interest in remaining informed and engaged as these efforts move forward. Some stakeholders suggested additional participants, as well as venues, where HBF could bring their message to interested parties (e.g., renewable energy conferences, local farmers markets).

- **Value locally produced and non-certified sustainable biofuels.** Recognizing that RSB is an international standard and RSB-certified biofuels could be imported to Hawai‘i with no origin distinction, many stakeholders felt it important to include—and possibly highlight —recognition of biofuels produced locally. This not only lowers GHG emissions related to transportation from other locations, but also supports local businesses, keeping the economic benefits in a closed loop within Hawai‘i, and meets any additional local standards. The added value of locally produced biofuels is significant in the eyes of many stakeholders and should be appropriately considered—and possibly marketed as having such added value.

  Related to this topic, one technical advisor was concerned that bringing the RSB Standard to Hawai‘i and creating a default definition of “sustainable biofuels” may give the

impression that non-certified RSB biofuels are not sustainable—when they may well be. The RSB Standard takes the precautionary principle approach, which may be too extreme for practical application by a business. This technical advisor would prefer a risk- and science-based approach. The RSB Standard in Hawai'i should not be more stringent or cumbersome than the RSB Standard in other regions.

- **Transparency will be critical to a standard's credibility**. Ensuring that transparency is applied to all aspects of the standard—from the identity of the decision makers to the process used when developing a standard and system, and how operators are certified under such a standard—is very important.
- **The RSB Standard in Hawai'i should not be more stringent than the RSB Standard in other regions.** Biofuels producers in Hawai'i should not be held to a higher standard than those used to deem imported biofuels as sustainable. The requirements and basis of any standard should be comparable regardless of region so it does not put local producers at a disadvantage.

Further input from workshop evaluation forms.

Workshop participants were given an opportunity to provide additional input about the workshop—concerning both the information presented as well as the facilitation—on evaluation forms (Appendix 9). Most participants who provided feedback indicated that they found the workshops to be informative, helpful, and well facilitated. They felt that more time is needed to adequately discuss this important topic and would like to remain engaged in future discussions or workshops.

CONCLUSION

The state of Hawai'i has a vision of becoming energy independent by developing a mix of local and renewable energy sources with biofuels seen as one potential, locally produced source. Several initiatives support this transition: the Hawai'i Clean Energy Initiative, a partnership between the state of Hawai'i and the U.S. Department of Energy, aims for Hawai'i to use 70 percent clean energy by 2030, with 40 percent coming from locally generated renewable sources, including biofuels. In addition, significant buyers of fuel in Hawai'i (Hawaiian Electric Company (HECO) and the U.S. Navy) announced intentions of using more locally produced biofuels in the foreseeable future. These efforts and initiatives prompted HBF to begin an open and transparent conversation to discuss how to best accomplish the transition to expanded biofuels production in Hawai'i.

As one of the most geographically isolated island chains in the world, Hawai'i depends almost entirely on imported fuels for energy. A transition to energy independence will require addressing the finite natural resources of the archipelago—particularly land and fresh water. In addition, the diverse and biologically rich ecosystems, along with the rich sense of tradition and spirituality and the desire to be less dependent on food imports must be considered to ensure biofuels production in Hawai'i is done in a sustainable and responsible manner.

Input from various stakeholders who participated in the RSB Needs Assessment process indicated that the RSB Standard could serve as a strong initial framework to define, promote, verify, and possibly market sustainable, locally grown biofuels; however, some modifications may be warranted. In addition, the promotion of biofuels is likely to require additional systems and

mechanisms, such as government-led incentives, infrastructure, or guidelines, if it is to be a viable industry in Hawai‘i.

Additional input provided during the RSB Needs Assessment was very valuable and may not have been expressed in other forums as Hawai‘i currently lacks a comprehensive, holistic, systems approach for vetting the appropriateness of biofuels for Hawai‘i. HBF acknowledges and appreciates the many technical advisors and stakeholders who volunteered their time for the RSB Needs Assessment process and feels it was an important and valuable first step in convening and facilitating constructive dialogue among members of the Hawai‘i community who affect, are affected by, and are interested in biofuels production. It is the intent of HBF to continue to facilitate open dialogue and consultation with interested stakeholders to develop a framework for sustainable biofuels expansion in Hawai‘i.

Appendix 1
Technical Advisor Introductory Packet

October 4, 2010

Re: Roundtable on Sustainable Biofuels (RSB) Standard Needs Assessment

Dear Technical Advisor,

On behalf of Hawaii Biofuels Foundation (HBF), I would like to request your support promoting the responsible expansion of sustainable biofuels in Hawaii by serving as a technical advisor as we conduct a Roundtable on Sustainable Biofuels (RSB) Needs Assessment.

HBF is a multi-stakeholder organization that is seeking to facilitate the development of a sustainable Hawaii-based biofuels industry. HBF aims to have its biofuels production system and the biofuels produced qualify as sustainable biofuels as defined by the RSB. The alignment with RSB will help guide biofuels expansion in Hawaii towards one consistent and globally recognized sustainable biofuels standard – lessening negative impacts of and adding credibility to - biofuels produced and consumed in Hawaii.

The needs assessment will evaluate the RSB Principles, Criteria, and Indicators (Version 1.1) and implementation guidelines in the Hawaii context. The evaluation will look at legal, socio-economic, ecological, and cultural conditions as well as assessing the applicability and appropriateness of indicators and criteria. We believe you would add tremendous value in the assessment of RSB's Principles. If you are interested in participating, we could send you the complete principles and criteria that are relevant to your area of expertise.

An overview of the needs assessment process and how you could contribute to its success is provided in Exhibit B.

Please follow up directly with Liz Muller, HBF's Needs Assessment Facilitator, at the contacts below to discuss any aspect of this request.

Office: 415 924 2335
Mobile: 415 609 9040
Skype: lizmullerllc
Email: liz@lizmuller.com

Thank you in advance for your assistance,

Hawaii Biofuels Foundation

Attachments

Exhibit A
RSB Principles and Criteria

Principle 1: Legality
Biofuel operations shall follow all applicable laws and regulations.
Applies to Feedstock Producer, Feedstock Processor and Biofuel Producer.

Principle 2: Planning, Monitoring and Continuous Improvement
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. Applies to Feedstock Producer, Feedstock Processor and Biofuel Producer.

Principle 3. Greenhouse Gas (GHG) Emissions
Biofuels shall contribute to climate change mitigation by significantly reducing lifecycle GHG emissions as compared to fossil fuels.
Applies to Feedstock Producer, Feedstock Processor, Biofuel Producer, and Biofuel Blender.

Principle 4: Human and Labor Rights
Biofuel operations shall not violate human rights or labor rights, and shall promote decent work and the well-being of workers.
Applies to Feedstock Producer, Feedstock Processor and Biofuel Producer.

Principle 5: Rural and Social Development
In regions of poverty, biofuel operations shall contribute to the social and economic development of local, rural and indigenous people and communities.
Applies to Feedstock Producer, Feedstock Processor and Biofuel Producer.

Principle 6: Local Food Security
Biofuel operations shall ensure the human right to adequate food and improve food security in food insecure regions.
Applies to Feedstock Producer, Feedstock Processor and Biofuel Producer.

Principle 7: Conservation
Biofuel operations shall avoid negative impacts on biodiversity, ecosystems, and other conservation values.
Applies to Feedstock Producer, Feedstock Processor and Biofuel Producer.

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

Principle 9: Water
Biofuel operations shall maintain or enhance the quality and quantity of surface and ground water resources, and respect prior formal or customary water rights.
Applies to Feedstock Producer, Feedstock Processor and Biofuel Producer.

Principle 10: Air
Air pollution from biofuel operations shall be minimized along the supply chain.
Applies to Feedstock Producer, Feedstock Processor and Biofuel Producer.

Principle 11: Use of Technology, Inputs, and Management of Waste
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.
Applies to Feedstock Producer, Feedstock Processor and Biofuel Producer.

Principle 12: Land Rights
Biofuel operations shall respect land rights and land use rights.
Applies to Feedstock Producer and Feedstock Processor.

Exhibit B

To: Technical Advisors

From: Liz Muller on behalf of Hawaii Biofuels Foundation

Date: September 20, 2010

Re: Overview of The Roundtable on Sustainable Biofuels (RSB)

Below is a brief overview of the RSB Standard and an outline of the RSB Needs Assessment process as well as specific guidance on how you can best contribute to this important exercise.

The RSB

The RSB is an international initiative that brings together farmers, companies, non-governmental organizations, experts, governments, and inter-governmental agencies concerned with ensuring the sustainability of biofuels production and processing.

The RSB Standard

The RSB has developed a third-party certification system for biofuels sustainability standards, encompassing environmental, social and economic principles and criteria through an open, transparent, and multi-stakeholder process.

The standard describes the rules to be obeyed by operators in order to lift their activities up to a globally recognized level of sustainability. The RSB Standard centers on its principles, criteria and indicators against which operators are certified.

Please refer to RSB's website (www.rsb.org) for a complete list of principles, criteria and indicators.

In addition to these principles, we will also be evaluating the expansion of biofuels in Hawaii in the cultural or smallholder context. We will evaluate both terrestrial and aquatic crops.

Geographic adaptation of the Standard

The RSB has created a geographic adaptation standard that is intended to ensure that international RSB Criteria and corresponding RSB Indicators can be adapted to political, legal, customary and/or technical social, environmental, cultural, ethical and/or economic conditions in a *particular geographic region*. Such adaptation shall only be undertaken if compliance with the international *RSB Principles & Criteria* and indicators and the *RSB standards*:

i. do not comprehensively and/or consistently achieve the intent of the *RSB Principle*s & Criteria in a *particular geographic region*;

ii. resulted or could result in a violation of existing legislation in a *particular geographic region*.

iii. resulted or could result in systematically inconsistent outcomes for different participating operators in a *particular geographic region*;

iv. resulted or could result in systematic negative political, legal, customary and/or technical social, environmental, cultural, ethical and/or economic effects in a *particular geographic region*.

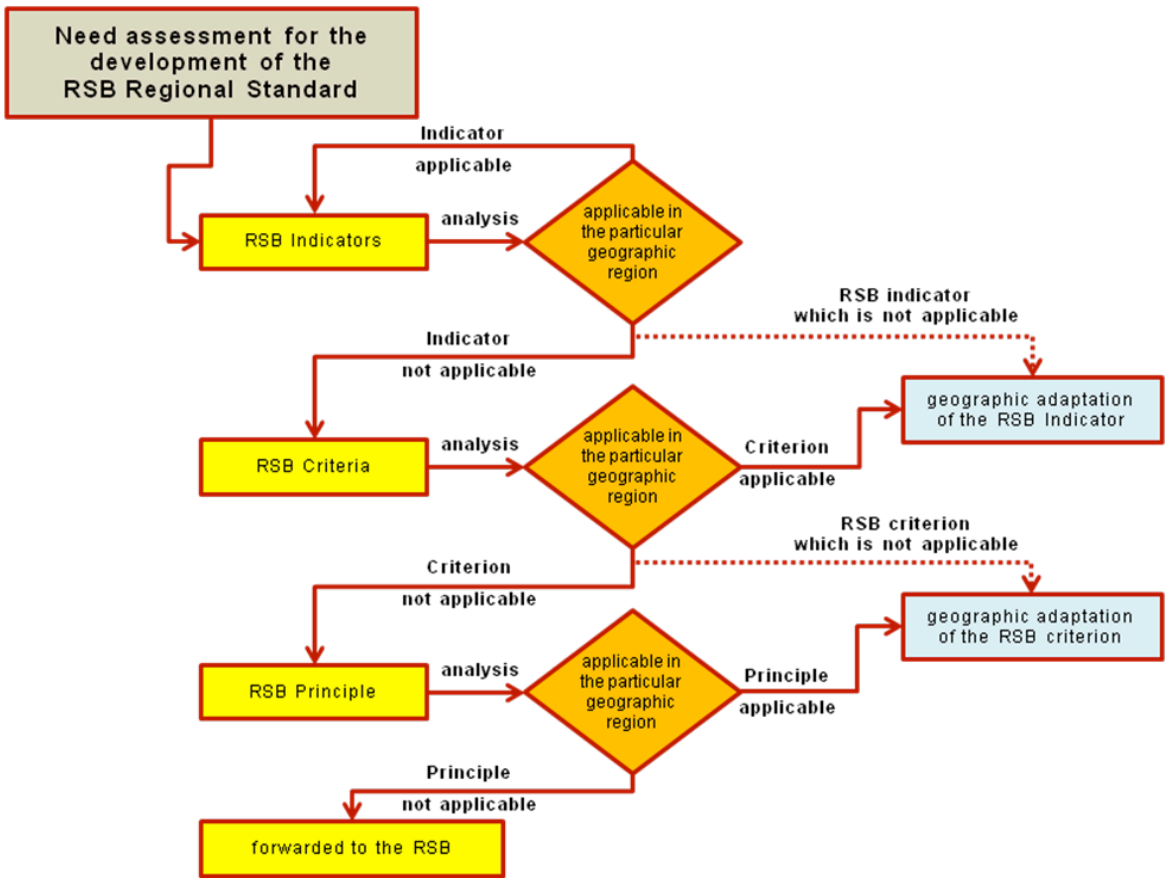
The RSB Needs Assessment process

The RSB Needs Assessment begins by evaluating if each indicator is relevant, appropriate and applicable in the subject region. An indicator should be evaluated through the process outlined in Section 4 of *RSB Standard for adaptation to geographic conditions* depicted below. If it is determined that an Indicator is not applicable, the associated criteria should be evaluated. If the criteria is applicable an adjustment to the indicator should be made. If the criteria is not applicable, evaluation of the principle shall be done and modification of criteria in a similar manner.

Changes to the RSB standard for geographic adaptation should be done in this prioritized manner:

1. Keep all Principles, Criteria & Indicators
2. Add Indicator
3. Modify Indicator
4. Delete Indicator
5. Add Criteria
6. Modify Criteria
7. Delete Criteria
8. Delete Principle

Consideration may need to be given to the difference between small-scale and large-scale operators.



Request

We ask that you, as technical advisor, reference the RSB process and use the attached reference table to complete the following:

- Evaluate each indicator and minimum requirements[1] for applicability, relevance and appropriateness in Hawaii. If these are clearly appropriate for Hawaii, then the indicators can remain unchanged. If the relevance and applicability of the indicator or minimum requirement is unclear, please provide a recommendation change.
- Justify your conclusion in the space provided. Please provide a compelling justification should you recommend adding, modifying or deleting criteria.
- Assess which principles and criteria are met by laws and regulations of the US and state of Hawaii. Please cite the applicable regulations or laws.

Explanation of documents / resources

RSB has an extensive set of resource documents that you may find helpful. The most relevant documents are available in the project resource library (see below). The complete set, as well as general information about RSB, can be viewed at www.rsb.org.

My team has streamlined and modified the RSB documents (individual principle overviews) for your use. This included: 1) condensing the overall text by removing repetitive language, 2) consolidating the minimum requirements and indicators (means of verifying that a minimum requirement is met) into one list, and 3) providing a space for your input. We have also separated the principles for ease of use. We highly recommend that you utilize these documents – available in the project resource library – during your assessment.

Resource Library

I have established a web-based resource library where you can find the following documents:

Contact Lists

- List of Technical Advisors per Principle (TA Vs P&C) *development in progress*
- Workshop stakeholders

Needs Assessment Instructions

- RSB Needs Assessment Introductory Presentation
- Technical Advisor Introduction Letter
- This memo

Principle tables for Technical Advisors

- Tables that provide minimum requirements, indicators and criteria for each individual principle (these are the documents you should use to conduct your assessment).

RSB Documents

- RSB Indicators

[1] RSB recommends that one should begin by evaluating minimum requirements alongside the Indicators (in some cases they are equivalent).

- RSB Principles & Criteria Version 1
- RSB Standard for adaptation to geographic condition

You can access, download or upload files through the following URL and password:

https://public.me.com/lizmuller
password: cotton

You can download and upload documents directly from this library. Please do not replace any existing document when uploading any revisions, but rather save as a duplicate file with your name or initials.

Support

Please contact me at 415.924.2335 or liz@lizmuller.com if you should have questions or require additional support.

Appendix 2
Technical Advisors by Principle
Phase 1

RSB Princple	Technical Advisor	Affliation
Principle 1: Legality	Kip Cherry*	Natural Resources Conservation Service
Principle 2: Planning, Monitoring and Continuous Improvement	Stevie Whalen Scott Turn	Hawai`i Agriculture Research Center Hawai`i Natural Energy Institute
Principle 3. Greenhouse Gas Emissions	Sam Pintz	Hawaiian Electric Company
Principle 4: Human and Labor Rights	Wallace Ishibashi	International Longshore & Warehouse Union
Principle 5: Rural and Social Development	Alani Apio Mae Nakahata	Kamau LLC Hawai`i Farm Bureau Federation
Principle 6: Local Food Security	Mae Nakahata	Hawai`i Farm Bureau Federation
Principle 7: Conservation	Charles "Chuck" Chimera Mae Nakahata Patricia Clifford	Hawai`i Invasive Species Council Hawai`i Farm Bureau Federation Hawai'i Invasive Species Council
Principle 8: Soil	William "Bill" Steiner Mae Nakahata	College of Tropical Agriculture and Human Resources Hawai`i Farm Bureau Federation
Principle 9: Water	Yvonne Y. Izu	Morihara Lau and Fong, LL Law Partnership
Principle 10: Air	Sam Pintz Mae Nakahata	Hawaiian Electric Company Hawai`i Farm Bureau Federation
Principle 11: Use of Technology, Inputs, & Management of Waste	Chuck Chimera Fred Perlak Dr. Lyle Wong Sandra Kunimoto Mae Nakahata	Hawai`i Invasive Species Council Monsanto Hawai`i Hawai`i Department of Agriculture Hawai`i Department of Agriculture Hawai`i Farm Bureau Federation
Principle 12: Land Rights	Mae Nakahata	Hawai`i Farm Bureau Federation
Algae Principles 7, 9 & 11	Carol Okada Domingo Cravalho Heidi Kuehnle	Hawai'i Department of Agriculture Hawai`i Department of Agriculture Kuehnle AgroSystems

* Kip Cherry provided general input confirming that laws and supporting enforcement mechanisms are effective in an agriculture setting.

Appendix 3
Webinar Presentation

Introduction to Roundtable for Sustainable Biofuels and its Needs Assessment Process

Hawai'i Biofuels Foundation

Autumn 2010

liz **muller**, llc

www.lizmuller.com

Webinar agenda

Introductions

HBF overview

RSB overview

Geographic adaptation process

Conducting the Needs Assessment

Discussion and Q&A

Introduction

- Hawai‘i has a master plan to expand renewable energy, including sustainable biofuels. Hawa‘ii Biofuels Foundation (HBF) supports this mission.
- Roundtable on Sustainable Biofuels (RSB) is the predominant international standard that defines and certifies sustainable biofuels.
- RSB has developed a process to evaluate the RSB Standard in the context of differing crops (including aquatic) and geographic conditions. This process begins with a needs assessment.
- The needs assessment process will focus on indicators and requirements through the lens of realistic implementation conditions.
- HBF does not intend to develop a RSB Standard for Hawai‘i at this time.

Roundtable for Sustainable Biofuels

RSB is an international multi-stakeholder initiative that defines and certifies sustainable biofuels production. It is:

- Simple, accessible and implemented worldwide
- Generic to all crops
- Adaptable to new information
- Efficient and inexpensive to measure

The RSB has developed resources to guide and support partners:

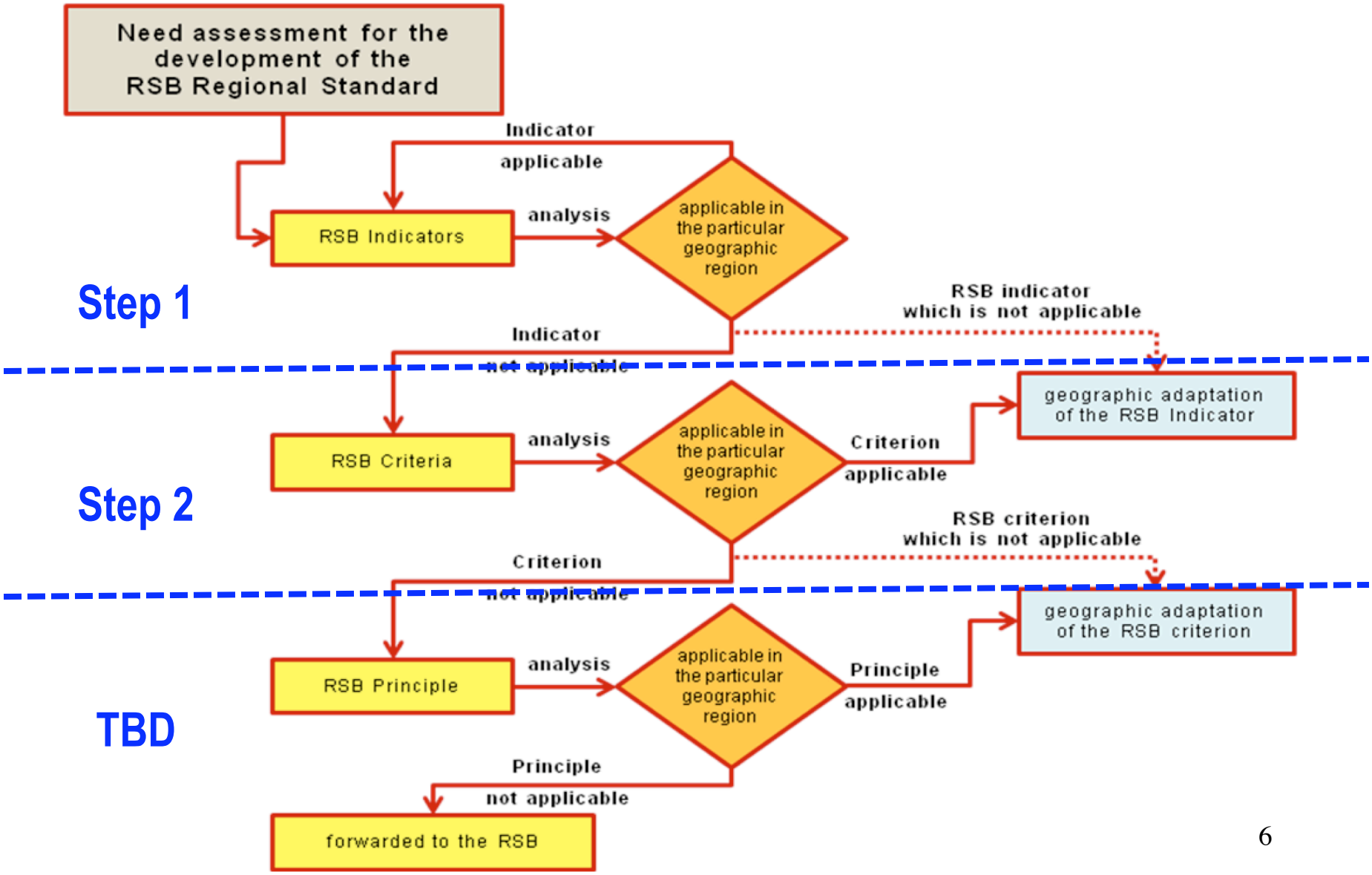
- The RSB Tool includes several GHG calculation methodologies
- The RSB Guidelines address these issues and include a Food Security Assessment
- Expert Groups on Indirect Impacts & GHG
- RSB's Needs Assessment for geographic adaptation

Visit www.rsb.org for more information

RSB's Principles and Hawai'i considerations

Principle 1: Legality
Principle 2: Planning, Monitoring and Continuous Improvement
Principle 3. Greenhouse Gas Emissions
Principle 4: Human and Labor Rights
Principle 5: Rural and Social Development
Principle 6: Local Food Security
Principle 7: Conservation
Principle 8: Soil
Principle 9: Water
Principle 10: Air
Principle 11: Use of Technology, Inputs, and Management of Waste
Principle 12: Land Rights
Hawaii: Algae
Hawaii: Cultural issues
Hawaii: Smallholder context

RSB's Needs Assessment Process Flow Chart



Changes to the RSB standard for geographic adaptation should be done in this prioritized manner

1. Keep all Principles, Criteria & Indicators
2. Add Indicator
3. Modify Indicator
4. Delete Indicator
5. Add Criteria
6. Modify Criteria
7. Delete Criteria
8. Delete Principle

We recommend taking a two step approach to conducting the Needs Assessment

1. Technical advisors should focus on assessing the applicability of each **indicator** (i.e. does it make sense and is it achievable). (**Requested by October 11th**)

2. After consolidating input from all technical advisors and where an indicator is deemed not applicable, the applicability of and possible changes to the subject **criteria will be considered**. (October 20 – 29)

Request of Technical Advisors in Step 1

1. Evaluate each of the minimum requirements or indicators for applicability in Hawai‘i.

2. Technical advisors should suggest 1) no changes, 2) additions, 3) modifications or, 4) deletions of indicators as appropriate.

3. Justify your suggestion in the space provided.

4. Assess which principles and criteria are met by laws and regulations of the US and state of Hawai‘i. Please cite the applicable regulations or laws.

Additional requests will be discussed based on the outcomes from the above tasks.

Example of the Needs Assessment Table

Principle 7: Conservation			
RSB Criterion	Minimum Requirements / Indicators	No changes to Criteria or Indicator (justification optional)	Addition, modification or deletion of minimum requirement or Indicator with justification
Criterion 7c. Biofuel operations shall protect, restore or create buffer zones.	Buffer Zones shall be protected, restored or created to protect adjacent sites Within the operation site, buffer zones shall be protected, restored or created <u>Additional Indicators</u>: 7.c.i.1. Operator demonstrates that buffer zones are protected, restored or created. 7.c.i.2. Buffer zones are effective in mitigating potential negative impacts. 7.c.i.3. Buffer zones remain unused.		

Example of the Needs Assessment Table

Principle 1: Legality			
RSB Criterion	Minimum Requirements / Indicators	No changes to Criteria or Indicator (justification optional)	Addition, modification or deletion of minimum requirement or Indicator with justification
Criterion 1a. Biofuel operations shall **comply with all applicable laws and regulations** of the country in which the operations occur and with relevant international laws and agreements.	1.a.i.1. Evidence demonstrating compliance with the applicable national laws and regulations.		
	1.a.i.2. Compliance with the applicable international laws.		
	1.a.i.3. All applicable licenses, permits and other legal requirements are valid.		

Next steps and project timeline

Technical advisors input on minimum requirements and indicators (Step 1) by October 11th

Some technical advisors will work with HBF's facilitator and RSB to assess the applicability of and possible changes to select **criteria**. (October 18th – 29th)

Stakeholder workshops (November 15th – 19th)

- Hawai‘i, Kaua‘i, Maui and O‘ahu
- Stakeholder recommendations are appreciated

Submittal to RSB (Mid-December)

- Recommendations and considerations
- HBF does not intend to develop a standard at this time

Questions and discussion

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Liz Muller, LLC is a WBENC-Certified Women's Business Enterprise and a San Francisco Bay Area Green Business

Appendix 4
Applicable Plans, Policies, Statutes and Regulations to RSB Principles

RSB Principle	Applicable Laws and Regulations
Principle 1: Legality	**State** Hawaii Office of Environmental Quality Control implements HRS § 343 (Environmental Impact Statements)
Principle 2: Planning, Monitoring and Continuous Improvement	**State** **Hawaii Clean Energy Initiative** The state of Hawaii has signed a Memorandum of Understanding (MOU) with the U.S. Department of Energy (DOE) Assistant Secretary for Energy Efficiency and Renewable Energy (EERE) to establish the Hawaii Clean Energy Initiative. DOE and the state pledge to collaborate to produce 70% of the state's energy needs from clean energy sources by 2030. **Bioenergy Master Plan: Act 253 of 2007, Part III** DBEDT shall develop and prepare a bioenergy master plan in consultation with representatives of the relevant stakeholders. As required by law, DBEDT made its report to the legislature in 2008. **Act 240** A 2006 law that provided funding to DBEDT to "conduct a statewide multi-fuel biofuels production assessment of potential feedstocks and technologies, the economics of the various renewable fuels pathways, and the potential for ethanol, biodiesel, and renewable hydrogen production to contribute to Hawaii's near-, mid-, and long-term energy needs." **Energy Feedstock Program**, HRS § 141-9 The Energy Feedstock Program was established within the Department of Agriculture to promote and support the production of energy feedstock in Hawaii and establish milestone.
Principle 3: Greenhouse Gas Emissions	**Federal** Energy Independence and Security Act (EISA) 2007 advanced biofuels must achieve at least a 50% reduction in life-cycle greenhouse gas emissions. **State** **Act 234,** Session Laws of Hawaii 2007 Established the State's policy framework and requirements to address Hawaii's greenhouse gas emissions. **HRS 226-18:** Reduction, avoidance, or sequestration of greenhouse gas emissions from energy supply and use
Principle 4: Human and Labor Rights	
Principle 5: Rural and Social Development	**State** **Rural** Small farms and low-density residential uses, with a minimum ½-acre lot size. Jurisdiction is shared by the counties and the State land use change. **Historic Sites**

	State Historic Preservation Division Review of Permits: HRS § 6E-42 requires that the DLNR-SHPD be given notice from a permitting agency when the agency has reason to believe that a project "may affect historic property." **Land Use Boards and Commissions** Board of Land and Natural Resources The BLNR convenes twice monthly to review and take action on department submittals, including land leases and Conservation District Use Applications (CDUAs). DLNR Land Division HAR § 183-185, 190, 219-223
Principle 6: Local Food Security	**State** HRS §§ 141-168 – I don't think this fits here, looked online and it is general ag regs, I think? HRS § 205-2, 205-4.5, 205.4.6: uses, and restrictions on use, on agricultural zoned land. Permitted uses include growing of crops for bioenergy and biofuel processing facilities. HRS § 205-41, et seq. govern the more restrictive uses allowed on IAL. HRS § 205-44: Reclassification of IAL must meet strict criteria. HRS § 205-46: Incentives for important agricultural lands: grants, tax incentives, and other benefits. Article XI, Sec 3. (1978) - Constitutional mandate for IAL: the State shall conserve and protect agricultural lands, promote diversified agriculture, increase agricultural self-sufficiency and assure the availability of agriculturally suitable lands. Act 183 (2005) – Fact sheet on IAL SB 2646 (2008) - Incentives which trigger IAL process HRS § 226 Hawaii State Planning Act
Principle 7: Conservation 7a Maintain or enhance conservation values	**Federal** U.S. Endangered Species Act of 1973. National Environmental Policy Act of 1969 **State** HRS § 195D – Endangered Species Act, Conservation of Aquatic Life, Wildlife, and Land Plants HRS § 195 – Natural Area Reserve Systems. HRS § 343, land use in conservation area require an EA or EIS
7b Maintain or enhance ecosystem functions	**Federal** National Environmental Policy Act of 1969
7e Prevent invasive species from invading areas outside the operation site.	**Federal** Public Law 109-154 109th congress Public Lands Corps Healthy Forests Restoration Act of 2005 **State** HRS § 194 – Invasive Species Council. HRS § 520A – Landowners liable to control invasive species
Other	**State**

	Other pertinent regulations: Seed Rules: http://hawaii.gov/hdoa/admin-rules/subtitle-6-division-of-plant-industry/AR-67.pdf ; HRS § 152 – Noxious weed control Plant import: http://www.capitol.hawaii.gov/hrscurrent/Vol03_Ch0121-0200D/HRS0150A/HRS_0150A-0006_0001.htm HRS § 195D – Endangered Species Act, Conservation of Aquatic Life, Wildlife, and Land Plants HRS § 150A – Importing Plants, Animals, and Microorganisms. HRS § 194 – Invasive Species Council. There is established the invasive species council for the special purpose of providing policy level direction, coordination HRS § 520A – Landowners liable to control invasive species HRS § 195 – Natural Area Reserve Systems. The legislature finds and declares that (1) the State of Hawaii possesses unique natural resources, such as geological and volcanological features and distinctive marine and terrestrial plants and animals, many of which occur nowhere else in the world, that are highly vulnerable to loss by the growth of population and technology HRS § 186 – Tree Farms. Included within the Agricultural District under HRS 205-2 or within the Conservation District and zoned for commercial forest use. HRS § 58 – Exceptional Trees: It is the policy of the State to safeguard exceptional trees from destruction due to improper land development, and the legislature finds that enactment of protective regulations by the counties to accomplish this is a valid and important public purpose.
Principle 8: Soil	
Principle 9: Water	**Federal** **National Pollutant Discharge Elimination System (NPDES) Permits** Since 1974, the U.S. Environmental Protection Agency delegated permitting authority for NPDES permits to the State of Hawaii, Department of Health, Clean Water Branch. NPDES permitting requirements apply to both "point source" (generally, pipes or manmade ditches) or "non-point sources," such as stormwater runoff. **NPDES Stormwater: Polluted Runoff Control Program** Nonpoint Source Pollution caused by rainfall moving over and through the ground, carrying pollutants that are eventually deposited into streams, wetlands, coastal waters, and aquifers. Hawaii 2006 Water Quality Monitoring and Assessment Report Hawaii's Coastal Nonpoint Pollution Control Management Plan - June 1996 Hawaii's Implementation Plan for Polluted Runoff Control - July 2000 Hawaii's Local Action Strategy to Address Land-Based Pollution Threats to Coral Reefs - March 22, 2004 **State** The Hawaii Constitution provides that the State has an obligation to protect, control, and regulate the waters of the state. There are 23,000 acres of inland surface water, 3 million acres of state ocean water, and 410,000 acres of coral reef around the Main Hawaiian Islands. **Marine Waters** DLNR's Office of Conservation and Coastal Lands oversees beach and marine lands out

	to the seaward extent of the State's jurisdiction (3 nautical miles from shore). HRS § 183C (governing lands located within the Conservation District) and marine activities within State marine waters typically require a Conservation District Use Permit (CDUP). **Ground and Surface Water** Hawaii's Commission on Water Resource Management has jurisdiction over ground and surface waters, including any and all water on or beneath the surface of the ground, including natural or artificial watercourses, lakes, ponds, or diffused surface water and water percolating, standing, or flowing beneath the surface of the ground. State Water Code, HRS § 174C of the Hawaii Revised Statutes; Hawaii Administrative Rules §§ 13-167 to 13-171 The State Water Code, Chapter 174C, Hawaii Revised Statutes, authorizes the Commission to designate water management areas for surface water use regulation where the Commission, after research and investigations, and consultation with the appropriate county mayor, county council, and county water agency, and after public hearing and published notice, finds that serious disputes respecting the use of surface water resources are occurring. **Water Availability and Limitations on Use of Water for Biofuels Production** The CWRM, Stream Protection and Management Branch, issues permits for new and existing uses of surface and ground water. Users of ground water (aquifer, wells) in a Ground Water Management Area require a Ground Water Use Permit, issued by the commission. **Sources of Information for Water Use** Department of Health Rules are governed by HAR § 11.
Principle 10: Air	**Federal** Clean Air Act (PDF as of Feb.2004) **State** HRS 342B – Clean Air and Air Pollution Control
Principle 11: Use of Technology, Inputs, and Management of Waste	**State** HRS §§ 342J, 128D, 128E – Hazardous Waste, Oil, Toxic Substances HRS § 149A – Pesticides
Principle 12: Land Rights	**State** Most uses require a Conservation District Use Permit (CDUP), which is issued by the Board of Land and Natural Resources. Land uses in the Conservation District trigger HRS § 343, and require an Environmental Assessment (EA) or Environmental Impact Statement (EIS) unless they are declared "exempt." Biofuels Production Land Use Allowance: Senate Bill 2849, 2008. Became Act 145, signed into law on June 5, 2008

	The state of Hawaii permits the use of lands originally zoned as agricultural land use districts to be used for renewable energy production, storage, and distribution, including the production of biofuels. **Special Use Permits** (SUP), authorized by HRS § 205-6, allow "certain unusual and reasonable" uses in the agricultural and rural districts; these uses must comply with the Hawaii Land Use Law and meet the LUC guidelines. HAR § 15-15-95(b) provides guidelines as to what is an "unusual and reasonable" use of agricultural land. HRS § 205 defines state law and outlines areas subject to county-level regulation. Land Use District boundaries were originally set by the State Land Use Commission (HRS § 205-2, HAR § 15-5). No amendment to any land use district boundary nor any other action by the land use commission shall be adopted unless such amendment or other action conforms to the Hawaii state plan. HRS § 205-16. Permitted uses: very restricted, under HRS § 183C and HAR § 13 (DLNR).

Appendix 5
Workshop Participant Packet

Hawai‘i Biofuels Foundation

Sustainable Biofuels Workshop
December 2010

	Registration and Refreshments
5 min	**1. Welcome** • Hawai‘i Biofuels Foundation
5 min	**2. Introduction to Hawai‘i Biofuels Foundation** • Hawai‘i Biofuels Foundation Board Member
5 min	**3. Workshop Objectives and Agenda** • Hawai‘i Biofuels Foundation
10 min	**4. Introductions** • All
10 min	**5. Overview of Roundtable on Sustainable Biofuels** • Matt Rudolph (RSB)
1 hour	**6. The RSB Standard in the Context of Hawai‘i** • Liz Muller (facilitator) • All
10 min	**7. Wrap up** • Liz Muller
5 min	**8. Closing Statement** • Hawai‘i Biofuels Foundation
	Meeting close

Frequently Asked Questions

HAWAIʻI BIOFUELS FOUNDATION

What is the Hawaiʻi Biofuels Foundation (HBF)?

The HBF is a multi-stakeholder governed, 501(c)(3) organization that will obtain grants to support a variety of initiatives - including, but not limited to, assessments, research and development, and demonstration projects - to help create a future for sustainable and locally produced biofuels in Hawaiʻi.

How will HBF achieve this mission?

Ensuring that the transition to a biofuels industry in Hawaiʻi is accomplished in an environmentally and socially sustainable manner will be a top priority for HBF. The Foundation also recognizes that a new energy future for Hawaiʻi will require overcoming several hurdles. In the short term, research and development of locally grown feedstock will be critical in the cultivation of biofuels crops. HBF aims to fund research and development of existing and next generation feedstocks, such as algae, and support for feedstock process (e.g. crushing and oil extraction). HBF also recognizes the need to define the potential economic viability for agricultural stakeholders—both large landowners and smaller farmers.

How was HBF developed?

The need to encourage production of sustainable, locally produced biofuels in Hawaiʻi was originally identified in a discussion between Hawaiian Electric Company (HECO) and the Natural Resources Defense Council (NRDC). A key consideration was the importance of working with local stakeholders - and having a multi-stakeholder entity to facilitate the collaboration across various interested parties to support the responsible expansion of sustainable biofuels in Hawaiʻi. After discussions with current members of the HBF Board of Directors, who share the vision of sustainable, locally produced biofuels in Hawaiʻi, the creation of HBF was underway. The HBF filed its articles of incorporation in March 2010 and received 501(c)(3) status on July 8, 2010.

Who is on the HBF Board of Directors?

HBF recognizes that representation from constituencies in Hawaiʻi that have an interest in the foundation's mission or will be impacted by the development of biofuels in Hawaiʻi is essential to its success. Current board members include:

David G. Waller, HECO
Debbie Hammel, NRDC
Dr. Michael Hamnett, Research Corporation of the University of Hawaiʻi
Mark Fox, The Nature Conservancy of Hawaiʻi
Richard Ha, Hamakua Springs Country Farms
Luella Costales, Hawaiʻi Farm Bureau Federation
Wallace Ishibashi, International Longshore and Warehouse Union
Alani Apio, Kamau LLC

How does HBF align with other renewable initiatives such as Hawaiʻi Energy Policy Forum (HEPF), Hawaiʻi Clean Energy Initiative (HCEI) and others?

HBF aims to complement, not compete with, other efforts such as HEPF and HCEI and HBF Board members are also engaged in other initiatives. HBF supports the collaboration and exchange of knowledge and experience across these, and other initiatives, that share a common vision of a new energy future in Hawaiʻi.

How can I learn more about HBF?

HBF is committed to informing interested parties of our activities as we support sustainably produced biofuels. Please visit our website www.hawaiibiofuelsfoundation.org for additional information or contact HBF by emailing us at info@hawaiibiofuelsfoundation.org.

ROUNDTABLE ON SUSTAINABLE BIOFUELS AND ITS NEEDS ASSESSMENT PROCESS

What is the Roundtable on Sustainable Biofuels (RSB)?

The RSB (http://rsb.epfl.ch/) is an international initiative that seeks to bring together farmers, companies, non-governmental organizations, experts, governments, and inter-governmental agencies concerned with ensuring the sustainability of biofuels production and processing.

The RSB has developed voluntary standards and a third-party certification system for sustainably produced biofuels. The RSB Standard is intended to encompass environmental, social and economic principles and criteria that have been developed through an open, transparent, and multi-stakeholder process.

What are the guiding principles of the RSB Standard?

The RSB Standard is based on 12 principles and associated criteria (http://tinyurl.com/rsbversion2) that define the social and environmental requirements with which biofuel operations must comply. The principles are high level 'tenets' of sustainability, and the associated criteria under each principle indicate the minimum requirements that must be met for compliance to be granted. Associated with each criterion are indicators that help operators and auditors identify how to demonstrate RSB compliance. See Exhibit A for a complete list of the 12 principles.

- *RSB **Principles** - describe the broad areas that are addressed by the RSB Standard.*
  - ***Criteria** - provide a greater level of detail on specific areas that need to be addressed under the corresponding principle.*
    - ***Indicators** - provide the means by which an operator demonstrates compliance with the criteria.*

What is the RSB needs assessment and how is it conducted?

The RSB has created a geographic adaptation standard that is intended to ensure that the international RSB Standard can be adapted to the political, legal, social, environmental, cultural, ethical, and/or economic conditions in a particular geographic region.

The RSB needs assessment is the first step in a process by which the RSB Standard is evaluated for potential modification for a particular geographic region. The needs assessment begins by evaluating if each indicator is relevant, appropriate and applicable in the subject region. If it is determined that an indicator is not applicable, the associated criterion is evaluated. If the criterion is applicable, an attempt is made to improve the applicability by introducing an additional indicator to meet the intent of the associated criterion. If the criterion is not applicable, then the principle is evaluated. An adjustment to the criterion can be made if it is found that the principle is applicable. Any suggestions for modification of the RSB Principles must be approved by the RSB Steering Board.

How can I provide input into the RSB needs assessment process?

The best way to engage in this RSB needs assessment process is to attend and participate in the upcoming workshops. If you are unable to attend any of the workshops, please email your comments to the HBF at info@hawaiibiofuelsfoundation.org. While HBF encourages continued input and engagement over the long-term, we do request that stakeholders provide comments no later than Thursday, December 18, 2010 if they would like them incorporated into the official needs assessment report to RSB.

RSB PRINCIPLES

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

Principle 2: Planning, Monitoring and Continuous Improvement
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.

Principle 3:. Greenhouse Gas (GHG) Emissions
Biofuels shall contribute to climate change mitigation by significantly reducing lifecycle GHG emissions as compared to fossil fuels.

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

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

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

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

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

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

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

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

Principle 12: Land Rights
Biofuel operations shall respect land rights and land use rights.

Please note that *Principle 8: Soil* only applies to a feedstock producer. All other principles apply to feedstock producer, feedstock processor and biofuel producer. *Principle 3: Greenhouse Gas Emissions* is the only principle that applies to biofuel blenders.

Roundtable on Sustainable Biofuels' Needs Assessment Workshop

Hawai'i Biofuels Foundation
December 6th – 9th, 2010

liz **muller**, llc
www.lizmuller.com

Hawai'i Biofuels Foundation

HBF is a multi-stakeholder organization that includes representation from the agricultural and environmental communities, the electric utility, research, development and engineering entities, labor, and Native Hawaiian interests.

HBF is seeking to facilitate the development of a sustainable Hawai'i-based biofuels industry, specifically utilizing locally grown agricultural wastes or energy crops.

HBF aims to obtain grants toward the funding of various initiatives, assessments, research, development projects and demonstration projects that will help to create a future for sustainable biofuels in Hawai'i.

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HBF has representation from different constituencies

Current board members include:

David G. Waller, Hawaiian Electric Company
Debbie Hammel, Natural Resources Defense Council
Dr. Michael Hamnett, Research Corporation of the University of Hawai'i
Mark Fox, The Nature Conservancy of Hawai'i
Luella Costales, Hawai'i Farm Bureau Federation
Wallace Ishibashi, International Longshore and Warehouse Union
Alani Apio, Kamau LLC

3

Renewable Energy Initiatives in Hawai‘i

Hawai‘i Energy Policy Forum - is a consensus-based multi-stakeholder forum that supports sustainable energy in Hawai‘i by enabling of information sharing, stakeholder collaboration and civic participation.

Hawai‘i Clean Energy Initiative - aims to meet 70% of Hawai‘i energy needs with clean energy by 2030 with a vision of future energy independence.

Hawai‘i Biofuels Foundation - is a multi-stakeholder organization that is seeking to facilitate the development of a sustainable Hawai‘i-based biofuels industry.

4

Workshop agenda

Welcome
HBF Overview
Introductions
RSB Overview
Workshop Overview
Discuss RSB Principles, Criteria and Indicators
Wrap up
Closing

5

Introductions

Name

Organization

6

Roundtable on Sustainable Biofuels (RSB) Introduction

RSB is an international multi-stakeholder initiative based at the Swiss Federal Institute of Technology that defines and certifies sustainable biofuel production.

- Implementable worldwide
- Generic to all feedstocks and biofuel types
- Adaptable to new technology
- Efficient and inexpensive to implement

The RSB has developed resources to guide and support partners:

- The RSB Tool includes a multi-GHG calculation methodologies
- Multiple Chain-of-Custody models to track products through the supply chain (inc. product segregation & mass-balance)
- RSB's Needs Assessment for geographic adaptation

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Why the need for a strong standard?

Criticism against biofuels for not delivering on their promise of sustainability, especially in regards to:

- Deforestation
- Greenhouse gas emissions reductions
- Food Security

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RSB's Principles – Credible, Robust and Comprehensive

Principle 1: Legality
Principle 2: Planning, Monitoring and Continuous Improvement
Principle 3. Greenhouse Gas Emissions
Principle 4: Human and Labor Rights
Principle 5: Rural and Social Development
Principle 6: Local Food Security
Principle 7: Conservation of Biodiversity
Principle 8: Soil
Principle 9: Water
Principle 10: Air
Principle 11: Use of Technology, Inputs & Waste Management
Principle 12: Land Rights

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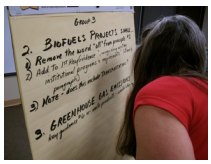
Standards Development Through Stakeholder Outreach

Dozens of stakeholder outreach meetings held since 2008 throughout the world to receive feedback on the RSB Standards, including in: Brazil, Mali, Mozambique, Belgium, Kenya, Dominican Republic, United States, Colombia, Argentina, Malaysia, China and numerous other countries



Thousands of people have participated in the in-person and online discussions. Reports from all meetings and all comments received during all of the meetings available on the RSB website – www.rsb.org

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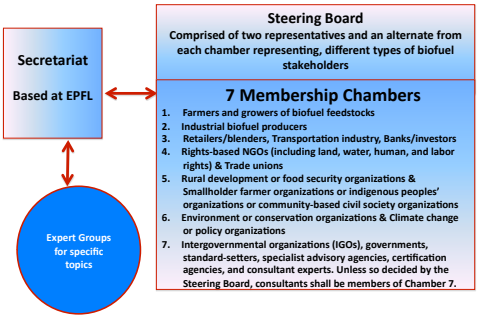
RSB Pilot Projects – Checking the Usability of Version One

- Pilot projects held around the world using a variety of feedstocks in different locations: Australia (Wheat), Mozambique (Sugarcane), Guatemala (Jatropha), Brazil (Sunflower), Peru (Sugarcane)
- Results were used to propose changes for Version Two of the RSB Standard.
- Pilots found that the standards were feasible, but that there were areas of duplication and need for clarification, especially in regards to the impact assessment requirements. All information posted at www.rsb.org
- Pilot projects on going… Let us know if you might want to participate!

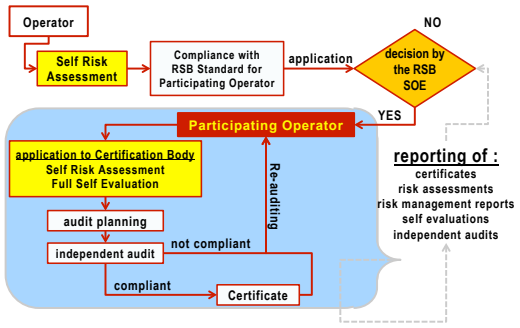
11

RSB Governance Structure: A Membership Organization



12

The RSB Certification System



13

Risk-based approach

A risk-based approach adjusts the audit intensity by the risk that a particular operator brings to the system.

Risk class	Audit interval	Audit type	Audit team
1	12 months	desk audit	1 international lead auditor
	24 months (+6)	office & field audit	1 international lead auditor + 1 local auditor
2	9 months	desk audit	1 international lead auditor
	18 months (+6)	office & field audit	1 international lead auditor + 1 local auditor
3	12 months (+6)	office & field audit	1 international lead auditor + 1 local auditor
4	9 months (+3)	office & field audit	1 international lead auditor + 1 local auditor + technical, social, environmental experts
5	6 months (+3)	office & field audit	
6	3 months (+3)	office & field audit	

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Complementary mandates and initiatives

Renewable Fuels Standard – Compliance with the US Renewable Fuel Standard GHG emissions reductions requirements

Green Initiative for Fuels Transition Pacific – Compliance with Energy Independence and Security Act (EISA) Section 526

Sustainable Biodiesel Alliance – 13 Principles and Baseline Practices for Sustainability for Biodiesel

RSB is working with local initiatives and partners when possible, seeking areas of collaboration to define and certify and sustainable biofuels

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Workshop objectives

- Be respectful - seek to understand differing opinions, listen without judgment
- Provide constructive input – succinctly and on topic
- Consider the big picture over the long-term
- Please participate

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The RSB needs assessment – objective and process

Objective

Assess the legal, socio-economic, ecological, technological, and cultural applicability and appropriateness of indicators and criteria in the context of Hawai'i.

Process

Using the RSB's geographic adaptation standard we are taking the following steps to conduct the needs assessment:

1. Technical Advisors assessed the applicability of each indicator
2. Stakeholder workshops aimed at soliciting information and input
3. Inform RSB of process and findings

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The Hawai'i context

- Hawai'i is an isolated archipelago that contains a high level of biodiversity, including many rare or protected species, in its diverse ecosystems.
- The Hawaiian Islands have finite resources such as land and water.
- The localized topographic and climatic conditions on the islands limits large-scale production of biofuels.
- Hawai'i's biofuel market is challenging under current market conditions.
- The tightly knit Hawai'i community lives with a rich sense of tradition and spirituality.
- Engaging the local community in this process is important.

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Technical Advisors

Alani Apio, Kamau LLC
Patricia Clifford, Hawai'i Invasive Species Council
Charles Chimera, Hawai'i Invasive Species Council
Domingo Cravalho, Hawai'i Department of Agriculture
Heidi Kuehnle , Kuehnle AgroSystems
Wallace Ishibashi, International Longshore & Warehouse Union
Yvonne Izu, Morihara Lau and Fong, LLP Law Partnership
Sandra Kunimoto, Hawai'i Department of Agriculture
Mae Nakahata, Hawai'i Farm Bureau Federation
Carol Okada, Hawai'i Department of Agriculture
Fred Perlak, Monsanto Hawai'i
Sam Pintz, Hawaiian Electric Company
William Steiner, College of Tropical Agriculture and Human Resources
Scott Turn, Hawai'i Natural Energy Institute
Stevie Whalen, Hawai'i Agriculture Research Center
Lyle Wong, Hawai'i Department of Agriculture

It should not be inferred that Technical Advisors endorse RSB or HBF.

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Technical Advisor input – general comments

- Costs and benefits should be equally shared among all players
- Existing regulations may address many of the issues
- Small- and large-scale producers are needed
- The RSB Standard should not compete with existing standards or mandates
- Certification should be streamlined
- The Native Hawaiian Community and their rights must be respected
- We should encourage the sharing of business plans, technology, contingency plans, etc.
- Engage broad range of committed stakeholders

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Sufficient existing laws are in place for the following principles:

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

Principle 2: Planning, Monitoring and Continuous Improvement
Sustainable biofuel operations shall be planned, implemented, and continuously improved through an open, transparent, and consultative Environmental and Social Impact Assessment (ESIA) and an economic viability analysis.

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

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

Principle 12: Land Rights
Biofuel operations shall respect land rights and land use rights.

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Modifications were recommended for the following principles:

Principle 3: Greenhouse Gas Emissions
Principle 6: Local Food Security
Principle 7: Conservation
Principle 8: Soil
Principle 9: Water
Principle 10: Air
Principle 11: Use of Technology, Inputs, and Management of Waste

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Technical Advisor input to the RSB Standard (continued)

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

Input
- May need some special provision for algae biomass.
- GHG compliance and LCA should be periodically revisited.

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Principles thought not to be applicable in Hawai'i – as strictly defined or at an operator level

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

Input
Hawai'i is not a food insecure region (by United Nations Food and Agriculture Organization definition).
May be more appropriate to evaluate if biofuels replace existing agricultural (including livestock) activity.
Include flowers, foliage, landscape plants and other critical products.

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Technical Advisor input to the RSB Standard (continued)

Principle 7: Conservation

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

Input

- *Criterion 7.a Conservation values of local, regional or global importance within the potential or existing area of operation shall be maintained or enhanced.*
  Require the development of a Conservation Plan and Monitoring Plan.
- *7c. Biofuel operations shall protect, restore or create buffer zones.*
  The development of buffer zone spatial scale shall depend on dispersal characteristics of proposed biofuel species and adjacent/regional ecosystem types.
- *7.d.i.4. Establish ecological corridors that facilitate the movement of wildlife in areas surrounding the site(s).*
  Ecological corridors are effective in protecting, maintaining and/or enhancing biodiversity at ecosystem and landscape scales.
- *7. e.i.7. In the case of invasion, the participating operator has implemented corrective measures.*
  Upon discontinuation of crop cultivation, all viable crops and/or propagules should be destroyed and continuous monitoring should be conducted.

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Technical Advisor input input on the RSB Standard (continued)

Principle 8: Soils

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

Input

- Crop rotation may not make sense if working with a perennial grass.
- Some stakeholders may consider fallow areas with planted vegetation under arid irrigated conditions to be a waste of water use.
- Replace Soil Management Plans reference to Conservation Plans.
- Plan should not place such a heavy emphasis on “organic” practices.
- Pesticides are under FIFRA law as well as State conditions, WHO is not appropriate.
- Delete “Soil Health” unless there is a clear metric.

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Principles thought to warrant change at principle level

Principle 9: Water

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

Input

Under the Hawai‘i Water Code, all water resources are a trust obligation of the state and individuals do not have ownership over water resources. A possible alternative is “Biofuels operations shall respect existing water rights.”

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Technical Advisor input on the RSB Standard (continued)

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

Input
- Emission control plan should be updated every 5 years.
- Replace "Best Available Technology (BAT)" to "Best Available Control Technology (BACT)" to ensure technologies are available and not cost prohibitive.
- The three year requirement to phase out open air burning should be deleted until alternative technology is available.

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Technical Advisor input on the RSB Standard (continued)

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

Input
- GMOs are addressed by USDA laws and should not be separated out from other technologies.
- Delete the need for technology to provide "social benefits" - this is an unreasonable burden on the operator and metrics are not defined.
- Should reference US rules not international.
- Byproduct management should be part of the risk assessment.

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Questions and discussion

- Additional input on RSB Standard?
- Reaction to Technical Advisors' input to date?
- Questions on the needs assessment process and objective?
- Additional questions or comments?

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Follow up and further input

Please visit www.hawaiibiofuelsfoundation.org
to contact or learn more about HBF

To access additional information on the RSB needs assessment and provide additional input please download resources at
https://public.me.com/lizmuller
password: cotton
and email to liz@lizmuller.com

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ÉCOLE POLYTECHNIQUE
FÉDÉRALE DE LAUSANNE

Roundtable on Sustainable Biofuels

12 Principles & Criteria form the core of the RSB Standard

The RSB Principles & Criteria describe the fundamental requirements of a sustainable biofuel production, such as the need to include local stakeholder consultation, meet minimum Greenhouse Gases performance, ensure conservation of important ecosystems and mitigate food insecurity in the region of operation.

The primary use of the RSB Standard is a certification system involving independent 3rd party certification bodies. The RSB certification model uses a risk management approach, which ensures security and robustness while remaining flexible for participating operators. To match the needs of operators, several "chain of custody" options are available, including 100% segregation, mass balance, etc. It is also possible to certify groups of producers. The RSB aims to be the "one-stop shop" for compliance with various regulations and seeks to be recognized by market regulators, such as the European Union.

The Roundtable on Sustainable Biofuels is coordinated at the Ecole Polytechnique Fédérale de Lausanne (EPFL) in Switzerland and is led by a multi-stakeholder Steering Board. Each member of the Steering Board represents one of the 11 RSB chambers, which comprise all biofuel sectors and stakeholders, including farmers, biofuel producers, the transportation industry, environmental and social NGOs, research institutes, governments and investors.
The RSB is committed to work in transparency, take decisions by consensus and include all interested stakeholders.

RSB Principles & Criteria

1. Legality
2. Planning, Monitoring & Continuous Improvement
3. Greenhouse Gases Emissions
4. Human & Labor Rights
5. Rural & Social Development
6. Food Security
7. Conservation
8. Soil
9. Water
10. Air
11. Use of Technologies, Inputs & Management of Wastes
12. Land Rights

The mission of the Roundtable on Sustainable Biofuels (RSB) is to ensure that biofuels deliver on their promises of climate change mitigation, economic development and energy security without causing environmental or social damage, such as deforestation and food insecurity. The Standard developed by the RSB consists of a set of normative documents and guidelines. It covers the entire biofuel value chain from "farm to tank" and addresses the negative impacts potentially caused by biofuel production.

RSB's commitment toward climate change mitigation

One of the central requirements of the RSB Standard is that biofuels show significantly reduced greenhouse gases emissions over their whole life cycle, as compared with fossil fuels.

To reduce its own carbon footprint, the RSB organizes the consultation of worldwide stakeholders through virtual discussions (teleconferences, emails and blogs). In-person meetings are only organized for the most important milestones or to reach out to stakeholders with limited access to virtual discussions.

What is a standard?

A standard describes the rules to be obeyed by operators in a given sector in order to lift their activities up to an officially recognized level of quality, security or sustainability for instance. The RSB Standard specifically focuses on sustainability. By complying with the requirements of the RSB Standard, a biofuel producer may limit the negative environmental and social impact of her/his operations while remaining economically viable.

In 2010, the RSB will test the Standard on the field. Certified biofuels should reach the market at the end of 2010/ early 2011. For more information about the RSB, its membership and upcoming activities, please visit www.rsb.org

Roundtable on Sustainable Biofuels

Type of document: RSB Principles and Criteria

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RSB Principles & Criteria for Sustainable Biofuel Production

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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.

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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.

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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.*

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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.*

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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.*

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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.*

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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 conversation 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.

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[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*
  a. *Organic direct planting,*
  b. *Permanent soil cover,*
  c. *Crop rotation, or*
  d. *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:*
    a. *good practices or*
    b. *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.*

***

Feedback Form

Sustainable Biofuels Workshop
December 2010

Name (optional):_____
Date and location of workshop: _____

OVERALL WORKSHOP IMPRESSION

		STRONGLY AGREE				STRONGLY DISAGREE
1	The workshop was worthwhile					
2	My expectations were met					
3	The right topics were addressed					
4	My understanding of the application of RSB Standards to the context of Hawai‘i has improved					
5	The discussions were highly productive					

PRESENTATIONS

Were the presentations relevant and informative

		EXCELLENT				POOR
6	Introduction to the Hawai‘i Biofuels Foundation					
7	Roundtable on Sustainable Biofuels					
8	RSB applicability in the context of Hawai‘i					

FACILITATION AND ORGANISATION

		EXCELLENT				POOR
10	The facilitation					
11	Event preparation and logistics					

OPEN QUESTIONS

12 What did you particularly like about this workshop?

13 What would you suggest be improved for future workshops?

Appendix 6: Workshop Invitation

Roundtable for Sustainable Biofuels (RSB) Standard

Registration Reminder

Please register for the free Roundtable for Sustainable Biofuels workshop by clicking here by November 30th.

If you have already registered for an upcoming workshop, you will receive confirmation and additional information shortly.

Invitation

The Hawai‘i Biofuels Foundation (HBF) will be presenting the Roundtable for Sustainable Biofuels (RSB) Standard to discuss the applicability of the standard in the context of Hawai‘i.

HBF is a not-for-profit, multi-stakeholder organization that is seeking to facilitate the development of a sustainable Hawai‘i-based biofuels industry, specifically utilizing locally-grown agricultural wastes or energy crops.

We hope that you will be able to attend one of the workshops below as we believe your active participation would add tremendous value to this discussion.

During the workshop, you will learn more about the RSB and HBF as well as discuss the applicability of the RSB Standard in the context of Hawai‘i's unique legal, socio-economic, ecological and cultural environments.

- Click here for the event website and latest updates: http://uhhconferencecenter.com/roundtable-for-sustainable-biofuels-rsb-standard

- Click here to download a PDF Flyer of the info below on the Roundtable on Sustainable Biofuels (RSB) Standard

Statewide Schedule

DATES	TIMES	ISLAND	VENUE
December 6th, 2010	10:00am - 12:00pm	**Hawai‘i Island**	Kona: West Hawai‘i Campus, Building 4, Room 2
December 6th, 2010	5:00 - 7:00pm	**Hawai‘i Island**	Hilo: UH Hilo Campus, Room UCB 118
December 7th, 2010	5:00 - 8:00pm	**O‘ahu**	Honolulu Community College, Multi-Media Room
December 8th, 2010	5:00 - 7:00pm	**Kaua‘i**	Kaua‘i Community College, Hawaiian Studies classroom
December 9th, 2010	5:00 - 8:00pm	**Māui**	Māui College, Laulima 107

CLICK HERE TO CONFIRM YOUR ATTENDANCE NOW!

About Hawai‘i Biofuels Foundation (HBF)

The Hawai‘i Biofuels Foundation (HBF) is a multi-stakeholder governed 501(c) (3) organization with the aim of obtaining grants toward the funding of various initiatives, assessments, research, development projects and demonstration projects that will help to create a future for sustainable biofuels in Hawai‘i.

Creating a transition to a new energy future for Hawai‘i will require overcoming several hurdles. In the short term, research and development of locally grown vegetable feedstock will be a critical initiating factor in defining the potential economic viability of agricultural stakeholders-both large landowners and smaller farmers-in the planting of biofuels crops. Additionally, ensuring that the transition to a biofuels industry in Hawai‘i is accomplished in an environmentally and socially sustainable manner will be a top priority. In the intermediate to longer term, research and development of next generation feedstock, such as algae, and support for feedstock process (e.g. crushing and oil extraction) must be considered.

The composition of the HBF Board of Directors includes representation from the agricultural and environmental communities, the electric utility, research, development and engineering entities, labor, and native Hawaiian interests. This diverse representation is essential in ensuring that HBF is inclusive of those groups in Hawai‘i that have an interest in the Foundation's mission and will be impacted by the development of biofuels in Hawai‘i.

Current Board members include:

- David G. Waller, Hawaiian Electric Company, Inc.
- Debbie Hammel, Natural Resources Defense Council
- Dr. Michael Hamnett, the Research Corporation of the University of Hawai'i
- Mark Fox, The Nature Conservancy of Hawai'i
- Richard Ha, Hamakua Springs Country Farms
- Luella Costales, the Farm Bureau
- Alani Apio, Kamau LLC
- Wallace Ishibashi, the International Longshore and Warehouse Union

UH Hilo Conference Center | 200 West Kawili Street | Hilo | HI | 96720

Appendix 7
Workshop Presentation

Roundtable on Sustainable Biofuels' Needs Assessment Workshop

Hawai'i Biofuels Foundation

December 6th – 9th, 2010

liz **muller**, llc

www.lizmuller.com

Hawai‘i Biofuels Foundation

HBF is a multi-stakeholder organization that includes representation from the agricultural and environmental communities, the electric utility, research, development and engineering entities, labor, and Native Hawaiian interests.

HBF is seeking to facilitate the development of a sustainable Hawai‘i-based biofuels industry, specifically utilizing locally grown agricultural wastes or energy crops.

HBF aims to obtain grants toward the funding of various initiatives, assessments, research, development projects and demonstration projects that will help to create a future for sustainable biofuels in Hawai‘i.

HBF has representation from different constituencies

Current board members include:

David G. Waller, Hawaiian Electric Company

Debbie Hammel, Natural Resources Defense Council

Dr. Michael Hamnett, Research Corporation of the University of Hawai‘i

Mark Fox, The Nature Conservancy of Hawai‘i

Luella Costales, Hawai‘i Farm Bureau Federation

Wallace Ishibashi, International Longshore and Warehouse Union

Alani Apio, Kamau LLC

Renewable Energy Initiatives in Hawai‘i

Hawai‘i Energy Policy Forum - is a consensus-based multi-stakeholder forum that supports sustainable energy in Hawai‘i by enabling of information sharing, stakeholder collaboration and civic participation.

Hawai‘i Clean Energy Initiative - aims to meet 70% of Hawai‘i energy needs with clean energy by 2030 with a vision of future energy independence.

Hawai‘i Biofuels Foundation - is a multi-stakeholder organization that is seeking to facilitate the development of a sustainable Hawai‘i-based biofuels industry.

Workshop agenda

Welcome

HBF Overview

Introductions

RSB Overview

Workshop Overview

Discuss RSB Principles, Criteria and Indicators

Wrap up

Closing

Introductions

Name

Organization

Roundtable on Sustainable Biofuels (RSB) Introduction

RSB is an international multi-stakeholder initiative based at the Swiss Federal Institute of Technology that defines and certifies sustainable biofuel production.

- Implementable worldwide
- Generic to all feedstocks and biofuel types
- Adaptable to new technology
- Efficient and inexpensive to implement

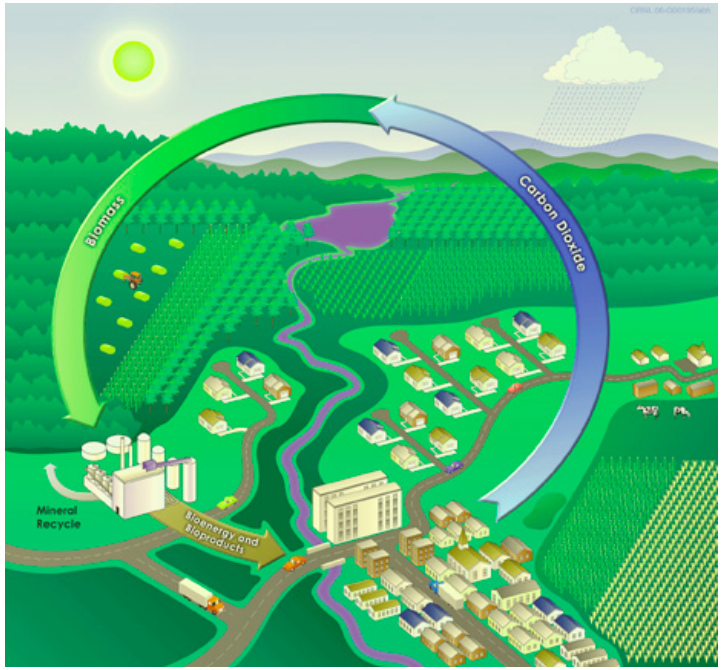
The RSB has developed resources to guide and support partners:

- The RSB Tool includes a multi-GHG calculation methodologies
- Multiple Chain-of-Custody models to track products through the supply chain (inc. product segregation & mass-balance)
- RSB's Needs Assessment for geographic adaptation

Why the need for a strong standard?

Criticism against biofuels for not delivering on their promise of sustainability, especially in regards to:

- Deforestation
- Greenhouse gas emissions reductions
- Food Security

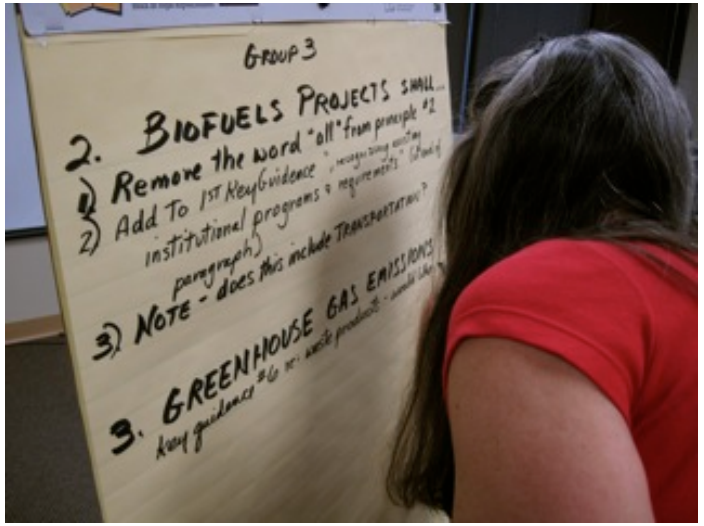


RSB's Principles – Credible, Robust and Comprehensive

Principle 1: Legality
Principle 2: Planning, Monitoring and Continuous Improvement
Principle 3. Greenhouse Gas Emissions
Principle 4: Human and Labor Rights
Principle 5: Rural and Social Development
Principle 6: Local Food Security
Principle 7: Conservation of Biodiversity
Principle 8: Soil
Principle 9: Water
Principle 10: Air
Principle 11: Use of Technology, Inputs & Waste Management
Principle 12: Land Rights

Standards Development Through Stakeholder Outreach

Dozens of stakeholder outreach meetings held since 2008 throughout the world to receive feedback on the RSB Standards, including in: Brazil, Mali, Mozambique, Belgium, Kenya, Dominican Republic, United States, Colombia, Argentina, Malaysia, China and numerous other countries

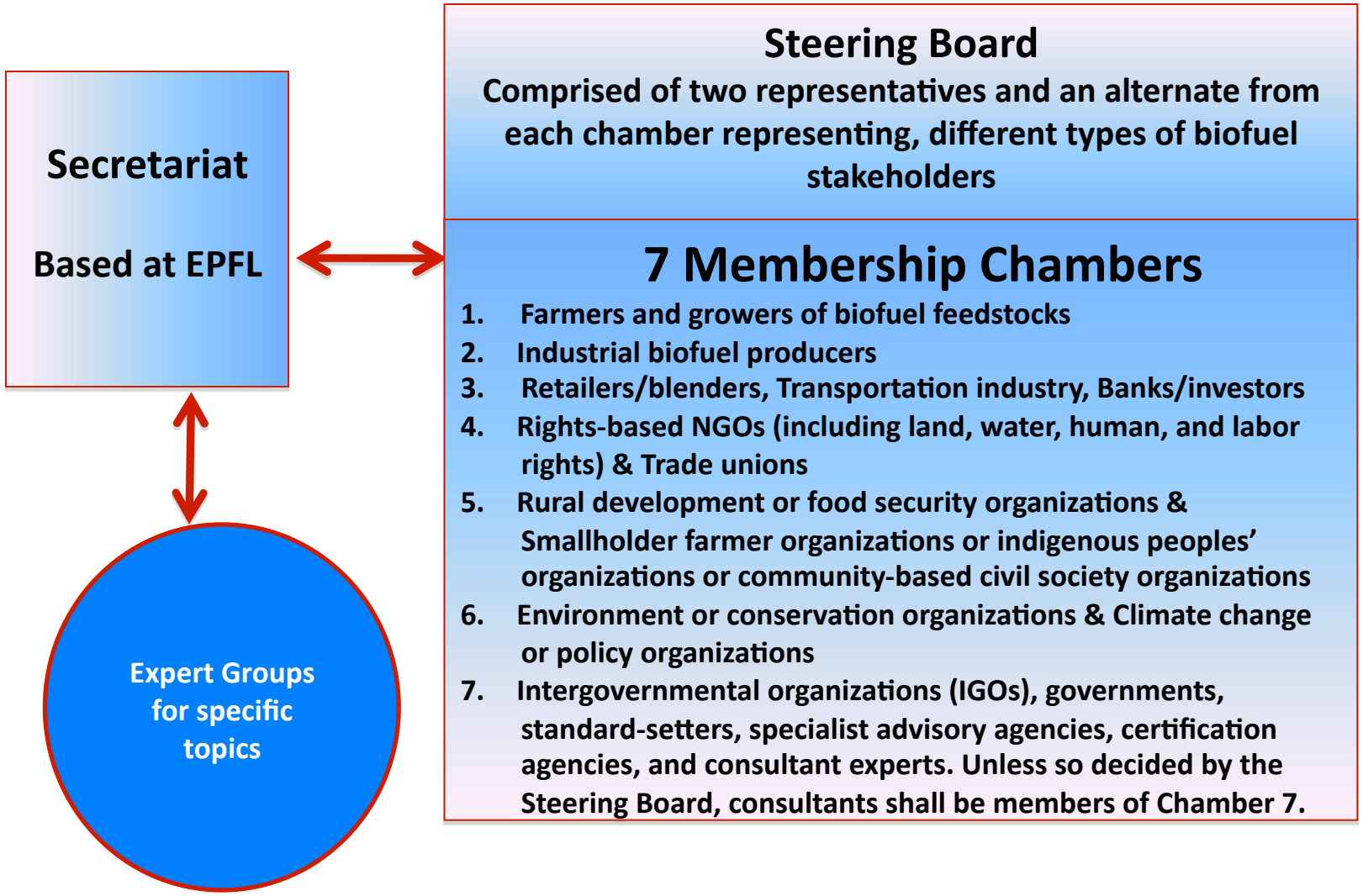


Thousands of people have participated in the in-person and online discussions. Reports from all meetings and all comments received during all of the meetings available on the RSB website – www.rsb.org

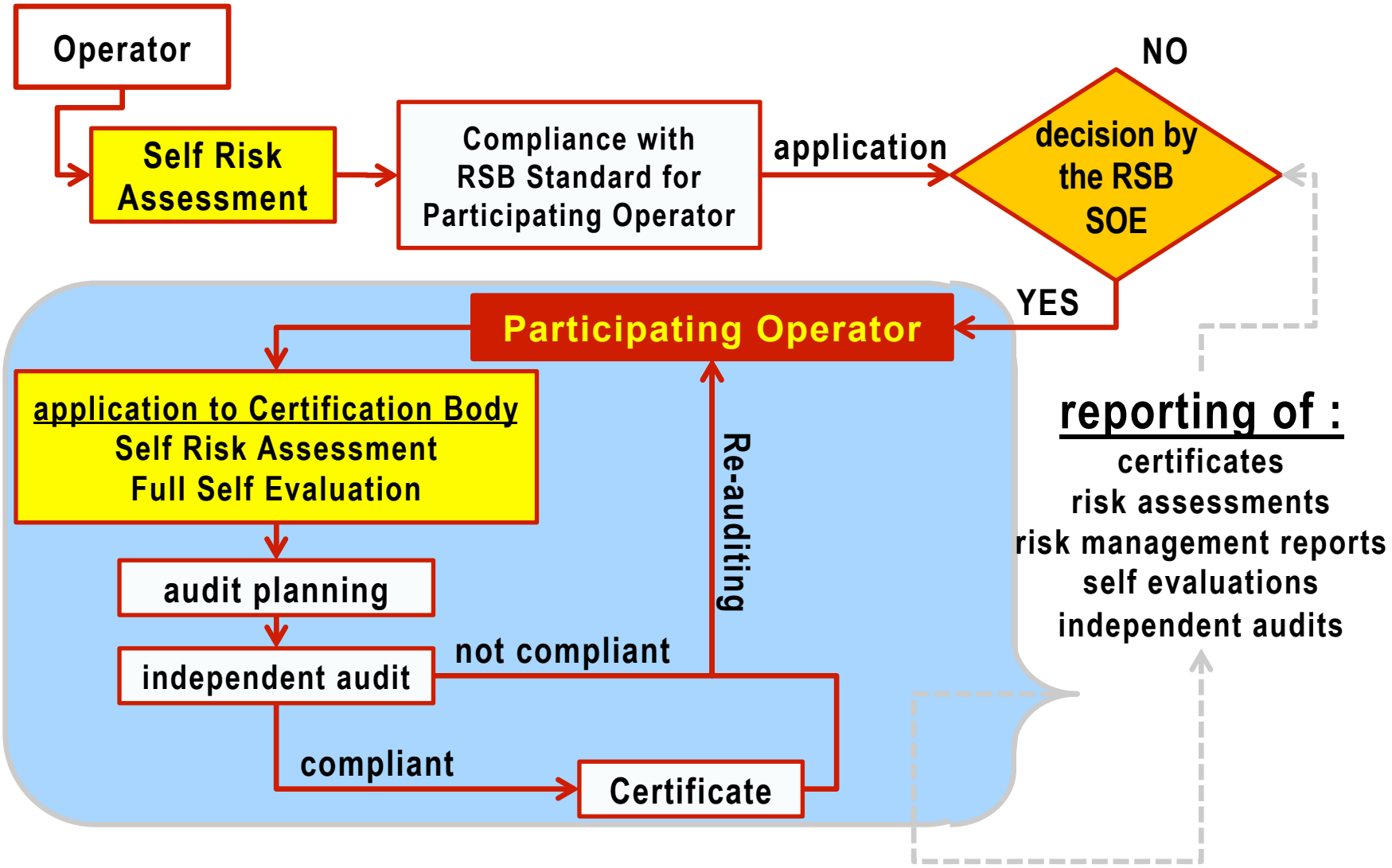
RSB Pilot Projects – Checking the Usability of Version One

- Pilot projects held around the world using a variety of feedstocks in different locations: Australia (Wheat), Mozambique (Sugarcane), Guatemala (Jatropha), Brazil (Sunflower), Peru (Sugarcane)
- Results were used to propose changes for Version Two of the RSB Standard.
- Pilots found that the standards were feasible, but that there were areas of duplication and need for clarification, especially in regards to the impact assessment requirements. All information posted at www.rsb.org
- Pilot projects on going… Let us know if you might want to participate!

RSB Governance Structure: A Membership Organization



The RSB Certification System



Risk-based approach

A risk-based approach adjusts the audit intensity by the risk that a particular operator brings to the system.

Risk class	Audit interval	Audit type	Audit team
1	12 months	desk audit	1 international lead auditor
	24 months (+6)	office & field audit	1 international lead auditor + 1 local auditor
2	9 months	desk audit	1 international lead auditor
	18 months (+6)	office & field audit	1 international lead auditor + 1 local auditor
3	12 months (+6)	office & field audit	1 international lead auditor + 1 local auditor
4	9 months (+3)	office & field audit	1 international lead auditor + 1 local auditor + technical, social, environmental experts
5	6 months (+3)	office & field audit	
6	3 months (+3)	office & field audit	

Complementary mandates and initiatives

Renewable Fuels Standard – Compliance with the US Renewable Fuel Standard GHG emissions reductions requirements

Green Initiative for Fuels Transition Pacific – Compliance with Energy Independence and Security Act (EISA) Section 526

Sustainable Biodiesel Alliance – 13 Principles and Baseline Practices for Sustainability for Biodiesel

RSB is working with local initiatives and partners when possible, seeking areas of collaboration to define and certify and sustainable biofuels

Workshop objectives

- Be respectful - seek to understand differing opinions, listen without judgment
- Provide constructive input – succinctly and on topic
- Consider the big picture over the long-term
- Please participate

The RSB needs assessment – objective and process

Objective

Assess the legal, socio-economic, ecological, technological, and cultural applicability and appropriateness of indicators and criteria in the context of Hawai‘i.

Process

Using the RSB's geographic adaptation standard we are taking the following steps to conduct the needs assessment:

1. Technical Advisors assessed the applicability of each indicator
2. Stakeholder workshops aimed at soliciting information and input
3. Inform RSB of process and findings

The Hawai‘i context

- Hawai‘i is an isolated archipelago that contains a high level of biodiversity, including many rare or protected species, in its diverse ecosystems.
- The Hawaiian Islands have finite resources such as land and water.
- The localized topographic and climatic conditions on the islands limits large-scale production of biofuels.
- Hawai‘i’s biofuel market is challenging under current market conditions.
- The tightly knit Hawai‘i community lives with a rich sense of tradition and spirituality.
- Engaging the local community in this process is important.

Technical Advisors

Alani Apio, Kamau LLC

Patricia Clifford, Hawai‘i Invasive Species Council

Charles Chimera, Hawai‘i Invasive Species Council

Domingo Cravalho, Hawai‘i Department of Agriculture

Heidi Kuehnle , Kuehnle AgroSystems

Wallace Ishibashi, International Longshore & Warehouse Union

Yvonne Izu, Morihara Lau and Fong, LLP Law Partnership

Sandra Kunimoto, Hawai‘i Department of Agriculture

Mae Nakahata, Hawai‘i Farm Bureau Federation

Carol Okada, Hawai‘i Department of Agriculture

Fred Perlak, Monsanto Hawai‘i

Sam Pintz, Hawaiian Electric Company

William Steiner, College of Tropical Agriculture and Human Resources

Scott Turn, Hawai‘i Natural Energy Institute

Stevie Whalen, Hawai‘i Agriculture Research Center

Lyle Wong, Hawai‘i Department of Agriculture

It should not be inferred that Technical Advisors endorse RSB or HBF.

Technical Advisor input – general comments

- Costs and benefits should be equally shared among all players
- Existing regulations may address many of the issues
- Small- and large-scale producers are needed
- The RSB Standard should not compete with existing standards or mandates
- Certification should be streamlined
- The Native Hawaiian Community and their rights must be respected
- We should encourage the sharing of business plans, technology, contingency plans, etc.
- Engage broad range of committed stakeholders

Sufficient existing laws are in place for the following principles:

Principle 1: Legality

Biofuel operations shall follow all applicable laws and regulations.

Principle 2: Planning, Monitoring and Continuous Improvement

Sustainable biofuel operations shall be planned, implemented, and continuously improved through an open, transparent, and consultative Environmental and Social Impact Assessment (ESIA) and an economic viability analysis.

Principle 4: Human and Labor Rights

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

Principle 5: Rural and Social Development

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

Principle 12: Land Rights

Biofuel operations shall respect land rights and land use rights.

Modifications were recommended for the following principles:

Principle 3: Greenhouse Gas Emissions

Principle 6: Local Food Security

Principle 7: Conservation

Principle 8: Soil

Principle 9: Water

Principle 10: Air

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

Technical Advisor input to the RSB Standard (continued)

Principle 3: Greenhouse Gas Emissions

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

Input

- May need some special provision for algae biomass.
- GHG compliance and LCA should be periodically revisited.

Principles thought not to be applicable in Hawai‘i – as strictly defined or at an operator level

Principle 6: Local Food Security

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

Input

Hawai‘i is not a food insecure region (by United Nations Food and Agriculture Organization definition).

May be more appropriate to evaluate if biofuels replace existing agricultural (including livestock) activity.

Include flowers, foliage, landscape plants and other critical products.

Technical Advisor input to the RSB Standard (continued)

Principle 7: Conservation

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

Input

- *Criterion 7.a Conservation values of local, regional or global importance within the potential or existing area of operation shall be maintained or enhanced.*
  Require the development of a Conservation Plan and Monitoring Plan.
- *7c. Biofuel operations shall protect, restore or create buffer zones.*
  The development of buffer zone spatial scale shall depend on dispersal characteristics of proposed biofuel species and adjacent/regional ecosystem types.
- *7.d.i.4. Establish ecological corridors that facilitate the movement of wildlife in areas surrounding the site(s).*
  Ecological corridors are effective in protecting, maintaining and/or enhancing biodiversity at ecosystem and landscape scales.
- *7. e.i.7. In the case of invasion, the participating operator has implemented corrective measures.*
  Upon discontinuation of crop cultivation, all viable crops and/or propagules should be destroyed and continuous monitoring should be conducted.

Technical Advisor input input on the RSB Standard (continued)

Principle 8: Soils

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

Input

- Crop rotation may not make sense if working with a perennial grass.
- Some stakeholders may consider fallow areas with planted vegetation under arid irrigated conditions to be a waste of water use.
- Replace Soil Management Plans reference to Conservation Plans.
- Plan should not place such a heavy emphasis on “organic” practices.
- Pesticides are under FIFRA law as well as State conditions, WHO is not appropriate.
- Delete “Soil Health” unless there is a clear metric.

Principles thought to warrant change at principle level

Principle 9: Water

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

Input

Under the Hawai‘i Water Code, all water resources are a trust obligation of the state and individuals do not have ownership over water resources. A possible alternative is “Biofuels operations shall respect existing water rights.”

Technical Advisor input on the RSB Standard (continued)

Principle 10: Air

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

Input

- Emission control plan should be updated every 5 years.
- Replace “Best Available Technology (BAT)” to “Best Available Control Technology (BACT)” to ensure technologies are available and not cost prohibitive.
- The three year requirement to phase out open air burning should be deleted until alternative technology is available.

Technical Advisor input on the RSB Standard (continued)

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

Input

- GMOs are addressed by USDA laws and should not be separated out from other technologies.
- Delete the need for technology to provide "social benefits" - this is an unreasonable burden on the operator and metrics are not defined.
- Should reference US rules not international.
- Byproduct management should be part of the risk assessment.

Questions and discussion

- Additional input on RSB Standard?
- Reaction to Technical Advisors' input to date?
- Questions on the needs assessment process and objective?
- Additional questions or comments?

Follow up and further input

Please visit www.hawaiibiofuelsfoundation.org
to contact or learn more about HBF

To access additional information on the RSB needs assessment and provide additional input please download resources at
https://public.me.com/lizmuller
password: cotton
and email to liz@lizmuller.com

Appendix 8
Comprehensive Technical Advisor Input on RSB Principles, Criteria and Indicators

RSB Principle	Addition, modification, or deletion of requirement with justification
Principle 1: Legality	
	See Applicable Laws and Regs to RSB Standards document
Principle 2: Planning, Monitoring, and Continuous Improvement	
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.	Question: What about CBI?
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.	
The environmental and social impact assessment (ESIA) shall be carried out using independent and *qualified professionals.*	Who determines qualification?
Where biofuel operations will have *significant* social impacts, a social impact assessment shall be carried out using local experts.	What is significant?
Principle 3: Greenhouse Gas Emissions	
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.	GHG compliance and LCA should be periodically revisited and verified. It is possible that some operations might be grandfathered to future regulatory changes. Acceptable compliance should involve periodic review and certification that current regulations are being met. Example, Indonesia might pass good regulations, then exempt existing producers.

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.*	Suggest last word be changed from "reduced" to "minimized".
	Definition of LCA land utilization change can get tricky from one jurisdiction (or country) to another. Some studies suggest that change from actively farmed to fallow might represent a significant land use change. Is there some sort of best practice or regulatory criteria that we might hang our LCA hat on?
	Do we need some special provision for algae biomass? Could there be an LCA credit for sequestering CO2 in algae? I am not too familiar with the state-of the-art in LCA analysis, so maybe all this has been looked after.
Criterion 3c.Biofuel blends shall have on average 50% lower lifecycle GHG emissions relative to the fossil fuel baseline. Each biofuel in the blend shall have lower lifecycle GHG emissions than the fossil fuel baseline.	I think all ethanol blends would fail this test; but it is a good criteria for biodiesel.
	The blending of fuel oil and vegetable oil is currently planned by HECO. Depending on the blend ratio the 'bio-crude' may not meet this criteria. Maybe a bit of rewording could help.
	I think there may be problems with pyrolysis fuels, but I am not an expert. I like the criteria approach so long as we do not create a standard that is overly restrictive to alternative technologies. Let's discuss.
Principle 4: Human and Labor Rights	
Biofuel operations shall not violate human rights or labor rights, and shall promote decent work and the well-being of workers.	Existing laws are in place for collective bargaining.
	Anti-discrimination laws are in place.
	Entire section is difficult to amend as it is targeted to developing countries that do not already have the laws we have.

In regions of poverty, biofuel operations shall contribute to the social and economic development of local, rural, and indigenous people and communities.	Requirements and indicators focus on biofuel production in developing countries. There are U.S. laws such as equal rights and anti-discrimination, along with State laws for prepaid healthcare of employees that make much of these irrelevant.
	What is the definition of region or poverty? And why only in regions of poverty if indigenous resources are to be used?
Criterion 5a. In regions of poverty, the socioeconomic status of local stakeholders impacted by biofuel operations shall be improved.	Similar to above: Native Hawaiians will say that poverty need not be the deciding factor in whether or not the socioeconomic status of impacted local stakeholders should be improved.
Criterion 5b. 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.	Same as above. Also, Native Hawaiian communities, unfortunately, are disproportionately poverty-stricken.
Principle 6: Local Food Security	
Biofuel operations shall ensure the human right to adequate food and improve food security in food insecure regions.	The argument could be raised in Hawaii, given this broad principle, that any large-scale production competing for land/water/inputs/labor with food production would conflict with the human right to adequate food/food security because we're over 85% dependant on imported food.
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.	Measure should determine whether biofuel operation is replacing existing agricultural activity.
If operating in a food insecure region, Participating Operators shall determine during the screening process of the RSB impact assessment whether biofuel operations will have a direct impact on food security.	Agriculture goes beyond food, it includes flowers, foliage, landscape plants, and other products all critical for self sufficiency. Topic area should not only be "food" security but should be titled "biosecurity," meaning the growth of local agriculture to increase the level of self sufficiency. It may also include expansion of export capacity to ensure reliable local supplies.

	Also biofuel operations—if it complements other agricultural activity—is not necessarily bad.
Indicator 6a.i.1. Operator demonstrates whether the biomass/biofuels operation(s) is/are in a region which is at risk of food insecurity	What is “region” in an island state?
Principle 7: Conservation	
Criterion 7a. Conservation values of local, regional, or global importance within the potential or existing area of operation shall be maintained or enhanced.	There are existing processes such as the Conservation Plan for site that can be developed with local NRCS/SWCD personnel.
	Many biofuel crops can be perennial, exposing soils to reduced threat of erosion. This would place vegetable production that may till every 120 days as a higher risk.
	Many of these criteria appear to have been developed for biofuel production, displacing forests or grasslands not in active agricultural production.
	The minimum requirements should require the development of a Conservation Plan for the area
Hunting, fishing, ensnaring, poisoning, and exploiting rare, threatened, endangered, and legally protected species shall not occur on the operation site.	Exploitation does not completely cover the removal of a plant species. Can a term be added to address the ‘take’ of a plant species?
Indicator 7a.i.1. Operator demonstrates that a Land Use Impact Assessment has been undertaken.	Not clear what a Land Use Impact Assessment is; if it is similar to an Environmental Assessment, the process appears costly and begs the question of who will pay for it. Who determines the level of precautionary practices? Replace with "Operator must have a Conservation Plan for the area."
Indicator 7a.i.2. For new projects, site level mapping, including areas to be set aside for conservation.	Do maps include invasive species in local and regional areas?
Indicator 7a.i.9. Operation(s) have taken place or are planned within legally protected areas, UNESCO World Heritage sites, Ramsar sites, or Alliance for Zero Extinction sites after January 1, 2009.	7.a.i.9. This indicator is unclear. Is this date relevant to all regions? If not can its relevancy be included in the indication?
Criterion 7b. Ecosystem functions and services that are directly affected by biofuel operations shall be maintained or enhanced	No change recommended.
7. b.i.2. Operations effectively maintains or enhances the ecosystem functions and services identified both inside, and outside the site(s).	Demonstrated by an approved monitoring plan.

Criterion 7c. Biofuel operations shall protect, restore, or create buffer zones.	
	Addition: The development of a buffer zone spatial scale shall depend on dispersal characteristics of proposed biofuel species and adjacent/regional ecosystem types.
	Rationale: The ecosystems of Hawaii have evolved without the same disturbance regimes as continental ecosystems (e.g. grazing, fire). The ecosystem's resistance to invasion may depend on the distance a propagule needs to travel to the ecosystem.
Criterion 7c.i.2. Buffer zones are effective in mitigating potential negative impacts.	7.c.i.2. Buffer zones are effective in mitigating potential negative impacts (including inadvertent movement of propagules off site). Justification for suggested change: More specifically mentions that buffer zones also mitigate against spread of propagules.
Criterion 7c.i.3. Buffer zones remain unused.	7c.i.3 Unused is unclear.
Criterion 7d. Ecological corridors shall be protected, restored, or created to minimize fragmentation of habitats.	
Criterion 7d.2. Progress requirements (non small-scale operators only).	7d.2. This is unclear as to its meaning and placement in the document.
Criterion 7d.i.4. Establish ecological corridors that facilitate the movement of wildlife in areas surrounding the site(s).	7d.i.4. This is unclear. If the site is already impairing connectivity, a preceding requirement addresses connectivity. In this requirement a corridor might be created because the site is surrounded by wildlife, but may connect ecosystems that do not naturally interact. This may allow movement of species between ecosystems that previously had biogeographical barriers.
	Addition: Ecological corridors are effective in protecting, maintaining, and/or enhancing biodiversity at ecosystem and landscape scales.
	Rationale: Conservation of biological diversity requires conservation across various spatial scales, including local, regional, and landscape level.

Criterion 7e. Biofuel* operations shall prevent invasive species from invading areas outside the operation site.	
If the species is recorded as highly invasive under similar conditions, this species shall not be used.	This requirement is vague. What sources are valid for considering a species highly invasive?
If the species has not been recorded as representing a high risk of invasiveness under similar conditions (climate, local ecosystems, soil type), and low risk of invasiveness has not been demonstrated, Operators shall follow these specific steps:	
1) During the feedstock selection and development, Operators shall conduct a Weed Risk Assessment (WRA).	Are there WRA's that will be considered as standards?
Indicator 7e.i.1. No species of high risk for invasion are used.	Modification:7e.i.1. No species of high risk for invasion are used.
	7e.i.1. No species of high risk are used. Recommend changing wording to state, "No species recorded as either invasive or with a high risk of invasiveness should be used when a non-invasive—or low risk alternative—is available.
	If a species identified as high risk is used in cultivation, appropriate measures will be undertaken to mitigate invasion risk and to assume financial liability for containment, control and eradication costs. Justification: There are no regulations in Hawaii requiring growers to adhere to the findings of the Weed Risk Assessment or other invasive plant lists, and growers may disagree with the conclusions of the WRA (e.g., doubt exists that Jatropha will become an invasive plant in the Hawaiian Islands, despite the high risk designation by the WRA). It would therefore be better to have biofuel operations assume responsibility for plants that escape (as highlighted by the other minimum requirements).
Indicator 7e.i.3. Species have no or low risk of invasion.	7e.i.3. Species have low risk of invasion. Rationale: Risk assessments classify as low risk, rather than no risk of invasion.

Indicator 7e.i.6. Continuous monitoring to detect any invasion outside the operation site.	7e.i.6. What stage of invasion will be detected? The literature suggests various stages from incipient to naturalized to invasive. An incipient stage may not be able to retain a population over time, while a naturalized stage will and an invasive stage can negatively impact the economy, environment, and human health.
	Modification: 7e.i.7. In the case of invasion, the participating operator has implemented corrective measures and continues to monitor for control effectiveness. Rationale: Many invasive species have seeds that survive for many years in the soil. These require on-going monitoring to deplete the population.
Additional Indicator Suggested:	7e.i.9. Upon discontinuation of crop cultivation, all viable crops and/or propagules at the operation site shall be destroyed, and continuous monitoring shall be conducted for an appropriate length of time to ensure that no viable propagules remain.
	Justification: Crop abandonment, and subsequent possibility of plants at abandoned or unmanaged sites to naturalize or spread, given enough time, remains a concern that rarely gets addressed. Responsibility for follow-up site maintenance should be explicitly placed in the purview of the biofuel operators, and should be included in appropriation of funding for biofuel management plans.
Principle 8: Soil	
Biofuels operations shall implement practices that seek to reverse soil degradation and/or maintain soil health.	This principle falls under the Agricultural Conservation Program (ACP), the Conservation Operations Program (COP), the Small Watershed Program, and EPA 40 CFR 122.23.
Criterion 8a. Operators shall implement practices to maintain or enhance soil physical, chemical, and biological conditions.	
	Approved conservation plans should be implemented.
Develop a soil management plan as part of the Environmental and Social Management Plan (ESMP).	Replace "soil management plan" reference to "conservation plan".

	Delete reference to “Soil Health” unless there is a clear metric associated with item.
Agrarian and forestry residual products for feedstock production shall not be used at the expense of long-term soil stability and organic matter content.	Organic matter content in a tropical location where it breaks down very rapidly is not a valid measure.
Operators shall implement measures to improve soil health, including: Organic direct planting, Permanent soil cover, ….	Plan should not place such a heavy emphasis on “organic” practices ... What is “organic direct planting”?
Crop Rotation	Crop rotation with biofuel crops may not make sense if working with a perennial grass.
Fallow areas with natural or planted vegetation to recover natural fertility and interrupt pest life.	Fallow areas with planted vegetation under arid irrigated conditions may be unfeasible ... Activists may call it a waste of water use.
Criterion 8a.i.2. Do not use any of the chemicals on the WHO’s 1a and 1b lists.	Pesticides are under FIFRA law as well as state conditions.
	Delete references to other approved chemical lists.
Principle 9: Water	
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 9a. Biofuel operations shall respect the existing water rights of local and indigenous communities.	**Delete Criterion 9a in its entirety.** The concerns addressed—negatively impacting community water supplies and existing water rights—fall within the jurisdiction of the Hawaii State Commission on Water Resource Management (CWRM). Hawaii Revised Statutes (HRS) 174C-4 (all waters, except coastal waters, are subject to regulation under the Hawaii Water Code); HRS § 174C-7 (CWRM has exclusive jurisdiction and final authority in all matters relating to implementation and administration of Hawaii Water Code).

	Because it has been determined that water resources are a trust obligation of the state and individuals do not have ownership over water resources, individual stakeholders are ultimately not in positions to determine or settle water rights. Under the Hawaii Water Code, CWRM has statewide jurisdiction to hear any disputes regarding water (HRS § 174C-10). Where there is a dispute, CWRM is not limited to deciding upon only the interests of the parties to the dispute, but is obligated to consider the entire public welfare and interest.
	Criterion 9a and the minimum requirements and indicators appear to be addressed to jurisdictions where there is no developed mechanism for regulation of water resources and determination of water rights. The minimum requirements and indicators, because they overlap with the Hawaii Water Code and use different terminology from the Hawaii Water Code, are likely to create confusion. Participating operators should, instead, be encouraged to work within the existing water resources regulatory framework.
	As an alternative, if it is deemed important to preserve Criterion 9a, it should be modified to read: "Biofuels operations shall respect existing water rights." In Hawaii, water resources are held in trust for the entire people of Hawaii and regulated on a statewide basis. Water rights are not held by "local communities" or "indigenous communities." Such language, therefore, would create confusion and disputes as to their meanings.
	If Criterion 9a in its alternative form is adopted, then the following minimum requirement/ indicator may be appropriate: "Participating operators shall, in coordination with CWRM, evaluate and document that the use of water for biofuel operations is in accordance with law and existing water rights."

Principle 10: Air	
Criterion 10a. Air pollution emission sources from biofuel operations shall be identified, and air pollutant emissions minimized through an air management plan.	I would suggest that the emission control plan be updated every five years. This seems particularly important since “Best Practices” are likely to change over time. Both the five year and BAT ideas suffer from a need to develop a trigger mechanism that signaled a requirement for installation or construction of new technologies. As a practical matter we must figure this out; having no periodic or BAT review almost certainly insures an outdated (ESMP).
	Also there's a whole group of pollutants under Hazardous Air Pollutants (HAP) and they probably should be covered by the list of pollutants in the table.
The Operator shall investigate and implement Best Available Technology (BAT) to reduce air pollution.	Requirement of BAT without balancing of costs is unreasonable. …replace implement with “use BACT as much as possible to reduce air pollution.”
Criterion 10a.i.1. Emission control plan applicable for participating operators other than small-scale operators.	Emission Control plan does not limit this to the feedstock processor …requiring producers to have an “emission control plan” seems extreme.
	I would suggest that the emission control plan specifically note the height at which the emissions are being released.
	There are existing Clean Air Regulations that processors must follow.
Indicator 10a.i.1. Comply with existing Clean Air regulations.	
	I would suggest that the emission control plan specifically note the height at which the emissions are being released.

Criterion 10b. 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.	This might be tightened up a bit. The emission control plan may be restricted to the energy crop or particular processing facility, but there might be surplus biomass (outside the planned usable bio-crop) outside the control plan that developers could dispose of by open burning without violating their plan. Also there is the additional problem of initial land clearing where a common practice is to burn the cleared material. I don't know exactly how to address these unacceptable practices.
A plan shall be put in place to phase out any open-air burning within three years following certification (with few exceptions).	Minimum requirement placing a time limit on the phase out of open air burning is unreasonable without assurance that technology is developed to replace it. The three year requirement should be deleted.
Principle 11: Use of Technology, Inputs, and Management of Waste	
Criterion 11a. Information on the use of technologies in biofuel operations shall be fully available, unless limited by national law or international agreements on intellectual property.	I am unaware of GMO crops being used for biofuel production in the Hawaiian Islands. The criterion and minimum requirements presented here, however, seem sufficient to address any concerns.
	Delete second minimum requirement. Language assumes that GMO is a potentially hazardous technology. And use of "hazardous" without an agreed upon definition is unacceptable.
Indicator 11a.i.2. Comprehensive risk assessment and risk management plan in relation to the use of technology—including GMOs—has been conducted prior to certification.	11a.i.2. Why is it necessary to add the phrase "..including GMO.."? Either a comprehensive risk assessment has been done or not; adding GMO brings nothing to the discussion. "GMO" plants are covered by the USDA and the Hawaii Department of Agriculture for review of deregulation.
	Delete all references to GMOs. In its current form, this section is an anti-GMO statement.
Identifies all technologies that actually or potentially pose a social, environmental, and/or economic risk.	Conditions should apply to all technologies. How do you measure and define social risk? Methodology for all metrics should defined.

Demonstrate the social and environmental benefits.	Why are there concerns about “social benefits”? What could those possibly be? The economic impact of not burning fossil fuels? Monitoring social benefits is an unreasonable burden on the operator. Some jobs will be gained some lost with any shift in technology.
Identifies measures to avoid and/or mitigate actual and potentially negative impacts.	“Potential negative impacts” No metric provided ..goes down the road of precautionary principle.
	Indicator should stay within the scope of existing laws and regulations, unlike developing countries, these are already in place. Compliance with EPA regulations.
Criterion 11b. 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.	No changes recommended.
	If this is for Hawaii, then it should be the US rules—not international. Genetically engineered plants and their release are regulated by the USDA and the Hawaii Department of Agriculture.
	This must be more specific; is it plants, microbes, animals, what?
	I don’t believe that the US is part of the Cartagena Protocol, so why should those regulations be consulted?
	This will be too restrictive. If the seed of an indigenous crop is hard to come by, what then? Who will determine “comparable output” and based on what criteria?
	There are no internationally accepted scientific protocols. This should be regulated by the USDA.
	This should follow US guidelines, not international guidelines.
	This is too restrictive. It will be too difficult to satisfy everyone for local and community co-existence agreements. This is not well defined and would constitute a prohibitive expense and restriction.
	Monitoring the impacts of GMOs? In what way? For what? This should be part of the risk assessment.

	This is requiring use of an equivalent native crop. The social impact (flooding the local market with local crop production) could lead to local economic catastrophe and becomes restrictive for the operator.
Criterion 11c. Micro-organisms used in biofuel operations that may represent a risk to the environment or people shall be adequately contained to prevent release into the environment.	No changes recommended
	This should be part of the risk assessment, whether it is plant or microbial.
Criterion 11d. Good practices shall be implemented for the storage, handling, use, and disposal of biofuels and chemicals.	No changes recommended, but not sure if all laws/regulations are applicable to Hawaiian Islands.
	There are US regulations that cover the storage of hazardous chemical and the use of ground and aerial pesticides. There are also labeled chemicals for use by the Hawaii Department of Agriculture.
Criterion 11e. 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.	No changes recommended.
	Byproduct management should be part of the risk assessment
	See above “unless innocuous”
Principle 12:Land Rights	
Criterion 12a. 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.	Existing state and county zoning laws control what can be done with the lands. Replace indicators with “Comply with existing state and county Land Use and Zoning laws.”

Appendix 8
Additional Input Provided by Technical Advisors

RSB Standard Needs Assessment for Geographic Adaptation – Hawaii
Please note that we are providing unedited additional comments that were provided by technical advisors via email or phone conversations.

The biofuel opportunity exists. However, as [The RSB Standard is] written, we can kill the effort before it even starts. Without inclusion of actual farmers and ranchers for a balance of the benefits, highlighting the risks as the first stage without a balance sets an unreasonable threshold.

RSB is potentially competing with other certification schemes and initiatives, particularly the RFS2 and GIFTPAC/DLA sustainability requirements.

I have not had a chance to go through the document thoroughly to deal with all the specifics. On the first run through I found it much too cumbersome for small entities; one size fits all from large to small producer, from crop to crop type, doesn't work in agriculture. Agriculture is trying to deal with the food safety issue right now especially how it applies to the singe small-scale producer. Flexibility and using some of the existing guidelines is something to factor in.

One person who has had the time to review this thoroughly commented on the fact it would take 3 days to be certified based on this document; is that annually or one time; what is the cost of this; how does this get paid for by a commodity (fuel) crop that hasn't been demonstrated to be profitable yet. USDA is providing subsidies to incentivize producers to even get into this.

The numbers are all coming out of large-scale plantations for large processing facilities. This is not the only model that will eventually emerge. How does this fit with diverse feedstock from diverse producers for small rural operations?

I would really like to be a part of the discussion and appreciate your continual contact. There are just a lot of demands on small operations and we are in that category.

Hawaii will be unique in this regard but can be a model for small rural communities that might be able to utilize their lignocellulosic waste for energy self-sufficiency but not if there are onerous certification requirements designed for the large-scale global operations. Those entities ascertaining the value of this should be charged with providing the cost for these activities since they are represented as a public benefit. How does the public provide for the cost of these benefits? I don't personally believe that all the environmental costs should fall on the backs of the producers.

There is a conservation agency that supports producers, NRCS. If it provides a conservation plan that the producer follows that should be the producers' certification.

We reviewed the portions you requested in Principles 7 and 11 and have concerns with all of them. In general, we feel that all applicable laws need to be followed in each case. However, there seems to be an underlying bias in the criterion that go far beyond the legal requirements

in an uneven way. It's difficult for us to endorse those kinds of blanket restrictions because the statutes and regulations allow the Board to approve the issuance of permits under certain conditions of importation or mitigation procedures that minimize the risk to agriculture and the environment as approved by the Board. Also, while the Weed Risk Assessment (WRA) is a valuable tool, we don't believe it's intended to be absolute. Applicants may still move forward through the permit review process even if the WRA may consider it to be invasive. Mitigations required would be listed in permit conditions if it's approved by the Board.

Further, while Principle 11 is a general statement regarding efficiency and social and environmental responsibility, Criterion 11a, b and c appear to be focused against GMO technology, based on the precautionary principle and not suitable for giving general guidance. Taken to its extreme it could be seen as a means to prohibit advancement of biofuels by requiring exhaustive studies on risk and alternatives that makes the investigative and pre-implementation process unduly lengthy and costly.

Therefore, our comments pertaining to 7 a, c and e and 11 a, b and c are as follows:
Providing guidance under these principles should be more along the lines of saying that all applicable laws and regulations will be adhered to at a minimum. Beyond that, operators are encouraged to share business plans, technology, contingency plans, etc. to a reasonable extent as they feel appropriate for the project and related communities. (The assumption here is that the processes for required permits, EAs, etc. should dictate the scope and extent of risk assessments, potential impacts, mitigation measures, etc. The regulatory process should not be second-guessed or trumped by a set of voluntary guidelines.)

After working through these sections and providing these comments, we're still not clear how such a document would be used productively.

I am sorry to be unfamiliar with your charge or your operation and appreciate being included but there is a lot of work that needs to be done to get this into a workable more flexible approach to feedstock that has yet to be identified.

I am curious to know, then, why there are not representatives on the group [either agency/FED folks (DBEDT, USDOE, Navy), some research (NREL, HARC), some electric/gas company reps and some private folks] of folks who are actively growing alternative feedstocks? You seem to have algae covered but everyone I know working in this area including UHH (we have a joint project with CalPoly) all agree we are ten years from any affordable solution to the problem of turning it into a fuel source (I would add that ""ten years"" has become a mantra over the past 20 years with folks who envision this process). The sugar folks should be at the table since they have a ready answer to the alcohol question (as compared to biodiesel) though the few thousand acres left in Hawaii would not be able to supply the total demand especially given the price you can get it for from Brazil.

People I am thinking of include Dennis Gonsalves, Director of the USDA PBARC research station in Hilo who is ramping up to do a methane project at the only major slaughter house left in the islands, Richard Ha who owns Hamakua Springs sustainable farm who is putting in a hydroelectric plant to run his 600 acre production site and getting ready to put in an ethanol production plant from fruit and vegetable culls, the younger Twigg-Smith who has 200 acres of

Jatropha trees planted and myself who has several acres of Jatropha I am gathering growing data on, a study I am doing on about 1000 Jatropha trees which have gone ""feral"" over the last 50 years and a proof of concept project I am working on for about 8000 oil palm trees being planted out now (half finished) to collaborating farmers to study impacts of soil type, climate variation, elevation and insect pests on growth, health and eventually production. These are on the ground experiments of a practical nature and it seems to me that kind of practicality is missing from the working group. I am in touch with a group of private local investors who have researching the idea of using wood chips from invasive trees (albizia, strawberry guava, causarina) as a cellulosic alcohol feed stock. We are getting ready to put in an experimental extraction plant (funds in hand) at the CAFNRM-UHH farm to prepare for receiving nut products from various trees as well to study the oil products. I have attached a spreadsheet estimate for a landowner interested in planting oil palms, and a photo about a year old of the oil palm seedlings growing in our shadehouses.

This concerns me as someone who wants to see the field move forward because of the real disconnect that is happening here. Folks whose experience comes from reading about the field or listening to someone else about ""shoulds and coulds"" may not know the practical limitations or real potential for a feedstock if they have not tried growing it themselves. I suspect also they are out of touch with what is happening on the Big Island because the approach here seems to be Oahu-centric."

My primary concern is to find some way to insure continued compliance through on-going review and/or certification without creating a scheme which discourages technological innovation and diversification. We are in a field of rapidly evolving biocrops and processing technology that will hopefully produce increasingly clean and sustainable bioenergy so our policies need to continually push producers toward better environmental performance. We need to get them to periodically reassess and defend their environmental practices.

Per conversation:
Economics are totally missing from this standard and the thresholds on the non-economic parameters may not be achievable. By bringing the standard to Hawaii and creating a default definition of “sustainable biofuels” it may give the impression that non- RSB certified biofuels are not sustainable when they may be. RSB Standard takes the precautionary principle approach. I would prefer a risk- and science-based approach. RSB may be perceived as an activist coming to the islands and establishing unrealistic requirements.

I also feel that we should promote continuous improvement. I like the Keystone Alliance effort (Field to Market) program’s measure, act, improve model. Producers and others can engage at a lower threshold and improve over time.

Essentially, my thoughts are that with respect to our situation in Hawaii relative to Native Hawaiian rights and concerns, there may be push-back because although several of the principles and criteria address impacts to indigenous communities, none specifically relates to these communities and their rights as a “separate whole”. My recommendation is to address this at a board level prior to going public because if we don’t we may be accused of avoiding the obvious and by doing so create unnecessary conflict.

We've had this conversation with the board already a while back and I know that we want to avoid at all costs having to develop a regional standard, but I strongly recommend that we figure out a way, soon, to bridge the gap with respect to addressing Native Hawaiian concerns. Of note: prominent Native Hawaiians (Mililani Trask and her group) are now advocating geothermal energy. This is after decades of fighting it. I believe the 180-degree turnabout is the bottom dollar *and* process: they now see that there is an opportunity to hugely benefit Native Hawaiian communities via royalties to those communities for the rights to access resources deemed indigenous. And, over the past several decades processes have been developed globally through which indigenous rights are recognized, affirmed and respected. Given this new socio-political context, (where many in the Native Hawaiian community are looking to equally benefit from the use and development of resources deemed indigenous) there may very well be an effort to claim ownership/rights to indigenous organisms that may produce biofuels (i.e., native algae) and/or the resources like water, air and land to develop renewable energy. Indeed, this is already taking place in various communities across the islands in different ways.

I'm not knowledgeable enough to suggest an answer, but an advocacy organization like Kahea, which melds indigenous and environmental rights and concerns, would be a likely protester to the RSB if their basic concerns weren't acknowledged and addressed up front: how do these standards address, holistically, Native Hawaiian culture, communities and rights? And, if they don't, what can be done to address those issues?

Appendix 9
Workshop Evaluation Forms

Feedback Form

HILO

Sustainable Biofuels Workshop
December 2010

Name (optional):_____
Date and location of workshop: _____

OVERALL WORKSHOP IMPRESSION

		STRONGLY AGREE				STRONGLY DISAGREE
1	The workshop was worthwhile		2			
2	My expectations were met		2			
3	The right topics were addressed	1	1			
4	My understanding of the application of RSB Standards to the context of Hawai'i has improved	1		1		
5	The discussions were highly productive			1	1	

PRESENTATIONS

	Were the presentations relevant and informative	EXCELLENT				POOR
6	Introduction to the Hawai'i Biofuels Foundation	1	1			
7	Roundtable on Sustainable Biofuels	1	1			
8	RSB applicability in the context of Hawai'i			1	1	

FACILITATION AND ORGANISATION

		EXCELLENT				POOR
10	The facilitation	1	1			
11	Event preparation and logistics	1	1			

OPEN QUESTIONS

12 What did you particularly like about this workshop?

- Open dialogue—needs to continue over longer time frame

13 What would you suggest be improved for future workshops?

- Longer time set aside

Feedback Form

KAUAI

Sustainable Biofuels Workshop
December 2010

Name (optional):_____

Date and location of workshop: _____

		STRONGLY AGREE				STRONGLY DISAGREE
OVERALL WORKSHOP IMPRESSION						
1	The workshop was worthwhile	1	2		2	
2	My expectations were met	1	2	1		
3	The right topics were addressed	2		1		
4	My understanding of the application of RSB Standards to the context of Hawai‘i has improved	3			1	
5	The discussions were highly productive	1	2		1	
PRESENTATIONS						
Were the presentations relevant and informative		**EXCELLENT**				**POOR**
6	Introduction to the Hawai‘i Biofuels Foundation	1	2		1	
7	Roundtable on Sustainable Biofuels	1	2		1	
8	RSB applicability in the context of Hawai‘i	1	2		1	
FACILITATION AND ORGANISATION		**EXCELLENT**				**POOR**
10	The facilitation	2	1		1	
11	Event preparation and logistics	3			1	

OPEN QUESTIONS

12 What did you particularly like about this workshop?

- I’m very into alternative energy
- The chance to give input
- Great input; kept on time

13 What would you suggest be improved for future workshops?

- Can’t say as it is my first with group
- Longer time frame to allow for more discussion

Feedback Form

KONA

Sustainable Biofuels Workshop
December 2010

Name (optional):_____

Date and location of workshop: _____

		STRONGLY AGREE				STRONGLY DISAGREE
OVERALL WORKSHOP IMPRESSION						
1	The workshop was worthwhile	1	2	1		
2	My expectations were met		3			
3	The right topics were addressed	1	2			
4	My understanding of the application of RSB Standards to the context of Hawai‘i has improved	3	1			
5	The discussions were highly productive	2	2			
PRESENTATIONS						
Were the presentations relevant and informative		**EXCELLENT**				**POOR**
6	Introduction to the Hawai‘i Biofuels Foundation	2	2			
7	Roundtable on Sustainable Biofuels	1	2	1		
8	RSB applicability in the context of Hawai‘i	1	3			
FACILITATION AND ORGANISATION		**EXCELLENT**				**POOR**
10	The facilitation	3	1			
11	Event preparation and logistics	1	2		1	

OPEN QUESTIONS

12 What did you particularly like about this workshop?

- Open discussion/informal
- Did not know what to expect (and thus did not know if the right topics were discussed)
- Variety in representation

13 What would you suggest be improved for future workshops?

- Larger outreach to more people
- Get more people involved
- Next workshop should focus on adapting the 12 standards for HI

Feedback Form

MAUI

Sustainable Biofuels Workshop
December 2010

Name (optional):_____

Date and location of workshop: _____

OVERALL WORKSHOP IMPRESSION

		STRONGLY AGREE				STRONGLY DISAGREE
1	The workshop was worthwhile		1			
2	My expectations were met			1		
3	The right topics were addressed			1		
4	My understanding of the application of RSB Standards to the context of Hawai‘i has improved	1				
5	The discussions were highly productive			1		

PRESENTATIONS

Were the presentations relevant and informative		EXCELLENT				POOR
6	Introduction to the Hawai‘i Biofuels Foundation			1		
7	Roundtable on Sustainable Biofuels			1		
8	RSB applicability in the context of Hawai‘i		1			

FACILITATION AND ORGANISATION

		EXCELLENT				POOR
10	The facilitation	1				
11	Event preparation and logistics		1			

OPEN QUESTIONS

12 What did you particularly like about this workshop?

-

13 What would you suggest be improved for future workshops?

Feedback Form

OAHU

Sustainable Biofuels Workshop
December 2010

Name (optional):_____
Date and location of workshop: _____

OVERALL WORKSHOP IMPRESSION

		STRONGLY AGREE				STRONGLY DISAGREE
1	The workshop was worthwhile	7	1		1	
2	My expectations were met	6	1	1	1	
3	The right topics were addressed	4	3	1	1	
4	My understanding of the application of RSB Standards to the context of Hawai‘i has improved	3	5	1		
5	The discussions were highly productive	5	2		2	

PRESENTATIONS

Were the presentations relevant and informative

		EXCELLENT				POOR
6	Introduction to the Hawai‘i Biofuels Foundation	2	2	3		
7	Roundtable on Sustainable Biofuels	5	3	1		
8	RSB applicability in the context of Hawai‘i	4	2	3		

FACILITATION AND ORGANISATION

		EXCELLENT				POOR
10	The facilitation	6	2		1	
11	Event preparation and logistics	1	4	2	2	

OPEN QUESTIONS

12 What did you particularly like about this workshop?

- Variety in representation
- Very informative; appreciate Liz/Matt’s willingness to engage the group
- I always enjoy the....of going super high level down to micro—we did that tonight, good facilitation
- Thank you for the opportunity to participate
- Good facilitation! Felt like I had a chance to talk despite some very verbal opinions in the group. Reminded us that this is a work in progress
- Comprehensive approach
- Exposure to pointed observations from peers; background on EPA

13 What would you suggest be improved for future workshops?

- Next workshop should focus on adapting the 12 standards for HI
- Clarify who should get the RSB (utilities, transporters, end-users, etc) this was flushed out in Q&A. Address applicability of local, state, federal laws-lots of overlap....
- HBF should/could provide more info that puts RSB in context, we'd like to know whose doing what—this can be put on the website –no need workshop
- Don't change the start time
- Larger room, start earlier or do it for two days—3hrs isn't enough.
- Measureable index development
- No need to read slides aloud. If the text of the standard was available previously and attendees were advised to become familiar to them; i apologize for not being prepared. Assuming however that i was not alone, i wouldn't consider ___ from this session to be comprehensive or informed. Set realistice time line for meeting goals.