

# Feedstocks for Advanced Biofuels

**An introduction to the RSB**

# Biofuels and Feedstocks



**Neither good nor bad by category**

**It all depends – on how and where produced**

**There are valid concerns – inadequate legislation**

- Land use change and conservation of biological diversity
- Water availability
- Invasive species as new energy crops
- Real carbon benefit?
- Social concerns – land and water rights, and others

**That's why credible, practical, and affordable certification is crucial**

- NWF supports RSB for this purpose.

# Food versus Fuel is a Red Herring – Much Too Simplistic #I



## **The real controversy is conflict over LAND and its many uses**

- Agriculture, nature conservation, human habitation, etc.

## **Land may be available**

- Low productivity/degraded pastures and cropland can be restored

## **But humans don't have a good history of using land carefully**

- Costs of land restoration often discourage investment
- Native prairies and rangelands are being turned into monocultures

# Food versus Fuel is a Red Herring – Much Too Simplistic #II



## Food security can be **INCREASED** via biomass and biofuels

- Diversify crops and markets
- Give value to cover crops and residues
- Provide non-food, seasonally staggered sources of income
- Provide energy for value-added products (critical for smallholders and local communities)
- Stabilize grain prices – **IF** mandate for fuels is variable



# Residues can be Carefully Harvested

— but Potential Impacts Remain



## **Forestry and agriculture residue harvests should protect wildlife and habitat from**

- Harvesting during nesting, cutting stubble too short, chemicals

## **Soil structure and carbon must be conserved**

- How much residue should be left on the land?

## **Use of cover crops and no till practices could maximize carbon retention**

- But most farmers don't use these yet
- Rules for these are uncertain/uneven

# Biomass for Energy – Competition and Controversy



## Threats – harvesting too intensively

- Habitat loss – Bottomland Hardwoods and Longleaf Pine chipped up/for co-firing with coal
- Whole trees – carbon debt for decades masquerading as ‘carbon neutral’ (during precisely the near-term period where emissions must come down)
- Large scale power plants – may depend on huge “woodsheds” that exceed local residue capacity

## Solutions – use with care

- Small diameter – use only thinnings and residues for fuel/energy
- Allow long-lived trees to continue sequestration until harvested for long-lived uses – housing, furniture, certain plastics
- Good forest management – FSC standard is RSB selection



# RSB: Independent global coalition



# RSB works across sectors to set global best practice



1. Farmers



2. Producers



3. End-users, blenders, investors



4. Trade Unions



6. Environment NGOs



5. Rural Development NGOs



7. UN, government, research

# Best Practice:12 Principles

1000+ experts, 185 organisations, 35 countries



## Legal

**Legality**

**Land rights**

## Social

**Human and  
Labor Rights**

**Rural and  
Social  
Development**

**Local Food  
Security**

## Environmental

**GHG  
emissions**

**Conservation**

**Soil**

**Water**

**Air**

## Management & Technical

**Planning,  
Monitoring and  
Continuous  
Improvement**

**Use of  
Technology,  
Inputs, and  
Management  
of Waste**

# Sustainability indicators for crops



- **Fertilizer use, diesel and electricity for harvesting and processing, yields - all impact on the GHG intensity.**
- **Land conversion: no destruction of valuable forest, wetlands, peat lands or areas of high biodiversity.**
- **Water use in areas of water shortage.**
- **Impacts on food production in areas of food poverty.**
- **Land and water rights, etc.**



# Sustainability indicators for waste materials



- In general industrial wastes and residues are lower risk.
- Residues from the palm oil processing industry i.e Palm Fatty Acid Distillates (PFADs) and Palm stearin are high risk and should be from RSPO, SAN or RSB certified plantations.
- Agricultural wastes removal – not at the expense of soil quality, habitat values, water management.



# Sustainability indicators for processing



- **Emissions to air and water, especially in developing countries.**
- **Worker safety and labor rights.**
- **Water use in areas of water shortage.**
- **Local impacts.**



# What makes RSB different?



- **Global comprehensive standard – covers more key issues better**
- **Support from NGOs & UN Agencies**
- **Feedstock agnostic**
- **Collaboration – efficiency**
- **Risk-based approach – even ILUC**
- **Sustainability applied to full supply chain**
- **Stakeholder engagement**
- **Food security and rural development**
- **Smallholder-friendly**
- **Advisory / support services**



- **Screening**



- **Identify priority sustainability issues for study and management (soil, water, food security)**



- **Environmental and Social Management Plan**



- **Audit and ongoing monitoring**

# RSB Approach to ILUC – Low Risk Biomass



*Problem:* **Indirect impacts** occur when land or raw materials are switched from traditional use as food/feed/fiber to a new use – for bioenergy or biomaterials.

One result may be that the market demands replacement products, which raises the price and induces invasion of additional production areas - the famous “***Indirect Land Use Change.***”

## *RSB's Solution: The Low Risk Biomass Approach*

- Developed jointly with WWF International and Ecofys
- **Encourages biomass production/processing which decreases the risk of displacement and competition with the food, feed and fiber sectors**
- Designed as a built-in **complementary module** for RSB-certified companies who wish to demonstrate a low risk of creating indirect impacts.

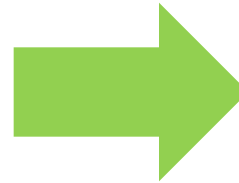


## 3 scenarios

1. Yield increase beyond the baseline or double cropping/no additional land conversion
2. Unused or degraded land restoration/avoids new arable land for cultivation and saves natural habitats
3. Wastes and residues/not requiring dedicated production from arable land

- **De-risking Projects for Investors:** guidance and advice to project developers & due diligence for investors.
- **Training and advice on preparation for certification.**
- **Policy development**
- **‘Smallholder Support’:** building capacity for certification and setting up supply chains.

# Diversity of Feedstocks & Products



- **Biofuels**
- **Plastics**
- **Food**
- **Feed**
- **Lubricants**
- **Cleaning products**
- **Pharmaceuticals**
- **Cosmetics**
- **Flavors & Fragrances**



## **Adapted standard for smallholders**

- **Simplified language & guidance**
- **3 years to come into compliance**
- **Exempted from certain aspects of standard – e.g. rural development**



# Smallholder Pilot, Eastern Cape Providence



**Project in Elliot and Encobo on 1000 hectares of maize and soybean**

## ***Feedback on RSB:***

- ***“Presents a simplified structured approach to general business management including documentation of all the critical processes.”***
- ***“Empowers the farmer to be in touch with the operations of his/her business and continuously track performance.”***
- ***“Helps the farmer to continuously improve way of doing business which in itself creates sustainability.”***



# Energy Tobacco – ‘Solaris’

## Sunchem Biofuel Development South Africa



- Energy tobacco - ‘Solaris’, Limpopo
- Kopano cooperative





# Amyris, Brazil



# Gliricidia – wood pellets

## Biomass Supplies, Sri Lanka



### BIOMASS

- wood pellets
  - 40,000 small farmers
  - 60 million trees planted
  - vision to make Sri Lanka energy sufficient
- 
- ‘live fencing’
  - Shade & support for other crops
  - animal fodder
  - soil improver - natural fertilizer and pesticide



# Supporting sustainable aviation



**SAFUG** - 28 airlines representing 33% of global aviation fuel use have pledged to *'support verifiable sustainability metrics consistent with and complementary to the RSB Principles & Criteria'*



Boeing Corporate Citizenship program supports the **RSB smallholder program**.



Certification of major aviation initiatives e.g the EU **ITAKA Project**.



Many active members and certified operators from the aviation sector.



- **IATA, Airbus, SkyNRG, South African Airways, JetBlue: Active RSB Members**
- **Boeing:** supports the smallholder programme
- **United/AltAir: certification almost complete**
- **ITAKA Project in EU just announced**
- **Commercial flights: KLM (2013)**

# Altair Fuels (undergoing certification)



- **United Airlines in partnership with AltAir**
- **Expected to provide a greater than 60 percent reduction in lifecycle carbon emissions**



# Supporting the shift to renewables



## Purpose:

To grow a **global corporate market for renewable fuels** and accelerate the shift from fossil fuels

## Goals:

- Increase the number of **companies choosing renewable fuels**
- Demonstrate **renewable fuels makes good business sense**
- **Address barriers** to source renewable fuels

# How to get involved with RSB



**Join RSB as a member:** Access new ideas and tap into expertise of fellow members and the RSB staff. Participate in governance – current standard revisions. Advertise your association with RSB via the new members' logo.

**Become certified to the RSB Standard** as a producer, processor or trader. Certified operators are automatically associate members and use the RSB logo on all certified products and marketing materials.

**RSB advisory services** provide tailored training and assistance in implementing sustainability principles, calculating GHG savings and regulatory compliance.

**Sponsor a smallholder project** in the developing world to help small farmers access international supply chains.

# Contact Details



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