Bioenergy sustainability with focus on the EU policy developments.

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Content

• Introduction
• Tools to promote a responsible/sustainable bioenergy sector
• Conclusions
Established in 1961
5 million supporters
Offices (NOs, POs, Assoc.) in 91 countries
4400 staff
Thematic focus: Climate/Energy, Forests, Freshwater, Marine, Species, Sustainability
Regional Priorities
WWF – 2 global goals

Biodiversity

Ecological Footprint

...reverse global trends

LIVING PLANET INDEX, 1970-2005

HUMANITY'S ECOLOGICAL FOOTPRINT, 1961-2005
Main conclusions:

- WWF sees climate change as a major threat to biodiversity that will potentially overshadow any other human-induced threat.

- High degree of probability that known forms of sustainable energy sources using known technologies can be harnessed to meet doubling energy demands by 2050.

- Achieve 60-80% reduction of climate dangerous emissions

- Long term stabilization of 400 ppm, which will hopefully avoid dangerous climate change and keep warming under 2°C
6 solutions, one of them is the wide use of renewable sources of energy

Bioenergy for heat and transport holds vast potential but could go terribly wrong if implemented unsustainably – e.g., by clearing biodiverse habitats to plant energy crops.

By 2050, the scenario includes the equivalent range of 110-250EJ per year from sustainable biomass, with a best estimate at 180EJ/yr. Together, this and other low emission technologies can provide 513EJ energy per year by 2050, or about 70% of the supply after efficiencies have been applied.
WWF Grouping of Climate Solutions Technologies

**Industrial Energy Efficiency and Conservation**
- Efficient Buildings
- Efficient Vehicles
- Aviation and Shipping Efficiency
- Repowering Hydro

**Sustainable Biomass**
- Wind Power
- Solar PV
- Solar Thermal Power
- Solar Thermal Heat
- Small Hydro
- Geothermal (heat and power)
- Tidal, Wave and Ocean Technologies
- Hydrogen from Renewables
- Large Hydro (existing plus sustainable)
- Carbon Capture and Storage
- Natural Gas displacing Coal

** Unsustainable Biomass**
- Unsustainable Hydro
- Nuclear

FWF – Climate Solutions Report 2007
How to address sustainability?
International processes

- **EU** biofuel directive, criteria for biomass (liquids, no go areas, minimum GHG savings), biomass directive (MCPFE, CEN, credible certification)
- **CBD** regional processes, assessing impacts
- **REDD/CDM** (land use planning, reducing deforestation)
- **FLEG**T (legal, but not necessarily sustainable)
- **MCPFE** bioenergy criteria, afforestation/reforestation guidelines
- **RSB** (draft standard, HCV, GHG balance, it’s a meta standard)
- **Reporting on biofuel sustainability in the UK (RTFO)**: sustainability criteria are not legally binding, reporting is.
Socio-environmental safeguards for bioenergy

- Significant **GHG balances** over fossil fuels

- Bioenergy production should not be established through the conversion of natural ecosystems that have **high conservation values** and/or critical **carbon storage functions**

- Bioenergy feedstocks must be produced using **better management practices** (BMPs)
Socio-environmental safeguards for bioenergy

- Governments must take measures to ensure an equitable playing field for the small producers.
- Implementation of bioenergy policies must take into account food security and must not threaten the realisation of the right to food.
- Policies and programmes must address displacement effects that influence GHG balance, poverty and the environment.
- Social considerations and indigenous people’s rights must be considered as a priority in bioenergy development.
What tools to use to achieve sustainable or responsible management?

• Depends on:
  – The associated risks
  – The associated costs
  – The producers
  – The claims made on the feedstocks (independently verifiable)
  – ....

Avoiding controversial sources  
Third party independent certification
- Legally binding (EIA, procurement policies, legality)

- Voluntary (certification, verification, scorecard system)

- Step-wise approach
Avoiding controversial sources

• Tools are already available

Risks with regards to legality (source NEF con)
Risks with regards to HCVF (source NEF con)
New tools…

• IBAT for business provides integrated information at the site scale – at the level of individual parks, concessions or other fine-scale management units.
Scorecard concept

• Used in the paper and biofuel sector

• Not an alternative to certification

• Could be interesting to explore in the European context in case of local supply chains
WWF/WB biofuel scorecard

• to provide a reasonable first cut at indicating whether a proposed biofuel project is likely to have a net positive or a net negative impact on the environment
  – (i) compare different biofuels and different biofuel production systems across key criteria in terms of environmental sustainability;
  – (ii) understand what kinds of changes to production systems would result in more sustainable production; and
  – (iii) track progress in improving sustainability over time.
Certification

- Using credible standards
- Third party independent verification
- Grievance procedure in place
- Using logos, claims on management practices
- Etc.
International Meta-Standard Strategy

- There is a need for an internationally agreed production standard covering all kinds of crops.

- The standard should not be used for protectionist purposes and should not disadvantage small producers.

- Should ensure legality and environmental and social sustainability.

- Should comply with ISEAL standards.
How would it work? (examples)

<table>
<thead>
<tr>
<th>Meta-standard criteria (process and content)</th>
<th>FSC</th>
<th>PEFC</th>
<th>CEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legal compliance</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Identification and maintenance of High Conservation Values</td>
<td>Yes</td>
<td>NO</td>
<td>?</td>
</tr>
<tr>
<td>Maintenance or enhancement of environmental services (watershed, soil protection)</td>
<td>Yes</td>
<td>Yes</td>
<td>?</td>
</tr>
<tr>
<td>Balanced stakeholder involvement</td>
<td>Yes</td>
<td>No</td>
<td>?</td>
</tr>
<tr>
<td>GHG balance</td>
<td>No</td>
<td>No</td>
<td>?</td>
</tr>
<tr>
<td>Third party independent verification</td>
<td>Yes</td>
<td>Yes</td>
<td>?</td>
</tr>
</tbody>
</table>
### The Meta-Standard Approach

Summarised results of a benchmark of the draft Dutch Meta-Standard criteria against the criteria of a selection of existing standards.

<table>
<thead>
<tr>
<th>CRAMER CRITERIA</th>
<th>SAN/RA</th>
<th>RSPO</th>
<th>Basel</th>
<th>EUREPGAP</th>
<th>FSC</th>
<th>SA 8000</th>
<th>IFOAM</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <strong>Greenhouse gas balance</strong></td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>1a Net emission reduction compared with fossil reference, inclusive of application, is at least 30%.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. <strong>Competition with food, local power supply, medicines and building materials</strong></td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>2a Insight into the availability of biomass for food, local energy supply, building materials or medicines.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.1 <strong>Biodiversity</strong> The installation of biomass production units will not be at the expense of protected or vulnerable biodiversity</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>3a No deterioration due to biomass production of biodiversity in protected areas.</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>3b No deterioration of biodiversity by biomass production in other areas with high biodiversity value or vulnerability.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3c No installation of biomass production units in regions where biodiversity has recently been decreased due to conversion.</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>N</td>
<td>P</td>
</tr>
<tr>
<td>3.2 <strong>Biodiversity</strong> The management of biomass production units will contribute towards the conservation or strengthening of biodiversity</td>
<td>P</td>
<td>N</td>
<td>P</td>
<td>P</td>
<td>Y</td>
<td>N</td>
<td>P</td>
</tr>
<tr>
<td>3.2a Concrete contribution towards the maintenance or recovery of biodiversity at or around biomass production units in natural or cultural landscapes.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. <strong>Prosperity</strong></td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>N</td>
<td>P</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>4A Insight into possible negative effects on the regional and national economy.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. <strong>Social well-being</strong> No negative effects on the well-being of the employees and local population, taking into account</td>
<td>Y</td>
<td>P</td>
<td>Y</td>
<td>P</td>
<td>P</td>
<td>Y</td>
<td>P</td>
</tr>
<tr>
<td>5a Working conditions of employees</td>
<td>Y</td>
<td>P</td>
<td>Y</td>
<td>P</td>
<td>P</td>
<td>Y</td>
<td>P</td>
</tr>
<tr>
<td>5b Human Rights</td>
<td>Y</td>
<td>P</td>
<td>P</td>
<td>N</td>
<td>P</td>
<td>Y</td>
<td>P</td>
</tr>
<tr>
<td>5c Property rights and rights of use</td>
<td>P</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>N</td>
<td>P</td>
</tr>
<tr>
<td>5d Insight into the social circumstances of local population</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>P</td>
<td>N</td>
</tr>
<tr>
<td>5e Integrity</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>6.1 <strong>Environment</strong> In the production and processing of biomass, the soil, and the soil quality must be retained or even improved</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>P</td>
<td>P</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>6.1a In the production and processing of biomass best practices must be applied to retain or improve the soil and soil quality.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.1b In the production of biomass crop residues are used for multiple purposes.</td>
<td>P</td>
<td>P</td>
<td>P</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>P</td>
</tr>
<tr>
<td>6.2 Environment: In the production and processing of biomass, ground and surface water are not depleted and water quality is maintained or improved</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>P</td>
<td>P</td>
<td>N</td>
<td>P</td>
</tr>
<tr>
<td>6.2a In the production and processing of biomass best practices must be applied to restrict the use of water and to retain or improve ground and surface water quality.</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>6.2b In the production and processing of biomass no use must be made of water from non-renewable sources.</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>P</td>
<td>N</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>7. <strong>Legislation</strong> Biomass production will take place in accordance with relevant national laws and regulations and international treaties</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>7a No violation of national laws and regulations that are applicable to biomass production and the production area.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7b No infringement of relevant international treaties</td>
<td>Y</td>
<td>Y</td>
<td>P</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
<td>P</td>
</tr>
</tbody>
</table>
Benchmarking of existing schemes has been carried out by other processes: for example in the UK in the frame of public procurement requirements.

Sometimes difficulties with interpretation: RSB – protection of HCV areas - , FSC – maintenance or enhancement of HCVs –

Cost-effective way of developing standards in the bioenergy sector, does not create extra burden on the producers.
The EU biofuel policy

  - Defines „no-go” areas (wetlands, grasslands, forests), based on biodiversity and carbon criteria
  - Promotes production on idle/degraded lands or waste products
  - Promotes better management farming practices
  - Defines minimum GHG savings (45% by 2013, 60% by 2015)
  - Requires extensive reporting on soil, water, air and social issues.

- Only certified products will count against the renewable targets
Further work is required

- Indirect impacts not being dealt with

- Definitions and geographic range of “no-go” areas will have improved/developed

- Reporting requirements on wider sustainability criteria established
Other relevant processes: CEN

Sustainably produced biomass for energy application (more than in RES-D)

covers all biomass from EU and outside which is produced for energy application.
-CEN standard will go beyond EU Directive esp. in context with social P& C.
-6 working groups: cross-cutting issues, GHG, biodiversity, social-economic aspects, verification and indirect landuse change.
-First draft of the standard has to be presented by January 2010.
-CEN will develop a framework standard, not a metastandard.
Other relevant processes

• Governmental standard setting: D, NL

• ISO: will start soon

• ....
Conclusions

• The adopted system should not disadvantage small producers and should not discourage the development of local supply chains

• A harmonized system is needed regardless of the end-use

• Should build on existing credible tools.