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Global Assessment of Biomass and Bioproduct Impacts on Socio-economics and Sustainability



Dominik Rutz, Rainer Janssen

WIP – Renewable Energies

Workshop on Biofuels and Bioproducts

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Global-Bio-Pact

- Supported in the 7th Framework Programme of the European Commission
- Coordinator: WIP Renewable Energies
- Duration: 3 years
- Start: February 2010



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Global-Bio-Pact Idea

Development and harmonisation of sustainability schemes
for biofuels and bioproducts
to prevent negative socio-economic impacts



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Global-Bio-Pact Partners



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Global-Bio-Pact – Partnership

- **WIP – Renewable Energies**, Germany
- **Imperial College London**, United Kingdom
- **Utrecht University**, The Netherlands
- **BTG Biomass Technology Group**, The Netherlands
- **Institute for Energy and Environmental Research**, Germany
- **ProForest**, United Kingdom
- **Roundtable for Sustainable Biofuels**, Switzerland
- **Universidade Estadual de Campinas**, Brazil
- **National Institute for Agricultural Technology**, Argentina
- **Tropical Agricultural Research and Higher Education Center**, Costa Rica
- **Tanzania Traditional Energy Development and Environment Organization**, Tanzania
- **Mali-Folkecenter**, Mali
- **Greenlight Biofuels Indonesia**, Indonesia




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Objectives

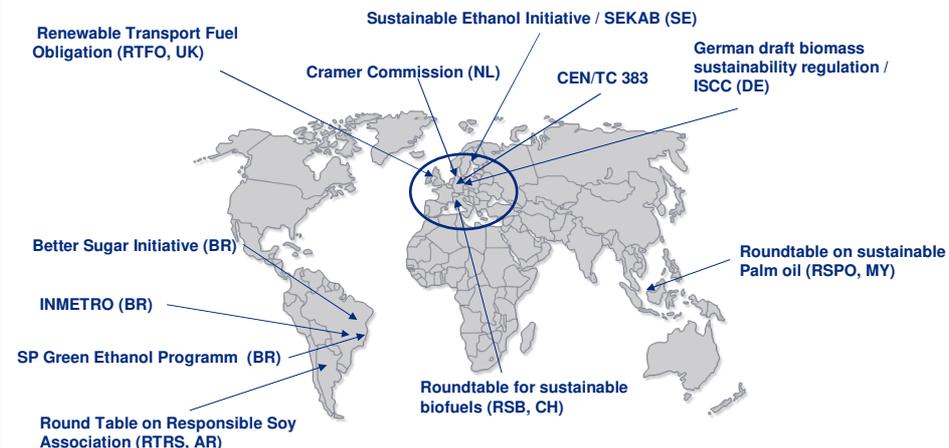
- Identify socio-economic impacts of **feedstock production**
- Identify socio-economic impacts of **conversion chains**
- Analyse impacts on **food security**
- Investigate link: socio-economic and **environmental impacts**
- Review current and future **trading** schemes
- Analyse **public perception**
- Make recommendations for **certification**




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Ongoing Sustainability Initiatives



Renewable Transport Fuel Obligation (RTFO, UK)

Sustainable Ethanol Initiative / SEKAB (SE)

Cramer Commission (NL)

CEN/TC 383

German draft biomass sustainability regulation / ISCC (DE)

Better Sugar Initiative (BR)

INMETRO (BR)

SP Green Ethanol Programm (BR)

Round Table on Responsible Soy Association (RTRS, AR)

Roundtable for sustainable biofuels (RSB, CH)

Roundtable on sustainable Palm oil (RSPO, MY)

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Socio-economic Impacts of Biomass Production and Use

- Gender
- Employment opportunities
- Working conditions
- Health
- Food security
- Food and feed prices
- Land issues: competitive uses
- Land issues: conflicts
- Transitions from small to large production
- Change in traditional use and knowledge
- Local energy provision
- ... etc.

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Case Studies

- **Argentina:** Soy production and conversion
- **Indonesia:** Palm oil production and conversion
- **Tanzania / Mali:** Jatropha cultivation
- **Costa Rica / Brazil:** Bioethanol production from sugarcane
- **EU / N-America:** 2nd generation Biofuels



Case study levels

- Local/company level
- Regional level
- National level



Case Study: Soy in Argentina



- Production systems mainly large-size
- Soy farmers usually have no influence on the use of the soy beans
- Main product of soy are proteins
- Only 15-25% of the soy bean is oil (oil surplus in Argentina)
- Annual yield: ~ 0,5 t/ha Oil
- 99% genetically modified



→ **Which sustainability criteria can be applied here?**

Case Study: Jatropha in Afrika



- Case Studies: small to large scale projects in Mali and Tanzania
- Jatropha – a miracle plant?
- High yields only on good soils with sufficient water and nutrient availability
- Interest of large companies in big plantations
- Jatropha is still to less investigated (Breeding)
- Wrong promises (especially to smallholders) have to be avoided



Case Study: Sugarcane in Latinamerica



- Brazil: longest history in ethanol use in transport applications
- Costa Rica: no ethanol use for biofuels so far; country with high biodiversity





Case Study: Lignocellulosic Biorefinery Canada



- Forestry products and industry residues
- Integrated cellulose-to-ethanol bio-refining
- Assessed company: Lignol



Case Study: Palm oil in Indonesia



- World's leading exporter of palm oil, few up-stream processing to biofuels and bioproducts
- Case studies in North and South Sumatra (Comparison of ownership models)
 - Privately owned estates with associated smallholders
 - Government owned plantations
 - Independent smallholders





Main outcome of Global-Bio-Pact

- Assessment of existing socio-economic principles, criteria, and indicators
- Elaboration of a set of socio-economic impact indicators
- Test audits
- Recommendations for EU legislation
- Recommendations on harmonisation of certification schemes



THANK YOU VERY MUCH FOR YOUR ATTENTION!



Contact

Dominik Rutz, Rainer Janssen
WIP – Renewable Energies

www.wip-munich.de
www.globalbiopact.eu

dominik.rutz@wip-munich.de
rainer.janssen@wip-munich.de

