BioTrade2020+
www.BioTrade2020plus.eu

IEA Bioenergy
Task 40: Sustainable International Bioenergy Trade

International workshop:

Towards sustainable international biomass trade strategies

Friday 24 October 2014, Brussels

Background document for the interactive discussion

Today in the European Union, the achievement of existing and future bioenergy targets implies that in addition to using domestic biomass, European markets will also **rely on imports of biomass**. Some well-positioned regions of the world are already playing a role in supplying biomass to the European markets and could become increasingly relevant in the near future.

Trade can be a logical result of the **supply-demand balance**: some regions have excess potential, while other have shortages, which can balance out through trade. Another argument is that export regions potentially have more **cost-efficient production systems** - reasons can be climatic or also cheap labour - so they can compete with EU domestic resources, even with trade cost included. Some of these regions are developing export markets, but don't (yet) focus on domestic use of their resources. To some extent, in this phase their **market** is **initiated** by European demand.

The main aim of the European project BioTrade2020plus is to provide guidelines for the development of a **European Bioenergy Trade Strategy** for 2020 and beyond. Some of the principles of this strategy will be to ensure that imported biomass feedstock is sustainably sourced and used in an efficient way, while avoiding distortion of other markets. It will be important to find a basis for a balanced approach between promoting the use of domestic biomass, while also keeping markets open for sustainable imports of biomass.

The project will focus on **lignocellulosic biomass** (woody resources, agricultural residues and cellulosic crops), for the following sourcing regions: *North America* (Southeast United States), *South America* (Brazil, Colombia), *East Europe* (Ukraine), *Southeast Asia* (Indonesia/Malaysia) and *East Africa* (Kenia/Mozambique/Tanzania).

This workshop aims to initiate discussions on how these trade strategies can be framed. The central points of discussion will be

(1) how to define sustainable export potentials,
(2) which opportunities and risks are connected with biomass trade and how these can be addressed, and
(3) which are the key principles that sustainable biomass trade should fulfil.

One important point, which will also be discussed in the panel debate, is the interaction between local use and exports in the sourcing regions.

The following pages contain the points which will be discussed in the interactive discussion.

How to translate technical potentials into sustainable potentials?

The translation of techical potentials into sustainable potentials for the selected countries (and respective feedstocks) is a key activity within the Biotrade2020plus project. In this workshop we aim to collect stakeholder opinions regarding the following statements:

1) Sustainability criteria and indicators and respective thresholds should apply to all feedstocks **regardless where they are consumed** (domestically or in third countries –exports-).
2) Sustainability requirements not only need to be taken into account when translating the technical potentials into sustainable potentials but should consider as well the **full value chains** (e.g. for GHG emissions derived from processing or transporting to EU).
3) Translating technical potentials into sustainable potentials should distinguish between **"basic"** sustainability requirements (those considered within the RED) and a more **"advanced"** set. The list proposed by the BioTrade2020plus is:

Criterion	Indicator (thresholds to be defined)	Sustainability	
		basic	advanced
Resource Use	Land Use Efficiency*	--	✓
	Secondary Resource Efficiency*	--	✓
	Energy Efficiency*	--	✓
	Output service quality	--	✓
Biodiversity	Conservation areas and land with significant biodiversity values	✓	✓
	Land management w/o negative effects on biodiversity	--	✓
Climate	Life cycle GHG emissions incl. direct LUC	✓	✓
	Inclusion of GHG effects from iLUC[1]	--	✓
	Inclusion of GHG effects from C stock changes	--	✓
Soil quality	Erosion	--	✓
	Soil Organic C	--	✓
	Soil Nutrient Balance[2]	--	✓
Water use & quality	Water Availability[3]	--	✓
	Water Use efficiency	--	✓
	Water quality	--	✓
Non-GHG emissions	SO_2 equivalents[4]	--	✓
	Particulate Emissions PM_{10}	--	✓
Food security	Price and supply of national food basket and fuel wood	--	✓
Land use security	Changes in land tenure and access[5]	--	✓
Labor conditions	Adherence to ILO principles and voluntary standards. Not all countries are signatories of ILO	✓	✓
Employment	Number of jobs from bioenergy	--	✓
Production cost	Levelized life-cycle cost, excluding subsidies	--	✓

** = considering by- and co-products of bioenergy life cycles*

[1] Data for 2020; until 2030, a revised ILUC factor should be determined which reflects progress regarding international policies to contain or reduce LUC effects
[2] See http://www.iinas.org/Work/Projects/REDEX/redex.html
[3] New bioenergy cropping and conversion facilities placed outside of areas with severe water stress
[4] Calculated for life cycles, should be lower than fossil benchmark
[5] Degree of legitimacy of the process related to the transfer (i.e. change in use or property rights) of land for new bioenergy production, and extent to which due process is followed in the determination of the new title

How to assess local demand?

The local demand for energy and other uses at sourcing regions is assessed by investigating the use of lignocellulosic biomass for food, feed as well as traditional purposes (paper & pulp, construction material) and new material purposes (biochemical, plastics), use of lignocellulosic biomass for local traditional energy, and use of lignocellulosic biomass for local modern small scale and modern large scale energy uses that might already exist or arise in the future.

Local demand is impacted by a number of factors including lignocellulosic biomass production in agricultural, forestry and bioenergy crop sectors, growth drivers of population, GDP, income and living standards. It is additionally influenced by other pressures such as environment and energy regulation, impacts of climate change and related commitment and political stability.

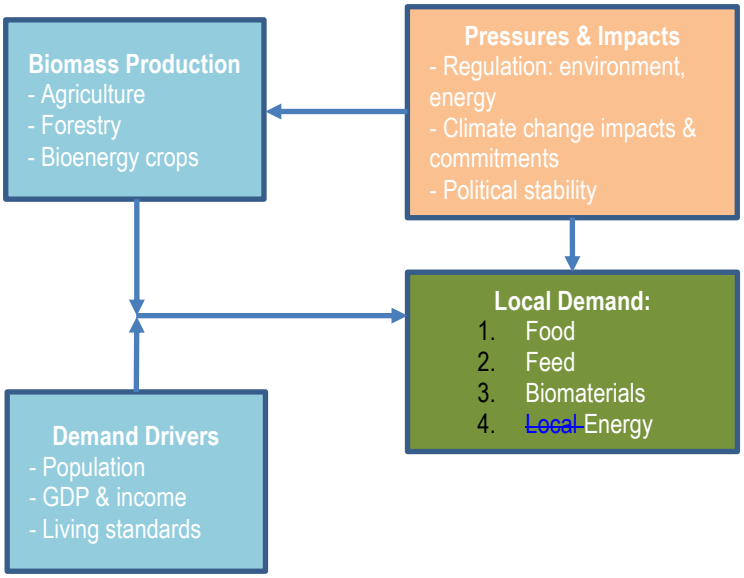

Figure of Local Demand Drivers and Impact Factors

As the percentage and usage of lignocellulosic biomass for energy and non-energy purposes in developing and industrialized countries are different, it is important to carefully investigate local demands and review the difference.

There are a number of **data sources** to support the assessment of local demands for lignocellulosic biomass. In the BioTrade2020plus project, we rely on **national statistics, international projections (e.g., from IEA)** as well as **questionnaires and interviews** with project partners and stakeholders in the international sourcing regions for the estimation. Furthermore, **site survey** is also another method with assistance of project interns to collect data in those countries. Results of external reports and projects are equally used to ultimately achieve an overall estimation of domestic uses of dominant agricultural products, energy crops and forest feedstocks at present, in 2020 and in 2030.

Questions in the posters:

1. *How reliable do you assume the assessment of current (and future) local demand using the following methods:*
   a. Based on national statistics (e.g. population, GDP, biomass uses for materials and energy by different users)
   b. Interview and questionnaires with industries that use biomass for energy and other purposes
   c. Interviews with experts to assess uses of biomass outside the formal economy (e.g. use of fuel wood by local people)

2. *For the calculation of export potentials, we suggest to exclude local demand for biomass (for food & feed and material purposes, traditional energy or modern bioenergy purposes, both now and in the future). So local demand gets priority over exports. Do you agree with this approach?*

3. *How would you see the different applications of lignocellulosic biomass evolve in the future (by 2030)?* We make a distinction between developing countries and developed/OECD countries:

   1. Use of biomass for **traditional material purposes** (e.g. paper & pulp, construction material)

   2. Use of biomass for **new material purposes** (e.g. biochemical, plastics)

   3. Use of biomass for **local traditional energy use** (fuel wood)

   4. Use of biomass for **local modern, small scale use** (e.g. modern stoves, small-scale district heating)

   5. Use of biomass for **local modern, large scale use** (e.g. large-scale electricity production, 2nd generation biofuels)

Which are the main opportunities related to biomass trade for energy?

A number of potential opportunities are provided in the following list. Please indicate on the poster how important you rate a certain opportunity – argumentation is welcome. If you feel some opportunities are missing, please feel free to suggest additional ones.

FOR IMPORTING REGIONS (EU):

A. Biomass provides an alternative for fossil energy, and it is not weather dependent or intermittent. Imported biomass can contribute to this when domestic resources are limited.

B. Imported biomass can be a cost-efficient way to reach renewable energy targets.

C. Opening markets for imported biomass can reduce the stress on domestic biomass resources (e.g. for existing biomass processing industries)

D. EU countries can initiate technological solutions (e.g. advanced biofuels) which need high biomass volumes (which may not be available on the domestic market)

E. …

FOR EXPORTING REGIONS:

A. Export markets create economic opportunities to market (abundant) local feedstocks

B. It creates socio-economic opportunities (incl. job creation) in forestry, agriculture, industry, …

C. There are synergies with local markets (e.g. forest products, wood processing industry, agricultural products)

D. Demand from outside the region will stimulate/trigger sustainable practices in forestry, agriculture, industry.

E. Initiating mobilization of biomass (with demand from outside the region) will trigger local production of renewable energy.

F. …

Which are the main risks related to biomass trade for energy?

A number of potential risks are provided in the following list. Please indicate on the poster how important you rate a certain risk – argumentation is welcome. If you feel some risks are missing, please feel free to suggest additional ones.

FOR IMPORTING REGIONS (EU):

A. A lot of energy is lost in **transport**, reducing the overall greenhouse gas performance, making it difficult to fulfil binding GHG criteria.

B. Domestic potential in the EU may be outcompeted by cheaper imports, leaving some of the **domestic potential underutilized**.

C. Relying on imported biomass only moves our problem of **energy import dependency** from one region to another – presents no real solution.

D. Demand from the energy side, and in particular the involved subsidies are impacting **world market prices** for other sectors. This creates an unlevel playing field.

E. European **subsidies** are flowing outside the EU, and do not contribute to the European economy.

F. …

FOR EXPORTING REGIONS:

A. Additional demand for these types of biomass generates a **risk of overexploitation** in forestry and agriculture, resulting in biodiversity loss and a loss of carbon in forests and agricultural soils.

B. Additional demand may increase prices for these feedstocks and lead to **displacement**, i.e. draw away feedstocks from existing local applications (e.g. paper, panel boards).

C. Focus of international trade is generally on large scale players. There may be limited opportunities for **smallholders** to access these new export markets.

D. There is a risk of '**land grabbing**' of large players, moving away indigenous people or smallholders.

E. Claiming certain feedstocks for export may **lower opportunities in sourcing regions**, e.g. to use their own resources for energy production

F. …

Key principles and policy options for sustainable trade

The following statements provide potential principles and policy options for sustainable trade of biomass. Some statements may be somewhat provocative; we don't expect you to agree with everything, your reaction is appreciated. Please indicate on the poster if you agree or disagree with a certain statement – argumentation is welcome. If you feel some principles or policy options are missing, please feel free to suggest additional ones.

1. **Sustainable biomass sourcing** is a precondition for all imported biomass to the EU, and for all domestically sourced biomass, the same principles and criteria are to be applied.

2. Sustainability should go **beyond the RED criteria** (as defined for biofuels) and consider other fundamental aspects such as sound management in sourcing areas and social issues.

3. When applying performance-based sustainability requirements (e.g. for GHG, efficiency), these need to be based on the **full value chain** (= incl. production and logistics).

4. We need to understand and quantify **indirect effects** (e.g. iLUC, materials displacement) and include them in value chain assessments.

5. The EC and/or Member States should define **approved practices** that avoid/reduce negative indirect effects.

6. Markets should be open, **no** discrimination (~WTO) or **trade barriers** because of too demanding quality & sustainability requirements.

7. Renewable energy from **domestic** sources should have **priority** over imports.

8. The EC / Member States need to **assist sourcing regions** towards sustainable practices in biomass production and harvesting.

9. The EC should adopt **bilateral agreements** with sourcing regions to recognize existing legislation and management practices.

10. Member States need – at least in the longer-term - to **avoid subsidies** as these create market distortions.

11. **Resource efficiency** should be required as a basic principle (e.g. minimum overall efficiency), for locally produced and imported feedstock.

12. The EC / Member States should stimulate local developments in renewable energy or GHG savings in sourcing regions and create **virtual trade mechanisms** (see carbon markets, ETS mechanism) instead of physical trade.

13. …