



# **BioTrade2020plus**

## **Supporting a Sustainable European Bioenergy Trade Strategy**

**Intelligent Energy Europe  
IEE/13/577/SI2.675534**

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### **Deliverable 6.4**

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## **Report of Workshops**

Publicity level: PU  
Date: 23/08/2016



Co-funded by the Intelligent Energy Europe  
Programme of the European Union

## The BioTrade2020plus Project

### Objectives

The main aim of BioTrade2020plus is to provide guidelines for the development of a **European Bioenergy Trade Strategy for 2020 and beyond** ensuring that imported biomass feedstock is sustainably sourced and used in an efficient way, while avoiding distortion of other (non-energy) markets. This will be accomplished by analyzing the potentials (technical, economical and sustainable) and assessing key sustainability risks of current and future lignocellulosic biomass and bioenergy carriers. Focus will be placed on lignocellulosic biomass from current and potential future major sourcing regions of the world (US, Ukraine, Latin America, Asia and Sub-Saharan Africa).

BioTrade2020plus will thus provide support to the use of stable, sustainable, competitively priced and resource-efficient flows of imported biomass feedstock to the EU – a necessary pre-requisite for the development of the bio-based economy in Europe.

In order to achieve this objective close cooperation will be ensured with current international initiatives such as IEA Bioenergy Task 40 on “Sustainable International Bioenergy Trade - Securing Supply and Demand” and European projects such as Biomass Policies, S2BIOM, Biomass Trade Centers, DIA-CORE, and PELLCERT.

### Activities

The following main activities are implemented in the framework of the BioTrade2020plus project:

- Assessment of **sustainable potentials of lignocellulosic biomass** in the main sourcing regions outside the EU
- Definition and application of sustainability criteria and indicators
- Analysis of the **main economic and market issues of biomass/bioenergy imports** to the EU from the target regions
- Development of a dedicated and **user friendly web-based GIS-tool** on lignocellulosic biomass resources from target regions
- **Information to European industries** to identify, quantify and mobilize sustainable lignocellulosic biomass resources from export regions
- **Policy advice on long-term strategies** to include sustainable biomass imports in European bioenergy markets
- **Involvement of stakeholders** through consultations and dedicated workshops

More information is available at the BioTrade2020plus website:  
[www.biotrade2020plus.eu](http://www.biotrade2020plus.eu)



## About this document

This report corresponds to D6.4 – Workshop report of BioTrade2020+. It has been prepared by: CENER and WIP, with the contribution of VITO, IINAS, Utrecht University, DLO and Imperial.

<b>Start date of project:</b>	01-03-2014
<b>Duration:</b>	30 months
<b>Due date of deliverable:</b>	Month 30
<b>Actual submission date:</b>	Month 30 – August 2016

<b>Work package</b>	WP6
<b>Task</b>	Task 6.6
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Dissemination Level		
<b>PU</b>	Public	x
<b>PP</b>	Restricted to other programme participants (including the Commission Services)	
<b>RE</b>	Restricted to a group specified by the consortium (including the Commission Services):	
<b>CO</b>	Confidential, only for members of the consortium (including the Commission Services)	

Version	Date	Reason for modification	Status
0.1	17/06/16	Preliminary version	Finished
0.2	14/07/16	Comments from WIP	Finished
0.3	23/08/2016	Comments from VITO and Advisory Board Members	Finished

*This project is co-funded by the European Union within the INTELLIGENT ENERGY - EUROPA Programme. Grant Agreement n °IEE/13/577/SI2.675534. The sole responsibility of this publication lies with the author. The European Union is not responsible for any use that may be made of the information contained therein.*

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## 1. Introduction

BioTrade2020plus aims at strengthening links and information exchange between stakeholders involved in international sustainable biomass trade. For this reason among the several dissemination activities scheduled during the course of the project under task 6.6 of WP6, the following events were initially scheduled:

- Collection end-users tool requirements<sup>1</sup>.
- Midterm and cooperation IEA Bioenergy workshop (M8- October 2014, Brussels).
- Final Dissemination workshop (M30, August 2016, Brussels).

The following report aims at describing the main issues (organization, celebration and outcomes) from the following three workshops carried out during the course of the project:

- Midterm and cooperation IEA Bioenergy workshop held on October 24<sup>th</sup>, 2014 in Brussels.
- Policy Options for Sustainable Biomass Trade workshop held on June 3<sup>rd</sup> in Vienna as a side-event of the 23<sup>rd</sup> European Biomass Conference.
- Final Dissemination Workshop, titled: “Towards a European Trade Strategy for Sustainable Solid Biomass Imports to the EU” held on June 14<sup>th</sup> 2016 in Brussels as a parallel event of the European Sustainable Energy Week (EUSEW).

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<sup>1</sup> This action was considered as a workshop in the Annex 1- Description of the work. Finally, in order to get a higher impact was replaced by personal interviews in the 22<sup>th</sup> European Biomass Conference and Exhibition (for more details, see deliverable D4.2. of the project).

## **2. Midterm and Cooperation IEA Bioenergy workshop**

### **2.1. Workshop objective**

One of the objectives of the BioTrade2020+ project is to propose appropriate long-term strategies and support frameworks which can form a basis for a balanced approach between promoting the use of domestic biomass, while also keeping markets open for sustainable imports of biomass.

This workshop aimed to bring people together to initiate discussions on how these trade strategies can be framed. The central points of discussion were:

- How to define sustainable export potentials?
- Which opportunities and risks are connected with biomass trade and how these can be addressed?
- Which are the key principles that sustainable biomass trade should fulfil? (one important point is the interaction between local use and exports in the sourcing regions).

### **2.2. Workshop organization**

The workshop was held in VLEVA (*Liaison agency Flanders-Europe*) in Brussels the 24 of October 2014, Friday. They kindly provide a meeting room to carry out the event.

It was co-organized by BioTrade2020plus consortium (lead by VITO) and IEA Bioenergy Task 40. Participation was free of charge but registration was required (through BioTrade2020plus website). 66 people participated in the workshop, from the following sector: 13 policy makers, 12 solid biomass related industry, 4 biomass suppliers, 8 consultants to policy and industry, 23 academia & research, 3 NGOs and 3 other. The participants came from 11 Member States (AT, BE, DE, DK, ES, IE, IT, FI, NL, SE and UK). Also, there was participation from the following EU policy domains: DG ENER, DG ENV, DG AGRI, DG RTD and EASME.

The workshop included an Interactive discussion with the participation of the whole audience.

A copy of the programme is included in the Annex.

### 2.3. Workshop minute

The workshop began with an introduction of the project by **Luc Pelkmans (VITO)** and **David Sanchez (CENER)**. The project is currently at its beginning stage and some preliminary results have been produced. Pelkmans pointed out that this workshop provides opportunities for 66 stakeholders from a diverse background and different continents, including Europe, Africa, Southeast Asia, Australia, North America and South America to come together and initiate discussions on how trade strategies can be framed. The outcome of these discussions will then be used as inputs for the project. More details about the project are available on the [project website](#).

**Martin Junginger (UU)**, leader of IEA Bioenergy Task 40, presented an overview on the history and future expectations of biomass trade for energy. He revealed that in the past century, biomass consumed for energy purposes largely occurred locally. However, due to advanced pretreatment technologies, inter-continental trade became economically feasible around the year 2000 and has increased exponentially since then. In recent years, the EU has become the biggest importer of biomass energy stimulated by a series of promoting policies in several Member States, but East Asia has emerged as a new market for biomass. Junginger indicated that last year there was about one million tons of pellet exported to Korea, mainly from Vietnam and Canada. “Without policy support, there will be very little bioenergy trade,” Junginger stressed. For the future, Junginger pointed out that in order to make demand and supply for bioenergy meet, traded volumes will have to increase drastically, to levels of 100 million tons per year. Main exporting regions could be Latin America, Sub-Saharan Africa and Russia, main importing regions the OECD countries, China and India. Last year, Task 40 has published a book “International Bioenergy Trade: History, status & outlook on securing sustainable bioenergy supply, demand and markets” which compiles lessons and insights on the trade of global bioenergy commodities. It is available for purchase on the [Springer website](#).

**Uwe Fritsche (IINAS), Leire Iriarte (IINAS), Thuy Mai-Moulin (UU) and Bah Saho (ECREEE)** then presented preliminary work on the methodology framework and case studies on Southeast USA and Mozambique/Kenya and an overview of the bioenergy sector in the ECOWAS region (not included as a specific case study but presented by Mr Saho). Currently, a methodological framework has been setup using a mix of approaches to assess sustainable biomass potential. Technical potentials of lignocellulosic biomass are determined first, and then further screened by imposing several sustainability constraints. Fritsche pointed out that the next step would be to adapt a spatially explicit approach which is able to address local conditions more precisely than aggregated approach at regional or national level.

In the two case studies, local demand is computed based on national data and projected using qualitative assessment instead of complex economic modeling. It was stressed by the participants that local market conditions must be taken into account more carefully especially considering the cost and price issues. The additional sustainable potential supply after deducting local demand is regarded as potential for export. Luc Pelkmans indicated that such setting avoid displacement effect between

local demand and export potential. Such connections between local and extra-local markets contribute as a basis for legislation in addressing local development. Bah Saho emphasized that local participation is the key for successful mobilization of biomass. He suggested a few potential measures, such as providing economic incentives, formulating legislations for biomass, and demonstration by the companies to convince the local communities. One workshop participant pointed out that by improving efficiency not only in production but also in local biomass usage (which is currently of very low efficiency), extra volume of biomass could be available for export.

After the first panel session the participants were split into four groups for an interactive discussion (more info in section 4).

In the afternoon session, **Martin Junginger** led the panel debate joined by **Patrick Lamers (INL)**, **Maria Almeida Aranha (UNICA)**, **Bah Saho**, and **Michael Deutmeyer (Green Resources)** on the motion “*Export or local use of biomass, is it a dilemma?*”.

**Deutmeyer** presented the activities of GreenResources in East Africa. They replant forest on degraded forest and bush land in Tanzania, Mozambique and Kenya, currently up to 40,000 ha, and aim to expand for up to 200,000 ha in the future. The company applied FSC certification and has created jobs. For the moment, forest products serve only the local market, such as charcoal. However, they aim for oversea market in the future with large scale production of fibre along with their expansion. Deutmeyer emphasized that it is crucial to deal professionally with local communities (e.g. providing jobs) with regular monitoring. The company has proven successful in dealing with conflicts. They have also considered and accommodated losses incurred, e.g. unauthorized harvest by local communities, as part of the cost.

“About 80% of local cooking fuel comes from the forest,” **Bah Saho** said, “... there is a need for investment and national legislation enforcement with promotion and partnership with companies.” The Africa panelist also stressed that it is important to ensure that there is no illegal harvest from natural forests.

The current development in Brazil was elaborated by **Maria Almeida Aranha**. In 2013, about 25% of the Brazilian energy matrix came from biomass (~15% from sugarcane). Biomass energy is complementary to hydropower between dry and wet seasons. There are already several commercial plants commissioned for second generation biofuel production. It is expected that large amounts of second generation biofuel will be produced from bagasse and straw in the near future. She also pointed out that the development is largely triggered by domestic demand, but export could become an important factor, if external market has become more attractive. The competition with traditional use is not worrying, according to the Brazilian panelist, as it is not a major type of feed with essential nutrition.

Meanwhile in the US, the demand for biomass is not as certain as liquid biofuel, as mandates are made for renewable electricity at state level and not specified for bioenergy. For biofuel, it is expected that by 2022, according to the Energy Independent and Security Act (EISA, 2007) and within the 36 billion gallons (Bga) of



renewable fuels targeted at least 21 Bgal will be advanced biofuels, 16 Bgal cellulosic biofuels and 1 Bgal biomass based diesel. In terms of supply, there will be about 140 Mt woody biomass supply, compared to projected demand in 2025 at about 100 MT. Patrick Lamers, the US panelist explained that the supply-demand dynamics in the US largely depends on the private land owners who are not bound to any legislation but attracted by economic incentives. He mentioned that currently the biochemical conversion pathway of agricultural residues is more advanced than the thermochemical conversion of woody biomass to 2<sup>nd</sup> generation feedstocks. He therefore expected the demand for woody biomass to produce biofuels not to increase dramatically on the short term. Also the increased use of biomass to substitute coal was deemed unlikely, given the current opposition of NGO's and the ongoing use of shale gas to replace coal in the US. In terms of socio-economic aspect, Lamers said that there might be some tax incentives if the industry creates new jobs, especially in the rural areas. Lamers suggested adding urbanization as one scenario to be considered in the study, as urbanization is deemed as a strong competitor on land-use.

The moderator questioned about the realistic approach to determine land availability for bioenergy. "Put in place regulation," Saho stressed, pointing out the importance of formalizing the classification of forests and lands. Almeida pointed out that the Brazilian government has already determined expansion areas for sugarcane in the future. "About 7.5% of arable land can be utilized for sugar cane cultivation, currently, only 1.5% is used.", For the US, Lamers pointed out that the large amounts of private land owners can largely decide themselves what they want to produce on their land, and that determining land availability was not possible in a straightforward manner.



**Participants in the panel debate**

All workshop presentations are available at: <http://www.biotrade2020plus.eu/news-events.html>



## 2.4. Interactive discussion: extended summary

The audience was divided in 4 groups of around 15 people, taking into account people's background in terms of sectors and regions. Each group had a moderator and a rapporteur from the BioTrade consortium.

4 items were discussed in a timeframe of 1.5 hours:

1. how to translate technical potentials into sustainable potentials?
2. how to assess local demand?
3. opportunities and risks of international biomass trade
4. key principles for sustainable trade and policy options

### 1. *How to translate technical potentials into sustainable potentials?*

The translation of technical potentials into sustainable ones for the selected countries (and respective feedstocks) is a key activity within the Biotrade2020plus project. In this session we aimed to collect stakeholder opinions regarding the following three 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-).***

The discussion on the 1<sup>st</sup> question concentrated on the following aspects:

- *No distinction in biomass utilization when applying sustainability requirements (so not only for energy as is often the case now). Most people agreed with this. However, this is not easy to implement and can only be done step by step.*
- *Can we apply the same requirements/indicators/thresholds for domestic and imported biomass? It was stressed that some specificity will be needed as countries have different backgrounds. One participant stated that *criteria (and principles)* should be generic and apply to all feedstocks and locations; the application of these principles in indicators can be region and feedstock specific. Example is the application of FSC and PEFC. Transparency is very important.*
- *Can we expect that similar sustainability criteria are applied regardless where the biomass is consumed? Different countries will have a different approach in this. We can't expect every country to adopt the same requirements for all types of biomass and all applications. Nevertheless it would be better to have a consistent approach, also to avoid leakage (unsustainable products being used in sectors or countries with low requirements).*

Some other remarks of the participants:

- If applied to all biomass feedstocks and applications, sustainability requirements should also be applied to *fossil feedstocks*. Otherwise there is no level playing field.
- First focus on capacity building before we start to certify.

**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).**

There were some discussions how far this value chain would reach: up to the EU harbor (where the biomass enters the EU market) or including end use:

- Some participants stated that that we should focus on the sustainability of the feedstock production.
- Others would limit the value chain to the port of entrance (including pretreatment and transport). The end use is a different matter.
- Many participants felt that efficient end use also needs to be included.

**3. Translating technical potentials into sustainable potentials should distinguish between “basic” sustainability requirements (those considered within the RED) and a more “advanced” set.**

There were differences of opinion: some participants wish to extend the criteria to the advanced set, others stated that this would be too ambitious, difficult to evaluate and decrease the competitive position of bioenergy compared to fossil fuels. One group concluded that basic requirements are the ones to be applied on the market (maybe slightly extended, e.g. with social criteria and soil quality), the advanced set will serve for monitoring. For calculating sustainable potentials the advanced set can be used.

**2. 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.

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.

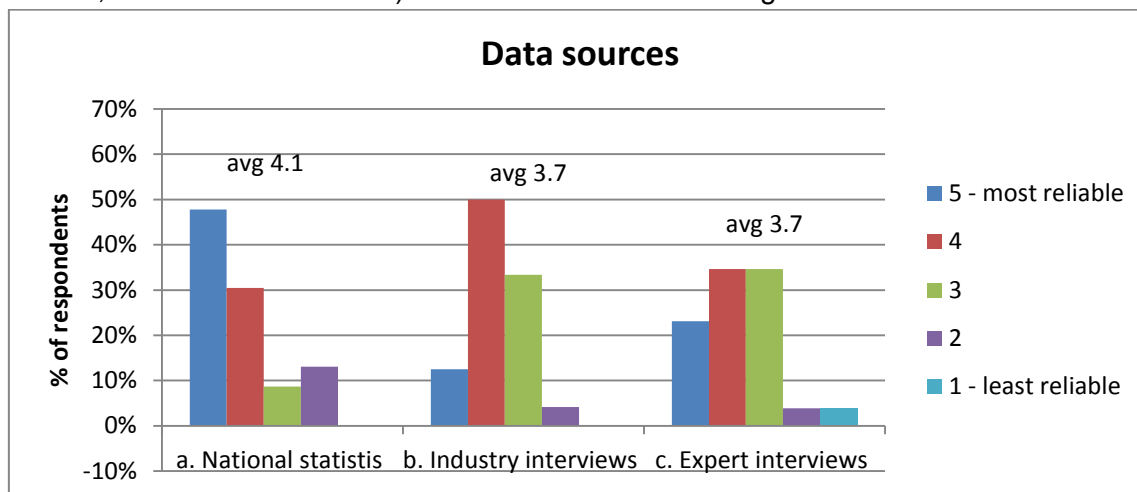
**1<sup>st</sup> question: How reliable do you assume the assessment of current (and future) local demand using the following methods:**

- 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)

The figure below shows the spreading of responses (with average scoring per data source, on a scale from 1 to 5). National statistics score higher than interviews.



It was frequently stated that a combination of different sources of information is needed. The reliability of the different methods is also country specific.

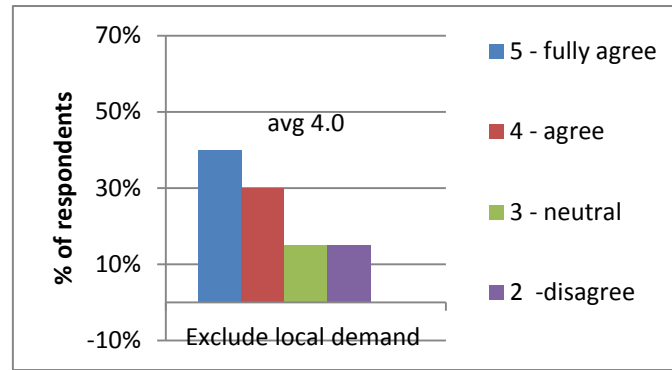
- *National statistics*: may be OK for OECD countries, but unreliable for less developed countries.
- *Interviews/questionnaires with industries*: data should be available, preferably from associations to get the whole picture. Strategic agenda from individual companies?
- *Interviews with experts* (other biomass uses): relevant for small scale use. Methodology must be known. Indicative general view.

Other methods mentioned: policy target analysis; site surveys (time consuming); modelling; estimates of professionals; consultation.

**2<sup>nd</sup> question: 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?**

The figure below shows the spreading of responses. 70% responded 'agree' or 'fully agree'. Nevertheless there were some critical remarks:

- How to deal with local inefficient and unsustainable use of biomass?
- It doesn't reflect market complexities, how markets work. This relates to a large number of variables (price, product, availability ...).
- Added value should be the first priority.
- OK that domestic *residential* demand gets priority, not industrial demand (some products are locally produced for world markets).
- There are links between domestic markets and exports (they can reinforce each other, create flexibility).

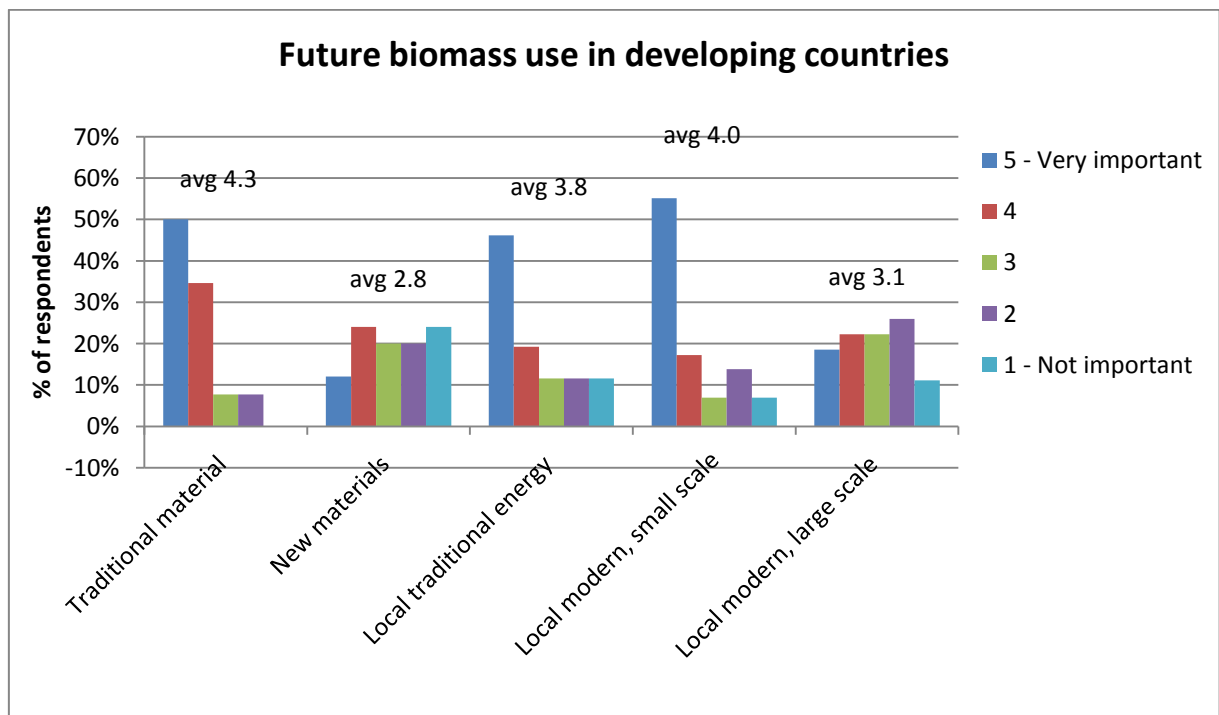


**3<sup>rd</sup> question: How would you see the different applications of lignocellulosic biomass evolve in the future (by 2030)?**

We make a distinction between developing countries and developed/OECD countries. The participants were asked to rate the following five types of biomass use according to their importance.

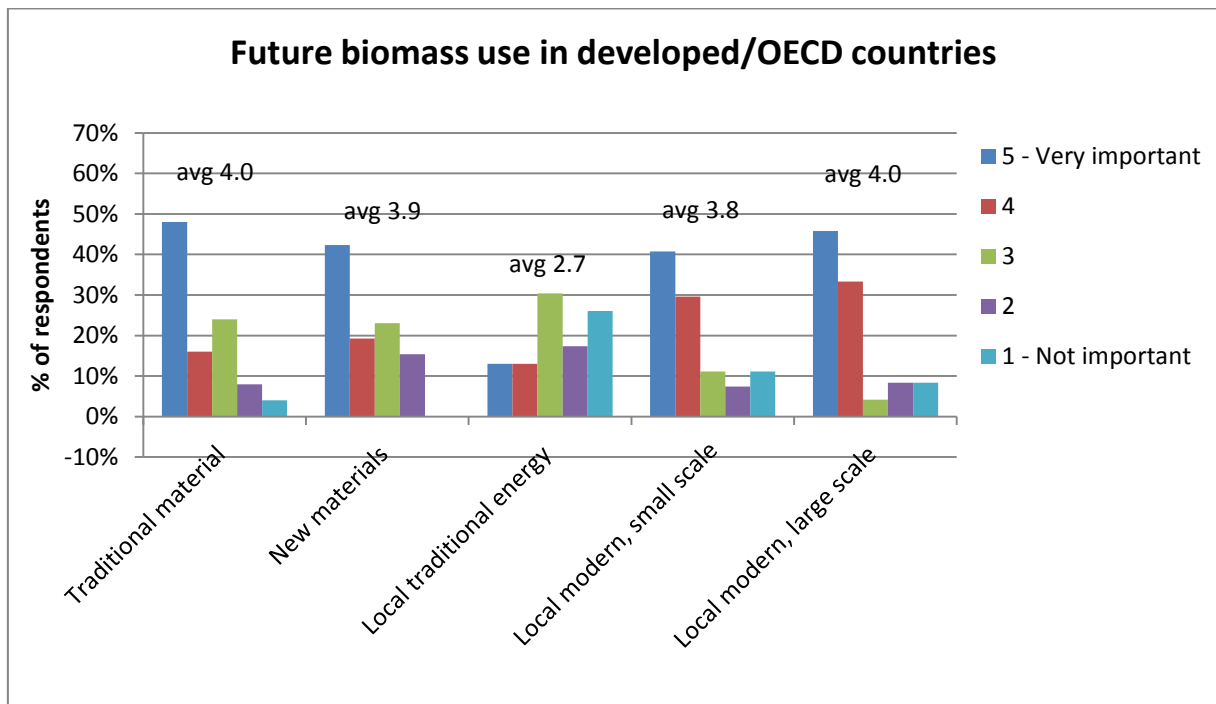
- Use of biomass for **traditional material purposes** (e.g. paper & pulp, construction material)
- Use of biomass for **new material purposes** (e.g. biochemical, plastics)
- Use of biomass for **local traditional energy use** (fuel wood)
- Use of biomass for **local modern, small scale use** (e.g. modern stoves, small-scale district heating)
- Use of biomass for **local modern, large scale use** (e.g. large-scale electricity production, 2<sup>nd</sup> generation biofuels)

The following figures show the responses, including the averages (on a scale from 1 to 5).



The respondents rated *traditional material use*, *small scale modern use* and *traditional energy use* as most important in developing countries by 2030. Large scale modern installations and new material production were considered less important.

As a general remark it was stated that the expectations differ by region – we can't put all developing countries in one group. E.g. prospects for Latin America are very different from Southeast Asia or Africa.



For developed/OECD countries *local modern large scale use*, *traditional material*, *new materials* and *local modern small scale* were considered in the same range of importance. Local traditional energy was considered less important by 2030.

Some additional remarks:

- Synergies between traditional materials and new materials (new materials may be developed alongside traditional, e.g. in paper industry)
- Synergies between large scale biofuels and new materials (in biorefineries)
- Small scale: we should facilitate the transition from traditional (inefficient) local energy to modern small scale. Better statistics needed.

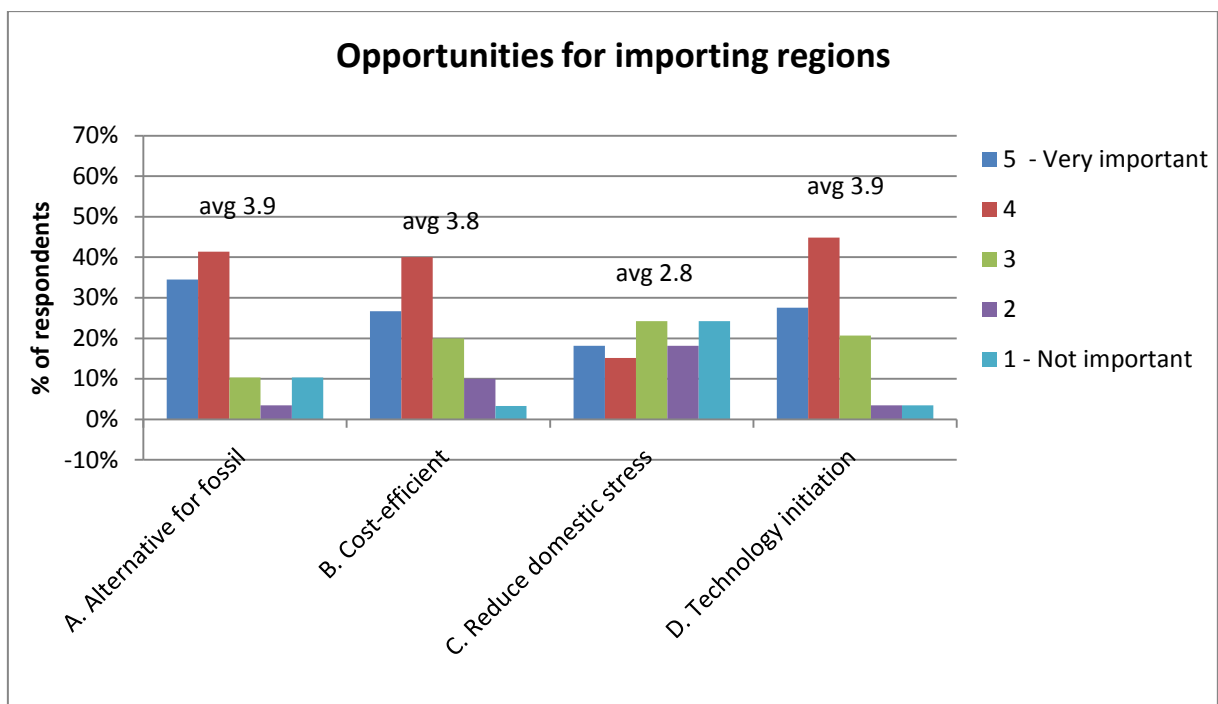
### 3. Opportunities and risks of international biomass trade

A number of potential opportunities and risks were provided. Distinction was made between opportunities/risks for importing regions (EU countries) and for exporting regions. The participants were asked to rate the opportunities and risks in terms of importance.

#### Opportunities 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)

The figure below shows the responses, including the averages (on a scale from 1 to 5)



Opportunities A, B and D were generally considered important to very important. The opinions on reducing domestic stress on biomass (Opp C) were mixed.

Some remarks of participants:

- Biomass production is also weather dependent and seasonal (Opp A). Nevertheless short term variability and storage options are totally different from solar or wind energy.

- Biomass is a good alternative when other renewables are not available/efficient (so not replacing, but additional to other renewables).
- Only looking at cost is too narrow and short term focused (Opp B).
- There may be hidden subsidies in the 'cost-efficient' imported biomass.
- Reasoning for UK import is lack of biomass supply and availability of large scale cheap biomass elsewhere. Market forces and cost dominate.
- Import reliance should be transitional, not long-term.
- Avoid protectionism, we can't prioritize local industries.
- Bioenergy should significantly reduce GHG emissions and replace fossil (in reality, i.e. including indirect effects). But we shouldn't build demand on imports.

Additional opportunities for importing regions:

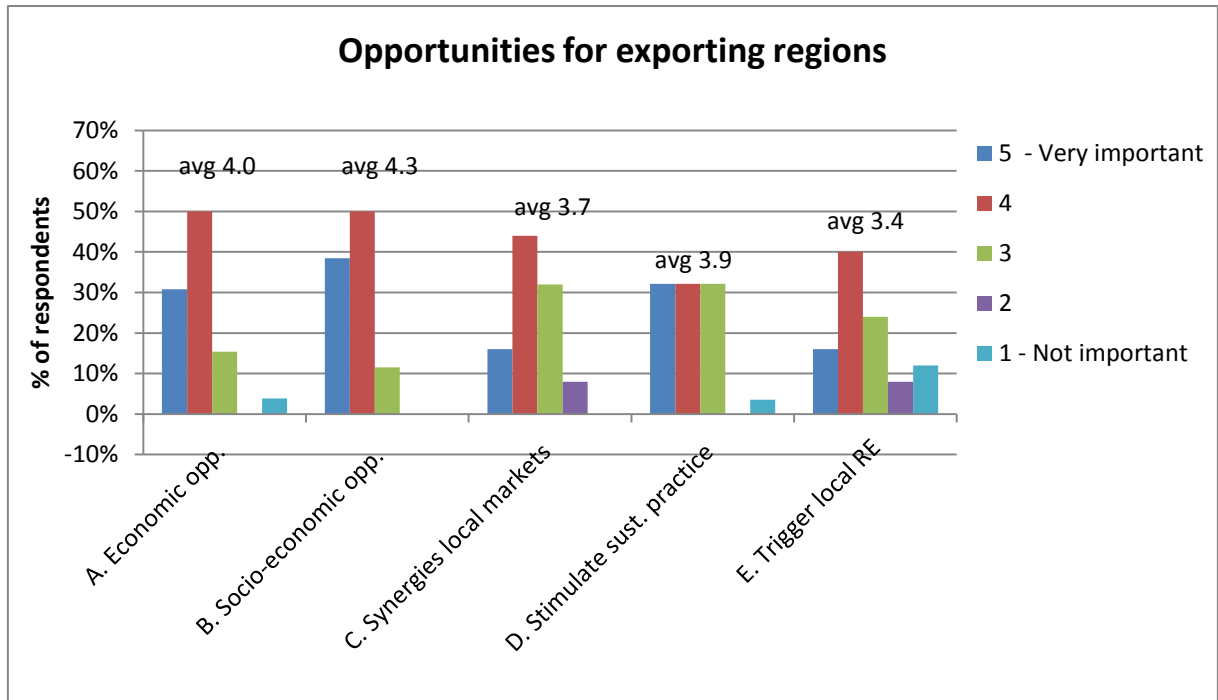
- Increase feedstock portfolio.
- Hedging against price hikes in local markets
- 3<sup>rd</sup> country development (stronger trade partners)
- Initiate sustainable resources for the bioeconomy
- Imports can facilitate the development of local bioenergy infrastructure/development

**Opportunities 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.*

The figure below shows the responses, including the averages (on a scale from 1 to 5)





Most people considered economic opportunities (A), socio-economic opportunities (B) and stimulation of sustainable practices (D) in exporting regions as important to very important. There was somewhat less agreement on local market synergies (C) and triggering local renewable energy (E).

Some remarks of participants:

- Local markets can be a driver for export (synergies).
- If sustainability criteria are required for traded biomass, this may stimulate sustainable practices (Opp D).

Additional opportunities for exporting regions:

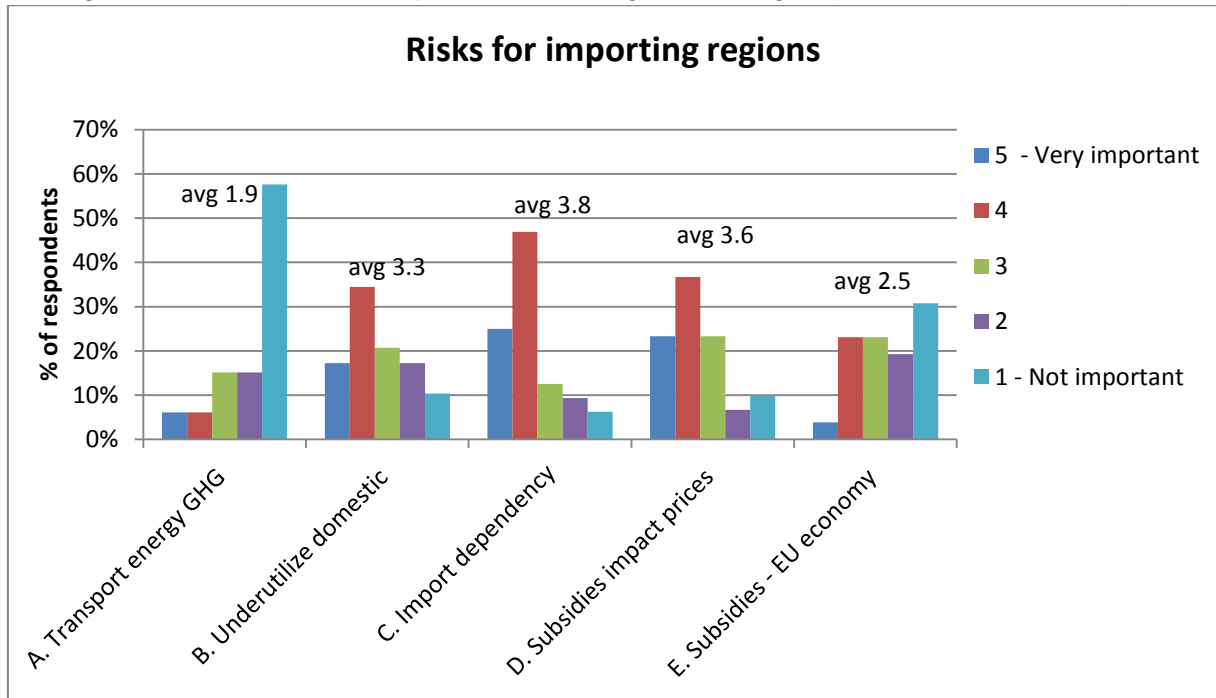
- Improve attitudes and know-how of bioenergy options
- Increase local product portfolio
- Political tool to reduce energy dependency (see Ukraine & Russia)

#### **Risks for importing regions:**

- 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.*

The figure below shows the responses, including the averages (on a scale from 1 to 5)



The answers show a wide divergence of the answers of participants. Risks C (import dependency) and D (subsidies impacting prices) were indicated as most important. Risk B (underutilize domestic resources) had more opponents. Risk E (EU subsidies flowing outside EU economy) was less supported, and for risk A (transport energy) most participants felt that this was of low importance.

Some remarks of participants:

- Risk A: Transport is a relatively small part of the overall GHG/energy consumption as overseas transport is very efficient. There is still an opportunity to decarbonize this part.
- Risk B: Domestic biomass can compete on price with imported biomass.
- Import from “cheap” countries (with low labour costs, low environmental constraints) may indeed outcompete EU resources and reduce the socio-economic benefits for domestic resources in the EU. There may be hidden subsidies, e.g. US state support for local economic development.
- Trade is as old as mankind. It will happen when it makes economic sense.
- Risk C (import dependency): we are now in a learning path.
- Risk D (subsidies and prices): ‘renewable carbon’ currently has different value in various sectors/end use purposes. If there was a common (and sufficiently high) price for carbon in the different markets the problem would be much less.
- Risk E (EU economy): also bring in energy efficiency by development of new industries
- Impact on economy needs to be analysed.

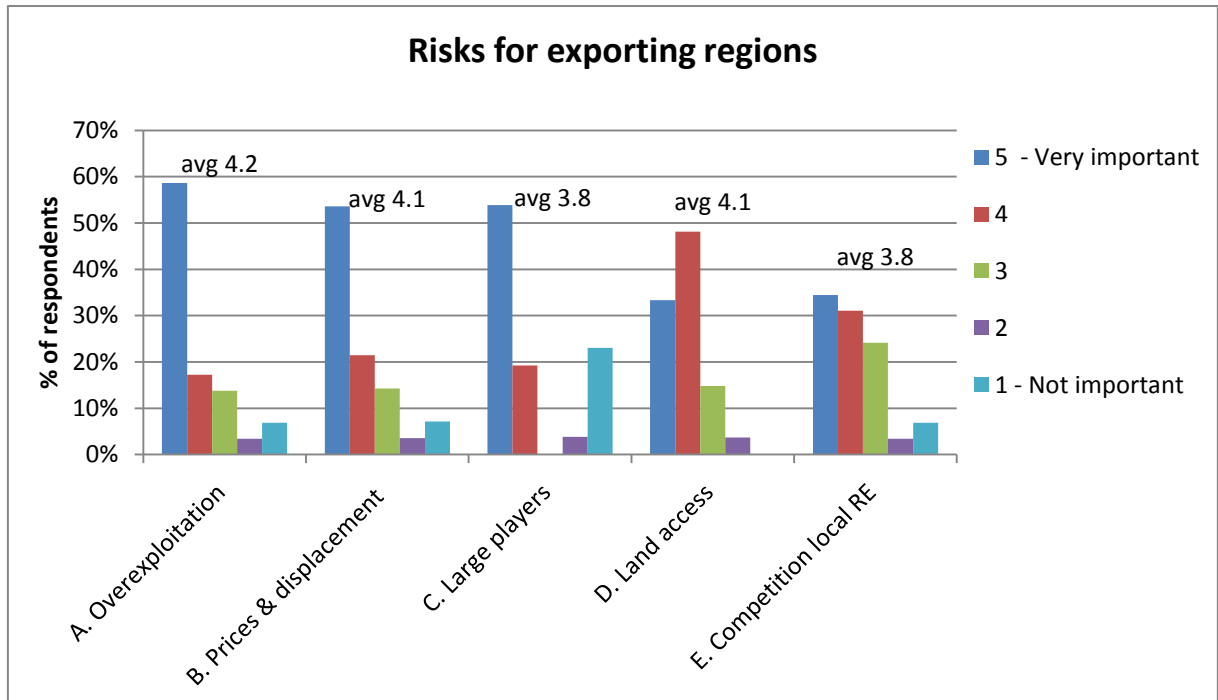
Additional risks for importing regions:

- Extend the life of co-firing installations, leading to longer reliance on coal for energy production.
- No international climate agreement creates a disadvantage (higher cost) for European sectors (no level playing field on global markets).
- Risk that sustainability criteria show unsatisfactory, either due to incomplete knowledge or limited data availability.
- Claim of GHG savings which are not justified.
- Volatilities in financial systems (e.g. currencies)

**Risks 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*

The figure below shows the responses, including the averages (on a scale from 1 to 5).



Most respondents agreed that these five identified risks were important to very important. There was a little lower support for risks C (large players) and E (competition local RE).

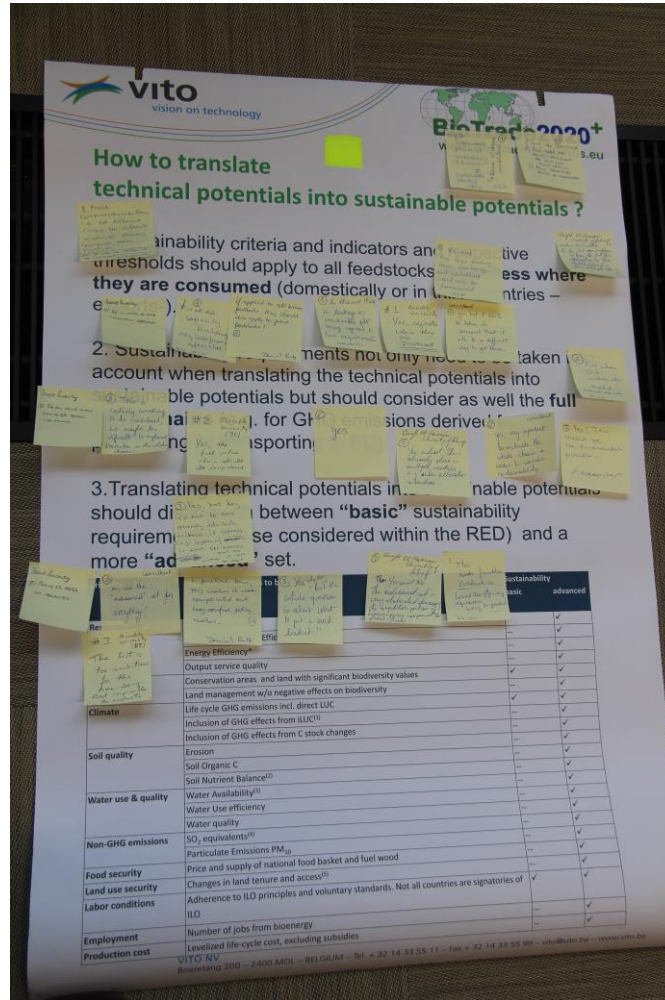
Some remarks of participants:

- Risks A, B & D: Risk of sustainability, land grabbing or displacement can be important for some countries, in some cases. There should be differentiation, e.g. depending on the existing policy framework and enforcement.
- Risk B & E: Needs investigation to quantify displacement.
- Displacement is possible; however, there is still room for development in low populated areas.
- Risk C: Different schemes (CoC rules) may be thresholds to participate, certainly for smallholders.
- Risk E: if local regulations are missing, they will not cease these opportunities

Additional risks for exporting regions:

- Dependency on multinational companies
- Changing frameworks & export conditions
- Volatilities in financial systems (e.g. currencies)





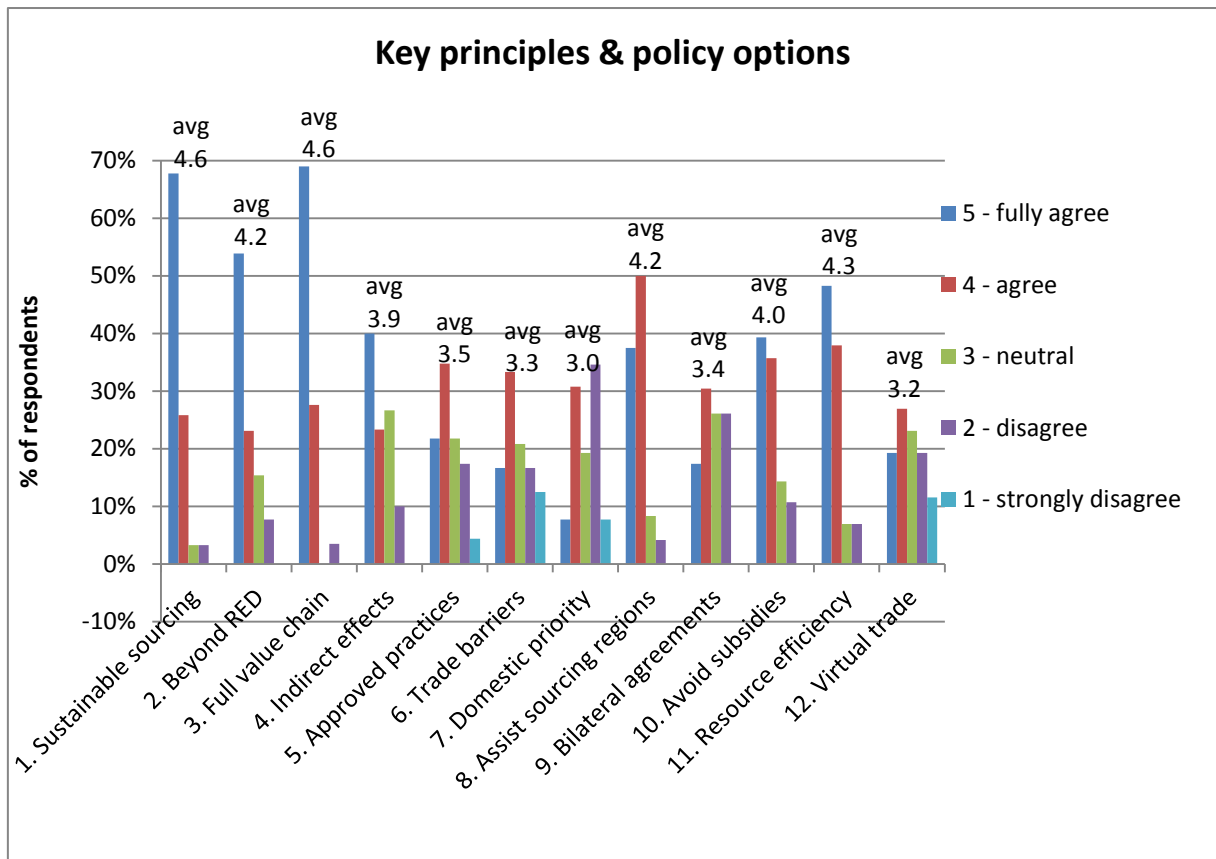
Some photos from the interactive session

#### 4. **Key principles for sustainable trade and policy options**

The following statements were presented, providing potential principles and policy options for sustainable trade of biomass. The participants were asked to rate if they agree or disagree with these statements.

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.

The following figure shows the responses for the 12 statements, with ratings on a scale from 1 to 5. Averages are also indicated.



There is most support for statements 1 (sustainable sourcing), 2 (beyond RED), 3 (full value chain), 8 (assist sourcing regions) and 11 (resource efficiency).

Some remarks of participants:

Statement 1 (sustainable sourcing): 94% agree / fully agree; 3% disagree

- The statement should make distinction between (a) sustainable sourcing, (b) for all biomass applications
- Who defines what is sustainable or not?
- Region specificity?

Statement 2 (beyond RED): 77% agree / fully agree; 8% disagree

- RED criteria are only for biofuels, there should be harmonized sustainability criteria for all uses.
- How far beyond RED? Not too strict, it should be manageable for markets.
- Social criteria should be included. Can be difficult for WTO.
- Use of biomass should be included.
- Also include cascade use

Statement 3 (full value chain): 97% agree / fully agree; 3% disagree

Statement 4 (indirect effects): 63% agree / fully agree; 10% disagree



- The statement should make distinction between (a) understanding and quantifying, (b) include iLUC factors in assessments.
- Very important to understand and identify, however, quantifying in value chain assessment is difficult and risky to block market development. Caution !
- Only if this is also included for food, feed, materials and fossil fuels.
- We need a better approach than current methods (iLUC), which are very assumption dependent. Also need data that is difficult to collect.

Statement 5 (approved practices): 57% *agree / fully agree*; 21% *disagree/strongly disagree*

- This is difficult and requires careful thought (e.g. regional difference). Appropriate practices may be different in different circumstances.
- Too prescriptive – principles and criteria should be sufficient.

Statement 6 (trade barriers): 50% *agree / fully agree*; 30% *disagree/strongly disagree*

- We must comply with WTO.
- The more sustainability criteria, the more difficult trade will be.
- We should find a balance between sufficiently strong quality and sustainability requirements (see statements 1-2-3) and market access.

Statement 7 (domestic priority over import): 39% *agree / fully agree*; 43% *disagree/strongly disagree*

- Difficult to enforce because of WTO.
- Maybe good to start domestic markets, but not necessary in the long term.
- Depends on a large number of variables.

Statement 8 (assist sourcing regions): 88% *agree / fully agree*; 4% *disagree*

- Very important to cooperate.
- Can be linked to statement 5 (approved practices).
- If we help countries to comply our requirements, do we subsidize their markets to be established? Requirement for sustainable practices should be reflected in the price we pay.

Statement 9 (bilateral agreements): 47% *agree / fully agree*; 26% *disagree*

- May help to open fair markets

Statement 10 (avoid subsidies): 75% *agree / fully agree*; 11% *disagree*

- Tax differentiations related to external cost should be possible + subsidies to initiate promising technologies (should be limited in time)
- Only if all support/subsidies can be avoided => as long as there are subsidies for fossil and nuclear energy ...
- Depends on the way you use subsidy instruments.
- We should distinguish between short-term and long term subsidies and mechanisms. Agree that subsidies should be avoided for the *long term*.

Statement 11 (resource efficiency): 86% *agree / fully agree*; 7% *disagree*

- What is understood under resource efficiency? E.g. cascade use/ multipurpose use / energy efficiency
- Principle is OK, but should not be legally enforced.
- How does this work for developing countries?

Statement 12 (virtual trade mechanisms): 46% *agree / fully agree*; 31% *disagree/strongly disagree*

- High risk for misuse.

Additional suggestions:

- An overall key principle could be to increase efficiency and diversity at the same time (diversity in all systems: bio, market, political)
- Full GHG balance
- Level playing field with fossil fuels
- Integration with other uses (food/feed/materials).
- Sustainable use

### **3. Workshop on Policy Options for Sustainable Biomass Trade**

#### **3.1. Workshop objectives**

One of the objectives of the BioTrade2020+ project is to propose appropriate long-term strategies and support frameworks which can form a basis for a balanced approach between promoting the use of domestic biomass, while also keeping markets open for sustainable imports of biomass.

#### **3.2. Workshop organization**

The workshop was held in Messe Wien – Congress and Exhibition Centre in Vienna the 3<sup>rd</sup> of June 2015, Wednesday from 15:00 to 19:00. It took place on the occasion of the 23<sup>rd</sup> European Biomass Conference & Exhibition (EUBCE 2015) in Vienna, Austria.

It was organized by BioTrade2020plus consortium lead by VITO and supported by WIP. Fifty people participated in the workshop, the attendants list and a copy of the programme can be found in the Appendix 2. The total number of the attendees was 50 people from 16 European countries and from other parts of the world (México, Malaysia, Korea, Rusia, Mozambique, India, etc.).

### 3.3. Workshop minutes

After a short introduction by **Rainer Janssen (WIP)**, the moderator before the coffee break, the workshop began with an introduction of the BioTrade2020+ project by **Ines Del Campo (CENER)**. The project is currently half way with most tasks fully active. Within the project it is very important to have interaction with stakeholders. More details about the project are available on the project website ([www.biotrade2020plus.eu](http://www.biotrade2020plus.eu)).



**Heinz Kopetz (WBA)** was invited as speaker, external to the project (*although being involved in the Advisory Board of the project*), to give his view on potential opportunities of biomass trade. He took two starting points which are decisive for future trends: (1) climate change mitigation policies which will need get more serious in the next decades ('carbon budget approach') and (2) population growth and economic development, specifically in Africa and in Asia, resulting in a higher need of land for food. Kopetz stressed that biomass is in the first place a local issue, so countries should first consider local use. Looking at the natural resources in the different continents, he concluded that *Africa* will need to use their



land and biomass for their own needs, *Asia* will rely on imports, *Europe* will need to use its available land and resources better (including Russian resources), the *Americas* could have room for export, in particular Canada and Latin America. The US would have limited export potentials, if they implement serious climate policies. *Oceania's* potential is limited due to climate restrictions.

Mind that global supply of biomass for energy is expected to rise from 54 EJ in 2010 up to 125-150 EJ in 2035. Within the EU a lot can be produced with dedicated energy crops and agricultural residues.

The basic principles of biomass use should be (1) efficient use (use residual heat of power plants!) and (2) sustainability (don't use more biomass than is grown). The carbon absorbed and released by biomass is part of the natural carbon cycle (opposite to fossil). Bioenergy is one of the only renewable energy sources which can be delivered on demand. So it is complementary with other RE sources.

*Questions:*

- Role of improving energy efficiency and reducing energy demand?

It is recognized that this is complementary with renewable energy. Nevertheless with growing economies in developing countries a growing energy demand in these regions can also be anticipated.

**Leire Iriarte (IINAS)** presented the methodology of the case studies carried out in the BioTrade2020+ project to determine sustainable potentials in the sourcing regions. She also presented interim results of the case study in Southeast US. Focus is on pellets from forest residues and thinnings. There is not much space for expansion of forest plantations. For woody energy crops it is assumed that these will mainly be used for thermal domestic applications. The current surplus of forest biomass in the SE-US is estimated around 20 million tonnes (od), according to the estimates of Pöyry. In the past years pulp and paper demand declined, but this seems to have stabilized again. The longer term availability for export will depend on US demand for wood products and energy so renewable energy policies will play a relevant role. All these variables will be assessed by means of different scenarios.

**Martin Junginger (Utrecht University)** presented the results of a case study in Kenya. Of the total potential, 2/3 consisted of sugar cane residues (straw is currently not being used). There is no land available for energy crops and there is a shortage of fuel wood (with ongoing deforestation). Agricultural yield is one of the most important factors for the potential.



Junginger stressed that ground truthing is needed to look at the local situation (what happens currently with the biomass and land). Another uncertain factor is how the Kenyan energy system will develop on the longer term.

*Questions:*

- How is sustainability currently taken into account for the potentials?

The most important restriction is the amount of residues which should be left in the field. In principle this depends on the soil type.

- Are there similarities with the other countries in Africa?

Mozambique has also been analysed and the situation is clearly different from Kenya (climate, rainfall). The key factor is agricultural productivity.

Africa can't be generalised. Each country/region has its particularities.

- Exogenous factors: improving agriculture:

This seems to be a crucial factor, but the question is what we can do to make this happen. The main drivers are agricultural prices and access to capital. There are synergies with bioenergy, but bioenergy is clearly not the main driver for improving agriculture. Dedicated approaches are needed.

After the coffee break, **Luc Pelkmans (VITO)** introduced the topic of policy options, starting with an overview of opportunities, risk and barriers of international biomass trade. For opportunities and risk distinction was made between importing regions (EU) and sourcing regions. These items were also part of the on-going international survey (<http://www.surveygizmo.com/s3/1979784/Biotrade2020plus>). Some preliminary trends of the survey were highlighted. A list of policy options was presented; participants could provide their opinion on these policy options in a short questionnaire as an introduction to the panel discussion. 27 participants handed over a filled-in questionnaire (see Annex 4).



All workshop presentations are available at: <http://www.biotrade2020plus.eu/news-events.html>

### 3.4. Pannel discussion

The subsequent panel discussion focused on these policy options, which two central questions: (1) How to ensure sustainable biomass sourcing, (2) How to avoid displacement of local use. The following people were part of the panel:

- Heinz Kopetz, World Bioenergy Association (chairman of WBA, global organisation dedicated to supporting and representing the wide range of actors in the bioenergy sector).
- Rocio Diaz-Chavez, Imperial College, UK (expert in sustainability assessments for South-America, Asia and Africa; originally from Mexico).
- Rainer Janssen, WIP Renewable Energies, Germany (experience in biomass projects in Africa and Latin America)
- Serge Braconnier, CIRAD, France (working on production and use of biomass in local regions, worldwide)
- Iris Lewandowski, University of Hohenheim, Germany (working on energy crops in Europe and abroad; past work experience at Utrecht University and Shell, with a broad international view)
- Kees Kwant, Netherlands Enterprise Agency, Ministry of Economic Affairs, the Netherlands (chairman of IEA Bioenergy; involved in the Dutch debate on sustainable biomass)
- Peter Canciani, Central European Initiative (CEI) (intergovernmental organisation, supporting the development of sustainable biomass value chains *in South-East Europe*)



We had a very lively debate. The main debated points are summarized below.

#### **Summary of the main points discussed:**

- **Local use of biomass** should have priority, but there are clear opportunities in international markets, in particular for certain regions (e.g. Americas) – it is necessary to map where there is potential for exports, depending on sustainability requirements and local strategies for using the biomass themselves. It will be difficult to prevent displacement, but in fact all we do creates displacement. Is it a

bad thing if local actors respond to changing market demands? Of course if multinationals displace local actors this is a different issue. The question is if policies need to steer the local priority or should we leave it to the markets.

- **Agricultural improvement** in developing countries is key, predominantly for food production, but it can also provide opportunities for energy. There can be synergies between food and energy. Capacity building in good agricultural (and forestry) practices is very important, but a longer term effort. There was much discussion on African countries, but it is clear that Africa's opportunities in terms of biomass are merely for their own use, less for international trade. Nevertheless, examples from the past have shown that capacity building in sustainable production (e.g. through certification) is possible if markets require this.
- There are different positions in terms of **sustainability criteria** for solid biomass (on EU level). Some views defend that sustainability of forest biomass is already covered through MS regulations, and an additional requirement from the energy sector would create an extra administrative burden. Voluntary schemes (e.g. as developed by SBP) could then cover imported biomass. Other countries, which rely to a great extent on imports, would like to see a uniform EU system of sustainability requirements. The main discussion (with NGOs) is about imported biomass; there is a need to safeguard the sustainable supply of these resources. Mind that these safeguards will also be needed when a biobased economy further develops. It is crucial to have transparency about imported biomass. The discussion on sustainability criteria is actually about capacity building and creates an awareness on how to produce biomass in a sustainable way. Mind that making criteria over strict may just block further developments, which is in the interest of fossil industries. It is important to find a good balance. In the end we should come to a system that sustainability criteria are valid, no matter what application the biomass is produced for.
- An extra proposed sustainability criterion is to consider if sourcing regions are also putting efforts in **mitigating their own GHG emissions**. This can be part of bilateral agreements. It needs to be seen if this is WTO compliant.
- **Listing of no-go areas and feedstocks** are popular instruments for policy makers but care should be taken. Situations are usually not black-white, and may change over time. In this, identifying and promoting replication of "best practices" might be helpful.

## **4. Final dissemination workshop**

### **4.1. Workshop objective**

One of the objectives of the BioTrade2020+ project is to propose appropriate long-term strategies and support frameworks which can form a basis for a balanced approach between promoting the use of domestic biomass, while also keeping markets open for sustainable imports of biomass.

In addition to the BioTrade2020plus project, the Biomass Policies project aims to develop integrated policies for the mobilization of “resource efficient” indigenous bioenergy “value chains” in order to contribute towards the 2020 bioenergy targets set within NREAPs & 2030, and other EU28/National policy measures.

### **4.2. Workshop organization**

The workshop was held in the Permanent Representation of Spain with the support of the Delegation of Navarra in Brussels on Tuesday 14th June 2016, from 9:00 to 16:00. It was included as a parallel event in the European Sustainable Energy Week (EUSEW).

It was organized by the BioTrade2020plus consortium led by WIP and supported by CENER. The attendants list and a copy of the programme can be found in the Appendix 2. The total number of the attendees was 41 people from 14 countries: 9 European countries and 5 countries outside Europe (USA, Canada, Brazil, Gambia, and South Africa).



#### 4.3. Session 1: Overview on Solid Biomass Developments

After a short introduction by **Dominik Rutz (WIP)**, the moderator of the first session, the workshop began with a welcome and introduction of the BioTrade2020+ project by the coordinator **David Sánchez (CENER)**. He explained the project approach which is based in the following pillars:

- Sustainability & availability
- Case Study regions
- Strategies and policies

The outcomes of these three pillars will be gathered in the development of an interactive online tool that will allow to determine for each case study region:

- Sustainable biomass potential
- Cost-supply curve
- SWOT analysis

Another relevant tool for the project is the stakeholder engagement strategy that allows to carry out teleconferences and workshops with key stakeholders related to international biomass trade.

More details about the project as well as all presentations from this workshop are available on the project website ([www.biotrade2020plus.eu](http://www.biotrade2020plus.eu)).

**Heinz Kopetz (World Biomass Association)** was invited as speaker, external to the project (*although being involved in the Advisory Board of the project*), to give his view on International developments on the production and use of solid biomass. Since 2014 the World Biomass Association (WBA) publishes an annual report on bioenergy statistics (Global Bioenergy Statistics Report). It includes data from all bioenergy sectors including biofuels, biogas, pellets, charcoal etc. The geographical distribution of data is divided in different levels: global, continental and regional. For the elaboration of this report, WBA collaborates with other agencies: IEA, FAO, REN21 and IRENA.

He showed some figures about bioenergy supply worldwide and who are the world leaders (Asia has the highest supply of biomass, followed by the Americas and Europe).

Regarding solid biomass it comprises different origins: forestry, agricultural and waste.

Most of the biomass supply is from the forestry sector (87%) followed by agriculture (10%) and wastes (3%). Fuelwood is the largest biomass resource globally.

Mr. Kopetz also pointed out that solid biomass is the most important form of biomass for energy, with more than 90%. Its biggest share comes from forests. The main applications are heat and electricity production, approximate 50 EJ goes to heat and 5 EJ to electricity. He also mentioned other special issues related to solid biomass: the global decrease in forest area; some figures of woodfuel production (since 2000, global woodfuel production increased by 5.25%); electricity generation from biomass.

To increase energy density and reduce transport costs, solid biomass can be processed into: charcoal, pellets, torrefied wood, pyrolysis oil, briquettes.

- Charcoal is a highly underestimated sector. More than 50 million tonnes of charcoal are produced annually, mostly in Africa.
- Pellets are one of the fastest growing bioenergy sectors. Current production exceeds 25 million tonnes, predominantly in the EU and USA.

He also highlighted some new developments in the use of solid biomass:

- New biomass gasification equipment, small scale, came to the market (50 – 200 kW el) allowing high efficient heat driven electricity generation
- Increased interest in torrefied wood and pyrolysis oil as energy carrier with a high energy density
- New big biomass plants for District Heating started operation (Fortum Stockholm 330 MW)

He also gave some key messages of the contribution of solid biomass to the fulfillment of the Paris Agreement after COP21:

- A new strategy is needed: carbon taxes instead of the ETS system
- All countries should phase out fossil fuels and developed countries should take the lead
- Developing countries should go directly to renewables, should not build up a fossil structure.
- It is necessary to help develop the infrastructure for the use of biomass, in the long run exports from those regions with a structural over supply of sustainable biomass

The main conclusions highlighted were:

- Bioenergy is the largest renewable energy source globally (14% out of 18% share of renewables in the energy system).
- Electricity production from biomass is the third largest among renewables – 3 times more than solar PV in 2013!
- Forestry sector is the largest contributor to the biomass supply (in the form of fuelwood and charcoal).
- Pellets is one of the fastest growing bioenergy sector – more than 25 million tonnes produced.
- Charcoal is highly underestimated sector – larger than pellets in terms of energy and fuel use.



**Figure 1: Mr. Heinz Kopetz from World Biomass Association**

**Rocio Díaz-Chavez (Imperial College)** presented the work carried out (in collaboration with IINAS) within BioTrade2020plus for the determination of biomass potentials and sustainability issues.

She presented the Project approach on Sustainability issues, which includes:

- Guidelines for assessing the sustainability risks per type of biomass resource in every focus region
- List of relevant indicators at project level for all biomass, processes and end-uses
- Social, economic, environmental as well as political and institutional considerations

For the determination of the technical potential of lignocellulosic biomass, the following issues have been considered:

- General data
  - Legislation related to bioenergy
  - Data on main feedstocks used or with potential for biomass trade
- Production volumes
- Planted areas
- Harvested areas
- Irrigated areas
- Yield
  - National average
  - Data on main biomass currently exported
- Production volume
- Quantity exported
- Price
- Biodiversity
  - Legal/policy/governance related data
  - Geographic/land use data
  - Biological/physical data
- Land use
  - Land area under specific classes
- Area of land under each specified class
- Definition used in each country for that type of land class
- Socio-economic
- working conditions
- land tenure/rights
- Food insecurity issues
- ILO conventions
- Standards and Certification

Ms. Diaz-Chavez also presented a summary table showing the technical potential of the 6 selected case studies. Brazil, Colombia and United States have the highest potential whereas Kenya has the lowest. Indonesia and Ukraine have medium to high values.

She also explained the guidelines that have been taken into account for the development of a SWOT analysis. It has been carried out according to the following six principles:

- 1) Biomass availability;
  - a) Sustainable availability
  - b) Exportable availability
- 2) Biomass mobilisation and security of supply
- 3) Biomass cost
  - a) Cost to road side
  - b) Collection & pre-treatment cost up to harbour

- c) Transport cost long distance
- 4) Environmental sustainability
- 5) Social sustainability
- 6) Governance

Regarding sustainability an initial review of the main sustainability schemes at regional, national and international level has been carried out. An umbrella approach based on what has been developed for the S2BIOM project has been carried out for BioTrade2020plus.



**Figure 2: Ms. Rocio Diaz Chavez from Imperial College of London**

**Questions:** *why other sectors are not obliged to certify their products (ie: pulp and paper; chemical industry; etc.).*

**Luc Pelkmans (VITO)** introduced the topic of Strategies and Policies in two projects: BioTrade2020plus and Biomass Policies.

He introduced Biomass Policies, which is another European project that has been supported by the Intelligent Energy for Europe (IEE) programme of the EC. This project, that has recently ended (March 2016), has dealt with developing integrated policies for the mobilization of resource efficient biomass value chains, focused on indigenous biomass potentials in the EU. He gave an overview of the main future policy recommendations from the Biomass Policies project in terms of biomass supply, logistics, heat, electricity and advanced biofuels.

A Biomass policy toolkit (“tailoring evidence to support policy recommendations and decision-making”) is available at: <http://www.biomasspolicies.eu/tool>.

After the overview of the main policy recommendations from the Biomass Policies project, Mr. Pelkmans gave an overview of the work in the BioTrade2020plus project on strategies and policies. Some highlights of a global survey carried out in 2015, with 127 participants from 35 countries were presented, in terms of key principles for sustainable biomass trade, barriers for trade and policy options. Based on these results, a number of suggestions were made for long term strategies in relation to biomass trade. The main issues are:

- Biomass production & harvest in the frame of long-term sustainability
- A serious reduction of fossil fuels is needed in the frame of climate change mitigation
- Support sustainable mobilization
- Efficient use of resources
- Monitor direct and indirect impacts on markets (EU and outside)

- Independent knowledge to inform the public debate
- Provide financing / investment models (access to finance)
- Biomass quality and commodities



Figure 3: Mr. Luc Pelkmans from VITO

#### 4.4. Session 2: Potentials of Exporting Countries: Case Studies

After the coffee break, **Martin Junginger (Utrecht University)** introduced the second session dealing with the biomass potentials of exporting countries and introduced the Case Studies selected under BioTrade2020plus and the methodology adopted for the calculation of the sustainable biomass potentials. He also explained the scenario approach that has been taken into account for the studies:

- Business as usual (BAU): current situation, 2020 and 2030
- High export (HE): current situation, 2020 and 2030

Then, the leaders of the different case studies made a brief presentation of the main results achieved:

- **Gert-Jan Nabuurs (Alterra)** presented the United States case study
- **Wolter Elbersen (Wageningen University and Research)** introduced the case study about Colombia
- **Lotte Visser (Utrecht University)** presented the case studies about Brazil and Ukraine
- **Thuy Mai-Moulin (Utrecht University)** showed the results from Kenya and Indonesia case studies

After the case study presentations, Mr Junginger gave an overview and summarized the individual and combined results of the case studies and also the costs, and GHG emissions.

The main conclusions were:

- BioTrade2020plus does not aim to determine how much biomass is available in these regions but how much biomass can be exported from these regions to the EU which of course depends on the price.
- US South East shows highest export potentials; sustainability requirements are the main limit for the net sustainable export potential by 2030.

- In other sourcing regions, the speed of biomass mobilisation and building up infrastructure/logistics is the main constraint.
- GHG emission thresholds are not an issue, but at current price levels, exports would be limited to 200-600 PJ.
- Competing demand from South & East Asia may further limit export to the EU.
- US SE, Ukraine and Colombia could make significant contributions (200-600 PJ) to fill the EU supply gap.
- Not all feedstock types are included for all supply regions
- Other promising sourcing countries (e.g. Canada, Mozambique) not (yet) included.

*Questions:*

- What will be the most preferred industry to use the biomass, the energy sector or other industries (bioproducts/chemical)?
- In the GHG emissions calculations for sugar cane residues, has the mechanised labor been taken into account?

All workshop presentations are available at: <http://www.biotrade2020plus.eu/news-events.html>

#### **4.5. Session 3: Perspectives of Exporting Countries**

The subsequent panel discussion focused on the Opportunities and constraints for biomass export to the European Union. It was moderated by **Uwe Fritsche (IINAS)** who asked the panelist the following two central questions: (1) What would be the take home message after this workshop?, (2) What should be done next?.

The following people were part of the panel:

- Suani Coelho, Brazilian Reference Center on Biomass (CENBIO), Brazil.
- Bah Saho, ECOWASM Regional Centre for Renewable Energy and Energy Efficiency (ECREEE), Cape Verde.
- Helen K. Watson, University of Kwazulu-Natal, South Africa
- Maria Almeida Aranha, Brazilian Sugar Cane Industry Association, Brussels Office, Brazil
- Tapio Ranta, Lappeenranta University of Technology, Finland
- Jenny Walther-Thoss, WWF, Germany
- Peter-Paul Schouwenberg, RWE Essent, The Netherlands



**Figure 4: Panel debate**

We had a very lively debate. The main debated points are summarized below.

***Summary of the main points discussed:***

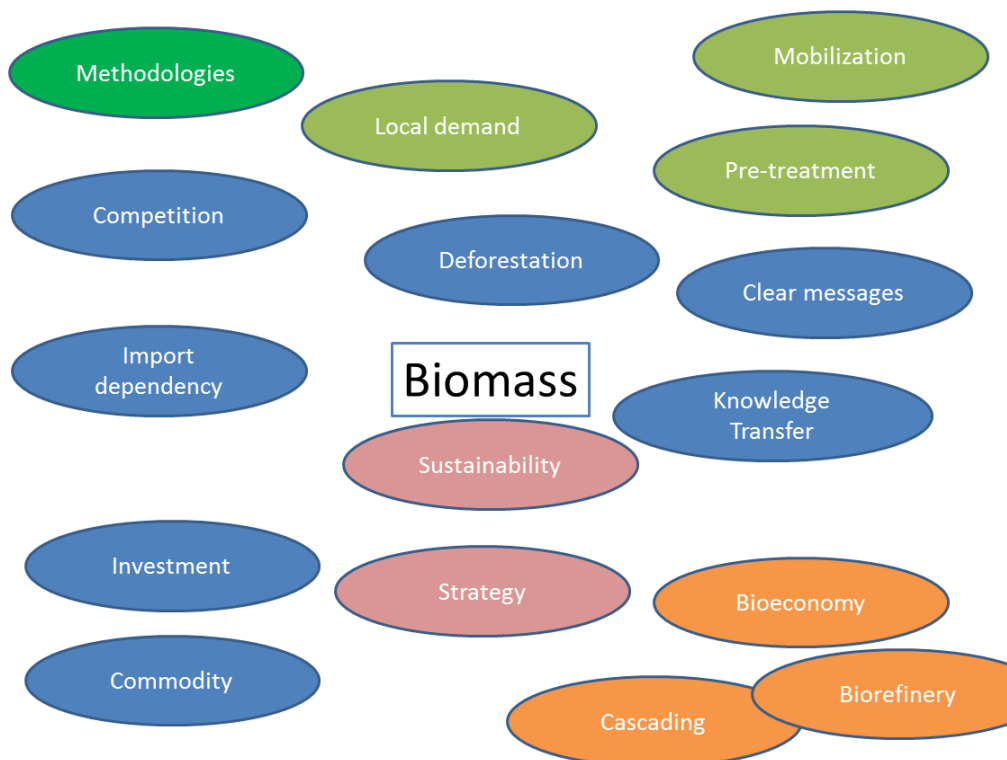
- **Importance of local use of biomass:** if possible is necessary to integrate the local and external demand.
- **Mobilisation is a very important issue** that can be promoted by trade
- **Sustainability is a key issue and therefore the criteria should take into account the real conditions existing in other countries**, thus in certain regions (ie: US and Brazil) is complicated to fulfil the criteria and indicators established at EU level.
- **The multiplication of sustainability criteria in the end work as barriers to trade. The EU should take into account existing criteria/environmental legislation in the exporting countries and work towards some form of equivalence/mutual recognition. Another possibility is to adopt criteria that are elaborated at international level (e.g. GBEP).**
- 
- **Biomass cannot be the substitute for everything** (ie: chemicals, fuels for transport, etc.).We have to set the limits.
- **Biomass is not a commodity.** It has to be: affordable, sustainable and durable.
- The sustainable use of biomass is one little step in the way to a low carbon economy
- **A clear and stable regulatory & policy framework is required**

#### 4.6. Session 4: Results of BioTrade2020plus

The last session was moderated by **Inés del Campo (CENER)** and focused on the presentation of the current version of the interactive online tool and the main conclusions extracted from the workshop.

**Gert-Jan Nabuurs (Alterra/Wageningen University and Research)** presented the interactive BioTrade2020plus tool for biomass imports to the EU.

Finally **David Sánchez (CENER)** closed the workshop presenting the most relevant keywords extracted from the presentations:





## 5. BioTrade2020plus Consortium

### ***CENER – National Renewable Energy Centre, Biomass Department, Spain***

Project Coordinator BioTrade2020plus

Contact persons: David Sánchez González & Inés del Campo Colmenar

### ***Imperial – Imperial College London, Centre for Environmental Policy, United Kingdom***

Contact persons: Dr Rocio Diaz-Chavez

### ***DLO – Alterra, Wageningen University and Research, The Netherlands***

Contact persons: Dr Gert-Jan Nabuurs & Dr Berien Elbersen & Dr Wolter Elbersen

### ***IINAS – International Institute for Sustainability Analysis and Strategy GmbH, Germany***

Contact person: Leire Iriarte & Uwe Fritsche

### ***VITO - Flemish Institute for Technological Research, Belgium***

Contact persons: Luc Pelkmans

### ***UU - Utrecht University, Faculty of Geosciences, Energy & Resources, Copernicus Institute of Sustainable Development, The Netherlands***

Contact persons: Dr Martin Junginger & Thuy Mai-Moulin

### ***WIP- WIP Renewable Energies, Germany***

Contact persons: Dr Rainer Janssen & Dominik Rutz



## 6. Appendix 1: - Midterm and cooperation IEA Bioenergy workshop programme and background document



International workshop:

### **Towards sustainable international biomass trade strategies**

Friday 24 October 2014, Brussels

We cordially invite you to join this workshop, which is co-organised by the BioTrade2020+ consortium and IEA Bioenergy Task 40.

Today in the European Union, the cost-effective achievement of existing and future bioenergy targets set in the legislation implies that in addition to using domestic sustainable and cost-competitive biomass potentials, European markets will also (partly) rely on sustainable and cheap(er) 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.

One of the objectives of the BioTrade2020+ project is to propose appropriate long-term strategies and support frameworks which can form a basis for a balanced approach between promoting the use of domestic biomass, while also keeping markets open for sustainable imports of biomass.

This workshop aims to bring people together 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 is the interaction between local use and exports in the sourcing regions.

#### Programme:

8.45 Registration

9.15 Welcome and introduction

*Luc Pelkmans (VITO) & David Sanchez (CENER, coordinator BioTrade2020plus)*

9.30 Biomass trade for energy: history & future expectations

*Martin Junginger (Utrecht University, Task Leader IEA Bioenergy Task 40)*

9.45 Assessing sustainable biomass export potentials: methodological considerations

*Uwe Fritsche (IINAS)*

10.15 Case study: woody biomass from Southeast USA

*Leire Iriarte (IINAS)*

10.45 Coffee break

11.00 Interactive workshop: break-out sessions to discuss the following topics:

- how to define sustainable export potentials?
- opportunities and risks of international biomass trade
- key principles for sustainable trade and policy options

12.30 Lunch

13.30 Reporting of the break-out sessions

13.50 Case study in Africa, first results

*Thuy Mai-Moulin (Utrecht University), Bah Saho (ECREEE)*

14:20 Panel debate, representatives from (potential) export regions:

- export or local use of biomass, is it a dilemma?

*Moderator: Martin Junginger (Utrecht University)*

*Panellists: Patrick Lamers (INL - USA), Maria Almeida Aranha (UNICA - Brazil),*

*Bah Saho (ECREEE - Africa), Michael Deutmeyer (Green Carbon Group)*

15:20 Main conclusions

*Luc Pelkmans (VITO)*

15:30 Closing



## IEA Bioenergy

### Task 40: Sustainable International Bioenergy Trade

#### Practical information:

*Date:*

Friday 24 October 2014

*Location:*

VLEVA (*Liaison agency Flanders-Europe*)  
Kortenberglaan / Avenue Cortenbergh 71, BE-1000 Brussels, Belgium

*Registration:*

Participation is free of charge, but registration is required. Please register before 15 October 2014 through [www.BioTrade2020plus.eu](http://www.BioTrade2020plus.eu).

*More information:*

[luc.pelkmans@vito.be](mailto:luc.pelkmans@vito.be), tel. +32 14 33.58.30

***BioTrade2020plus:***

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. It shall ensure that imported biomass feedstock is sustainably sourced and used in an efficient way, while avoiding distortion of other markets. BioTrade2020plus is supported by the Intelligent Energy for Europe Programme of the European Commission. The project started in April 2014 and will continue until October 2016.

[www.biotrade2020plus.eu](http://www.biotrade2020plus.eu)

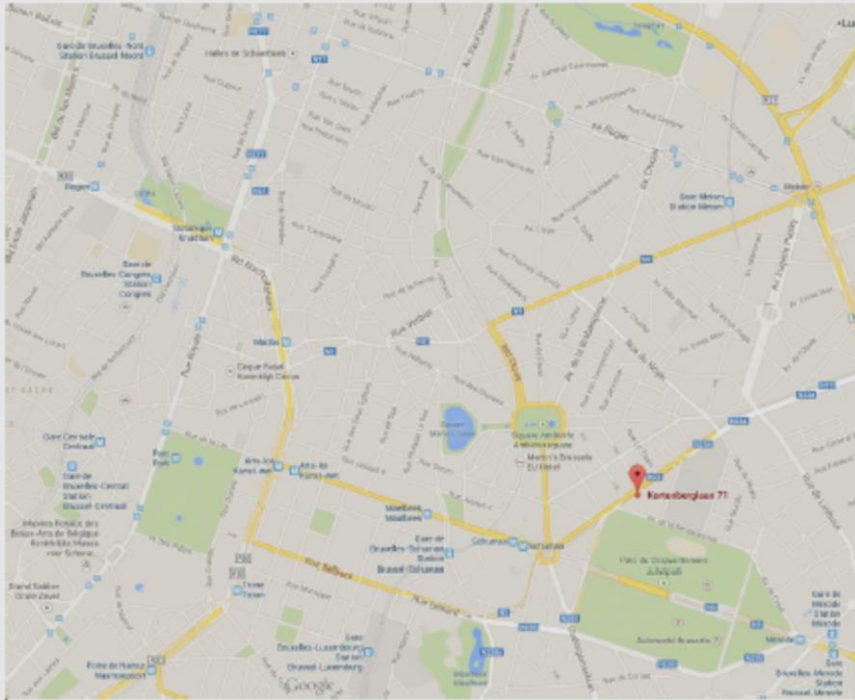
***IEA Bioenergy Task 40:***

Task 40 is an international working group under the IEA Bioenergy Implementing agreement. The group conducts studies and organizes events on various topics related to sustainable international bioenergy trade.

[www.bioenergytrade.org](http://www.bioenergytrade.org)

**Venue:**

VLEVA, Kortenberglaan/ Avenue Cortenbergh 71, 1000 Brussels  
400 m from Schuman Square (European district)



## Background document



**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 technical 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 <sup>(1)</sup>	--	✓
	Inclusion of GHG effects from C stock changes	--	✓
Soil quality	Erosion	--	✓
	Soil Organic C	--	✓
	Soil Nutrient Balance <sup>(2)</sup>	--	✓
Water use & quality	Water Availability <sup>(3)</sup>	--	✓
	Water Use efficiency	--	✓
	Water quality	--	✓
Non-GHG emissions	SO <sub>2</sub> equivalents <sup>(4)</sup>	--	✓
	Particulate Emissions PM <sub>10</sub>	--	✓
Food security	Price and supply of national food basket and fuel wood	--	✓
Land use security	Changes in land tenure and access <sup>(5)</sup>	--	✓
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

<sup>1</sup> Data for 2020; until 2030, a revised ILUC factor should be determined which reflects progress regarding international policies to contain or reduce LUC effects

<sup>2</sup> See <http://www.iinas.org/Work/Projects/REDEX/redex.html>

<sup>3</sup> New bioenergy cropping and conversion facilities placed outside of areas with severe water stress

<sup>4</sup> Calculated for life cycles, should be lower than fossil benchmark

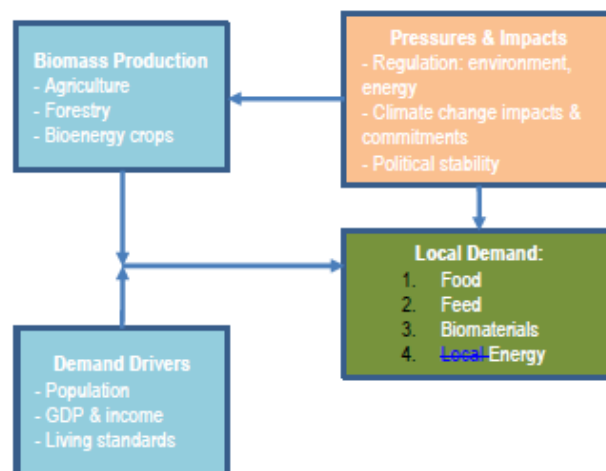
<sup>5</sup> Degree of legitimacy of the process related to the transfer (i.e. change in use or property rights) of land for new bioenergy production, and extent to which due process is followed in the determination of the new title



### 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, 2<sup>nd</sup> 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. ...



## 7. Appendix 2: Workshop on policy options programme

*Wednesday, 3 June 2015 (15:00-19:00)*

**15:00 Welcome to the Workshop**

Rainer Janssen, WIP Renewable Energies, Germany

**15:10 BioTrade2020+ - Introduction and Activities**

Ines Del Campo, CENER, Spain

**15:30 Global Biomass Resources – Potential Opportunities for Trade**

Heinz Kopetz, World Bioenergy Association (WBA)

**16:00 Results of BioTrade2020+ Case Studies**

Leire Iriarte, IINAS, Spain

Martin Junginger, Utrecht University, Netherlands

16:30 *Coffee Break*

**17:00 Opportunities, Risks and Barriers of International Biomass Trade**

Luc Pelkmans, VITO, Belgium

**17:30 Panel Discussion on Policy Options**

- **How to ensure sustainable biomass sourcing?**
- **How to avoid displacement of local use?**

*Moderation:* Luc Pelkmans, VITO, Belgium

*Panellists:*

Heinz Kopetz, World Bioenergy Association

Rocio Diaz-Chavez, Imperial College, UK

Rainer Janssen, WIP Renewable Energies, Germany

Serge Braconnier, CIRAD, France

Iris Lewandowski, University of Hohenheim, Germany

Kees Kwant, Netherlands Enterprise Agency

Peter Canciani, Central European Initiative (CEI)

**18:30 Summary and Conclusions**

Luc Pelkmans, VITO, Belgium

## 8. Appendix 3: Final dissemination workshop programme

International Workshop

# Towards a European Trade Strategy for Sustainable Solid Biomass Imports to the EU

14<sup>th</sup> June 2016

*Permanent Representation of Spain & Delegation of Navarra*  
Boulevard du Régent 52/Regentlaan 52, Brussels, Belgium



Co-funded by the Intelligent Energy Europe Programme of the European Union



## ***Workshop Description***

We cordially invite you to join this workshop organised by the BioTrade2020plus project with the participation of the Biomass Policies project. The workshop takes place in the framework of the **European Sustainable Energy Week (EUSEW) 2016**.

Targets of the European Union on **solid biomass** (pellets, woodchips, terrified biomass, pyrolysis oil) imply that the use of domestic and cost-competitive solid biomass potentials need to be promoted. However, Europe will also need sustainable and cheap imports of solid biomass from non EU countries. Some well-positioned regions of the world are already biomass suppliers for the European markets and therefore could become increasingly relevant in the near future.

One of the objectives of the **BioTrade2020plus** project has been to propose appropriate long-term strategies and support frameworks which can form a basis for a balanced approach between promoting the use of EU domestic solid biomass, while also keeping markets open for sustainable imports of solid biomass. In addition to the BioTrade2020plus project, the **Biomass Policies** project aims to develop integrated policies for the mobilization of “resource efficient” indigenous bioenergy ‘value chains’ in order to contribute towards the 2020 bioenergy targets set within NREAPs & 2030, and other EU27/ national policy measures.

Both projects address critical bottlenecks related to the use of solid biomass in order to promote renewable sources and achieve the Common European targets established for 2020 and 2030 and to move to a low carbon economy for 2050.

This workshop will inform you about the potentials of solid biomass in the EU and of sustainable imports from non EU countries to Europe. You will have the opportunity to directly discuss trade strategies with stakeholders from **Europe, Latin America, Africa, and Asia**.

## ***Programme***

08:30-09:00 Registration

### **Session 1: Overview on Solid Biomass Developments**

*Moderation: Dominik Rutz, WIP Renewable Energies, Germany*

- 09:00-09:20 **Welcome and introduction to BioTrade2020plus project**  
DAVID SANCHEZ, Centro Nacional de Energías Renovables (CENER), Spain
- 09:20-09:40 **Towards a EU bioenergy sustainability policy for the period after 2020**  
European Commission, Belgium
- 09:40-10:00 **International developments on the production and use of solid biomass**  
HEINZ KOPETZ, World Bioenergy Association (WBA), Austria
- 10:00-10:20 **Biomass potentials: Sustainability issues**  
ROCIO DIAZ-CHAVEZ, Imperial College, UK
- 10:20-10:40 **Strategies and policies in two projects: BioTrade2020+ and Biomass Policies**  
LUC PELKMANS, Flemish Institute for Technological Research (VITO), Belgium
- 10:40-11:00 *Coffee Break*



## **Session 2: Potentials of Exporting Countries: Case Studies**

*Moderation: Martin H. Junginger, Utrecht University, The Netherlands*

- 11:00-11:10 **Overview on the BioTrade 2020plus Case Studies**  
MARTIN H. JUNGINGER, Utrecht University, The Netherlands
- 11:10-11:20 **United States**  
GERT-JAN NABUURS, Alterra / Wageningen University and Research, The Netherlands
- 11:20-11:30 **Colombia**  
WOLTER ELBERSEN, Wageningen University and Research, The Netherlands
- 11:30-11:40 **Brazil**  
LOTTE VISSER, Utrecht University, The Netherlands
- 11:40-11:50 **Ukraine**  
LOTTE VISSER, Utrecht University, The Netherlands
- 11:50-12:00 **Kenya**  
THUY MAI-MOULIN, Utrecht University, The Netherlands
- 12:00-12:10 **Indonesia**  
THUY MAI-MOULIN, Utrecht University, The Netherlands
- 12:10-12:30 Discussion
- 12:30-13:30 *Lunch*

### **Session 3: Perspectives of Exporting Countries**

*Moderation: Uwe Fritsche, International Institute for Sustainability Analysis and Strategy (IINAS), Germany*

13:30-14:45 **Panel debate: Opportunities and constraints for biomass export to the European Union**

*Panelists:*

- SUANI COELHO, Brazilian Reference Center on Biomass (CENBIO), Brazil
- HELEN K. WATSON, University of Kwazulu-Natal, South Africa
- BAH SAHO, ECOWAS Regional Centre for Renewable Energy and Energy Efficiency (ECREEE), Cape Verde
- GERALDINE KUTAS, Brazilian Sugar Cane Industry Association, Brussels Office, Brazil
- PETER-PAUL SCHOUWENBERG, RWE Essent, The Netherlands
- JENNY WALTHER-THOSS, WWF, Germany
- TAPIO RANTA, Lappeeranta University of Technology, Finland

### **Session 4: Results of BioTrade2020plus**

*Moderation: Ines del Campo Colmenar, Centro Nacional de Energías Renovables (CENER), Spain*

14:45-15:30 **Interactive BioTrade2020plus Tool for biomass imports to the EU**

GERT-JAN NABUURS, Alterra / Wageningen University and Research, The Netherlands

15:30-15:45 **Conclusion and Next Steps**

DAVID SANCHEZ, Centro Nacional de Energías Renovables (CENER), Spain

15:45-16:00 *End of the workshop*

### Practical information

**Date & Venue:**

14th June 2016; **Permanent Representation of Spain**; Boulevard du Régent 52/Regentlaan 52, Brussels, Belgium

**Registration:**

Participation is free of charge, but registration is required. Please register before 3<sup>rd</sup> of June through <http://eusew.eu/energy-days/towards-sustainable-european-bioenergy-trade-strategy-2020-and-beyond>

**More information:**

Dominik Rutz ([dominik.rutz@wip-munich.de](mailto:dominik.rutz@wip-munich.de))  
Rainer Janssen ([rainer.janssen@wip-munich.de](mailto:rainer.janssen@wip-munich.de))  
Phone: +49 89 720 12 (-739), (-743)

**BioTrade2020plus:**

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. It shall ensure that imported biomass feedstock is sustainably sourced and used in an efficient way, while avoiding distortion of other markets. BioTrade2020plus is supported by the Intelligent Energy for Europe Programme of the European Commission. The project started in April 2014 and will continue until August 2016. [www.biotrade2020plus.eu](http://www.biotrade2020plus.eu)

