BioTrade2020plus

Supporting a Sustainable European Bioenergy Trade Strategy

Intelligent Energy Europe
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Deliverable 6.7

Report on the progress of BioTrade2020plus stakeholder consultations

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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 wood chips, pellets, torrefied biomass and pyrolysis oil from current and potential future major sourcing regions of the world (Canada, US, Russia, 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**

About this document

This report corresponds to D1.1 – Quality Control Plan (QCP) of BioTrade2020+. It has been prepared by: CENER, through contributions of WIP, VITO, IINAS and Imperial Collage.

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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 and under WP6 three stakeholder working groups have been established:

- WG1: Biomass importers and end-users (e.g. industries, representatives of competing markets, biomass traders, NGOs, policymakers)
- WG2; Biomass producers and exporters (e.g. agricultural, forestry and industrial sector in biomass producing countries, NGOs, policy makers in sourcing countries)
- WG3: Long-term strategies and support frameworks

The set-up, composition and establishment procedure of each working group is defined in the periodic deliverable 6.2 (Report of the set-up and engagement of working groups). Versions corresponding to M3 and M6 are available in the project website (www.biotrade2020plus.eu)

As reported in D6.2, for each working group a series of telephone conferences are going to be periodically organized. All these conferences are aimed to collecting user requirements, provide feedbacks on initial inputs and assumptions and provide feedback and validate draft deliverables. Previously to the conference a background paper was sent to all participants in order to boost the contribution during the meetings. After these teleconferences brief minutes are prepared and circulate to all the participants in order to compile all the information gathered and discussed.

Previously, a first stakeholder consultation was organized in the frame of the international workshop of 24 October 2014 in Brussels. In the interactive part of the workshop, discussions were organized on the following topics:

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

Conclusions of this workshop are reported in Deliverable 6.4.

After the workshop the following three teleconferences have been carried out:

1. November 27th, 2014. Topic: key principles on biomass trade; Working Group 3
2. December 5th, 2014. Topic: sustainability criteria and indicators; Working Group 2
3. December 11th, 2014. Topic: sustainability criteria and indicators Working Group 2

The participant list of each teleconference is shown in the Appendix 1.

This report aims at compiling all the information extracted from these teleconferences in order to have an overview and identify synergies and links between the stakeholders activities and the tasks developed under BioTrade2020plus. The opinions reflected here are not necessarily accepted by the majority of the participants neither by the consortium team.

2. Teleconference on Key Principles for Biomass Trade, 27 November 2014

2.1. Objective

To come to a long term trade strategy, BioTrade2020plus will define a number of key principles that need to be fulfilled to have sustainable trade, in agreement with different stakeholders.
The objective of this teleconference was to discuss some previously discussed (in the workshop of 24 October 2014) key principles as an important starting point to come to a sustainable trade strategy.

2.2. Discussion on the key principles, and their components

1. **Trade should be based on sustainable <u>biomass sourcing</u>**

a. Biomass sourcing requirements for 'good management practices' in forestry, agriculture, landscape management, waste management (e.g. in terms of biodiversity, carbon stock, soil, water, social conditions, land tenure).
b. If feedstock is produced in regions with lower levels of sustainability governance (compared to EU), this creates an unlevel playing field between domestic and imported biomass.
c. Workable contents of 'sustainable' to be defined (Renewable Energy Directive can be a basis). Can evolve step by step. Some aspects can be region specific.
d. Strive that sustainability requirements for biomass sourcing will be extended to all applications of biomass (food/feed/materials/energy).
e. The EU can assist sourcing regions towards sustainable practices,
    1. so that they learn from good practice experiences abroad,
    2. that they develop their own opportunities in terms of renewable energy and higher value products
    3. that they fully understand market requirements, so these don't form market / trade barriers. => Sustainability requirements / codes of good practice & voluntary schemes can trigger good practices in sourcing regions! e.g. better forest management increases wood increment and therefore the available potential.

This key principle was generally approved. Some comments on the specific points:

- There are different definitions of 'good management practises'. It will be necessary to clarify the term 'sustainability governance', which may different in different regions. Differentiating market access would be a very delicate issue.
- Some other documents should be considered, next to the Renewable Energy Directive, e.g. the Staff Working Document of July 2014 (SWD(2014)259), the draft ISO standard (ISO 13065), other certification standards such as FSC or PEFC.
- 'Assisting' or 'teaching' sounds quite patronizing. It is better to talk about cooperation, i.e. 'north-south' or even 'south-south' cooperation'. We should learn from good practices.

2. **Sustainable and resource efficient biomass <u>value chains</u> (incl. use)**

a. This implies an evaluation of the whole value chain, including biomass production, pretreatment, transport, conversion, distribution and end use.
b. Environmental aspects:
    a. Climate impact (GHG emissions)
    b. Air impact (other emissions, particularly in end use)
c. Resource efficiency: 'do more with less' => use the biomass in an efficient way.
    a. Energy efficiency
    b. Cascading use of biomass / added value / circular economy

The concrete sustainability indicators will be further discussed in the dedicated 'sustainability' teleconferences. Most discussion was on point c (resource efficiency).

- Cascading/circular use is on the crossroad of principle 2 (resource efficiency) and 3 (displacement). Cascading is currently tackled at European level (see Bioeconomy expert panel; DG ENTR study on cascading). Will BioTrade2020plus say something on cascading before these initiatives come out? Wouldn't it be better to wait and react on other initiatives?
- One stakeholder stated that cascading should be left to the market. Policy should not steer it. It would be good to get in touch with the actors of DG ENTR to have a joint discussion on this.
- *The added value of the BioTrade2020plus project is that the focus is on sourcing regions outside the EU - these countries may not be affected by EU policies on cascading.*
- To prescribe resource efficiency is difficult and depends on the political frameworks. The markets should find most efficient use of biomass; it is not clear how trade policies affect the end use.
- *The energy efficiency principle is fine but in practice it may be difficult to define thresholds/baselines/criteria of energy efficiency.*

3. **Displacement and indirect effects should be taken into account**

a. Are we dealing with a real excess of supply in the sourcing regions? Are we creating market distortions, displacing local sustainable use through subsidized demand? (e.g. towards their own renewable energy potential, higher value products)
b. This could drive existing applications away to other less sustainable resources (fossil, or non-certified forest land).
c. Identification and understanding displacement effects is important. Quantifying and including in value chain assessment (cfr iLUC) is difficult and very assumption dependent.
d. EC could approve practices / value chains which have low indirect effects.

The discussion went into the principle in general.

- In general there is an agreement with the principle. Export could add a threat on sustainable resources in some regions (e.g. also on protected land).
- Data collection is important as a starting point, however, indirect effects are difficult to quantify. The time factor has to be considered; what we define today may be completely different in some years.

- Difference between displacement and indirect effects? There is no study indicating that there is an iLUC problem for woody biomass. Is the issue targeted here related to iWUC (indirect wood use change)?
- *Indirect effects are actually the result of displacement. The current iLUC debate was mentioned as a reference to show the difficulties to include indirect effects in value chain assessment. iWUC may be more relevant for lignocellulosic material.*
- How to consider any unsustainable local use (e.g. wood for cooking and heating) and the impacts of that on exported biomass? *This is considered in the case studies / scenarios. Example Africa/Kenya: as long as there is an (unsustainable) over-demand of local biomass on local markets, biomass should not be sourced for export.*
- Unsustainable use is usually not on purpose – sustainable practices are often not disseminated properly enough in these countries. There is a necessity for these people to use the biomass and we have to accept this.
- Disseminating sustainable practices could be promoted through North-South or South-South cooperation (see principle 2). Through awareness raising, there might be more sustainable and efficient local use, leading to excess of biomass in the future (which might be exported).

4. No discrimination in market access

a. WTO compliant
b. Avoid protectionist market mechanisms
c. Find a balance between sufficiently strong quality and sustainability requirements and market access. (don't use sustainability requirements as trade barrier)
d. How to create socio-economic opportunities for smallholders? Trade is typically for large players. Administrative & practical difficulty to demonstrate sustainability criteria (barrier for smallholders).

All agreed with these statements.

- Sustainability requirements have been used in the EU as a trade barrier (for liquid biofuels). Minimum sustainability criteria should be agreed between the main stakeholders; otherwise there may be a problem with WTO compliance.
- This principle is a crosscutting issue, but it also needs to be stated as an individual principle. On the socioeconomic issues: it is always a problem to include smallholders in export markets. It is clear that proving sustainability creates an additional cost for smallholders. They need other supporting mechanisms. We should look at examples, also in other commodities (e.g. cooperatives, group certification,).

5. Avoid subsidies in the long term

a. Economic sectors shouldn't rely on subsidies in the long term.
b. Subsidies/support systems may distort markets, but may be necessary to initiate promising technologies (limited in time). Beware of unlevel playing field for other applications relying on the same feedstock.
c. Tax differentiations related to external cost (e.g. carbon tax) should be possible. Not only economics count.

There was some discussion among the stakeholders.

- It is important to take into account the fact that not all biomass uses get subsidies. Is the focus of the study more on electricity production? Some other biomass uses even today don't need subsidies.
- Does this principle only apply to EU or to other 3rd countries as well? In some developing countries it would be difficult for producers to produce biomass without subsidies.
- We have to be careful how certain subsidies are promoted; it can create more instability. It is important to consider who gets the subsidies (example UK, where merely rich people receive these subsidies).
- The principle is OK, at least in the long term. It is important to include external costs in the price. Carbon tax (on fossil fuels) would move this in the right direction. The principle should also apply to fossil fuels (see recent EU study http://ec.europa.eu/energy/studies/doc/20141013_subsidies_costs_eu_energy.pdf).
- It is important to make distinction of the subsidies between feedstock production and final use. Most of the agricultural sector in the EU is subsidised.
- Biomass is not cheaper than fossil fuel, and this will probably remain for some time. So far countries have different approaches (e.g. carbon tax in Sweden, ROCs in UK). Shall we dictate countries how to manage their support systems?
- *Long-term subsidies are difficult to defend, but a carbon tax is probably acceptable.*

6. Transparent markets

a. To have a clear view on long term sustainable trade, we should have a transparent overview of markets
b. There is currently insufficient clarity on traded volumes, sourcing, …
c. Need for clear reporting and monitoring system.

The stakeholders were also in agreement with these points. Some suggestions, points of discussion:

- Are we sure that we have all the right tools available now to ensure transparency? (NACE reporting, ...)
- It is important to know what level of details is needed. Sometimes it is very complicated to have access to the information.
- Traceability is very important (e.g. palm oil). However it may be a challenge to the industry.
- Certification systems can help provide data.

2.3. Statements

Six overall key principles for sustainable trade were derived from the interactive discussions in the workshop of 24 October 2014. In the teleconferences these were further discussed. The suggested key principles were generally accepted by the stakeholders, with some discussion and remarks on the underlying issues.

✓ **Trade should be based on sustainable biomass sourcing**

Agreement is needed on what is defined as 'good management practices', and what is accepted as sufficient 'sustainability governance'. Cooperation to learn from good practices.

✓ **Sustainable and resource efficient biomass value chains (incl. use)**

Sustainability criteria and indicators are discussed in other teleconferences.

Resource efficiency contains energy efficiency, but also cascading principles. There are different views whether cascading can be left to the market or should be steered by policies. There are still many questions about cascading (definition).

✓ **Displacement and indirect effects should be taken into account**

Data collection is important as a starting point, however, indirect effects are difficult to quantify and time dependent. iWUC (indirect wood use change) is more relevant for woody material.

Unsustainable local practices in sourcing regions: through awareness raising, there might be more sustainable and efficient local use. For the time being, we need to accept local demand, even if it is not efficient.

✓ **No discrimination in market access**

This is a crosscutting issue. Minimum sustainability criteria should be agreed between the main stakeholders; otherwise there may be a problem with WTO compliance.

Access for smallholders to export markets is a general problem. They need other supporting mechanisms, see also other commodities (e.g. cooperatives, group certification).

✓ **Avoid subsidies in the long term**

Not all bioenergy applications need subsidies. Some subsidy systems can create instability in markets. Subsidies should be transitional and are difficult to defend in the long term, but differentiation in relation to external costs should be possible. A carbon tax is probably acceptable.

✓ **Transparent markets:**

Traceability is very important, but may be a challenge. The right tools should be available (standard reporting). Certification systems can help provide data.

3. Teleconferences on Sustainability, 5 and 11 December 2014

3.1. Objective

Sustainable production of biomass with limited environmental and socio-economic impacts is of utmost importance to promote a sound international bioenergy trade. However, opinions on how to determine, measure and quantify "sustainability" differ. For this reason, BioTrade2020plus team has organized a series of telecons aiming to capture the points of view of stakeholders from different sourcing regions. General provisions with respect to sustainability issues are being discussed within telecons related to "key principles for biomass trade" (see section 2). Also, other telecons will be organized to further discuss the details of biomass potentials and domestic demands in the selected supplying regions (see section 4).

In particular, the following two teleconferences have been organised so far in order to discuss sustainability issues.

- Telco on December 5th, 2014 with WG2 stakeholders from North and Latin America
- Telco on December 11th, 2014 with WG2 stakeholders from South America

A summary of the main points discussed during these conferences are shown below.

3.2. Discussion about the sustainability approach

The attendees were asked to give their opinion regarding each of the following specific points:

i) Sustainability criteria and indicators and respective thresholds should apply to all feedstocks **regardless where they are consumed** (domestically or in third countries –exports-).

- One of the challenges is to have a global set of criteria and indicators, e.g. in forest certification. Criteria should be the same at the global level but indicators might change depending on the specific conditions. The regional differentiation for the indicators is often lacking.
- The context of the sourcing region needs to be considered and specific indicators have to developed to be applied in a specific area.
- The technology availability and the economic impact shall be considered.

Application of mandatory sustainability criteria is difficult in many countries outside Europe due to conflicting legal and regulatory framework conditions. For example, the agroecological zoning developed for Brazil does not fully match with the Renewable Energy Directive requirementes.
It is recommended to exploit experiences with the existing set of sustainability indicators developed in the framework of the Global Bioenergy Partnership (GBEP). Nonetheless, the GBEP indicators are targeted at the country level while the BioTrade2020plus indicators are specifically developed to calculate sustainable biomass potentials in different countries and addressing sustainability along the value chain.

ii) Sustainability requirements should be considered in the **full value chains** (e.g. include GHG emissions from processing or transport to the EU).

iii) Sustainability requirements should not only apply to biomass for bioenergy but to **all end uses**.

Sustainability criteria have to be applied independly of the final use. Not only the end product must be investigated, but the whole value chain (e.g. transportation to the EU) and also consider local impacts at production sites. For example in forestry, the key point is how forest land is managed and all environmental social/issues disregarding the type of end use. Others voice that this is the ideal situation, however this is highly unrealistic. It will not be possible to ensure compliance of companies in other sectors due to the lack of corresponding legal instruments in some sourcing regions (e.g. in Brazil with the agroecological zoning for sugarcane).

iv) It is only realistic to mandate the fulfillment of criteria for exporters of biomass to the EU, not for use in other sectors within the producing countries.

v) It is hard to compare GHG emissions in one context or another. Carbon cycles are different and conditions are different and it is important to have a different kind of understanding

vi) To assess sustainability, BioTrade2020plus methodology includes two sets of indicators: minimum (basic: current scenario) and advanced (future scenario) set of indicators (see the dreaft proposal at the end of the document).

This proposal is focused on “mid-point indicators” aimed to capture the core environmental, social and economic values to be maintained or protected. This generic proposal aims to provide a framework that might serve to develop sectoral and implementable approaches. Thus, primary biomass resources (i.e. that directly obtained from the field either as main product or residue), secondary biomass resources (i.e. those derived from industrial processes and streams) or waste present different sustainability challenges and risks. Then, based on this proposal, further “implementable indicators” will be developed for each feedstock (i.e. forest residues, roundwood from forest plantations, etc.). This refers, for example, to the amount of forest residues to be left on the ground, which directly interacts with the quality of soils and biodiversity protection.

There are four type of indicators:

- **Minimum requirements:** thresholds (or qualitative attributes) that should be met (resulting in "yes" only if the indicator meets the threshold or qualitative value). Example: thresholds for minimum GHG emissions levels.
- **Comparative to non-renewable reference**: can be compared with e.g. fossil fuel or non-renewable material reference. Example: indicators related to air emissions (PM_{10} and SO_2)
- **Comparative to other biomass**: can be compared to other biomass systems, in case the indicator is not relevant for non-renewable reference. Example: indicators related to soils
- **Descriptive**: provides information about key characteristics not easy to compare but relevant for assessing the value chain. Example: indicators related to participation and transparency.

Biotrade2020plus is one among other EU projects. Its focus is about imports, but the sustainability indicators shall apply to both, imported biomass and biomass that is produced within the EU. The final sustainability proposal of the project will not be a new standard. Different schemes such as voluntary forest certification standards (e.g. PEFC and FSC) or other efforts within the bioeconomy (e.g. RSB) have been considered.

Participants agreed that most of the project indicators make sense, but in some cases there is some overlap. There are more environmental and social criteria and only one economic criterion. There should be a balance between environmental and social indicators. The economic criterion should be included in the social cathegory, as economic criteria are always also social ones. Resource efficiency (land, energy, etc) maybe can be got away with just land use and energy rather than including resource efficiency. Same occurs with erosion indicator, then it might be easier to get this than C soil. Rather than duplicating the different aspects.

Forestry planning is a fundamental indicator on sustainability that might be included as an *implementable indicator.* Complying with laws might be included as well as an implementable indicator.

It is difficult to include social criteria and indicators as due to international agreements (it will not be possible to implement such indicators. Therefore, social criteria and indicators shall be excluded, according to one of the participants. Anything that is social cannot be implemented as legislation as each country covers these issues within their own legislation.

It is important to acknowledge progress within sustainability systems, as sustainability requirements are considered as main driver towards more sustainable practices.

In many developing countries focus is placed on traditional biomass use and lack of energy access. *Within the project priority will be given to local use of biomass resources before exploring exporting options.*

In many developing countries producers currently do not comply with the sustainability criteria, but they may be willing to adapt practices to do so.

vii) Based on those type of indicators, we would like to define the **ambition level of sustainability**: a "basic set" (the minimum list of issues that should be considered) and a "advanced set" (a more ambitious set of issues or thresholds) of sustainability requirements that should apply to imported biomass for bioenergy to EU. The consortium would like to know about:

- Whether you agree with these two approaches,

- Whether you would change the classification of any of the indicators.
- Whether those sets could be met in your region. Are there any feedstock or any practice that could be more sensitive?
- The measures that could be put in place to overcome potential barriers

The minimum list the indicators will be OK in Canada, but there would be some challenges to meet the advanced set. Same situation applies to Mexico, where there is not too much information available.

There would be more problems with agriculture feedstocks (there is not a voluntary certification scheme) than with forestry ones (under voluntary certification schemes) in Canada. Data is always not possible to get (for agriculture) but there is an increase the level of envirionmental recording. Statistics are available, but it would be necessary to implement certification schemes.

In Mexico they have the same level of info for all feedstock. The same effort should be made for all different types of biomass.

In Brazil, the inclusion of minimum requirements for social indicators in legal systems is very difficult. Examples for social indicators that may be included in sustainability schemes are agreements under ILO, however not all countries are signatory of ILO. It is a little bit difficult to put it all together under United Nations Human Rights Declarattion and its principles. Also, we have to consider "human rights" even if countries like Vietnam have not signed the Human Rights Declaration (or not all of the principles). Including issues related to Human rights is because it is aspirational. ILO is easier as many countries are signatory and once they have signed it passess to legislation.

In Brazil, the implementation feasibility of the indicators proposed within the project crucially depends on the thresholds set for the respective indicators (such as number of accidents, jobs created, etc.). *Thresholds for environmental indicators are quite easy to implement, whereas for social issues are more difficult to address.*

viii) Identify **practical implementation (or assurance) of sustainability** related issues, such as pathways to achieve sustainability, scale of activities, options for simplifications (low-risk areas), and the impact on costs:

- Which way do you foresee most effective to assure sustainable lignocellulosic biomass sourcing for exports?
    - Certified forest management
    - Controlled and mixed sourcing
    - Inspected compliance for stewardship plans and practices (for example with Best Management Plans)
    - Uninspected forest operations

Certified forest management is the best way to assure sustainability. Canada is a significant source of biomass. A small supplier of biomass is going to be looking for the sources locally, they might not need international cerification.

Uninspected forest operations may be difficult in countries without legislation about e.g. deforestation.

It is not possible to include all criteria and indicators in national legislation. Specifically, the criteria of "resource efficiency" is not included in any legislation. Specific measures are needed to check compliance with sustainability systems. Finally, the best way to ensure compliance with sustainability requirements will depend on the specific goal of such sustainability systems.

- *Should these pathways be simplified for small-scale activities?*

Simplification for small scale activities is of large importance in many developing countries as certification for small farmers is not easy. Experiences exist in Liberia (cooperation with Sweden) and Madagascar (cooperation with Germany to produce eucaliptus pellets for export). *The case of Madagascar is community based project. There are other small scale initiatives which do not need to go for certification. It is important to consider what type of markets are targeted by small scale producers. There is another experience, a social program in Sierra Leona about bioethanol. (Makieni project).*

- *Is it possible to identify low-risk regions or countries where "less demanding" pathways might be applied? (i.e. require certified products in high-risk regions and allow "inspected compliance" where risks are lower).*

This option might be tricky. The identification of low risk regions should be applied by country and by feedstock. Differences between energy crops and agricultural residues need to be respected. In general, it is assumed that (agricultural) residues have a low risk.

- *Do you think that the additional cost of demonstrating sustainability could be a trade barrier?*

Demostrating sustainability is not a trade barrier. The application of sustainability criteria is a tool to help several countries to improve their pathways and to increase overall sustainability. It is not an unfair barrier.

Other views hihglight that any sustainability requirement leading to higher costs can be considered a trade barrier.

3.3. Statements

Herein the main key points extracted from these telconferences are shown:

- **Criteria might be the same at the global level but indicators might be adapted to the specific conditions** (thresholds might be different to take into account regional differentiation).
- **Feedstocks should be produced in a sustainable way regardless of the conversion procedure and end use. The application of sustainability requirements to all end uses would be the ideal situation but highly unrealistic.** It will not be possible to ensure compliance of companies in other sectors due to the lack of corresponding legal instruments. It might be only realistic to mandate the fulfillment of criteria for exporters of biomass to the EU, not for use in other sectors within the producing countries.

- **Sometimes there exist contradictions between sustainability requirements mandated by the EU and national legislations in the sourcing countries**. For example, Brazilian biomass producers will follow Brazilian Law which might be contradictory in some ways to the sustainability criteria from the EU, for example, the agroecological zoning for sugarcane expansion in Brazil is not excluding the same areas as those identified as "no-go" areas within the EU RED (Renewable Energy Directive).
- **Most of the project indicators received positive views, but in some cases there is some overlap.** There should be a balance between environmental, social and economic indicators.
    - **Resource efficiency** (land, energy, etc) changes from one place to another, so maybe it is not convenient to consider them..
    - **Forestry planning** and **compliance with law should also be included**.
    - **Social criteria and indicators**. It is difficult to implement social criteria and indicators as due to international agreements (such as WTO). The implementation feasibility of these indicators crucially depends on the thresholds set for them (such as number of accidents, jobs created, etc.).
    - **It is important to acknowledge progress within sustainability systems, as sustainability requirements are considered as main drivers towards more sustainable practices** (In many developing countries producers currently do not comply with the sustainability criteria, but they may be willing to adapt practices to do so).

- Regarding the **ambition level of the indicators** (basic or advanced set), the situation per country is:

    - **Canada:** would be Ok for a basic set but there would be some challenges with the advanced ones. There would be more problems with agriculture feedstocks (there are not voluntary agriculture schemes) than with forest ones (under voluntary forest certification schemes). Data is always not possible to get (for agriculture).
    - **Mexico:** agrees with the basic set however, there would be some problems with the advanced set. There is not much information available either for forest feedstocks or agriculture ones. The same effort should be made for all different types of biomass.
    - **Brazil:** The inclusion of minimum requirements for social indicators in legal systems is very difficult. Examples for social indicators that may be included in sustainability schemes are agreements under ILO, however not all countries are signatory of ILO. Moreover, it is a little bit difficult to put it all together under United Nations Human Rights Declarattion and its principlesThresholds for environmental indicators are quite easy to implement, whereas for social issues are more difficult to address.

- The most effective way to assure sustainable lignocellulosic biomass sourcing for exports should be:
    - **Canada →certified forest management.** Canada a is significant source of biomass.
    - **Brazil→** it is not possible to include all criteria and indicators in national legislation.Specific measures are needed to check compliance with sustainability systems depending on the specific goal of such systems. For example in the case of EU sustainability requirements, an additional control should be applied.

- **Simplification for small scale activities is important in many developing countries as certification for small farmers is not easy.** However, it is important to consider what type of markets are targeted by small scale producers.
- **The identification of low risk regions should be applied by country and by feedstock.** Differences on sustainability challenges between energy crops and agricultural residues need to be respected. In general, it is assumed that (agricultural) residues have a low risk.
- There are different views about whether the compliance with sustainability C&I is a trade barrier. One one hand, **the application of sustainability criteria is a tool to help several countries improve their approaches and increase overall sustainability**. It goes back to the international community to help these countries in order for them to compete. It could be a trade barrier but it is not an unfair barrier. It might highlight places where this may occur but we see it in many countries that many people take this on and does not stop them to be players in the market. One the other hand, **any sustainability requirement leading to higher costs can be considered a trade barrier.** Having high costs can be a trade barrier.

4. Consultations for the next period

In order to collect more information and stakeholder's opinion about sustainability issues, from all the sourcing regions, two new additional teleconferences have been planned for the next period. The dates have to be fixed during the following weeks:

- 27th of January with stakeholders from Ukraine, Africa and America (we have invited those that couldn´t attend the previous telecons).

- 3rd of February with stakeholders from Southeast Asia, especially Malaysia and Indonesia.

The main outcomes of these and other teleconferences will be included in the following report on the progress of BioTrade2020plus stakeholder consultations which is due to month 16 (June 2015).

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:

Telco participants – Thursday 27. November, 2014 16:00-17:00 CET.

Working group members, Advisory Board Members, Stakeholders:

- Marc Monsarrat, Rainforest Alliance, UK
- Gordon Murray, Wood Pellet Association of Canada
- Sara Anton Lopez, Abengoa, Spain
- Fanny-Pomme Langue, European Biomass Association (AEBIOM), Belgium
- Birger Kerckow, FNR, Germany
- Carlos Alberto Fernández López, IDAE, Spain
- Emanuele Bianco, GSE, Italy

Participants of the BioTrade2020plus consortium:

- Luc Pelkmans, VITO, Belgium (Moderator)
- Dominik Rutz, WIP, Germany (Facilitator)
- Ines del Campo Colmenar, CENER, Spain (Rapporteur)
- David Sanchez Gonzalez, CENER, Spain
- Martin Junginger, Utrecht University, the Netherlands
- Leire Iriarte, IINAS, Spain
- Rocio Diaz-Chavez, Imperial College London, UK
- Thuy Mai-Moulin, Utrecht University, the Netherlands

Excused:

- ✓ Evelyne Thiffault, University Laval, Canada
- ✓ Suani Teixeira Coelho, CENBIO, Brazil
- ✓ Jenny Walther-Thoss, WWF, Germany
- ✓ Geraldine Kutas, UNICA, Brazil
- ✓ Yves Ryckmans, Laborelec, Belgium
- ✓ Peter-Paul Schouwenberg, RWE-Essent, the Netherlands
- ✓ Brian Kittler, Pinchot Institute, US
- ✓ Giulio Volpi, European Commission, DG ENER

Telco Participants - Friday 5 December 2014, 18:00 -19:00 CET

Working group members, Advisory Board Members, Stakeholders:

- Gibran Aleman on behalf of Roberto Parra--, Instituto Tecnologico de Monterrey, Mexico
- Warren Mabee, Queen's University,
- Nadine Block, Sustainable Forestry Initiative Inc.

Participants of the BioTrade2020plus consortium:

- Leire Iriarte, IINAS, Spain, (Moderator)
- Dominik Rutz, WIP, Germany (Facilitator).
- Ines del Campo Colmenar, CENER, Spain (Rapporteur).
- Rocio Diaz-Chavez, Imperial College London, UK (moderator and participant).
- Uwe Fritsche, IINAS, Germany.

Excused:

- Kevin Vessey, Saint Mary's University.
- Gordon Murray, Wood Pellet Association of Canada.

Telco Participants - Thursday 11 December 2014, 16:00 -17:00 CET

Working group members, Advisory Board Members, Stakeholders:

- Todd G Bush, Green Circle Bio Energy, USA.
- Suani Coelho, University of São Paulo, Brazil.
- Géraldine Kutas, UNICA, Brazil.

Participants (consortium):

- Leire Iriarte, IINAS, (Moderator).
- Rocio A Diaz-Chavez, Imperial College London, (Moderator).
- Rainer Janssen, WIP, (Facilitator).
- Ines del Campo Colmenar, CENER, (Rapporteur).
- David Sanchez, CENER.
- Luc Pelkmans, VITO.
- Uwe Fritsche, Leire Iriarte, IINAS
- Martin Junginger, UU, H.M.
- Thuy- Mai Moulin, UU, T.P.T.

Excused:

- Bah Saho, ECREEE,
- German Daroca, Universidad Católica de Valparaiso
- Rubens Lamparelli, NIPE/UNICAMP, Brazil.

7. Appendix 2:

Sustainability criteria and indicators table

Theme	Criterion	Indicator			Ambition							
					Basic set				Advanced set			
		#	Indicator	Description	Minimum req	Comp. Non-renewable reference	Comp. Bio reference	Descriptive	Minimum req	Comp. Non-renewable reference	Comp. Bio reference	Descriptive
Environmental	1. Resource efficiency	1.1	Land Use Efficiency	Available bioenergy carriers (including by- and co-products along the bioenergy life cycles) per hectare of cultivated area			✓		✓			
		1.2	Secondary Resource Efficiency	Heating value of the bioenergy output divided by the heating value of the secondary resource (e.g. waste or residues). This indicator applies to bioenergy carriers stemming from the conversion of secondary biomass resources such as residues and wastes.			✓		✓			
		1.3	Energy Efficiency	Cumulative energy demand (all inputs (based on LHV primary energy), incl. renewable energy and biomass input, compared to the outputs		✓			✓			

		1.4	Functionality (Output service quality)	Economic value of the outputs (€/GJ x GJ energy carriers + €/ton x ton materials), compared to the economic value of the heat which could be produced from burning the (dried) primary inputs (reference = heat from NG ~ 10€/GJ); economic values are excl tax, for industrial customers						✓	✓	

Theme	Criterion	Indicator			Ambition							
					Basic set				Advanced set			
		#	Indicator	Description	Minimum req	Comp. Non-renewable reference	Comp. Bio reference	Descriptive	Minimum req	Comp. Non-renewable reference	Comp. Bio reference	Descriptive
Environmental	2. Climate Change	2.1	GHG(CO_2eq) LCA, including LUC	GHG emissions during crop growth & harvesting, logistics, pretreatment and conversion, distribution, end use; in relation to the final output (combination of electricity, useful heat, biofuels & biomaterials)	✓				✓			
		2.2	Other GHG emissions	GHG from iLUC and C stock changes.		✓	✓		✓			
	3. Biodiversity	3.1	Protected areas and land with significant biodiversity values	Categories established by the RED	✓				✓			
		3.2	Biodiversity conservation and management	"Agrobiodiverse cultivation" (crop rotation; crop diversity in the landscape; avoidance of alien species) and amount of chemicals (pesticides/herbicides). Release of GMOs			✓		✓			
	4. Soil	4.1	Erosion	Probability of erosion where mitigation measures are not feasible			✓		✓			
		4.2	Soil Organic C	It depends on the type of crops (perennials and annual crops) and respective land management.			✓		✓			
		4.3	Soil Nutrient Balance	Probability of nutrient balance loss where mitigation measures are not feasible			✓		✓			

Theme	Criterion	Indicator			Ambition							
					Basic set				Advanced set			
		#	Indicator	Description	Minimum req	Comp. Non-renewable reference	Comp. Bio reference	Descriptive	Minimum req	Comp. Non-renewable reference	Comp. Bio reference	Descriptive
Environmental	5. Water	5.1	Water availability and regional water stress	Water use in relation to TARWR (total actual renewable water resources), or average replenishment from natural flow in a watershed.						✓	✓	
		5.2	Water use efficiency	Water use for biomass production (cropping)+irrigation+processing						✓	✓	
		5.3	Water quality	Water quality: water pollution (nitrate, phosphorous, pesticides, BOD)						✓	✓	
	6. Air	6.1	SO_2 equivalents	life cycle emissions of SO2, NOx, NH3 and HCl/HF from bioenergy provision, expressed in SO2 equivalents and calculated in accordance to the life cycle emission methodology for GHG		✓	✓		✓			
		6.2	PM_{10}	Life cycle emissions of PM10 from bioenergy provision, expressed in PM10 equivalents and calculated in accordance to the life cycle emission methodology for GHG		✓	✓		✓			
Social	7. Participation and transparency	7.1	Effective participatory processes	Enable effective participation of all directly affected stakeholders by means of a due diligence consultation process, including Free Prior & Informed Consent (FPIC) when relevant								✓

Theme	Criterion	Indicator			Ambition							
					Basic set				Advanced set			
		#	Indicator	Description	Minimum req	Comp. Non-renewable reference	Comp. Bio reference	Descriptive	Minimum req	Comp. Non-renewable reference	Comp. Bio reference	Descriptive
Social	7. Participation and transparency	7.2	Information transparency	Documentation necessary to inform stakeholder positions shall be made freely available to stakeholders in a timely, open, transparent and accessible manner								✓
	8. Secure tenure of land	8.1	Compliance with the VGGT to secure land tenure and ownership	Share of area or share of biomass that could be under secure land tenure, based on literature revision and national (or international) statistics.			✓		✓			
	9. Employment and labor conditions	9.1	Full direct jobs equivalents along the full value chain	Number of jobs from bioenergy (See the methodology of the GEF study)		✓	✓			✓	✓	
		9.2	Full direct jobs equivalent in the biomass consuming region (or country)	Number of jobs from bioenergy (See the methodology of the GEF study)		✓	✓			✓	✓	
		9.3	Human and Labor Rights	Adherence to ILO principles and voluntary standards. Not all countries are signatories of ILO	✓				✓			
		9.4	Occupational safety and health for workers		✓				✓			

Theme	Criterion	Indicator			Ambition							
					Basic set				Advanced set			
		#	Indicator	Description	Minimum req	Comp. Non-renewable reference	Comp. Bio reference	Descriptive	Minimum req	Comp. Non-renewable reference	Comp. Bio reference	Descriptive
Social	10. Health risks	10.1	Risks to public health	i.e. noise level and accidents								✓
	11.Food and fuel security	11.1	Risks for negative impacts on price and supply of national food basket and fuelwood.	Based on the BEFS methodology (and literature references).			✓		✓			
Economic	12. Production costs	12.1	Levelized life-cycle cost, excluding subsidies (including CAPEX, OPEX)	Levelized life-cycle cost, excluding subsidies (See the methodology of the GEF study)		✓	✓			✓	✓	