



**Online Survey**

# **Policy options for sustainable biomass trade**

October 2015

## **Survey Summary**

BioTrade2020plus

Supporting a Sustainable European Bioenergy Trade Strategy

Intelligent Energy Europe

IEE/13/577/SI2.675534



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

## **Survey Background**

The online survey was part of the BioTrade2020plus Project supported by the European Commission in the Intelligent Energy for Europe Programme.

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, economic 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.

**Timing:** launched in April 2015

**Number of participants:** 127 from 35 different countries

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## **Survey summary**

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## Survey Summary

### 1. Introduction

An online survey is performed with different statements in order to develop guidelines for a European Bioenergy Trade Strategy. The statements were divided in seven different categories:

- (1) opportunities for importing regions,
- (2) opportunities for sourcing regions,
- (3) risks for importing regions,
- (4) risks for sourcing regions,
- (5) barriers for trade,
- (6) key principles for sustainable biomass trade and
- (7) policy options.

In the remaining of this summary the responses to the different statements are summarized in table format and the main conclusions are drawn. Annex 1 contains the detailed survey.

In total 127 complete responses are received from 35 different countries. The respondents work in different organizations as indicated in Figure 1. Note that the total percentage is over 100% as respondents could select multiple organizational types.

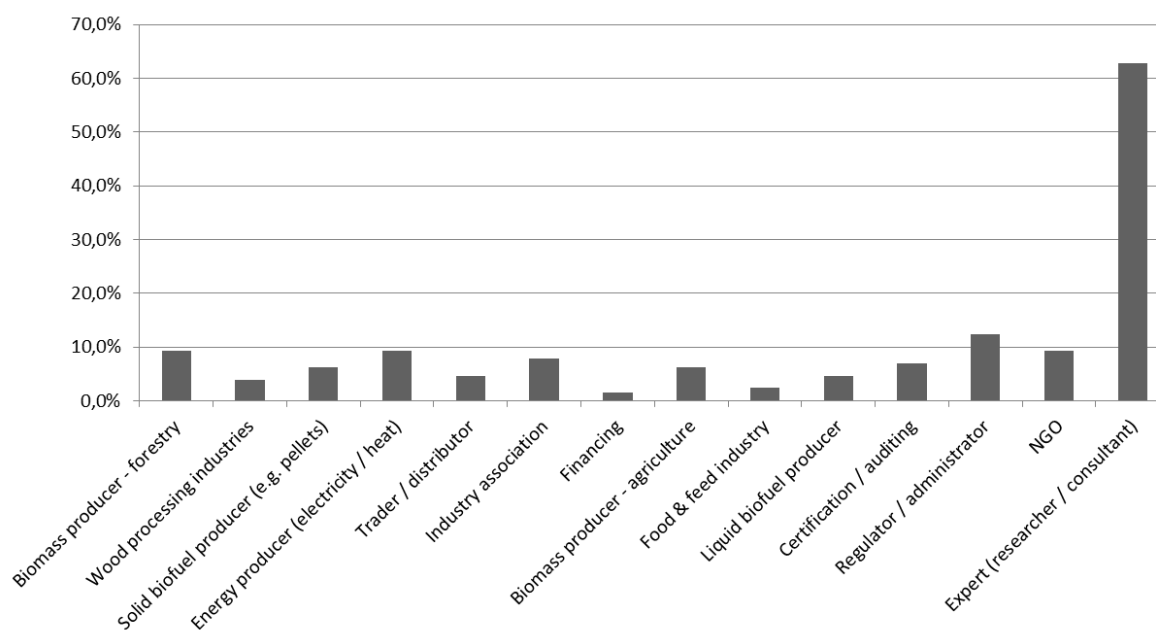


Figure 1. Organization

The respondents were most familiar with North America as sourcing region, *i.e.* 47%. Almost 35% of the respondents indicated to be most familiar with East Europe & Russia and 21% is most familiar with South America. 14.7% and 11.6% of respondents indicated to be most familiar with respectively Southeast Asia and Africa. *Circa* 15% of the respondents indicated to be most familiar with other sourcing regions such as Australia, Northern and Western Europe, and Central Asia. Only 12.4% of respondents indicated to be not familiar with a sourcing region.

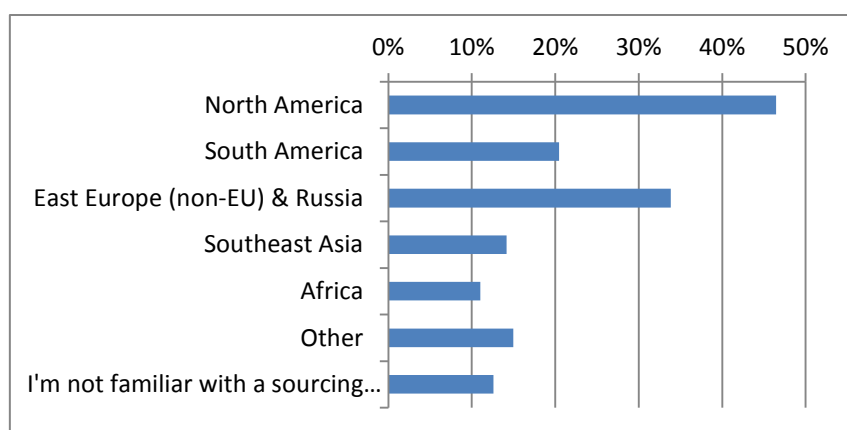


Figure 2. Sourcing region

## 2. Opportunities and risks of international biomass trade

In terms of markets and society, there are clear opportunities and risks related to international biomass trade. Distinction can be made between opportunities and risks for the importing regions (in this case EU countries), and on the other side opportunities and risks for sourcing regions (distinction can be made between North America, South America, Africa, Southeast Asia, East Europe & Russia).

### 2.1. Opportunities for importing regions in the EU

Statements were provided to the respondents concerning the following topics:

- Complementary role of biomass with other renewable energy sources;
- Role of imports in regions where domestic biomass potential is limited;
- Broader feedstock portfolio;
- Cost-efficiency;
- Infrastructure build up;
- Investments in new technologies;
- Reduce domestic competition for biomass; and
- Trading links.

An overview of the percentage of respondents that rated the statements concerning opportunities for importing regions in the EU as important or very important is provided in Table 1.

Table 1. Opportunities for importing regions in the EU

Statement	Percentage important and very important
Complementary with other RE sources	71%
Limited domestic potential	77%
Broader feedstock portfolio	68%
Cost-efficiency	79%
Infrastructure build-up	52%
Investments in new technologies	61%
Reduce domestic competition	45%
Trading links	46%

RE = Renewable Energy

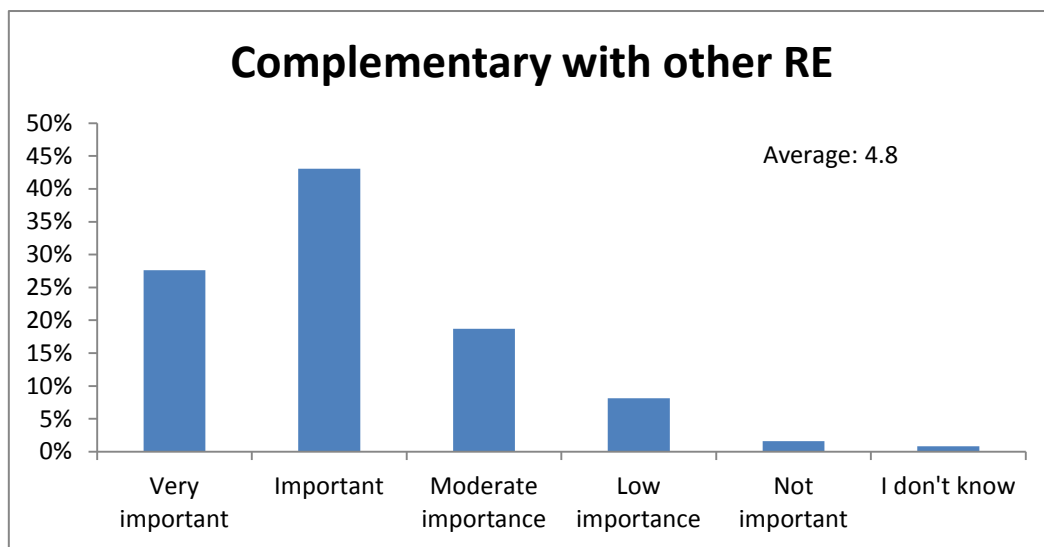
### Complementary role of biomass with other renewable energy sources

*Imported biomass can be complementary to domestic intermittent energy sources like solar or wind.*

70% of the respondents of the survey indicated that the fact that biomass can be complementary to domestic intermittent energy sources like solar or wind is important to very important. One respondent indicated that biomass is especially interesting in district heating and that a district heating network can also be used as a sink for excess renewable electricity. Some respondents also indicated the potential of biomass to be used as baseload power.

However, also some concerns are mentioned:

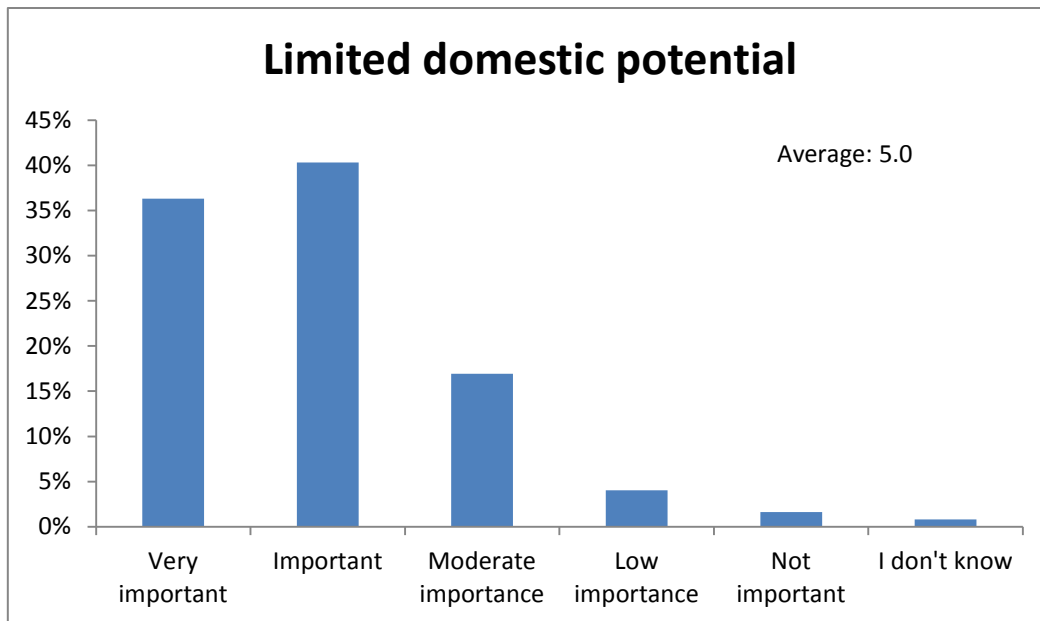
- Imported biomass is mainly used in larger facilities which are less flexible and, therefore, the complementarity is of less importance.
- Biomass is also exposed to fuel price fluctuations and is in that sense not so different than fossil based baseload energy.
- Priority should be given to local biomass.
- Attention should be provided that only biomass with a high energy content should be imported and not for example straw with a lower energy content per ton biomass.
- The current applications are not enough for balancing, but it may change in the future.



### Role of imports in regions where domestic biomass potential is limited

*Imported biomass is of interest in regions where domestic biomass resources are limited.*

The majority (*i.e.* 75%) of the respondents indicated this opportunity important or very important. Despite the fact that most respondents indicate this opportunity as important, also some concerns are raised. Some respondents indicated that countries should focus on their own strengths rather than import large amounts of biomass. One respondent indicated the problem with sustainability when importing biomass. Overall it can be concluded that the potential of importing biomass to countries with limited biomass potential is seen as important by the respondents. Agricultural biomass producers indicated a lower importance for this opportunity in comparison with the other groups.

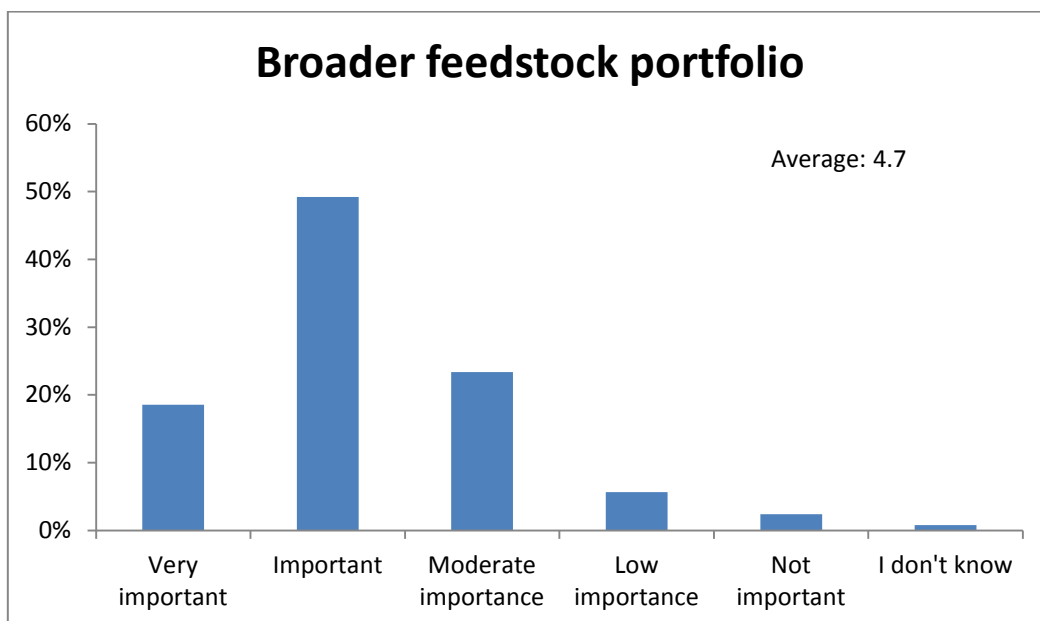


### Broader feedstock portfolio

*International trade opens up the feedstock portfolio of bioenergy installations in the EU. This creates flexibility in feedstock sourcing and stabilizes prices.*

In the survey almost half of the respondents indicated a broader feedstock portfolio as an important opportunity. The opportunity was indicated to be very important or of moderate importance by respectively 19% and 23% of the respondents. The flexibility of feedstock and suppliers is indicated by the respondents to be key for successful biomass projects.

Solid biofuel producers and traders indicated a higher importance for this opportunity.



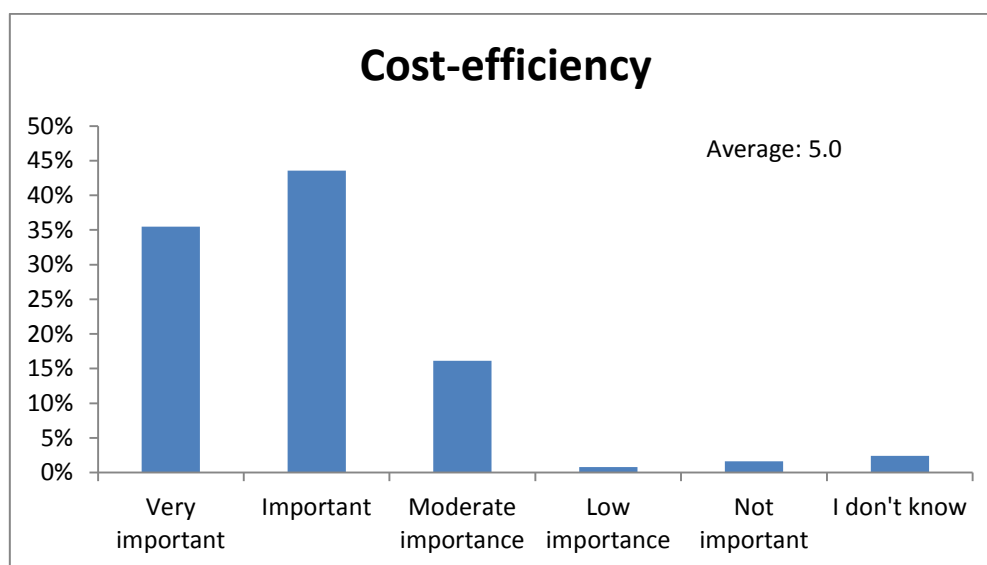
## Cost-efficiency

*Imported biomass from regions with abundant and easily accessible biomass can be a cost-efficient way to reach renewable energy targets.*

It seems that the majority (79%) of the respondents rate this opportunity as being important to very important. Although the majority of the respondents agrees that this opportunity is of large importance, some concerns are raised:

- Is this biomass sustainable?
- Is the cost-efficiency guaranteed on the long term?
- Is the biomass really abundant or would it be better to use the biomass locally?

For this opportunity the wood processing industries indicated a lower importance.

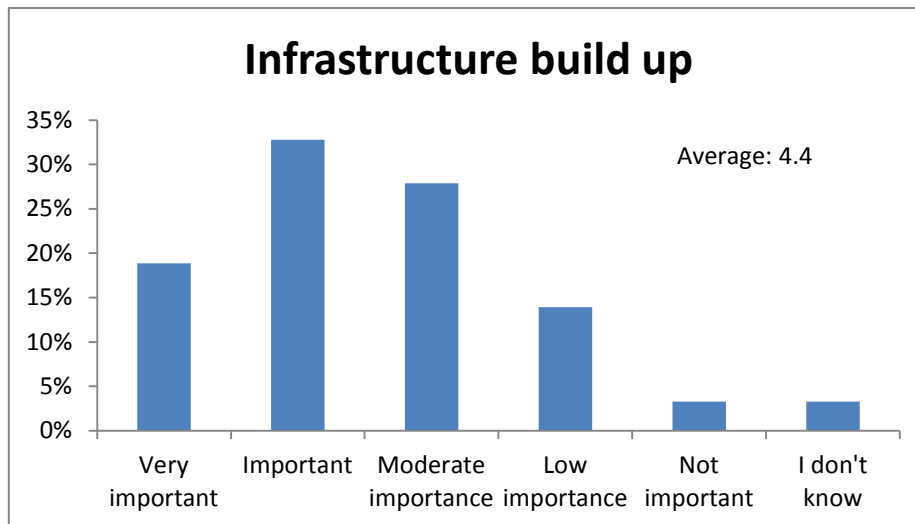


## Infrastructure build up

*Biomass imports can be in intermediate tool to facilitate the development of local bioenergy infrastructure in the EU.*

From the respondents 33% indicated this opportunity to be important and 27% to be of moderate importance. Based on the arguments provided by the respondents it can be concluded that major doubts exists about whether this might stimulate local infrastructure. Furthermore, they mention that infrastructure should be in place before imports can be realized.

For the opportunity 'infrastructure build-up' the respondents that were most familiar with 'North-America' responded it to be more important. Respondents that were most familiar with Africa rated it less important.



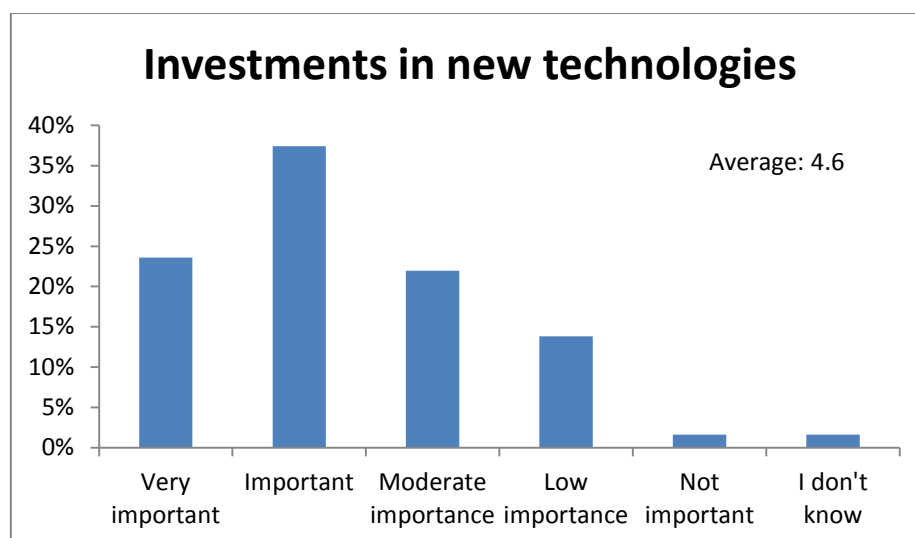
### Investments in new technologies

*EU countries can invest in technological solutions (e.g. advanced biofuels, biorefineries) which need substantial biomass volumes to reach economy of scale. Imports can fill the gap if these volumes are not available domestically.*

In contrast to the respondents in Brussels, only 61% of the respondents from the survey indicate this opportunity to be important to very important. The respondents indicated that the larger amounts of biomass, which is possible via imports, are used in large burning installations and are not available for new technologies that focus more on domestic types of biomass.

The wood processing industries and energy producers were very diverse in their responses concerning the importance of investments in new technologies.

A more dispersed answer was provided concerning the importance of the opportunity 'investments in new technologies' by respondents that were most familiar with Africa.



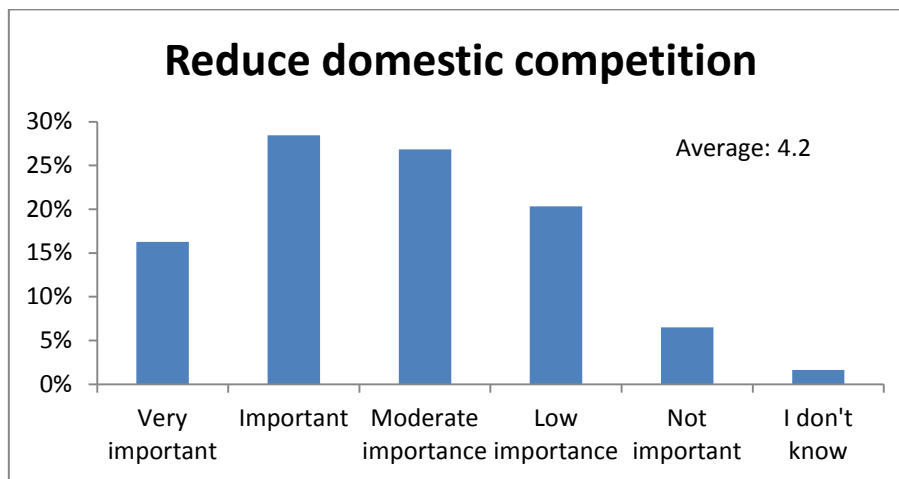


### Reduce domestic competition for biomass

*Opening markets for imported biomass can reduce competition for domestic biomass resources, e.g. related to the demand of existing biomass processing industries (for materials).*

Respondents of the survey indicated this opportunity as being one of the least important among the presented opportunities. However, still 46% of respondents indicated it to be important to very important. The main argument in favor of this opportunity is that competition will help to improve efficiency and reduce cost. Still, more arguments against this opportunity are raised:

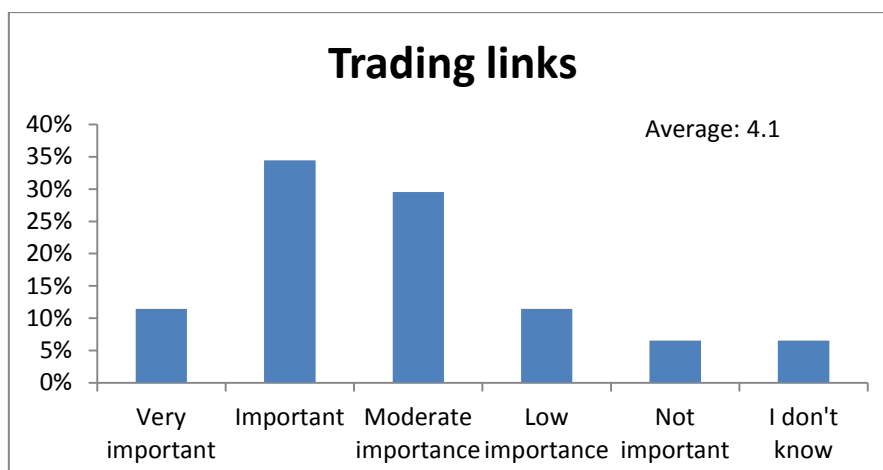
- What about biomass draining in exporting regions?
- Domestic competition for wood pellets is low and market pull is strongest from EU.
- There is a lack of markets for domestic biomass. A lot of the domestic biomass is not utilized as infrastructure is lacking and policy is instable.



### Trading links

*EU countries can build trading links with strategic trade partners.*

From the respondents 11% indicated this opportunity to be very important, another 35% rated the opportunity as important. A lower importance was provided to the opportunity 'trading links' by the respondents that were most familiar with Africa.

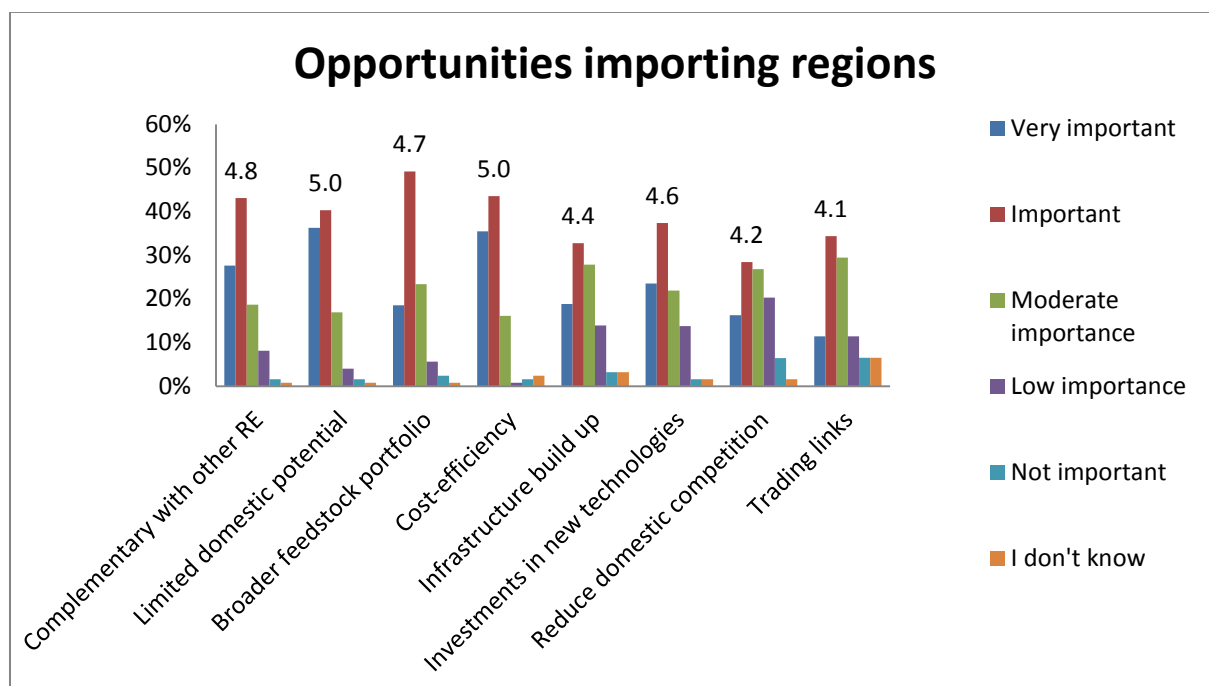


Other opportunities that are mentioned by the respondents are the following:

- Faster and more efficient mitigation of climate hazards.
- Assisting forestry management practice in other regions.
- Policy decisions of stem wood use in bioenergy.
- Raise of awareness about the need for more transparency in the general trade of woody biomass and as such stimulate the disclosure of illegal trade practices and contributing to a more level playing field.
- Security and diversification of supply.
- Adequate knowhow on markets, quality, standards and technology.
- Global balancing of local strengths and weaknesses.

In general regulators/administrators indicated a lower importance for the different opportunities. Also NGOs indicated a lower importance for most opportunities.

A visual summary of the answers concerning opportunities for importing regions in the EU is provided in the graph below.



## 2.2. Opportunities for sourcing regions

Statements were provided to the respondents concerning the following topics:

- Economic development;
- Job creation;
- Synergies with local sectors;
- Improved productivity;
- Sustainable practices;
- Building up supply chains; and
- Capacity building.

An overview of the responses for the different opportunities per sourcing region are provided in the tables below. Table 2 provides the number of respondents that indicated an opportunity to be important or very important and Table 3 provides the number of respondents that indicated an opportunity to be of low importance or of not being important.

*Table 2. Opportunities for sourcing regions in the EU – Important or Very Important*

Region (#respondents)	North- America (41)	South- America (15)	East Europe (non-EU) & Russia (30)	Southeast- Asia (6)	Africa (11)	No specific region (24)
Economic development	73%	80%	77%	100%	64%	78%
Job creation	56%	80%	77%	83%	90%	74%
Synergies with local sectors	63%	80%	70%	83%	73%	48%
Improved productivity	60%	67%	53%	100%	60%	39%
Sustainable practices	68%	80%	63%	83%	91%	61%
Building up supply chains	58%	73%	79%	100%	64%	68%
Capacity building	53%	67%	57%	100%	82%	57%

*Table 3. Opportunities for sourcing regions in the EU – Low Importance or Not Important*

Region (#respondents)	North- America (41)	South- America (15)	East Europe (non-EU) & Russia (30)	Southeast- Asia (6)	Africa (11)	No specific region (24)
Economic development	7%	7%	7%	0%	18%	0%
Job creation	10%	7%	10%	0%	10%	0%
Synergies with local sectors	13%	0%	10%	0%	18%	4%
Improved productivity	10%	27%	7%	0%	20%	13%
Sustainable practices	18%	0%	23%	0%	0%	4%
Building up supply chains	18%	20%	11%	0%	18%	5%
Capacity building	24%	7%	13%	0%	0%	9%

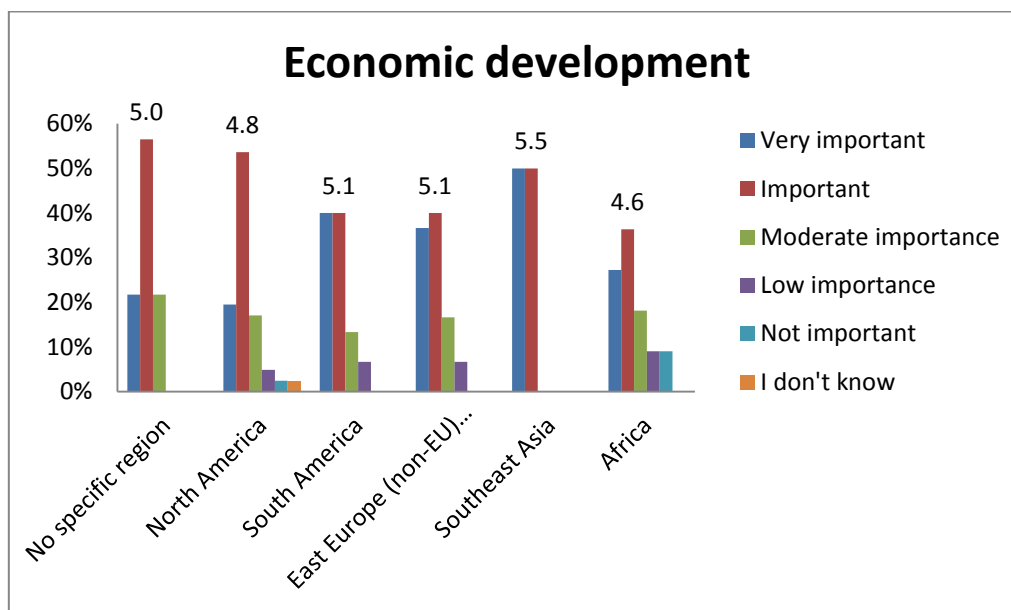
### **Economic development**

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

In the survey the majority of the respondents indicated this opportunity as very important or important for all regions. For Africa also 18% of the respondents indicated this opportunity to be not important or of low importance. Whereas almost no respondent indicated this for the other regions.

One respondent indicated that this biomass is abundant only due to a lack of local incentives to use it for energy. Another respondent indicated that biomass production in the US is helping to revitalize rural communities and provide a small boost to the forest products market that has been lagging in

recent years due to the economic downturn. Supporting strong markets and forestry jobs in turn creates more forests as forest landowners are encouraged to keep their forests as forests, rather than converting to other land uses such as agriculture or commercial development. However, it is also argued that low-value added products that are exported do not promote development.



### Job creation

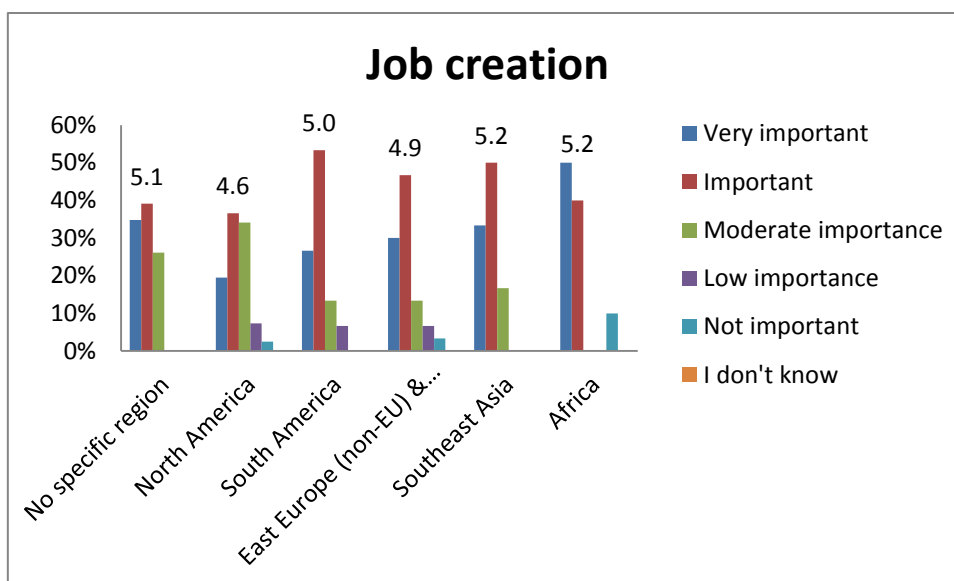
*Biomass export creates/sustains jobs in forestry, agriculture, industry, etcetera.*

In the survey the majority of the respondents agrees that this opportunity is important or very important. However, for North-America only 56% of respondents agreed.

Respondents indicated that it usually concerns non-specialized man force, that only few jobs are created and that it, therefore, is less important. It is also questioned whether biomass export creates more jobs than domestic usage of biomass.

Respondents that answered this question for the region East Europe (non-EU) & Russia indicated that it is not so much about job creation, but about preventing job loss in the forestry and wood processing sector. This sector suffered from a building crisis and lower demand for paper products.

For Africa respondents indicated that when the capacity to grow more biomass can be extended that it should be used domestically to reduce import-dependency and to provide local jobs.

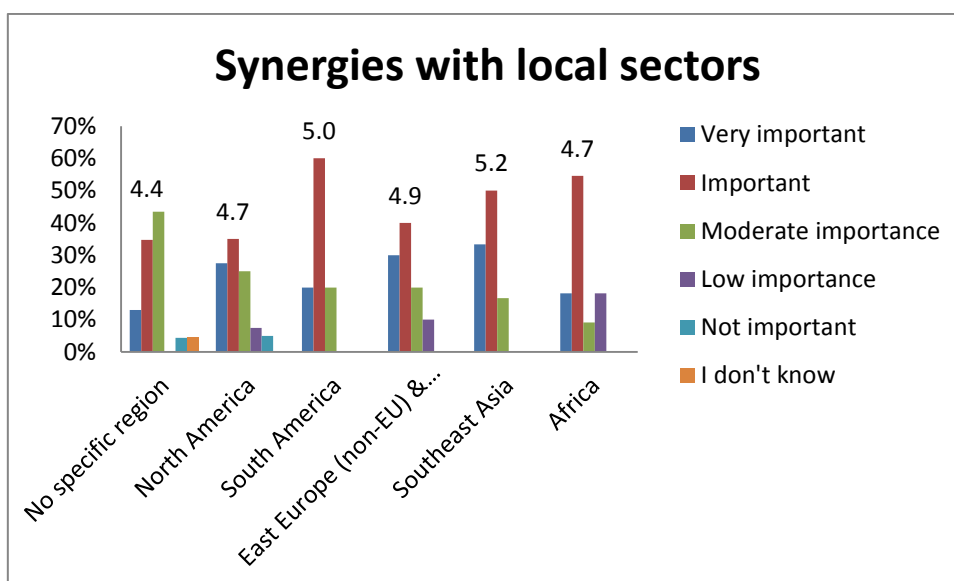


### Synergies with local sectors

*Providing an outlet for biomass residues from agriculture, forestry or the wood processing industry may improve the business case of these sectors.*

Only when the respondents replied with no specific region in mind, only 48% indicated the opportunity to be important or very important. With a specific region in mind, between 63% and 83% of the respondents agreed.

One of the respondents argued that local people may find new economic activities, but that most of the chain actions may be carried out with specific companies which are not always local. Another respondents replied that it might prevent local alternative business cases to be developed, taking into account that export is an easy way out.

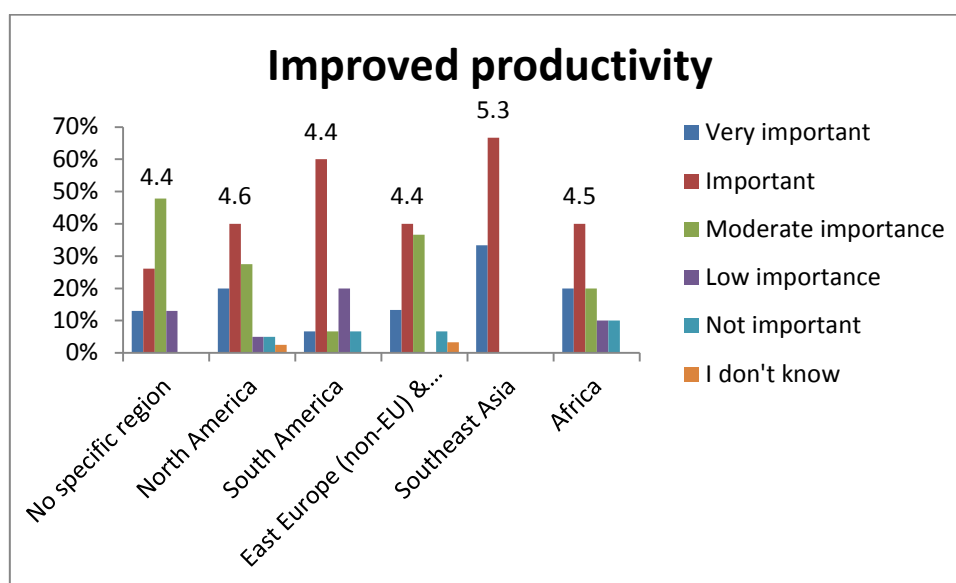


## Improved productivity

*Additional demand may create an incentive to improve productivity of forestry and agriculture.*

Only 39% of the respondents replied that this opportunity is important or very important for sourcing regions when they responded with no specific region in mind. In case they have a specific region in mind, the majority of the respondents agreed that the opportunity is important or very important. For Southeast Asia even 100% of the respondents indicated the improved productivity as being important or very important. However, for South-America and Africa also respectively 27% and 20% of respondents replied that this opportunity is of low importance or not important.

Some of the respondents responded that an improved productivity is something that happens on the longer term.

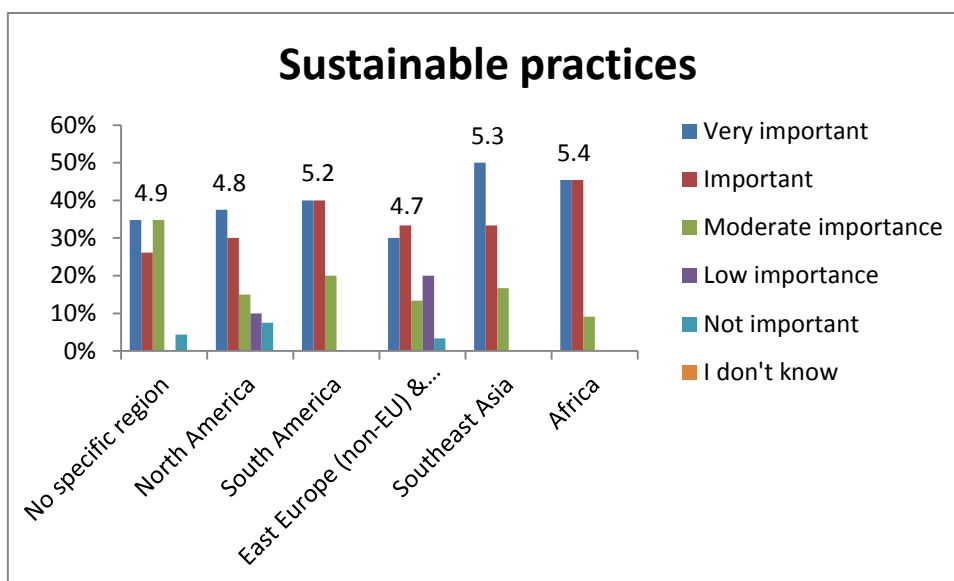


## Sustainable practices

*Demand from outside the region – with specific sustainability requirements or request for sustainability certification – contributes to improved sustainable practices in forestry, agriculture, and industry.*

More than 60% of the respondents indicated this opportunity to be important to very important for the different sourcing regions. However, also 18% and 23% of respondents indicated this opportunity to be of low importance or not important for respectively North-America and East Europe (non-EU) & Russia.

One of the respondents indicated that sustainability practices are dependent on regulations and the capacity of the government to enforce them. And that in underdeveloped regions with scarce governance, it will be more difficult to realize such practices. Also other respondents responded that sustainability will be pushed by legislation.

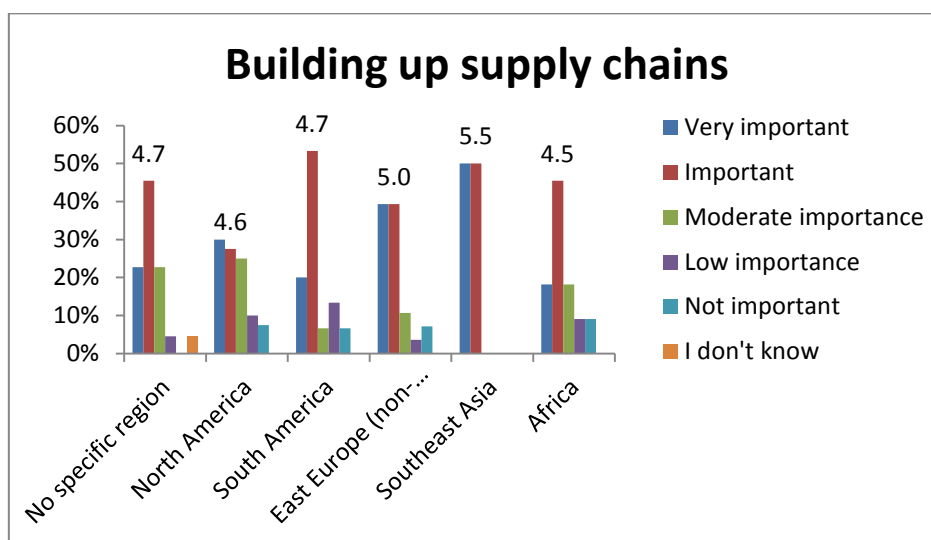


### Building up supply chains

*Setting up biomass supply chains and building infrastructure based on demand from outside the region may trigger local use of biomass for energy in these regions.*

Only for North-America less than 60% of respondents indicated 'building up supply chains' as being an important to very important opportunity.

One respondent indicated that much is possible in Africa since port infrastructures are being developed.



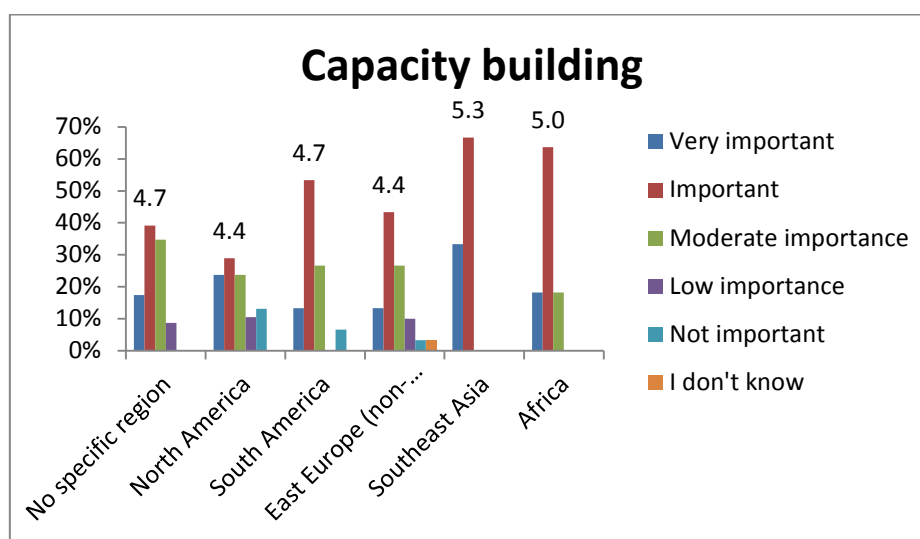
### Capacity building

*Cooperation with sourcing regions adds to capacity building (skilled jobs) and improved know-how and awareness of sustainable/efficient biomass use.*

There is some variations in the responses for this opportunity depending on the region for which this statement is provided. For North-America, East Europe (non-EU) & Russia, and in case no specific

region was selected, 53% to 57% of the respondents indicated this opportunity to be important to very important. For South-America this percentage is 67%, for Africa 82% and for Southeast-Asia it raises further to 100% of respondents. For North-America also 25% of respondents indicated the opportunity to be of low importance or not being important.

A respondent indicated that better trade monitoring might stimulate the general transparency and legality of trade practices of biomass which is especially important in South-America, Africa or Southeast-Asia. Another argument that is raised by one respondent is that biomass in Africa is used to replace coal in their operations. The respondent is concerned that this, economic and sustainable local use which receives no economic subsidies may be threatened by exports to Europe. Such exports would be driven by subsidies in Europe as biomass use there, is not yet economic in comparison with coal or pet coke.



### 2.3. Risks for importing regions in the EU

Statements were provided to the respondents concerning the following topics:

- Domestic potential underutilized;
- Import dependency;
- Impact of subsidies on prices;
- Impact on greenhouse gas balance;
- Longer coal reliance; and
- Business case uncertainty.

An overview of the percentage of respondents that rated the statements concerning risks for importing regions in the EU as important or very important is provided in the table below.



Table 4. Risks for importing regions in the EU

Statement	Percentage important and very important
Domestic potential underutilized	39%
Import dependency remains	44%
Subsidies and prices impacts	61%
GHG emissions related to transport	42%
Longer coal reliance	39%
Business case uncertainty	68%

### **Domestic potential underutilized**

*Domestic potential in the EU may be outcompeted by imports (potentially favoured by subsidies or lower environmental constraints), leaving some of it underutilized.*

From the survey only 39% of the respondents indicated the risk to be important or very important. The main arguments raised by the respondents for this score is the fact that regulations and control keep this risk to a minimum and that demand is higher than supply.

### **Import dependency**

*Relying on imported biomass moves the problem of energy import dependency from one region to another. This presents no real solution in terms of energy security.*

The majority (i.e. 34%) of the respondents from the survey indicated that this risk is of moderate importance. They indicated that diversification can provide additional value for energy systems. However, import is often shifted towards politically more stable regions. Also, respondents indicated that local resources should be utilized first.

### **Impact of subsidies on prices**

*Subsidies in the EU renewable energy sector may drive up world market prices of feedstocks for other sectors.*

61% of the survey respondents agree that this risk is important to very important. Several respondents agree that you can't discuss this without applying the same principles to fossil fuels.

### **Impact on greenhouse gas balance**

*Pretreatment and long distance transport movements consume substantial amounts of energy and reduce the greenhouse gas advantage of bioenergy.*

From the questionnaire 66% of the respondents indicated this risk to be of moderate importance to being very important. Respondents noted that local use is always better and that 'substantial' might not be the correct term, however, that the amounts of energy and GHG emissions is large. They also argue that it depends on the type of transport and that in some cases large distances by truck within a country might even be worse than imported biomass using a ship. However, respondents also noted that more research is needed in this field. Also, some respondents argued that this is not a risk if it is taken into account in the sustainability criteria for biomass.

### Longer coal reliance

Support for pellet co-firing may extend the life of older coal power facilities, or encourage investments in new coal facilities and therefore lead to a longer reliance on coal for power production.

Only 39% of respondents from the survey rate this risk as being important or very important.

Different arguments which are also dependent on the region are raised by the respondents to indicate the lower importance of this risk:

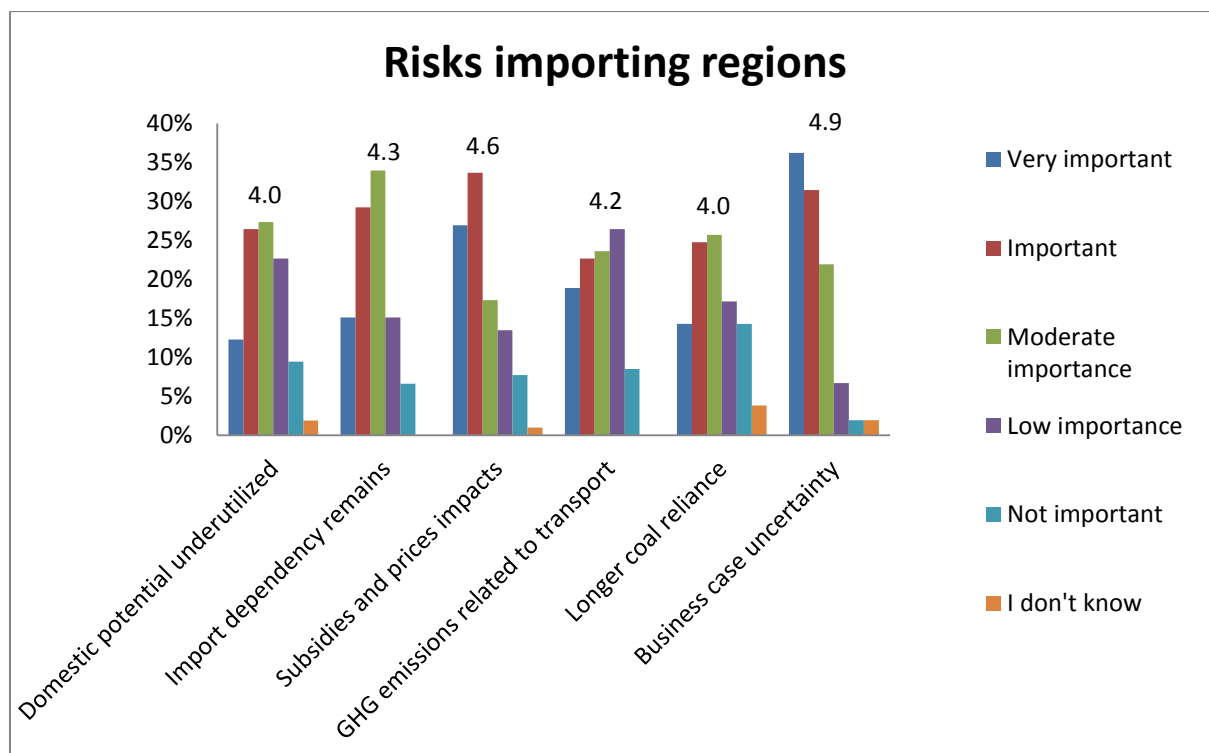
- Coal plants will remain working, with or without pellets. Whereas a trend of full conversion from coal to pellets is noticed in some other regions. For example in the Balkans coal power plants must be shut down.
- In Finland fuel peat is used and pellets are mainly used for heat production.
- This can easily be prevented by policy.

### Business case uncertainty

Difficult investment climate because there is no long-term stability in terms of policies (both in the EU and in sourcing regions) and prices (fluctuating fossil fuel prices).

68% of the respondents from the survey agree that this is an important risk for importing regions in the EU.

A graphical summary of the answers concerning risks for importing regions in the EU is provided in the figure below.



Other risks for importing regions that are mentioned by the respondents are:

- GHG emissions related to time period for regrowth to occur of harvested product and impact on biodiversity.
- Imports undermine the EUs climate and renewable efforts.
- There is a risk for colonization with bioenergy as driving force.

## 2.4. Risks for sourcing regions

An overview of the responses for the different risks per sourcing region are provided in the tables below. Table 5 provides the number of respondents that indicated a risk to be important or very important and table 6 provides the number of respondents that indicated a risk to be of low importance or of not being important.

*Table 5. Risks for sourcing regions in the EU – Important or Very Important*

Region (#respondents)	North-America (37)	South-America (15)	East Europe (non-EU) & Russia (26)	Southeast-Asia (5)	Africa (14)	No specific region (21)
Overexploitation	38%	67%	69%	80%	85%	67%
Displacement	23%	40%	62%	80%	62%	57%
Access to land	11%	60%	38%	100%	69%	48%
Renewable energy opportunities	23%	20%	42%	60%	69%	43%
Large players vs smallholders	26%	73%	65%	100%	85%	43%
Low value-added exports	21%	53%	54%	80%	62%	50%
Unstable EU policy	67%	79%	58%	60%	85%	71%

*Table 6. Risks for sourcing regions in the EU – Low Importance or Not Important*

Region (#respondents)	North-America (37)	South-America (15)	East Europe (non-EU) & Russia (26)	Southeast-Asia (5)	Africa (14)	No specific region (21)
Overexploitation	43%	27%	15%	0%	8%	10%
Displacement	57%	20%	19%	20%	0%	10%
Access to land	71%	13%	35%	0%	0%	14%
Renewable energy opportunities	60%	33%	38%	20%	15%	29%
Large players vs smallholders	53%	0%	15%	0%	0%	14%
Low value-added exports	44%	27%	12%	0%	23%	30%
Unstable EU policy	8%	7%	8%	0%	0%	10%

## Overexploitation

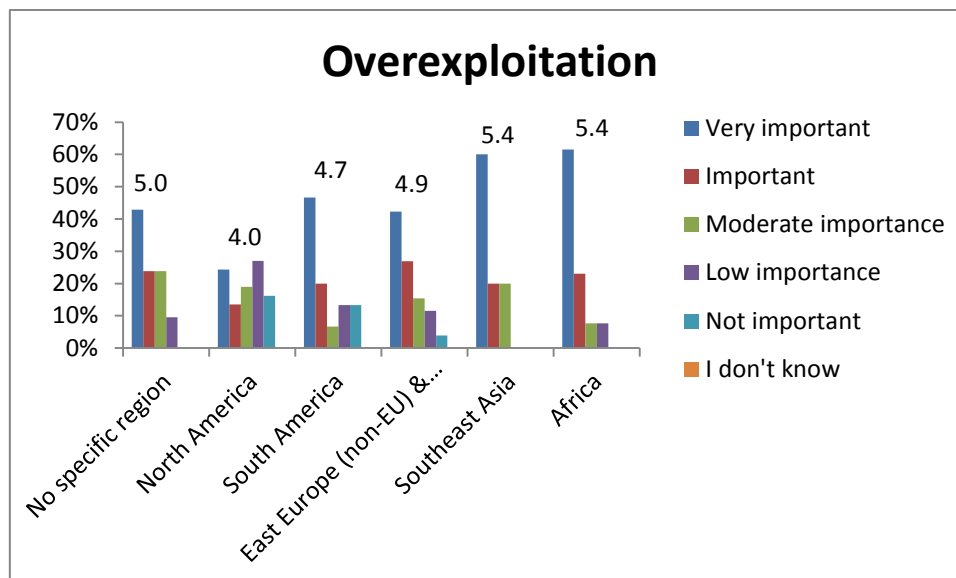
*Additional demand for tradable biomass generates a risk of overexploitation in forestry and agriculture. Without precautions this may result in biodiversity loss and a loss of carbon in forests and agricultural soils.*

Only for North-America the respondents indicated that this risk is not important. For the other regions more than 65% of respondents indicated this risk to be important to very important. However, for South-America and East Europe (non-EU) & Russia also respectively 27% and 15% of the respondents indicated this risk to be of low importance. For Southeast-Asia and Africa respondents were more unanimous.

Also from the comments provided by the respondents that answered the question for North-America it can be concluded that they agree that overexploitation can be managed and that there is no problem when sustainability guidelines receive strict attention. The respondents also point out that the US biomass industry uses forest residues and unmerchantable saw timber which is unwanted or unusable by other industries. Therefore, the higher-value industries drive harvesting and there has not been an increase or in other words a risk of overexploitation.

In Finland forest legislation guarantees that no overexploitation takes place. Other respondents from the survey also indicated that this issue is especially important in low development countries where legislation and sustainability criteria are harder to implement.

One of the respondents that answered with Africa in mind, indicated that especially the displacement effects (land taking, diversion of biomass and water) are likely to occur.

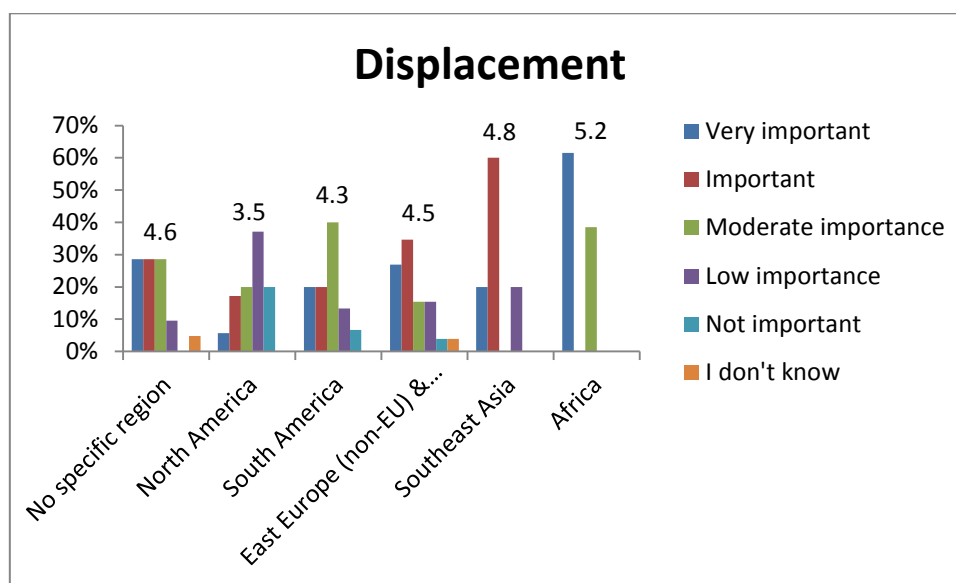


## Displacement

*Subsidized demand from the EU may increase local prices of biomass feedstocks and land. So export demand may compete with local use, drawing away feedstocks and land from local applications (energy, materials, food).*

For East Europe (non-EU) & Russia, Southeast-Asia and Africa the majority of the respondents indicated this risk to be important to very important. Also when the respondents had no specific region in mind, the majority indicated this risk to be important. For North-America and South-America respectively 23% and 40% of the respondents indicated this risk to be important or very important.

For North-America some respondents replied that displacement is taking place for certain industries such as pulp & paper. Another respondent answered that the subsidies power generators receive from EU governments are designed to cover the costs between securing supply of renewables and purchasing coal. Therefore, the subsidies do not increase the paying capacity of US biomass producers.

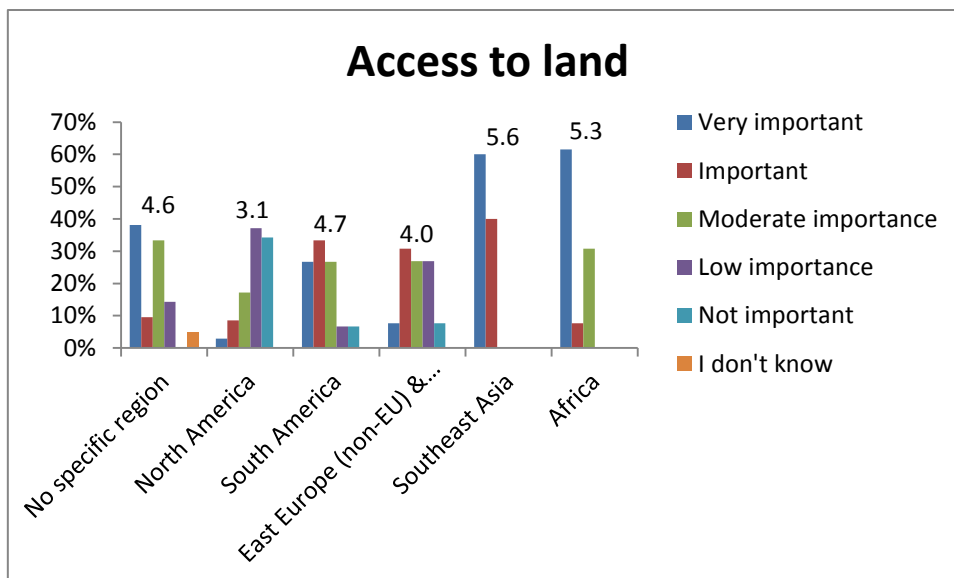


### Access to land

*In relation to the above, there is a risk of land claiming of large players, reducing the access to land for indigenous people or smallholders.*

For this statements you can notice large differences in responses depending on the region. For North-America 71% of respondents indicated that this risk is of low importance or not important. For East Europe (non-EU) & Russia ca. 35% of the respondents indicated the risk to be important, however, also 35% of respondents indicated it to be of no or low importance. For South-America, Southeast-Asia and Africa respectively 60%, 100% and 69% of respondents indicated the risk to be important to very important for the sourcing region.

Respondents indicated in the arguments section that this is especially important in Africa, Asia and South-America.

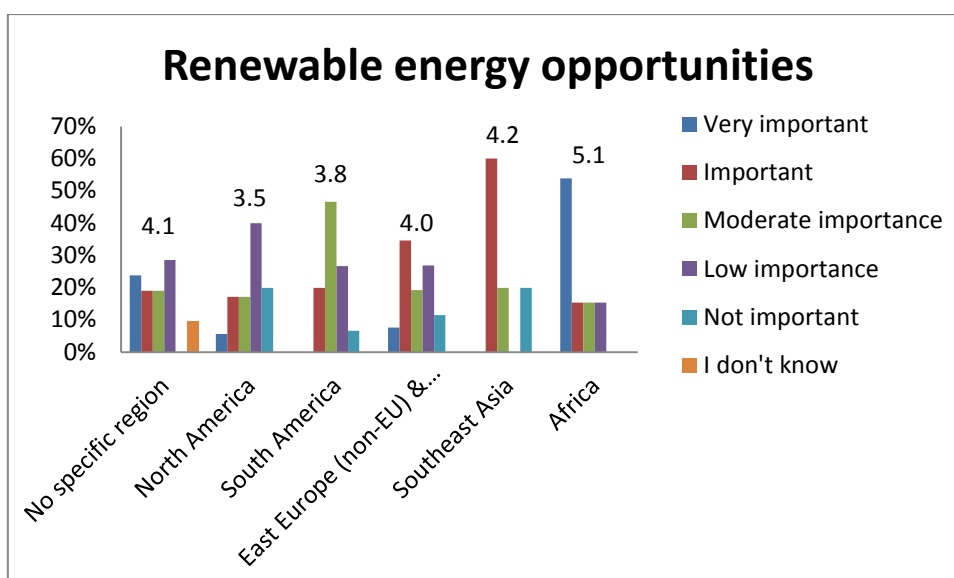


### Renewable energy opportunities

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

Responses on the importance of this risk for sourcing regions were diverse for all regions. However, for North- and South-America it is clear that the majority of the respondents does not rate the risk as being important, only 20-23% of respondents indicated it as being important or very important.

Some respondents replied that the opposite is the case and that many regions started as exporting regions and that this 'security of supply' triggered national usage. Another respondent indicated that this is not noticeable in Finland. For Latvia, a respondent indicated that, export is higher than import, although the export value is half of the import value, but there is a lack of interest from the government for renewable energy.



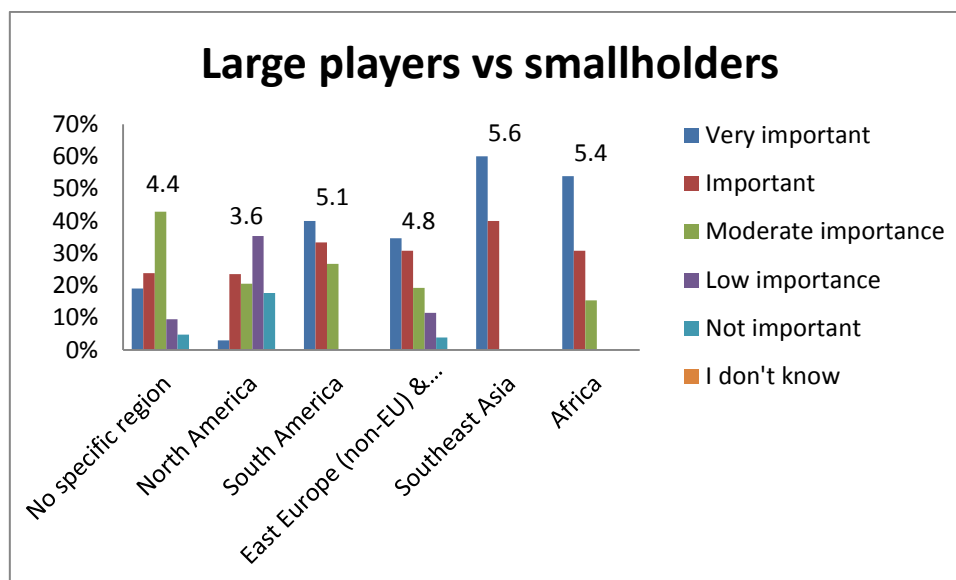
## Large players vs smallholders

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

For most regions the respondents of the survey agree that the risk is important or very important. Only for North-America the majority of the respondents indicated that there would be no risk for limited opportunities for smallholders to access the new export markets.

One respondent that provided an answer to this statement with North-America in mind indicated that smallholders could participate through cooperatives or via dealers. Another respondent indicated that many of the smallholders sell to pellet plants.

Some respondents also indicated that the development of commodities helps smallholders to access the market. Whereas other respondents replied that international trade requires a certain expertise that small players might not have. Also, a respondent answered that economies of scale are key for a profitable biomass trade and these are only reserved for big players.



## Low value-added exports

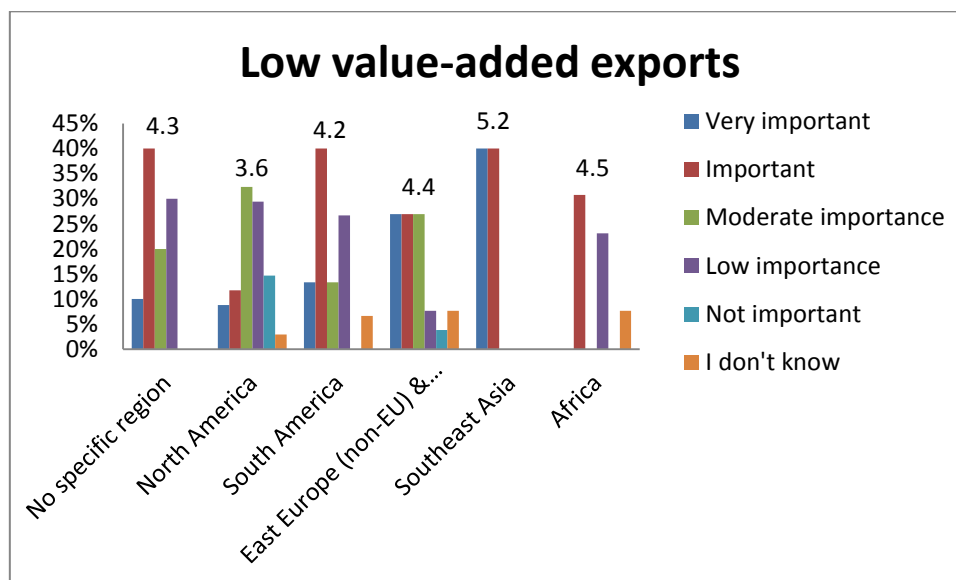
*Export is generally restricted to low value-added products, limiting the economic impact in sourcing regions.*

Only for Southeast-Asia 80% of respondents indicated this risk to be important to very important. For the other regions this percentage is lower, however, still more than 50%. Only for North-America only 21% of the respondents indicated it as an important risk.

One of the respondents replied that this is true for a lot of imported resources in the EU and not only for biomass. Another respondent indicated that this is especially important on the long run. Whereas one respondent pointed to the fact that although the added value might be low, if the volumes are large, it can still have a large economic impact.

A respondent that replied with Europe in mind, indicated that free trade is needed in order to optimize the production and refinement. And another respondent mentioned that this is only a problem to the extent that energy wood competes with industrial wood.

A respondent indicated that it is unlikely that high value-added products are produced from the same biomass as low value-added products. However, indirect impacts are important in this case.



### Unstable EU policy

*Changing support frameworks and requirements (quality and sustainability) in the EU harm the business model in sourcing regions.*

For all regions the majority of the respondents agreed that this risk is important to very important.

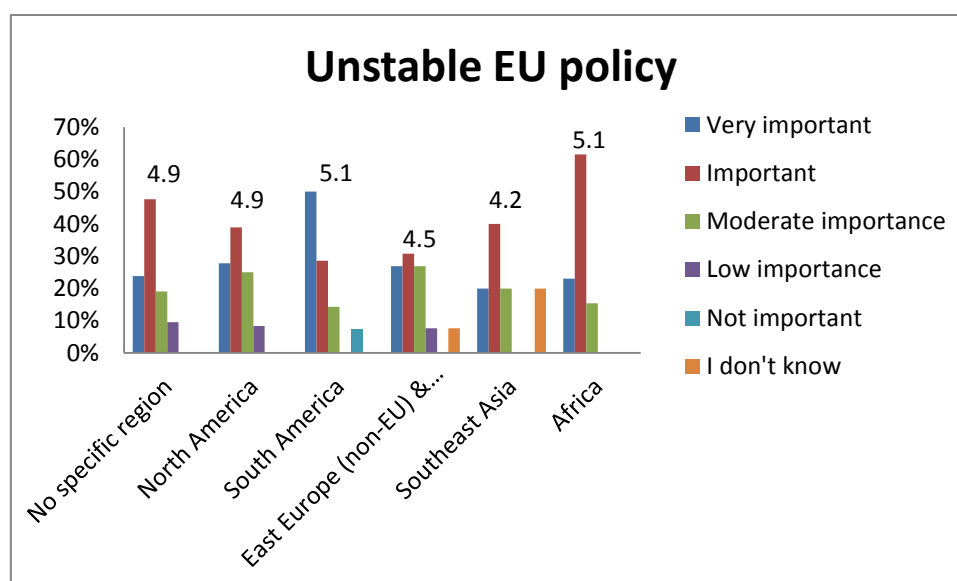
One respondent indicated that this statement is true, however, that business models quickly adapt to where the money is. Other respondents indicated that a stable policy is important to emerging industries to ensure confidence in the marketplace for investors. Especially taking into account that long term contracts are often required before investments are done in new biomass production lines. It is also pointed out by respondents that especially NGOs have a large impact on authorities.

In general it can be concluded that respondents answered differently for North-America in comparison with the other regions, except for the last statement (i.e. unstable EU policy).

Other risks that are mentioned by the respondents are:

- Lack of sustainable forest management (SFM) requirements for traded biomass could hamper the introduction of SFM practices locally.
- Biomass development needs to be in tandem with agricultural development, not compete with it.





### 3. Barriers for international trade

Junginger, et al. (2011)<sup>1</sup> defines bioenergy trade barriers as 'any issue that either directly or indirectly hinders the growth of international trade of biomass commodities for energy end-use'. It is difficult to draw a clear line what (indirect) trade barriers are, and what general barriers hamper the use of biomass (irrespective of being traded or used domestically).

We start from this reference, although the set-up was broader, including trade of ethanol, biodiesel and wood pellets, while the BioTrade2020+ project focuses on trade of lignocellulosic biomass.

An overview of the percentage of respondents that rated the statements concerning barriers for sustainable biomass trade as important or very important is provided in the table below.

Table 7. Barriers for sustainable biomass trade

Statement	Percentage important and very important
<b>National/regional protectionist policies and trade tariffs</b>	
Domestic bioenergy is favoured over imports in EU Member States' policies.	47%
Import tariffs for biomass commodities to the EU.	47%
Subsidies for exported biomass and export tariffs in certain sourcing regions.	38%
<b>Technical standards</b>	
Technical standards are too strict for certain feedstock.	32%
Diverging technical quality standards between countries/regions or even companies.	51%
Uncertainty about standards that are still in negotiation phase.	55%

<sup>1</sup> M. Junginger et al. (2011) *Barriers and opportunities for global bioenergy trade*. Energy Policy 39 (2011) 2028-2042, doi:10.1016/j.enpol.2011.01.040.

<b>Logistics</b>	
Lack of roads and port infrastructure in sourcing regions	65%
Lack of port infrastructure in Europe	32%
<b>Safety and sanitary/phytosanitary requirements</b>	
Varying or inconsistent safety requirements for traded biomass.	44%
Varying or inconsistent sanitary/phytosanitary requirements.	55%
<b>Sustainability criteria &amp; certification systems</b>	
Different sustainability requirements in EU Member States for solid biomass (not EU-wide).	78%
Proliferation of certification systems.	64%
Differences in sustainability governance of agriculture and forestry policies (legislation and enforcement) by country/region.	74%
Different rules for domestic feedstock vs imports.	47%
Sustainability criteria only required for energy and not for other applications of biomass.	66%
Lack of sustainability criteria for fossil fuels creates an unlevel playing field.	69%
Certification systems don't include sufficient aspects of sustainability.	39%
WTO doesn't allow specific sustainability requirements (like social criteria).	41%
Changing sustainability requirements creates uncertainty for stakeholders.	67%
<b>Global classification and trade statistics</b>	
No clear view on biomass trade statistics, in particular which part is used for energy.	55%
Problems with reporting of trade flows and unreliable statistics.	55%
<b>Public knowledge &amp; public opinion</b>	
Bad public image (towards public, media and policy makers) due to claims of unsustainable practices for biofuels.	80%
Insufficient knowledge of public/media/policy makers.	81%

## National/regional protectionist policies and trade tariffs

### ***Measures to promote domestically produced biomass for energy purposes in EU Member States' policies***

In the survey it was asked whether the respondents rated the barrier that domestic bioenergy is favoured over imports in EU Member States' policies as being important. Almost half of the respondents rated the barriers as important or very important. However, based on the arguments respondents gave, it seems that the respondents don't see it as a big issue.

### ***Import tariffs for various biomass commodities to the EU***

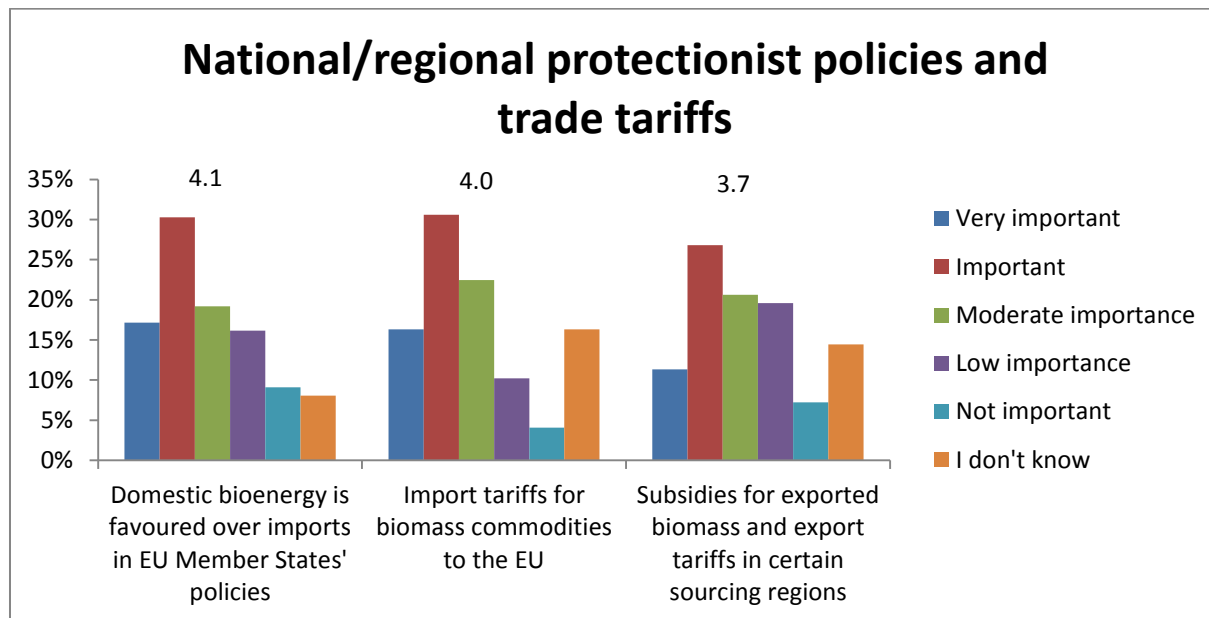
47% of respondents rated this barrier as important or very important. However, also 16% of respondents responded 'I don't know'.

### ***Subsidies for exported biomass/biofuels and export tariffs in certain sourcing regions***

The majority of the respondents (i.e. 48%) rated this barrier as being of moderate importance or important.

Some comments respondents gave:

- Subsidies and tariffs must promote easy and fair trade between countries and regions.
- Not really an issue in North-America.
- Not an issue in regions where large export occurs.



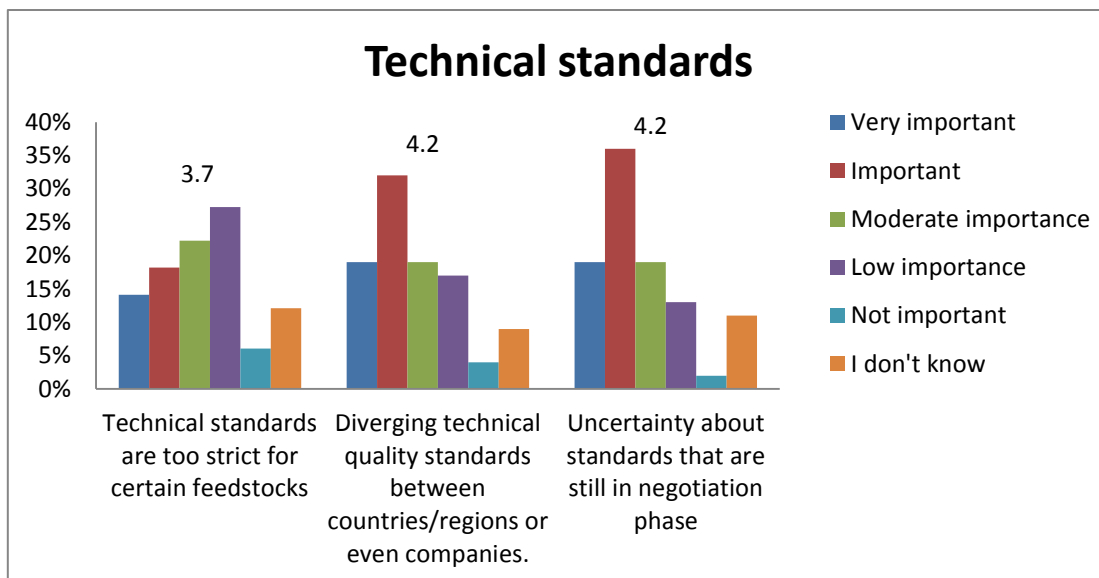
### Technical standards

In terms of international trade, there could be three issues hampering trade:

1. technical standards are made with specific feedstocks in mind, therefore imposing too strict requirements for certain other feedstocks,
2. technical quality standards diverge between countries/regions or even companies, thereby creating a barrier for trade,
3. uncertainty about standards that are still in negotiation phase.

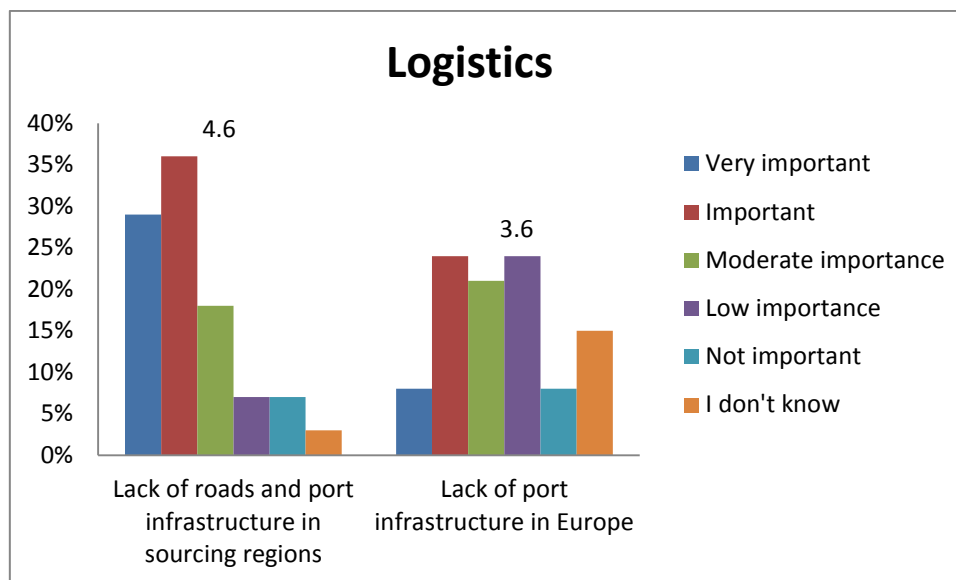
The majority of the respondents agree that the 2<sup>nd</sup> and 3<sup>rd</sup> barrier is important or very important. One respondents argued that not the technical standard divergence is a barrier, but the label that is put on the products (e.g. a biofuel in Ukraine is a waste product in Slovakia). Many of the respondents mentioned the importance of standardization. For the 3<sup>rd</sup> barrier the respondents agree that uncertainty is very important, however, they also answered that this uncertainty is mainly concerning sustainability issues and not concerning technical specifications. Also, respondents indicated that industry can be involved in the negotiation phase, however, they argue that more involvement from industry is needed.

Only 32% of the respondents rated the 1<sup>st</sup> barrier as important or very important. From the arguments it can be concluded that the respondents feel that technical standards are needed in order to guarantee sustainable practices and to realize commoditization of biomass. Also, they argue that technical standards are relatively easy to meet by large players.



## Logistics

The lack of roads and port infrastructure in sourcing regions is seen as important or very important by 65% of the respondents. However, some respondents indicated that this is not a problem in the US. The lack of port infrastructure in Europe is less important according to the respondents. Only 32% of the respondents indicated this barrier to be important or very important. However, also 15% answered that they didn't know whether this barrier is important. Also, some respondents indicated that this is mainly a problem for the Southern part of Europe.



In the survey we also asked the respondents to provide other logistical barriers. Some of the barriers mentioned by the respondents are the following:

- Lack of rail facilities for long distances;
- Limited experience in handling solid biofuels in many regions;
- Lack of infrastructure between the port and the plant location (even when nearby);
- Lack of needed harvesting equipment;

- Lack of system approach;
- Lack of public support for storage and logistics of biomass.

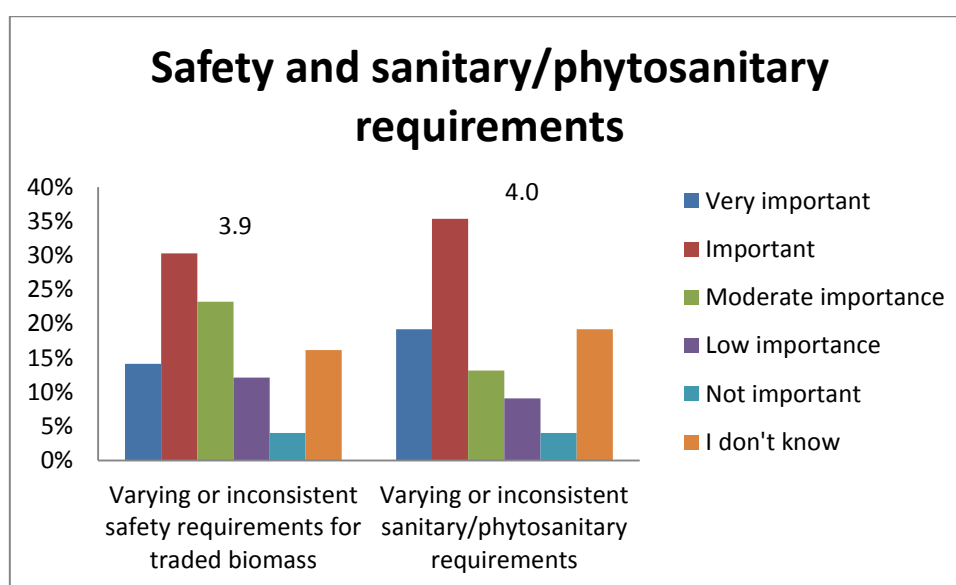
## Safety and sanitary/phytosanitary requirements

### *Safety requirements*

The barrier was indicated to be important by 30% of the respondents. From the respondents 14% rated the barrier as being very important and another 23% rated it as being of moderate importance.

### *Sanitary and phytosanitary requirements*

The majority (i.e. 55%) of the respondents agrees that this barrier is important to very important. However, also one fifth of the respondents answered 'I don't know' on the statement.



## Sustainability criteria and certification systems

### *Different sustainability requirements*

Almost 80% of the respondents agree that this barrier is important or very important. Only 5% indicated this barrier as not important or being of low importance. Also different respondents argued that it is difficult to have one set of criteria that is applicable on a EU level or to take into account country-specific criteria without being too bureaucratic.

### *Proliferation of certification systems*

From the online survey, 64% of respondents agreed that this barrier is important or even very important. Respondents argued that it sounds logical that one searches for the least demanding scheme as this might also be the cheapest one. However, respondents also noted that these might not prevent for the largest risks.

***Differences in sustainability governance***

Also this barrier is seen as one of the most important ones. Almost 75% of respondents agreed that this barrier is important to very important.

***Different rules for domestic feedstock vs import***

In comparison to the previous barriers concerning sustainability criteria and certification systems, only 47% of the respondents indicated this barrier as being important or very important. Some respondents argued that the same rules should apply. Other respondents mentioned that rules for domestic feedstock might be more strict, however, there is no barrier for trade in that case.

***No binding sustainability criteria for other biomass applications***

From the respondents, 66% indicated that this barrier is important or very important.

***No sustainability criteria for fossil fuels***

From the respondents, almost 70% indicated this barrier as being important or very important. However, also 13% of the respondents indicated this barrier to be not important. Various respondents indicated that fossil fuels are unsustainable and that it therefore would be useless to demand for criteria.

***Sufficient sustainability requirements in certification systems***

The opinions concerning the importance of this barrier are very diverse.

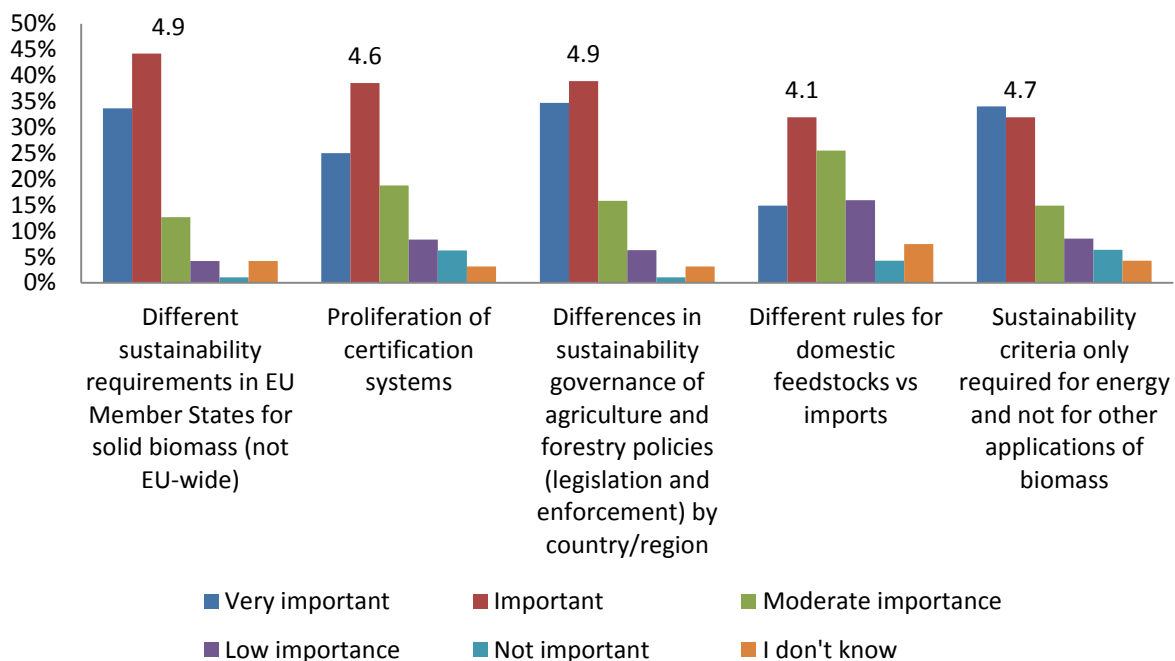
***WTO may not allow specific sustainability requirements***

Only 41% of the respondents argued that this barrier is important to very important. Also 14% of respondents replied 'I don't know' to this statement.

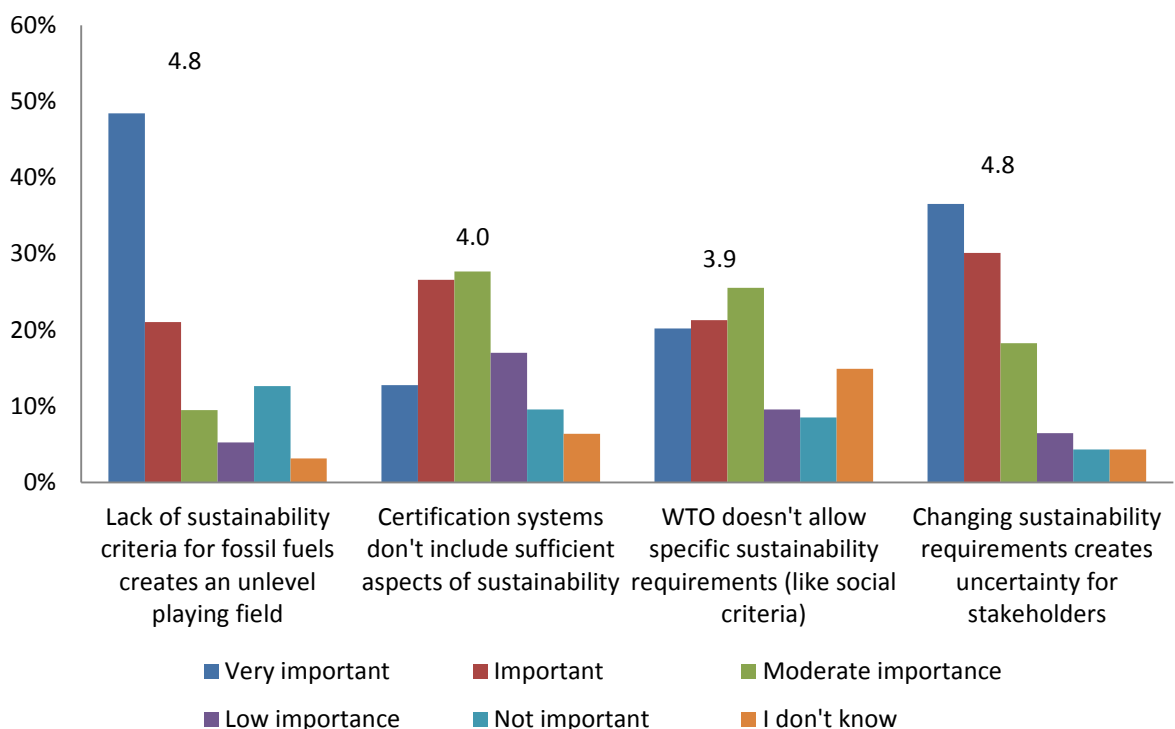
***Changing sustainability criteria***

More than 65% of the respondents indicated that this barrier is important or very important. Some respondents argued that they do not know any case where an effect was noticed. Other respondents suggested to implement sustainability criteria stepwise.

## Sustainability criteria & certification systems (1/2)



## Sustainability criteria & certification systems (2/2)



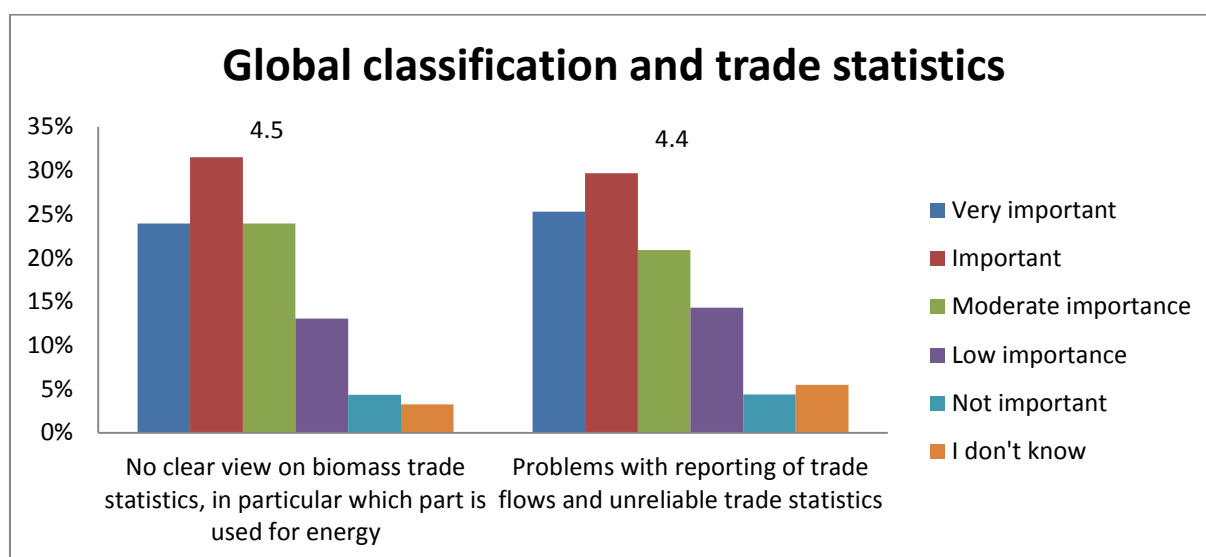
### Global classification and trade statistics

For the on-line survey we asked if the following issues represent a trade barrier:

- There is no clear view on biomass trade statistics, in particular which part is used for energy.
- There are problems with reporting trade flows, making some trade statistics unreliable.

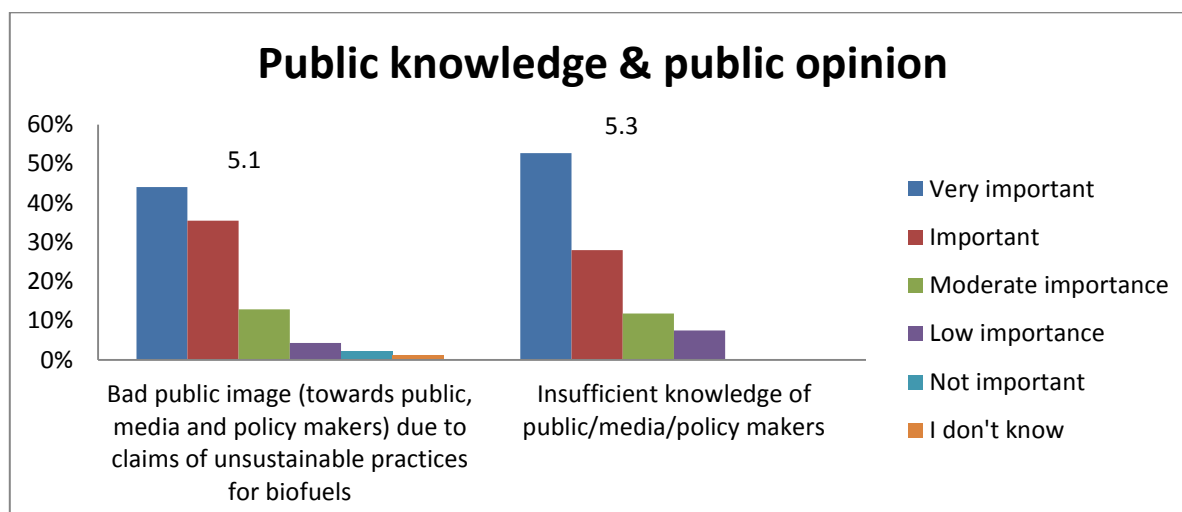
For both statements 55% of the respondents agreed that the barrier is important or very important.

Opinions concerning the availability of statistics are somewhat diverse. Several respondents argued that information is important and some even indicate that this information is already available, however, the impact on trade is questionable.



### Public knowledge and public opinion

For both the public image and the lack of public knowledge, 80% of the respondents indicated the barrier to be important to very important. From the arguments it seems that many respondents agree that actions should be taken to improve the image of biofuels/bioenergy and that mainly NGO influence media. Also, respondents argue that more and better education and training is needed.





#### 4. Key principles for sustainable biomass trade

For a long term trade strategy, a number of key principles need to be agreed upon with different stakeholders which are a prerequisite to have sustainable biomass trade.

An overview of the percentage of respondents that agreed or totally agreed with the statements concerning key principles for sustainable biomass trade is provided in the table below.

Table 8. Key principles for sustainable biomass trade

Statement	Percentage agree or totally agree
Trade should be based on sustainable and legally acquired biomass sourcing (traceable and verifiable).	97%
Full value chain (from feedstock production up to end conversion) as a basis for performance assessments (e.g. energy, GHG).	88%
Local use of biomass should have priority over trade. Displacement as a result of trade demand should be avoided.	76%
Displacement/indirect effects in the sourcing regions should be taken into account in support mechanisms for biomass/bioenergy.	75%
Markets should be open (WTO compliant), and there should be no discrimination in market access.	80%
Trade should follow the principles of fair trade, i.e. all actors in the value chain receive a fair share of the benefits.	86%
Markets should be transparent, with clear reporting and monitoring systems.	90%

##### Sustainable and legal biomass sourcing

In the survey 97% of the respondents agreed or fully agreed with the principle.

##### Full value chain as a basis for performance assessments

In the survey 58% of respondents totally agreed and another 32% agreed with the statement that the full value chain has to be used as a basis for performance assessment.

Although most respondents agree that the full value chain has to be taken into account, it is also questioned whether biomass producers can have an influence on the previous steps within the value chain.

##### Local use of biomass should have priority over trade

In the online survey 76% of respondents agreed or totally agreed, 22% was neutral and 2% answered 'I don't know'.

##### Displacement/indirect effects should be taken into account

75% of the respondents from the online survey agreed or fully agreed with this principle.

Respondents argued that more studies are needed in order to identify the best way to put this into practice.

### No discrimination in market access

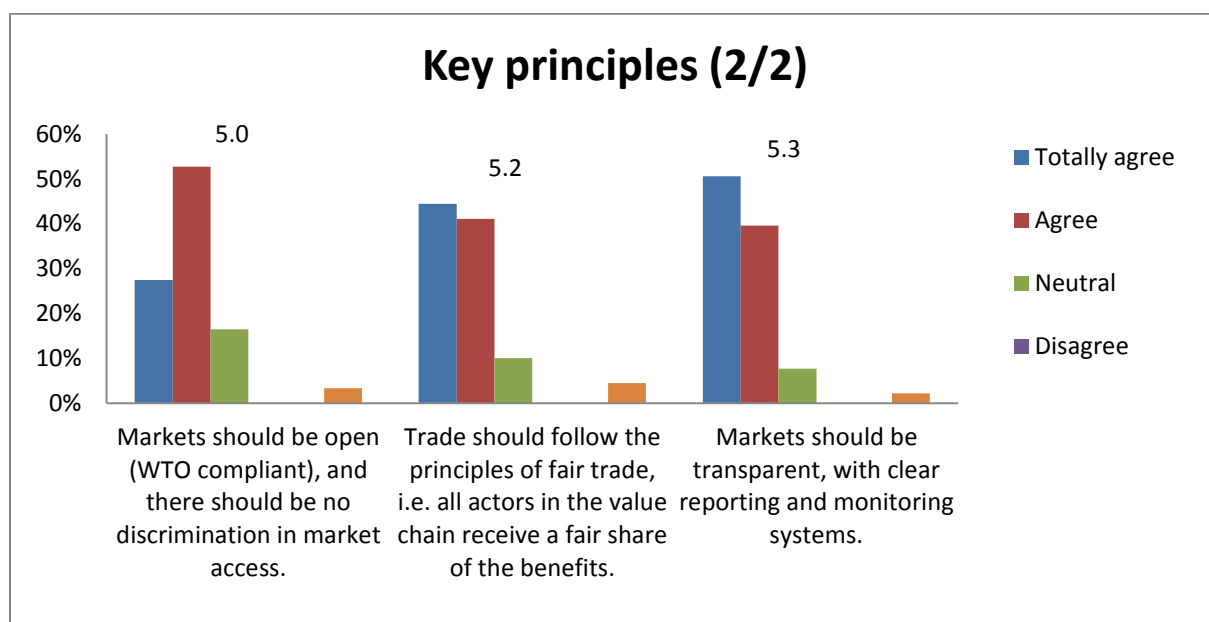
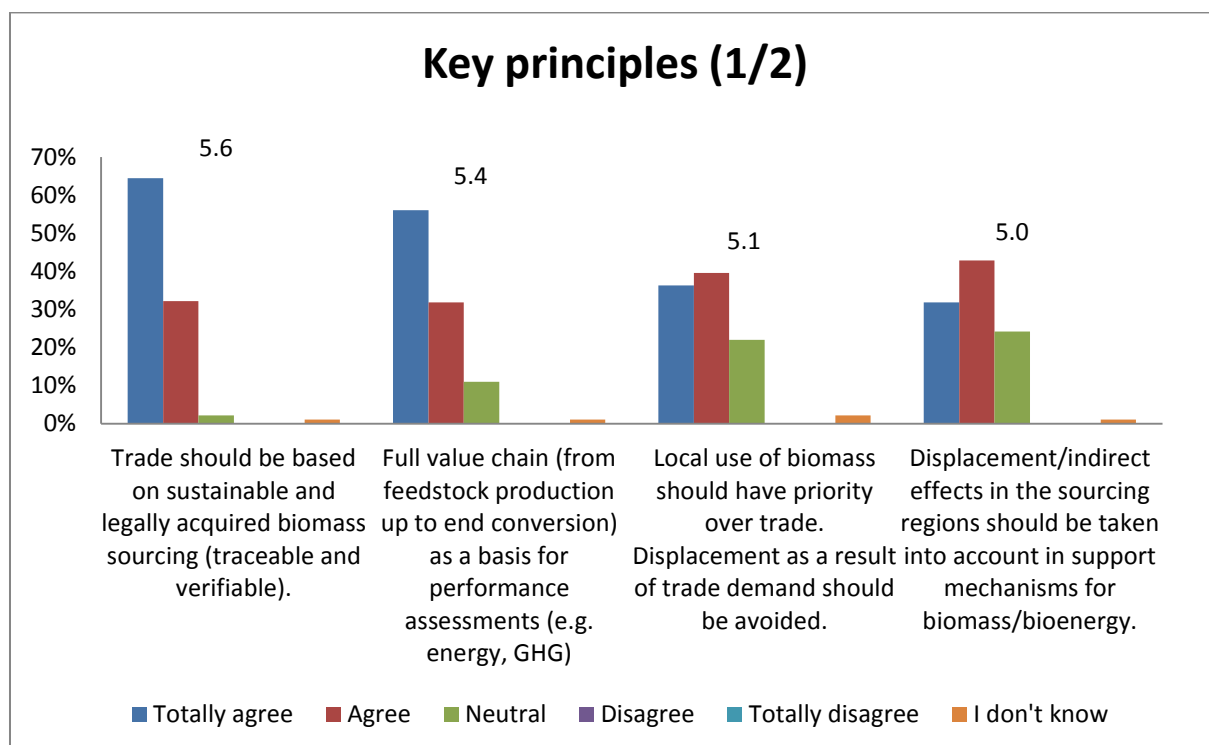
From the online survey 80% of the respondents agreed or fully agreed with this principle.

### Fair trade

Also with this principle the majority (i.e. 86%) of the respondents agrees or fully agrees. However, various respondents indicated that 'fair' should be better defined.

### Transparent markets

90% of the respondents agreed or fully agreed with the principle that markets should be transparent.



Other principles that are mentioned by the respondents are the following:

- Biomass usage should follow an integrated path and applications other than energy should always be considered.
- One should focus on the main demands such as GHG emission reduction and reduction of fossil fuel usage. Other sustainability demands are as relevant as they are to other trade chains (e.g. coffee and bananas).
- It is important to have a multi-stakeholder definition of sustainable practice.

## 5. Suggested policy options for biomass imports

Policy recommendations will be developed further on in the project and discussed with stakeholders. At this stage, we selected a number of policy options in relation to the key principles. These are included in the on-line survey for feedback. Mind that these are to be considered as *statements* on which people can react.

An overview of the percentage of respondents that agreed or totally agreed with the policy options is provided in the table below.

Table 9. Policy options (EU) for biomass imports

Statement	Percentage important and very important
<b>Sustainability criteria for bioenergy</b>	
Harmonized/common binding sustainability criteria are needed on EU level, also for solid and gaseous biomass for energy.	85%
Requirements should go further than the current RED criteria for biofuels (greenhouse gas emissions, biodiverse land, high carbon stock land).	69%
When forestry biomass is used, a proof of sustainable forestry management (e.g. FSC, PEFC) should be required.	90%
The EU should put more dedicated efforts in cooperation/good practice exchange with sourcing regions towards sustainable practices in biomass production and harvesting, and capacity building.	86%
<b>Displacement/indirect effects</b>	
Certain types of feedstock that have higher risks of indirect effects/displacement should be excluded from support, or support can be capped to a certain amount of feedstock.	80%
There should be incentives for practices that avoid/reduce negative indirect effects. The EC should clearly define such practices.	80%
Indirect effects should be quantified and included in value chain calculations (e.g. in terms of GHG balance).	72%
<b>Standards &amp; labelling</b>	
Technical standards for traded biomass should be agreed at international level, e.g. ISO.	85%
All wood-derived products (i.e. materials and energy carriers) should be labelled to indicate if they come from legal and sustainable forests or not.	84%

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**Monitoring**

Better monitoring systems with distinct classifications are needed for international trade flows of wood and other lignocellulosic products. 83%

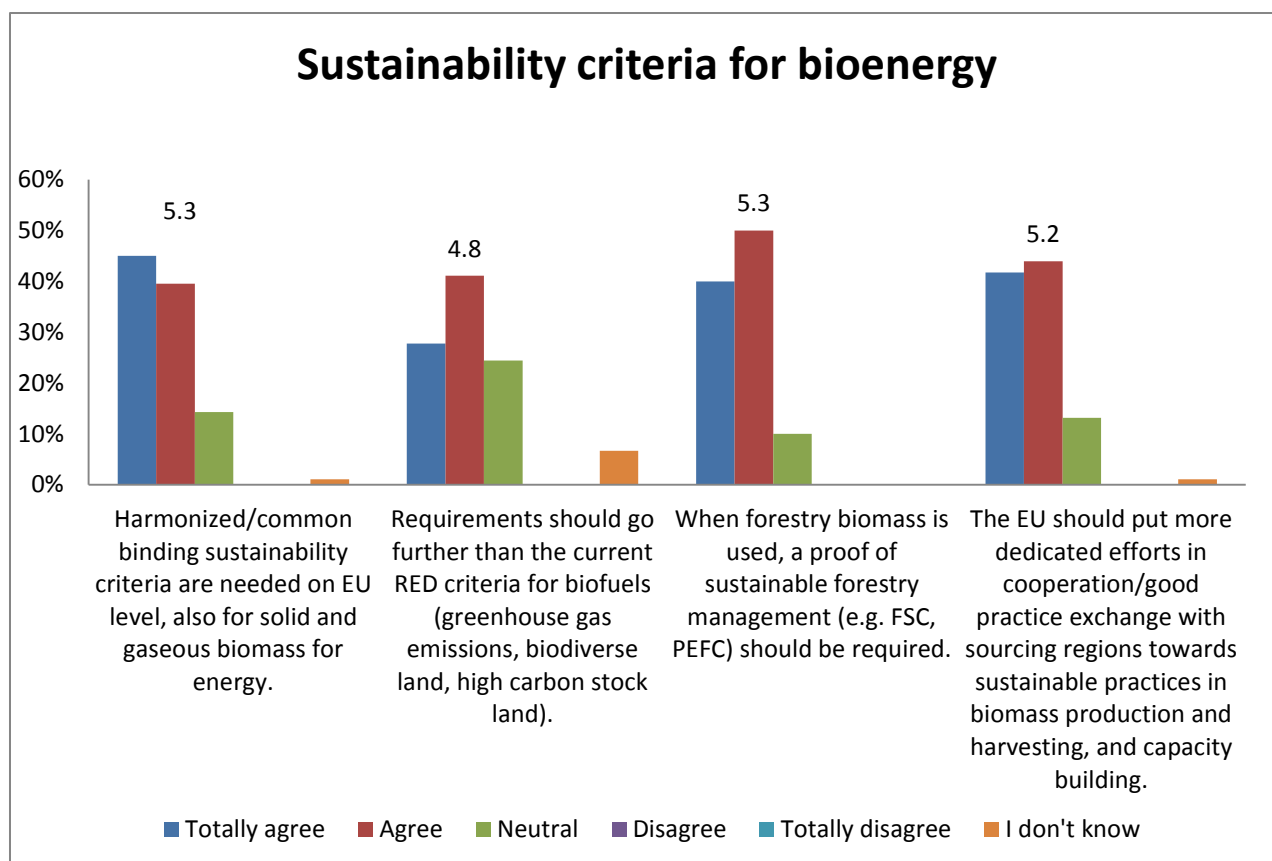
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**Sustainability criteria for bioenergy**

- Harmonized/common sustainability criteria for bioenergy are needed at EU level, not only for biofuels/bioliquids (as foreseen in the RED), but also for solid and gaseous biomass for energy. Different rules for different applications, or differing Member States rules results in market distortions. Towards the future also non-energy applications (bio-products) should be envisaged.
- The current sustainability criteria for biofuels/bioliquids in the RED (greenhouse gas emissions, biodiverse land, high carbon stock land) are mainly designed with agricultural land use in mind. Requirements for solid biomass – often related to forestry practices - should go further than the current RED criteria for biofuels.
- When forestry biomass is used, a proof of sustainable forestry management (e.g. FSC, PEFC) should be required.
- The EU should put more dedicated efforts in cooperation/good practice exchange with sourcing regions towards sustainable practices in biomass production and harvesting and capacity building.

More than 85% of respondents agree with the 1<sup>st</sup>, 3<sup>rd</sup> and 4<sup>th</sup> suggested policy option concerning sustainability criteria. Only with the second option (i.e. requirements should go further than current RED criteria) fewer respondents agree. However, still 70% of respondents agree or totally agree with this option. Despite the large number of respondents that agree with the different policy options, some comments were provided:

- Biomass is not a common product across the EU and, therefore, it is hard to provide common sustainability criteria.
- It is not clear why local usage should be regulated according to harmonized/common sustainability criteria.
- Criteria that are suggested by the respondents on top of the current RED criteria are social criteria, prosperity, environment (water, air, soil), and wellbeing. However, various respondents indicated that the current RED criteria are sufficient and that adding more criteria would make it too complicated.
- FLEGT (*i.e.* forest law enforcement, governance and trade) and EUTR (*i.e.* European timber regulation) can be combined in order to achieve cooperation or good practice exchange with sourcing regions.



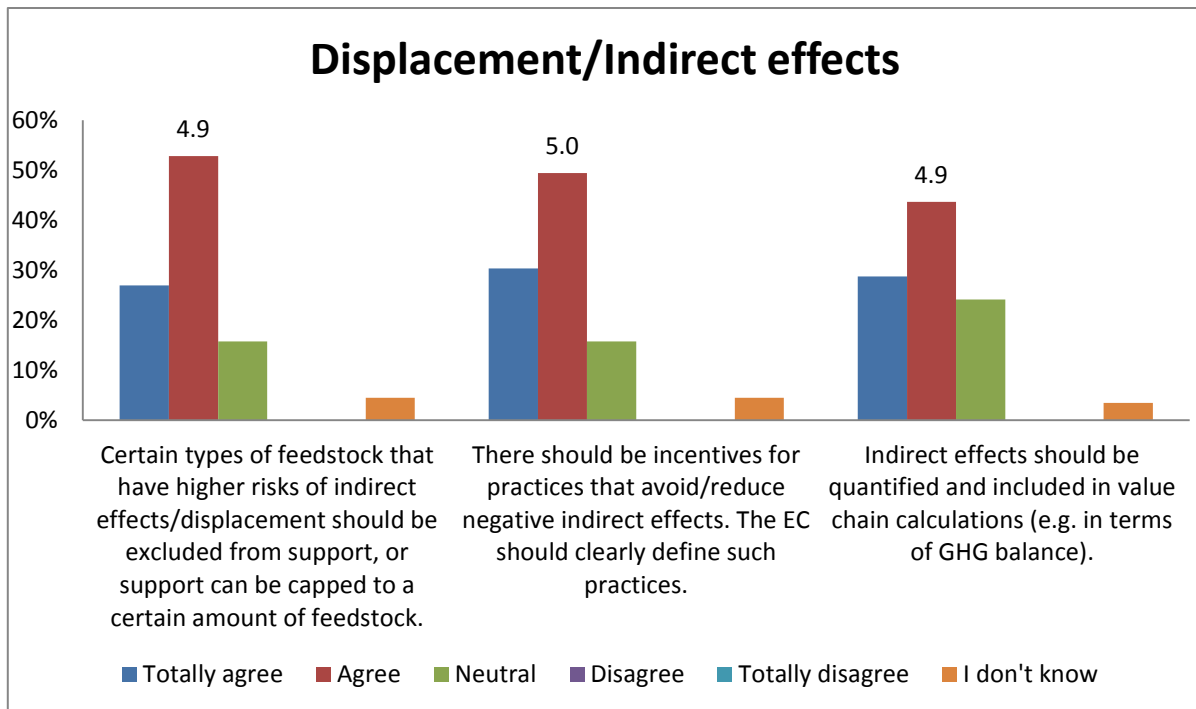
#### Displacement/indirect effects

- Certain types of feedstock that have higher risks of indirect effects/displacement should be excluded from support, or support can be capped (as is suggested for crop based biofuels).
- There should be incentives for market parties to improve their performance and tend to practices that avoid or reduce negative indirect effects. The EC should clearly define which practices are approved to be entitled for support.
- Indirect effects should be quantified and included in value chain calculations (e.g. in terms of GHG balance).

The majority of the respondents agree with the three policy options, respectively 80%, 80% and 72% of the respondents agreed or totally agreed with the options concerning displacement/indirect effects.

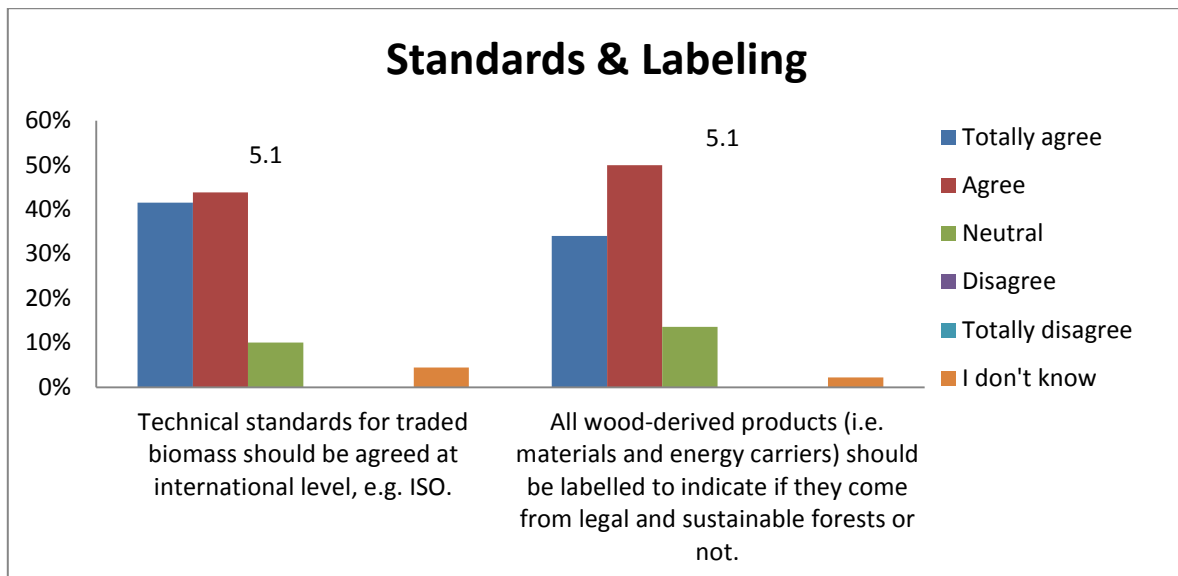
For the first policy option not all respondents agree that certain types of feedstock should be excluded from support. They argued that more measures are needed or that one should look at practical situations instead of feedstock type. The respondents also indicated that the risk exists that a large part of the potential will be excluded.

Some respondents indicated that the quantification of indirect effects is interesting, however, they questioned the way it has to be quantified. They also noticed that these effects should also be taken into account for other energy sources in that case. Therefore, although most respondents agree that this is an important policy option, they question whether it can be put into practice.



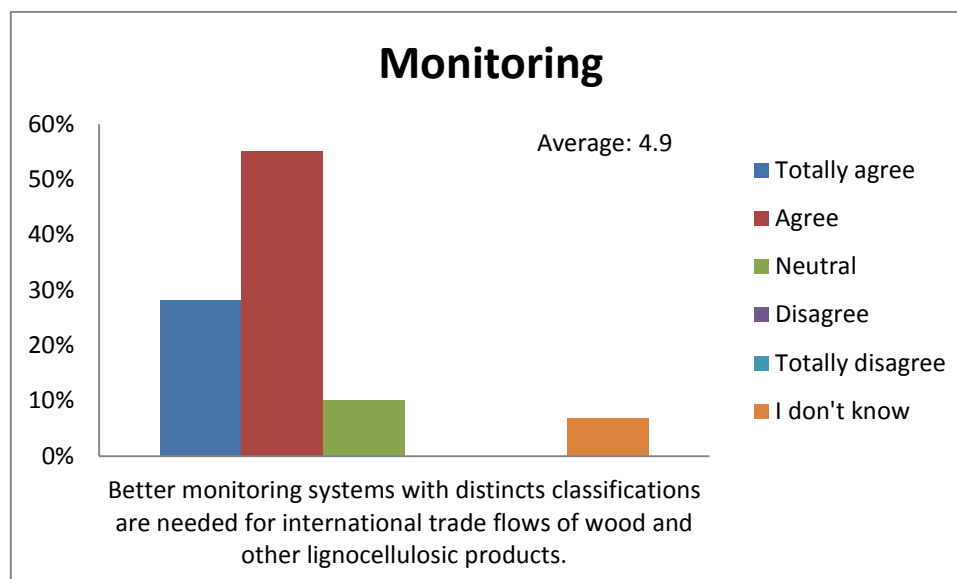
### Standards & labeling

For both statements 85% of respondents indicated to agree or totally agree with the policy option.



## Monitoring

83% of the respondents agree or totally agree with the policy option.



## 6. Main conclusions

The main goal of the survey was to ask for the opinion of various stakeholders concerning different statements in order to develop guidelines for a European Bioenergy Trade Strategy.

The respondents indicated 'limited domestic potential' and 'cost-efficiency' as the main opportunities for importing regions. The fact that EU countries can build trading links with strategic trade partners is seen as the least important opportunity.

Economic development and job creation are the main opportunities for sourcing regions that were indicated by the respondents when they had no specific region in mind. Also for North-America the main opportunity that is indicated by the respondents is economic development. Also, that demand from outside the region with specific sustainability requirements or request for sustainability certification contributes to improved sustainable practices in the sourcing region is indicated as an important opportunity. The latter is also indicated as an important opportunity for South-America. The respondents indicated for all opportunities that these are most important for Southeast-Asia. One of the most important opportunities that is indicated for Southeast-Asia by the respondents is building up supply chains. For Africa the most important opportunity is triggering sustainable practices according to the respondents.

The main risk for importing regions, according to the respondents of the survey, is a difficult investment climate due to the lack of long-term stability in terms of policies and prices. The underutilization of the domestic potential and a longer coal reliance are less important risks according to the respondents.

For the sourcing regions the risks that were indicated as being the most important ones differ a lot depending on the region. With no specific region in mind, 'overexploitation' and 'unstable EU policy'

are indicated as the most important ones. The unstable EU policy is also indicated as the most important one by the respondents that answered with North-America in mind. Furthermore, it is noticeable that the respondents that answered with North-America in mind, didn't really see the provided risks as being important. For South-America, 'large players vs smallholders' and an unstable EU policy are the main risks. The respondents indicated the risk of overexploitation and the focus on large scale players as the main risks when they had East-Europe (non-EU) & Russia in mind. In general the risk are rated to be more important when the respondents had southeast Asia or Africa in mind. For both regions especially the risk of land claiming is rated higher in comparison with the other regions.

The bad public image due to claims of unsustainable practices for biofuels and a lack of knowledge of public, media and policy makers are seen as the most important barriers for trade. Furthermore, respondents indicated the difference in sustainability requirements in EU Member States for solid biomass and the differences in sustainability governance of agriculture and forestry policies by country/region as one of the main barriers. The lack of port infrastructure in Europe, subsidies for exported biomass and export tariffs in certain sourcing regions, and technical standards that are quite strict for certain feedstocks are less seen as trade barriers by the respondents.

In comparison to the other statements, the respondents were relatively unanimous in their answers concerning the key principles for sustainable biomass trade. All principles were indicated to be important, however, the most important one is that trade should be based on sustainable and legally acquired biomass sourcing (traceable and verifiable). Also, respondents indicated that the full value chain should be the basis for performance assessment.

In the last part of the survey some policy options were provided and respondents agreed most with the following two options: (1) harmonized/common binding sustainability criteria are needed on EU level, also for solid and gaseous biomass for energy, and (2) a proof of sustainable forestry management should be required when forestry biomass is used. The respondents were less in agreement with the option that requirements should go further than the current RED criteria for biofuels. Although most respondents agreed with harmonized/common binding sustainability criteria, they also wondered whether this is possible, taking into account that biomass is not a common product across the EU. Also, respondents questioned whether local usage should be regulated according to harmonized/common sustainability criteria. Most respondents also indicated that taking into account displacement/indirect effects is important, however, they question whether it can already be put into practice.



## Annex 1: Survey

# Biotrade2020+ survey on international biomass trade for energy

April 2015

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## Introduction

Bioenergy plays an important role in the European Union's renewable energy targets. Projections imply 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.

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 distortion of other markets is avoided.

The project will focus on lignocellulosic biomass (woody resources, agricultural residues and cellulosic crops), with case studies in 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). In terms of trade strategies, other relevant countries like Canada or Russia will also be included.

This survey intends to gather stakeholder's opinions in terms of opportunities, risks and barriers of international trade, key principles of sustainable trade, and potential policy options to deal with risks and barriers. In accordance with the project aims, the focus is on trade of biomass to the EU, but the opinion of international stakeholders is also highly appreciated.

The full survey will take around 15 minutes of your time. Your responses will be treated as confidential. All answers provided to open questions may be quoted, but always anonymously, unless you specifically request that you may be quoted. If you feel uncomfortable answering a specific question, feel free to skip that question.



supported by



## Your background

### 1) Contact details

First Name (voluntary): \_\_\_\_\_

Last Name (voluntary): \_\_\_\_\_

Company (voluntary): \_\_\_\_\_

### 2) Country of residence\*

\_\_\_\_\_

### 3) In which type of organisation are you working? (multiple types can be selected)\*

- |  |   |
|--|---|
| <input type="checkbox"/> Biomass producer - forestry                               | <input type="checkbox"/> Biomass producer - agriculture   |
| <input type="checkbox"/> Wood processing industries (timber, panels, pulp & paper) | <input type="checkbox"/> Food & feed industry             |
| <input type="checkbox"/> Solid biofuel producer (e.g. pellets)                     | <input type="checkbox"/> Liquid biofuel producer          |
| <input type="checkbox"/> Energy producer (electricity / heat)                      | <input type="checkbox"/> Certification / auditing         |
| <input type="checkbox"/> Trader / distributor                                      | <input type="checkbox"/> Regulator / administrator        |
| <input type="checkbox"/> Industry association                                      | <input type="checkbox"/> NGO                              |
| <input type="checkbox"/> Financing   | <input type="checkbox"/> Expert (researcher / consultant) |

### 4) Which sourcing regions are you most familiar with? (multiple regions can be selected)\*

- North America
- South America
- East Europe (non-EU) & Russia
- Southeast Asia
- Africa
- Other: \_\_\_\_\_\*
- I'm not familiar with a sourcing region.

### 5) Age\*

- |                                |                                |
|--------------------------------|--------------------------------|
| <input type="checkbox"/> <25   | <input type="checkbox"/> 45-54 |
| <input type="checkbox"/> 25-34 | <input type="checkbox"/> 55-64 |
| <input type="checkbox"/> 35-44 | <input type="checkbox"/> >64   |

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## Opportunities for importing regions

### 6) Opportunities of biomass trade for importing regions in the EU

- **Complementary with other renewable energy:** Imported biomass can be complementary to domestic intermittent energy sources like solar or wind.
- **Limited domestic potential:** Imported biomass is of interest in regions where domestic biomass resources are limited.
- **Broader feedstock portfolio:** International trade opens up the feedstock portfolio of bioenergy installations in the EU. This creates flexibility in feedstock sourcing and stabilizes prices.
- **Cost-efficiency:** Imported biomass from regions with abundant and easily accessible biomass can be a cost-efficient way to reach renewable energy targets.
- **Infrastructure build up:** Biomass imports can be an intermediate tool to facilitate the development of local bioenergy infrastructure in the EU.
- **Investments in new technologies:** EU countries can invest in technological solutions (e.g. advanced biofuels, biorefineries) which need substantial biomass volumes to reach economy of scale. Imports can fill the gap if these volumes are not available domestically.
- **Reduce domestic competition for biomass:** Opening markets for imported biomass can reduce competition for domestic biomass resources, e.g. related to the demand of existing biomass processing industries (for materials).
- **Trading links:** EU countries can build trading links with strategic trade partners.

	How important do you rate these opportunities for importing regions in the EU?						Arguments
	Very important	Important	Moderate importance	Low importance	Not important	I don't know	
Complementary with other RE	( )	( )	( )	( )	( )	( )	---
Limited domestic potential	( )	( )	( )	( )	( )	( )	---
Broader feedstock portfolio	( )	( )	( )	( )	( )	( )	---
Cost-efficiency	( )	( )	( )	( )	( )	( )	---
Infrastructure build up	( )	( )	( )	( )	( )	( )	---
Investments in new technologies	( )	( )	( )	( )	( )	( )	---
Reduce domestic competition	( )	( )	( )	( )	( )	( )	---
Trading links	( )	( )	( )	( )	( )	( )	---
Other (please specify in the column 'arguments')	( )	( )	( )	( )	( )	( )	---

## Opportunities for sourcing regions

### 7) Define the sourcing region for which you are answering the following question related to opportunities?\*

Please start with the region you are most familiar with. You can answer the following question for up to 3 other regions.

- North America
- South America
- East Europe (non-EU) & Russia
- Southeast Asia
- Africa
- Other: \_\_\_\_\_
- No specific region

### 8) Opportunities of biomass trade for sourcing regions

- **Economic development:** Export markets create economic opportunities to market (abundant) local feedstocks.
- **Job creation:** Biomass export creates/sustains jobs in forestry, agriculture, industry, ...
- **Synergies with local sectors:** Providing an outlet for biomass residues from agriculture, forestry or the wood processing industry may improve the business case of these sectors.
- **Improved productivity:** Additional demand may create an incentive to improve productivity of forestry and agriculture.
- **Sustainable practices:** Demand from outside the region - with specific sustainability requirements or request for sustainability certification - contributes to improved sustainable practices in forestry, agriculture, industry.
- **Building up supply chains:** Setting up biomass supply chains and building infrastructure based on demand from outside the region may trigger local use of biomass for energy in these regions.
- **Capacity building:** Cooperation with sourcing regions adds to capacity building (skilled jobs) and improved know-how and awareness of sustainable/efficient biomass use.

	How important do you rate these opportunities for the selected sourcing region?						Arguments
	Very important	Important	Moderate importance	Low importance	Not important	I don't know	
Economic development	( )	( )	( )	( )	( )	( )	___
Job creation	( )	( )	( )	( )	( )	( )	___
Synergies with local sectors	( )	( )	( )	( )	( )	( )	___
Improved productivity	( )	( )	( )	( )	( )	( )	___
Sustainable practices	( )	( )	( )	( )	( )	( )	___
Building up supply chains	( )	( )	( )	( )	( )	( )	___
Capacity building	( )	( )	( )	( )	( )	( )	___
Other (please specify in the column 'arguments')	( )	( )	( )	( )	( )	( )	___

9) Do you wish to answer the question concerning opportunities for another sourcing region? \*

## Risks for importing regions

### 18) Risks of biomass trade for importing regions in the EU

- **Domestic potential underutilized:** Domestic potential in the EU may be outcompeted by imports (potentially favoured by subsidies or lower environmental constraints), leaving some of it underutilized.
- **Import dependency remains:** Relying on imported biomass moves the problem of energy import dependency from one region to another. This presents no real solution in terms of energy security.
- **Subsidies and price impacts:** Subsidies in the EU renewable energy sector may drive up world market prices of feedstocks for other sectors.
- **Greenhouse gas emissions related to transport:** Pretreatment and long distance transport movements consume substantial amounts of energy and reduce the greenhouse gas advantage of bioenergy.
- **Longer coal reliance:** Support for pellet co-firing may extend the life of older coal power facilities, or encourage investments in new coal facilities and therefore lead to a longer reliance on coal for power production.
- **Business case uncertainty:** difficult investment climate because there is no long-term stability in terms of policies (both in the EU and in sourcing regions) and prices (fluctuating fossil fuel prices).

	How important do you rate these risks for importing regions in the EU?						Arguments
	Very important	Important	Moderate importance	Low importance	Not important	I don't know	
Domestic potential underutilized	( )	( )	( )	( )	( )	( )	___
Import dependency remains	( )	( )	( )	( )	( )	( )	___
Subsidies and prices impacts	( )	( )	( )	( )	( )	( )	___
GHG emissions related to transport	( )	( )	( )	( )	( )	( )	___
Longer coal reliance	( )	( )	( )	( )	( )	( )	___
Business case uncertainty	( )	( )	( )	( )	( )	( )	___
Other (please specify in the column 'arguments')	( )	( )	( )	( )	( )	( )	___

## Risks for sourcing regions

### **19) Define the sourcing region for which you are answering the following questions relating to risks?\***

*Please start with the region you are most familiar with. You can answer the following question for up to 3 other regions.*

- North America
- South America
- East Europe (non-EU) & Russia
- Southeast Asia
- Africa
- Other: \_\_\_\_\_
- No specific region

### **20) Risks of biomass trade for sourcing regions**

- **Overexploitation:** Additional demand for tradable biomass generates a risk of overexploitation in forestry and agriculture. Without precautions this may result in biodiversity loss and a loss of carbon in forests and agricultural soils.
- **Displacement:** Subsidized demand from the EU may increase local prices of biomass feedstocks and land. So export demand may compete with local use, drawing away feedstocks and land from local applications (energy, materials, food).
- **Access to land:** In relation to the above, there is a risk of land claiming of large players, reducing the access to land for indigenous people or smallholders.
- **Renewable energy opportunities:** Claiming certain feedstocks for export may lower future opportunities in sourcing regions, e.g. to use their own resources for (modern) energy production.
- **Large players vs smallholders:** Focus of international trade is generally on large scale players. There may be limited opportunities for smallholders to access these new export markets.
- **Low value-added exports:** Export is generally restricted to low value-added products, limiting the economic impact in sourcing regions.
- **Unstable EU policy:** Changing support frameworks and requirements (quality and sustainability) in the EU harm the business model in sourcing regions.

	How important do you rate these risks for the selected sourcing region?						Arguments
	Very important	Important	Moderate importance	Low importance	Not important	I don't know	
Overexploitation	( )	( )	( )	( )	( )	( )	___
Displacement	( )	( )	( )	( )	( )	( )	___
Access to land	( )	( )	( )	( )	( )	( )	___
Renewable energy opportunities	( )	( )	( )	( )	( )	( )	___
Large players vs smallholders	( )	( )	( )	( )	( )	( )	___
Low value added exports	( )	( )	( )	( )	( )	( )	___
Unstable EU policy	( )	( )	( )	( )	( )	( )	___
Other (please specify in the column 'arguments')	( )	( )	( )	( )	( )	( )	___

*21) Do you wish to answer the question concerning risks for another sourcing region? (you can answer this question for 4 regions in total)\**

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## Barriers for trade

This sections contain a number of trade barriers for biomass, i.e. issues that either directly or indirectly hinder the growth of international trade of biomass commodities for energy end-use. Focus is on lignocellulosic biomass (pellets, chips, ...).

### 30) *Barriers for trade - National/regional protectionist policies and trade tariffs*

In principle, three types of 'protectionist' policy instruments can be distinguished which can distort the competitive position between domestic and imported biomass.

	How important do you rate the following barriers for sustainable biomass trade?						Arguments
	Very important	Important	Moderate importance	Low importance	Not important	I don't know	
Domestic bioenergy is favoured over imports in EU Member States' policies	( )	( )	( )	( )	( )	( )	—
Import tariffs for biomass commodities to the EU	( )	( )	( )	( )	( )	( )	—
Subsidies for exported biomass and export tariffs in certain sourcing regions	( )	( )	( )	( )	( )	( )	—

### 31) *Barriers for trade - Technical standards*

Technical standards describe in detail the physical and chemical properties of fuels or materials. In principle standards facilitate trade, as products can become 'commodities' with specific properties. In terms of international trade, some issues related to technical standards could hamper trade.

	How important do you rate the following barriers for sustainable biomass trade?						Arguments
	Very important	Important	Moderate importance	Low importance	Not important	I don't know	
Technical standards are too strict for certain feedstocks	( )	( )	( )	( )	( )	( )	—
Diverging technical quality standards between countries/regions or even companies	( )	( )	( )	( )	( )	( )	—
Uncertainty about standards that are still in negotiation phase	( )	( )	( )	( )	( )	( )	—

**32) Barriers for trade – Logistics**

When setting up biomass supply chains for international trade, logistics are a pivotal part in the system. Potential issues: availability of vessels, harbour and terminal suitability, logistical infrastructure to transport inland biomass to the port, ...

	How important do you rate the following barriers for sustainable biomass trade?						Arguments
	Very important	Important	Moderate importance	Low importance	Not important	I don't know	
Lack of roads and port infrastructure in sourcing regions	( )	( )	( )	( )	( )	( )	___
Lack of port infrastructure in Europe	( )	( )	( )	( )	( )	( )	___
Other logistical barriers (please specify in column 'Arguments')	( )	( )	( )	( )	( )	( )	___

**33) Barriers for trade - Safety and sanitary/phytosanitary requirements**

The properties of a biomass material and the intended use determine how the material should be safely transported and stored. Products may also face sanitary and phytosanitary measures or technical regulations applied at borders, to prevent the introduction of harmful organisms. While these types of requirements are an intrinsic part of international trade, the implementation may be region or product dependent.

	How important do you rate the following barriers for sustainable biomass trade?						Arguments
	Very important	Important	Moderate importance	Low importance	Not important	I don't know	
Varying or inconsistent safety requirements for traded biomass	( )	( )	( )	( )	( )	( )	___
Varying or inconsistent sanitary/phytosanitary requirements	( )	( )	( )	( )	( )	( )	___

**34) Barriers for trade - Sustainability criteria & certification systems**

	How important do you rate the following barriers for sustainable biomass trade?						Arguments
	Very important	Important	Moderate importance	Low importance	Not important	I don't know	
Different sustainability requirements in EU Member States for solid biomass (not EU-wide)	( )	( )	( )	( )	( )	( )	—
Proliferation of certification systems: unclarity about the differences. Tendency to go for the least demanding system.	( )	( )	( )	( )	( )	( )	—
Differences in sustainability governance of agriculture and forestry policies (legislation <u>and</u> enforcement) by country/region	( )	( )	( )	( )	( )	( )	—
Different rules for domestic feedstocks vs imports	( )	( )	( )	( )	( )	( )	—
Sustainability criteria only required for energy and not for other applications of biomass	( )	( )	( )	( )	( )	( )	—
Lack of sustainability criteria for fossil fuels creates an unlevel playing field	( )	( )	( )	( )	( )	( )	—
Certification systems don't include sufficient aspects of sustainability	( )	( )	( )	( )	( )	( )	—
WTO doesn't allow specific sustainability requirements (like social criteria)	( )	( )	( )	( )	( )	( )	—
Changing sustainability requirements creates uncertainty for stakeholders	( )	( )	( )	( )	( )	( )	—

**35) Barriers for trade - Global classification and trade statistics**

There are trade classifications for different biomass types, see CN/HS codes. Some categories are agglomerated so it is not always clear which part is traded for energy.

	How important do you rate the following barriers for sustainable biomass trade?						Arguments
	Very important	Important	Moderate importance	Low importance	Not important	I don't know	
No clear view on biomass trade statistics, in particular which part is used for energy.	( )	( )	( )	( )	( )	( )	—
Problems with reporting of trade flows and unreliable trade statistics	( )	( )	( )	( )	( )	( )	—

**36) Barriers for trade - Public knowledge & public opinion**

	How important do you rate the following barriers for sustainable biomass trade?						Arguments
	Very important	Important	Moderate importance	Low importance	Not important	I don't know	
Bad public image (towards public, media and policy makers) due to claims of unsustainable practices for biofuels	( )	( )	( )	( )	( )	( )	—
Insufficient knowledge of public/media/policy makers	( )	( )	( )	( )	( )	( )	—

**37) Barriers for trade - Other: if you feel certain relevant trade barriers are not included in the above, please enter them below.**

	How important do you rate these barriers for sustainable biomass trade?						Arguments
	Very important	Important	Moderate importance	Low importance	Not important	I don't know	
Other barrier 1 (please specify in the column 'arguments')	( )	( )	( )	( )	( )	( )	—
Other barrier 2 (please specify in the column 'arguments')	( )	( )	( )	( )	( )	( )	—

## Key principles for sustainable biomass trade

The main aim of the BioTrade2020+ project is to provide guidelines for the development of a long term European bioenergy trade strategy. A number of key principles will be defined in consultation with stakeholders which are a prerequisite to have sustainable biomass trade. The following presents a number of suggested key principles. Mind that the current focus is on biomass trade, which implies that the final use of the biomass energy carrier is not part of this discussion.

### 38) Key principles for sustainable biomass trade

	Do you agree with this principle for sustainable trade?						Arguments
	Totally agree	Agree	Neutral	Disagree	Totally disagree	I don't know	
Trade should be based on <b>sustainable and legally acquired biomass sourcing</b> (traceable and verifiable).	( )	( )	( )	( )	( )	( )	___
<b>Full value chain</b> (from feedstock production up to end conversion) as a basis for performance assessments (e.g. energy, GHG)	( )	( )	( )	( )	( )	( )	___
<b>Local use</b> of biomass should have <b>priority</b> over trade. Displacement as a result of trade demand should be avoided.	( )	( )	( )	( )	( )	( )	___
<b>Displacement/indirect effects</b> in the sourcing regions should be taken into account in support mechanisms for biomass/bioenergy.	( )	( )	( )	( )	( )	( )	___
Markets should be open (WTO compliant), and there should be no discrimination in <b>market access</b> .	( )	( )	( )	( )	( )	( )	___
Trade should follow the principles of <b>'fair trade'</b> , i.e. all actors in the value chain receive a fair share of the benefits.	( )	( )	( )	( )	( )	( )	___
Markets should be <b>transparent</b> , with clear reporting and monitoring systems.	( )	( )	( )	( )	( )	( )	___
Other (please specify in the column 'arguments')	( )	( )	( )	( )	( )	( )	___

## Policy options (EU)

Policy recommendations will be developed further on in the BioTrade2020+ project and discussed with stakeholders. At this stage, we selected a number of policy options in relation to the key principles. Mind that these are still open for debate.

### 39) Policy options (EU) - Sustainability criteria for bioenergy

	Do you agree with this statement?						Arguments
	Totally agree	Agree	Neutral	Disagree	Totally disagree	I don't know	
<b>Harmonized/common binding sustainability criteria</b> are needed on EU level, also for solid and gaseous biomass for energy.	( )	( )	( )	( )	( )	( )	—
Requirements should <b>go further than the current RED criteria</b> for biofuels (greenhouse gas emissions, biodiverse land, high carbon stock land).	( )	( )	( )	( )	( )	( )	—
When forestry biomass is used, a proof of <b>sustainable forestry management</b> (e.g. FSC, PEFC) should be required.	( )	( )	( )	( )	( )	( )	—
The EU should put more dedicated efforts in <b>cooperation/good practice exchange with sourcing regions</b> towards sustainable practices in biomass production and harvesting, and <b>capacity building</b> .	( )	( )	( )	( )	( )	( )	—

### 40) Policy options (EU) - Displacement/indirect effects

	Do you agree with this statement?						Arguments
	Totally agree	Agree	Neutral	Disagree	Totally disagree	I don't know	
<b>Certain types</b> of feedstock that have higher risks of indirect effects/displacement should be <b>excluded from support</b> , or support can be capped to a certain amount of feedstock.	( )	( )	( )	( )	( )	( )	—

There should be incentives for <b>practices that avoid/reduce negative indirect effects</b> . The EC should clearly define such practices.	( )	( )	( )	( )	( )	( )	—
<b>Indirect effects should be quantified</b> and included in value chain calculations (e.g. in terms of GHG balance).	( )	( )	( )	( )	( )	( )	—

**41) Policy options (EU) - Standards & labelling**

	Do you agree with this statement?						Arguments
	Totally agree	Agree	Neutral	Disagree	Totally disagree	I don't know	
<b>Technical standards</b> for traded biomass should be agreed at <b>international level</b> , e.g. ISO.	( )	( )	( )	( )	( )	( )	—
All wood-derived products (i.e. materials and energy carriers) should be <b>labelled</b> to indicate if they come from <b>legal and sustainable</b> forests or not.	( )	( )	( )	( )	( )	( )	—

**42) Policy options (EU) - Monitoring**

	Do you agree with this statement?						Arguments
	Totally agree	Agree	Neutral	Disagree	Totally disagree	I don't know	
Better monitoring systems with <b>distincts classifications</b> are needed for international trade flows of wood and other lignocellulosic products.	( )	( )	( )	( )	( )	( )	—

**43) Any final comments or remarks are welcome below.**

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## **Thank You!**

On behalf of the BioTrade2020plus consortium we would like to thank you for taking our survey. Your response is very important to us.

If you have questions about the survey, the procedures or the overall project, you may contact Luc Pelkmans: +32 14 33 58 30, [luc.pelkmans@vito.be](mailto:luc.pelkmans@vito.be)



## Annex 2: BioTrade2020+ 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 persons: 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

