



IEA Bioenergy

Strategic Intertask Study (Task 40/43/38):
Monitoring Sustainability Certification of Bioenergy

**Recommendations for
improvement of sustainability
certified markets**

***Strategic Inter-Task Study:
Monitoring Sustainability Certification of Bioenergy***

A cooperation between IEA Bioenergy Task 40, Task 43 and Task 38

**Task 4: Recommendations for improvement of
sustainability certified markets**

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Strategic Inter-Task Study: Monitoring Sustainability Certification of Bioenergy

At present numerous biomass and biofuel sustainability certification schemes are being developed or implemented by a variety of private and public organisations. Schemes are applicable to different feedstock production sectors (forests, agricultural crops), different bioenergy products (wood chips, pellets, ethanol, biodiesel, electricity), and whole or segments of supply chains. There are multiple challenges associated with the current status of sustainability certification, i.e. the proliferation of schemes has led to – to name a few – confusion among actors involved, market distortion and trade barriers, an increase of commodity costs, questions on the adequacy of systems in place and how to develop systems that are effective and cost-efficient.

Within IEA Bioenergy a strategic study was initiated among Tasks 40, 43 and 38 to monitor the actual implementation process of sustainability certification of bioenergy. The study was executed between January 2012 and Feb 2013. Its main goals were to evaluate how stakeholders are affected by certification initiatives, quantify the anticipated impact on worldwide bioenergy trade, assess the level of coordination among schemes, and make recommendations to remove barriers which may depress markets and reduce sustainable trade. A worldwide survey was launched to investigate the operational experiences of people actively involved with any aspects of bioenergy production systems, including those engaged in biomass feedstock production, conversion into primary and secondary biofuel and bioenergy products, markets and trade. The survey placed a particular focus on the input of stakeholders on how systems can be improved to be more effective. Many people have responded - we have received over 200 survey responses, from all over the world.

The study has produced four reports, which are available on-line on the IEA Bioenergy website and the sites of the participating tasks*:

- Task 1: Examining sustainability certification of bioenergy
- Task 2: Survey on governance and certification of sustainable biomass and bioenergy
- Task 3: Impacts of sustainability certification on bioenergy markets
- Task 4: Recommendations for improvement of sustainability certified markets

On Tuesday 12 March 2013 the main outcomes of the study were presented in a workshop, in connection to the World Biofuels Markets in Rotterdam.

- * www.ieabioenergy.com
www.bioenergytrade.org (Task 40, Sustainable Bioenergy Trade)
www.ieabioenergytask43.org (Task 43, Biomass Feedstocks for Energy Markets)
<http://www.ieabioenergy-task38.org> (Task 38, Climate Change Impacts)

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Table of Contents

1. Objective	1
2. Main findings & recommendations	2
2.0 Main characteristics of sustainable bioenergy	2
2.1 Main drivers to participate in certification	3
2.2 Selection of a suitable certification scheme	4
2.3 Main drivers for trade of biofuels and solid biomass	5
2.4 Voluntary schemes and regulations as complementary tools	6
2.5 Policies and regulations	7
2.6 Regional approaches	8
2.7 The development of certification schemes	9
2.7.1 Proliferation of schemes	9
2.7.2 Consistency and recognition	9
2.7.3 Global harmonization & common language	11
2.8 Role and impact on stakeholders	12
2.8.1 Stakeholder involvement	12
2.8.2 Impact on stakeholders	12
3. How to proceed: actions and roles of stakeholder groups	14

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1. Objective

During the last decade the use of biomass to substitute fossil fuels has increasingly resulted in a growing concern over the sustainability of biomass production and use. Driven by previous, existing, and forthcoming legislation and customer demand a variety of voluntary sustainability standards have become available for the production, processing and trade of biomass and agricultural products.

Several recent studies have explored these sustainability initiatives (e.g. van Dam and Junginger 2011, Buytaert et al. 2011, Magar et al. 2011). These studies concluded that there are multiple challenges associated with the current status of sustainability certification, i.e. the proliferation of schemes has led to – to name a few – confusion among actors involved, market distortion and trade barriers, an increase of commodity costs, questions on the adequacy of systems in place and how to develop systems that are effective and cost-efficient.

To support sustainable bioenergy deployment and overcome some of the challenges mentioned above, this IEA Bioenergy strategic study examined what is actually known and what is most important to learn about the current development and implementation of voluntary certification systems, the role of voluntary certification schemes in the governance of biomass/bioenergy/biofuels sustainability and how this has affected actors along the supply chains and trade.

The study is organised in 3 main tasks, leading to this final and fourth task on findings and recommendations.

- The first task examined the various approaches of selected sustainability schemes for agriculture, forestry, biomass, biofuels and bioenergy and how these schemes work, or are supposed to work in practice; what type of tracking procedures are in place (Chain of Custody standards), and how do they ensure sustainability (standard setting and assessment procedures). This task identified similarities and differences to develop an understanding of the benefits and opportunities that exist among the systems. The results of this comparative analysis, and the summary factsheets of the sustainability schemes drafted to conduct the comparison, can be found in the Task 1 report.
- To understand the views and opinions of all actors involved in bioenergy production and trade – from producers, suppliers, traders to certification bodies, auditors and end-users – a survey was conducted focussing on how these stakeholders are affected and what options are suggested to improve the effectiveness and efficiency of governance and certification systems for sustainable bioenergy deployment. About 200 responses were received and analysed. Discussion and summary of the responses to the questionnaire can be found in the report of the second task.
- In the third task two case studies were investigated to analyse the potential impact of sustainability certification on bioenergy trade flows and markets, i.e. the trade flows of liquid biofuels and wood pellets in the Netherlands and UK as being forerunners in the development and implementation of sustainability certification and large scale trade of the selected commodities. Results of this explorative study, and discussion on the relationship of sustainability certification with bioenergy trade dynamics can be found in the Task 3 report.

The main findings and knowledge gained through the project are summarized in this final task. The conclusions are mainly based/derived from the responses to the survey developed and analysed in task 2. Additionally recommendations on how to move forward are proposed.

2. Main findings & recommendations

The sustainability of biomass/bioenergy/biofuels can be governed at multiple levels through:

- subnational, national or regional legislation and regulations,
- international conventions and processes,
- jurisdictional guidelines (mandatory or voluntary),
- certification schemes,
- business systems - Corporate Social Responsibility & Environmental Impact Assessment.

With the myriad of international and national regulations, initiatives and agreements related to sustainable biomass, biofuel and bioenergy, it is difficult for industry and other stakeholders to see the best solutions to suit their sustainability policies.

Certification has deemed to be necessary and valuable, leading to a considerable rise in number of schemes developed over the last decade and the acceptance of voluntary schemes to show compliance with legislation, cf. the EU RED approach.

In the following sections the main findings related to the implementation of sustainability certification and related issues and impacts on stakeholders and trade are discussed. Additionally recommendations to (help) solve these issues are proposed, and summarised in the green boxes below each section.

2.0 Main characteristics of sustainable bioenergy

Sustainability of bioenergy addresses both the cultivation and conversion of biomass to energy. It is a multi-dimensional concept, aiming not only to reduce greenhouse gas emissions but also to focus on issues like soil carbon, biodiversity aspects, energy efficiency principles, social well being and economic development.

More concrete the common principles of sustainable use of biomass for energy purposed, as found in several initiatives aiming at the certification of biomass, biofuels and bioenergy, are:

- *Sustainable production*: Raw materials for biofuels may not come from land that has been converted (e.g. primary forest, protected area, highly biodiverse grassland, areas with high stocks of carbon, or peatlands) and must come from legal sources. Raw materials in the EU must be cultivated in accordance with the Common Agricultural Policy and/or correspond to criteria or guidelines for Sustainable Forest Management.
- *High greenhouse gas (GHG) performance compared to fossil fuels*: The GHG emissions of bioenergy chains should be less than the lifecycle GHG emissions of the fossil fuel that it replaces.
- *No other environmental impacts*: The production, conversion and logistics may not lead to negative impacts on soil, water and air quality.
- *Efficient energy conversion*: Bioenergy chains should strive for maximum energy efficiency in feedstock production, conversion and logistics.
- *Protection of biodiversity*: The production of biomass may not negatively affect biodiversity.
- *Contribute to local prosperity and welfare*: Bioenergy chains should contribute towards social well-being for employees and local population.

2.1 Main drivers to participate in certification

The first question industry and other stakeholders ask is why they should participate in standards and certification schemes: what are the advantages against the burdens related with certification?

In general the following **main drivers** influence stakeholders decision **to become certified** (in order of importance indicated by stakeholders in the survey):

1. **To comply with legislative requirements** (e.g. EU RED legislation). In general to comply with national legislation economic operators need to demonstrate that the sustainability criteria mentioned in legislation have been met. They can do this in different ways; one option accepted by EU RED is to use voluntary certification schemes. The eligible voluntary schemes cover all of the sustainability criteria laid down in the legislation, but they may also cover other sustainability issues that are not included in the legislation. Distinction can be made between schemes that stick to the legislative requirements of the RED (like the French certification scheme for biofuels, 2BSvs) and other schemes like the International Sustainability and Carbon Certification (ISCC) and the Roundtable for Sustainable Biofuels (RSB) which also cover additional criteria beyond the RED requirements. Operators may choose for more demanding schemes to differentiate themselves from competitors and anticipate possible new legislation.
2. **To increase/maintain market access and shares.** Market sustainability requirements, either policy or customer driven, are getting stronger (e.g. only sustainable certified biofuels are accepted in the EU and certified wood pellets in the Netherlands, Belgium and UK). Parties need to act to gain access, and maintain or increase market share. Certification is a way to show compliance with such requirements.
3. **To develop a green business profile.** The use of a certification scheme is one of the options for companies to show that they conduct business in an ethical and responsible way, taking into account social and ecological issues and demonstrate corporate social responsibility (CSR).
4. **Price premium** for certified products. In principle people have a higher willingness to pay for materials produced in a sustainable way (proven with labels or certificates). This can also be triggered by legislation in the form of (financial) incentives for stakeholders to meet certain standards, e.g. the current price premiums for advanced biofuels in US.
5. **To improve practices** in the supply chain and have a better control on suppliers/subcontractors. Certification may lead to improved management systems and can bring rapid changes in production practices when firms use them to support better practices and performances by their suppliers. Better practices lead to an improved production/supply chain efficiency and product quality.

The **main restrictions** to get certified mentioned by stakeholders are:

1. **No significant market advantage.** Currently not all markets require or reward value to sustainable production practises, and certification may not provide a significant market advantage. I.e. there are only mandatory sustainability criteria for liquid biofuels in the EU and the US but not for other commodities like food crops, timber or wood pellets. It is likely however, that this will change over time as the demand for certified products increases due to regulatory obligations and societal changes (e.g. growing awareness and recognition of the need for change/sustainable practices and products).
2. **Administrative complexity.** Certification schemes require that candidate certified bodies adapt their system to include for example a traceability tool that meets certain standards, and that they ensure the correct (and documented) implementation of systems' requirements. This introduces documentation and administration which can become very

complex, certainly for small players in the market (although bundling of small players is a strategy being tested and that has proven in Clean Development Mechanisms (CDM)).

3. **Too costly** (compared to a possible price premium or other benefits): Certification can introduce a significant cost. It not only requires regular audits and yearly fees, also the adaptation of practises allowing them to comply with the standard and/or audit requirements adds extra costs. These costs vary strongly depending on the scale of operations (burden of costs), the type of scheme used and whether or not price premiums are rewarded.
4. **Limited add-on value to existing sustainability governance** (in developed countries). Many actors believe that in North America and Europe enough legislation, regulations, guidelines and standards are already in place to support and meet sustainable bioenergy production.

The main driver for companies to get certified is to comply with legislative requirements and maintain market access. On the other hand there are still various restrictions due to administrative complexity and costs.

2.2 Selection of a suitable certification scheme

When companies decide to engage in a sustainability certification system, the next step is to **select an appropriate scheme** with a standard that not only helps to comply with legislation but also best fits the supply chain characteristics and sustainability goals, and helps to meet customer/market demands.

The **complexity** of these certification schemes, but also the lack of transparency and clear information on the full details of the schemes, **makes it difficult to get a clear picture**. The development of a **selection methodology** could guide operators to select a scheme that fits with the company's strategy, structure and market position so as to enhance the benefits gained by the certificate. First efforts in this respect have already been made by NL Agency¹ who developed a self-assessment form to help in the selection of a sustainability scheme. NL Agency refers to the following main questions to be considered in the selection process:

- What is the company's strategy towards sustainability?
- What type of certification system is used by suppliers or customers, and what are their expectations or requirements?
- Does this improve market access or trade of your product?
- Which schemes can you, or are the easiest to, comply with?
- Do benefits outweigh the efforts and costs?

An important aspect and **key criterion in the decision** regarding which scheme to choose, addressed in this study, is the credibility of a scheme. The **credibility** of a scheme is related to a number of factors, such as the appropriateness and robustness of its procedures and criteria to ensure sustainability, the experience and representativeness of stakeholders and recognition by other schemes and/or legislation or regulations. The codes of good practice developed by the International Social and Environmental Accreditation and Labelling Alliance (ISEAL)², International Standardisation Organisation (ISO) or other similar organisations could be an example. E.g. ISEAL and ISO already are a reference for many forestry and biofuels certification organizations. These

¹ NL Agency. Selecting a biomass certification system – a benchmark on level of assurance, costs and benefits. March 2012

² <http://www.isealalliance.org>

codes of good practice are internationally recognised and define requirements for ensuring credibility of schemes, for example that standards are developed through a multi-stakeholder process, that schemes measurably contribute to the objectives of the standard, and that schemes ensure that producers and the supply chain of the final product are regularly audited for compliance.

Companies can use guidance to select a scheme that fits with the company's strategy, structure and market position.

The credibility of a scheme is a key selection criterion for companies to use it for their purposes. Codes of good practice being developed by the International Social and Environmental Accreditation and Labelling Alliance (ISEAL) and similar organizations could be used as an example.

2.3 Main drivers for trade of biofuels and solid biomass

It is clear that existing **policies**, particularly in the EU, the USA and Brazil are **main drivers for trade of biomass for energy purposes**. Trade flows are starting to be registered and recent publications of Lamers et al. (2011) and Lamers et al. (2012) show the main trade flows of biofuels and biomass energy carriers on a worldwide level.

It is currently **hardly or not possible to quantify** the extent to which mandatory sustainability requirements and/or voluntary certification schemes have an **impact** on these trade flows. An important reason is that (i) the implementation of the RED requirements on EU level has just started and real data on how much trade is certified under which scheme is not publicly available and (ii) many other factors influence trade flows -such as changing currency exchange rates, shipping costs, bad harvests, interactions with commodities markets (covering crops, forestry and oil), etc.- making it difficult to discern the influence of sustainability governance systems. There is a clear **need for a systematic and transparent registration at the global level**, e.g. based on the use of the RINs system in the US where each gallon of fuel produced is being labelled and given a number.

Some indicative conclusions were drawn from an analysis of world markets:

- The Renewable Energy Directive (RED) is a clear driver for biofuels trade and voluntary schemes are given a clear role by complying with sustainability requirements of the RED. The impact of sustainability legislation in the RED has been substantial for specific liquid biofuel trade flows (palm, soy biodiesel). In terms of prices, feedstock price fluctuations are currently the most important factor in liquid biofuels trade, and they are closely related to annual harvest volumes (corn, wheat, sugar, soy, rapeseed) (cf. EtOH trade between Brazil, US and EU in 2011-2012, see Task 3 §3.3). Future impacts for liquid biofuels may be significant under the proposed cap of 5% food crop based fuels for the EU to reduce iLUC impacts.
- For solid biomass for energy, voluntary certification of traded volumes is rapidly increasing, but current impact of certification on prices and trade is negligible. Future impacts on solid biomass largely depend on the forthcoming EC legislation (binding requirements or not). Mind that there is an on-going scientific discussion on the carbon accounting of wood, which may impact the promotion of energy from certain types of woody biomass in the future. The development of science-based methodologies for correcting currently applied (LCA) carbon balancing schemes for global climate change impacts taking into account time

dependency in the calculations of climate change impacts may provide more robust data for policy decisions.

Real data on how much trade is certified under which certification scheme is not publicly available. There is a clear need for a systematic and transparent registration at the global level.

2.4 Voluntary schemes and regulations as complementary tools

Many stakeholders consider voluntary certification more effective than legislation in ensuring bioenergy sustainability, while others are more critical of the effectiveness of certification with regard to the control and enforcement. However all stakeholders see certification as a useful tool to operate and a **mix of regulations and voluntary certification** is generally preferred for meeting the goals for sustainable bioenergy.

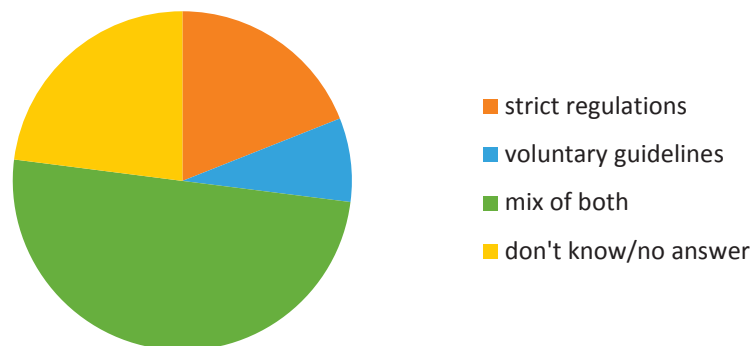


Figure 1: Distribution of the responses to the question which mechanisms are needed to meet the objectives of sustainable biomass, biofuel and bioenergy, results taken from table 1 of the Task 2 report.

An increase in the number of schemes occurred over the past few years, and the EU RED acceptance of voluntary certification to show compliance with legislative requirements confirm that certification is considered a valuable instrument. Although it is not sufficient on its own. First of all, certification schemes remain voluntary, and the history of forest certification has indicated that it is unlikely that voluntary certification will be able to stop the production and use of non-sustainable biomass/biofuels/bioenergy. Furthermore, impacts on meta- or macro level such as impacts on water basins or biodiversity in a larger region, the indirect land use change (iLUC) effects and landscape-level carbon balances cannot be addressed through certification alone, and need other forms of governance/legislation. **Certification systems should therefore be designed to interact with other governance systems for protection of ecosystems services.**

Generally, legislation is intended to be (and needs to be) simple to apply, and should be at a relatively **high level** (i.e. create uniform regulations that can be applied at a national or international scale). Certification may serve **as an on-the-ground tool** that enable all actors involved in the supply chain to show compliance with legislative requirements and goals and create market incentives that recognize top performers. Additionally, these systems can decrease the administrative burden on governments by **supporting the monitoring and control of implementation**. Voluntary certification schemes generally are **more adaptable/flexible** than regulatory initiatives. Many of them revise their standards regularly, for example at least every 5th year (e.g. Bonsucro, RSB, PEFC, and other schemes that are ISEAL members). Certification schemes can thus serve as innovative bodies to explore how sustainability levels can be increased taking into account continuous scientific development and improvement of practices in place. They should

complement regulations to improve awareness, facilitate discussion and the implications of certification and **provide a forum for sharing information** among stakeholders. However, legislative systems tied up in internationally agreed standards are ultimately needed to reach scale and create unified protection across systems, regions and countries although they could lead to a lower level of performance.

Certification can serve as an on-the-ground tool for implementing higher-level legislative sustainability requirements. It can be adapted faster than legislation and may serve to explore how continuous improvement of sustainability performance could be achieved, based on science-based developments. But legislative requirements in response to internationally agreed standards are needed to enable market growth (although not all developments need to be larger scale).

2.5 Policies and regulations

The biofuels business has already shown that **uncertainty and ongoing changes in policies and regulations causes markets to stagnate** (e.g. uncertainty about sustainability criteria for solid biomass on EU level and the long discussion on iLUC). It should be kept in mind that stakeholders are taking investment decisions based on long term contracts, while governments evaluate their policy year by year. Sustainability requirements are evolving and discussions on topics like iLUC for biofuels or carbon accounting for solid biomass are creating high uncertainties for companies, which in the future will need to comply with definitions of sustainability which are unknown today. Certainly to be avoided is to include less relevant requirements (e.g. costly and time-consuming analysis/tests which have no added value or requirements that are already covered under other regulations) leading to too many restrictions compared to other 'sectors' and which could complicate track and tracing systems and hamper markets and create trade barriers.

On the other hand policies and regulations may also stimulate markets and technological development much faster than they did for biofuels between 2005 and 2010. **Continuous follow-up** of the market's reactions to policy is thus advisable so as to slightly adjust where necessary and prevent 'over-compensation', without leading to an unstable policy environment as mentioned above.

In order to move the market as a whole towards more sustainable practices a legislative system that provides market certainty over time is needed. A **long term policy strategy** is considered an important driver to improve performances by defining clear objectives and creating a system of incentives (e.g. tax reliefs, subsidies). The regulations in their turn should lay down requirements which add credibility, and may encourage the development of transparent and comparable systems which are used by all stakeholders. When changes need to be implemented because of new insights, these should be implemented through a transparent step-by-step approach, in collaboration with the involved stakeholders.

Furthermore, there is also the **proliferation of policies and requirements that differ from one country/region to the other** due to other regional/country priorities, problems, government structures and processes. From market/trade (and maybe also policy) perspective it could be preferred to have a more aligned approach, possibly through a **common international framework of (minimum) standards**. This may not only lead to more international coherence but may also encourage the further internationalisation/globalisation of biomass/biofuel/bioenergy certification.

Policies should take into account how markets work and evolve (e.g. investment decisions, role of smallholders, technological development). Further deployment of sustainable bioenergy needs clear, transparent and stable policy paths. If changes need to be implemented because of new insights, this should be done through a transparent step-by-step approach.

To tackle the proliferation of country/regional specific policies and requirements, it could be preferred to develop an international framework of (minimum) standards creating more coherence between countries/regions.

2.6 Regional approaches

When looking at the regional and international level, it is clear that some regions – in particular Europe and North America – already have a **wide range of policies** (legislation, regulations and guidelines) as well as mostly sufficient implementation and control mechanisms in place to safeguard sustainable biomass production and regulate related markets, i.e. sustainable bioenergy laws, forestry and agricultural management practices and other complementary regulations such as nature and environment protection regulations, land use and related planning acts. Most of these policies are less than 5 years old, and take into account new environmental and economic developments and concerns. E.g. recent legislative initiatives, such as EU RED and US RFS2, are considered very important for meeting sustainability objectives for biofuels.

The problem of unsustainable biomass production most likely occurs in **countries with none existing or weak governance structures** (i.e. lack of enforcement and control mechanisms). In these countries other approaches are needed to reduce the potential impacts of an increasing consumption of biomass. The use of **certification schemes** could serve as an **alternative tool** to ensure sustainable biomass production as these systems include requirements that improve environmental and social practices and require regular third party auditing and verification, and are able to operate across borders.

A **risk evaluation system** could be considered to determine the need for certification, as it is often done in financing, by private companies purchasing biomass from around the world, or will be done in relation to the EU timber legality regulation (EUTR). Under the EUTR, which comes into effect in March 2013, all companies which 'first place' timber on the EU market, must undertake a due diligence risk assessment of their sources to document minimal risk of illegal material entering their supply chain. This allows operators to address and effectively limit the risk. It could be suggested to do a similar risk assessment to see what the risks are that unsustainable biomass enters the supply chain. If there are certain risks, certification schemes could be used as a tool to mitigate these risks.

Some remarks:

- While certain regions can be identified as having higher risk of illegal and unsustainable practices, requirements should remain neutral and unbiased, and unfounded trade barriers should be avoided. The same requirements should be applicable for all biomass sources. However, national legislation may form an important framework to comply with certain requirements/minimum standards.
- Nevertheless it should be taken into account the widely different environmental conditions in different countries and climatic zones.

*Certification schemes can serve as alternative tool for ensuring the sustainability of biomass from regions where policies and governance structures are weak.
Risk evaluation systems could be used to determine the need for certification in addition to the legislative systems.*

2.7 The development of certification schemes

2.7.1 Proliferation of schemes

The **proliferation of schemes** in the past years has led to **competition** between schemes. A positive impact is that this may lead to improvement in the development of standards and tools for verification and monitoring, and may provide insight into the 'best' or 'most efficient' structure of certification systems (design, implementation constraints, cost-benefits) as well as operational experience and degree of effectiveness of the scheme. The experience gained in developing schemes could also help to explore alternative models to meet sustainability goals.

On the other hand the variety of sustainability initiatives and standards –with current lack of coherence and transparency, but still considerable overlaps– may lead to confusion, lack of confidence and acceptance among the stakeholders. This may limit the effectiveness, lead to loss of belief that participation is meaningful, and distortion of the market. The risk is also that companies aim to use the commercially cheapest and least demanding certification scheme, or even 'greenwashing'³. To ensure a level playing field, the regulatory approved schemes should best be based on the same level of criteria (type and complexity), independence and transparency (governance and procedures). This is currently not the case for the EU RED approved certification scheme.

With regard to the easiness to implement a scheme, a good balance is needed between complexity and accessibility of schemes. If too many or complex indicators are defined, the certification process becomes too complex and costly and difficult to manage and thus not attractive for users. Too little detail will lead to different interpretation of the principles and will raise doubt about the ability of the scheme to assure that the product/process meets the requirements of the scheme.

The proliferation of schemes has led to competition in the market. This may bring further improvements in efficiency and effectiveness, but different approaches and requirements may also lead to confusion in the market place. There may be a tendency for the use of the least demanding system, or even 'greenwashing'.

With regard to the easiness to implement a scheme, a good balance is needed between complexity and accessibility of schemes.

2.7.2 Consistency and recognition

The main aim in the long term should be that **systems converge** up to a level that ensures **consistency and transparency** without imposing less relevant requirements at national or local level. Schemes could work towards **recognition**, enabling companies to expand market coverage without extra certification and related administrative and cost restraints. There are two types of recognition; i) mutual recognition in case schemes include the same/similar requirements (up to some level) and are implemented in an equal manner, and ii) unilateral recognition in case schemes

³ 'Greenwashing': to use a certification scheme as a claim to be 'sustainable' through advertising and marketing rather than actually implementing best practices that minimise the ecological, environmental and social impact.

complement each other (e.g. focus on different types of feedstock, parts of the chain and/or regions). In this way stakeholders are not confronted with a multitude of audits and requirements depending on the type of schemes used along the supply chain or the end-use. For example, forestry or agricultural schemes could adapt to provide the necessary information required by other schemes for chain assessment, e.g. in terms of GHG emissions, or different schemes would be able to use the same chain of custody.

There is already some movement towards recognition. Forestry schemes are accepted by ISCC. Also RSB is in the process of recognizing other schemes. The agricultural scheme SAN by the Rainforest Alliance was benchmarked against RSB standards, and recognized by RSB as meeting them.

But although several schemes can be used and accepted in the same chain, they do not all recognise each other. E.g. ISCC accepts volumes of biofuels from other EC recognised schemes, but not the other way round. Time and comprehensive communication is needed to link relevant systems at all levels and create consistency and transparency among them.

Also national implementation should be aligned. European Member States are designing their own incentive systems and specific requirements for biofuels from waste and residues, often with diverging definitions, which creates distortions on the European markets.

Certification systems differ in many ways: not only are they developed by different organisations, they have also been developed to serve many different feedstocks (e.g. forests, agricultural crops), bioenergy products (e.g. unprocessed forest residues, wood pellets, ethanol, biodiesel, electricity), and to apply to segments or all of the supply chain (e.g. production system, chain of custody from growers to energy consumers). Although the **general approach** of the sustainability initiatives is **similar**, the schemes **differ in the way specific issues are dealt with and how they operate**: i.e. chain-of-custody systems that are used and which parts of the supply chain is covered, how information is handled through the supply chain (e.g. online systems or declaration documents), verification procedures involving the whole or only parts of the supply chain, and how they deal with recognition of other schemes.

There is a need for more **consistency in tools, models and guidelines** used for implementation⁴ and verification⁵ meaning to ensure that companies being certified are not evaluated in a manner that leads to different results for the same issue depending on the scheme or certification body. Many schemes have comparable objectives and common requirements regarding the design and setting up of infrastructure to manage these schemes. Experiences from forest and agricultural certification that has the longest experience in dealing with such problems may be a useful place to start.

Systems should converge up to a level that ensures consistency and transparency, without losing meaning at local levels. Unilateral and mutual recognition are important instruments.

⁴ Meaning procedures to become certified

⁵ Meaning procedures to check whether or not an operator still meets the requirements of the standard

2.7.3 Global harmonization & common language

In relation to consistency and transparency, there is still no global/common definition on how the sustainability concept should be translated into practice, i.e. how to measure sustainability and which criteria/indicators should be included. It is therefore very important to find a common language on “what is sustainable and how it has to be verified/ documented”, which also uses the same terminology.

In order to ensure a uniform application and implementation of sustainability criteria, a **cross-sector approach** is necessary **covering harmonised global sustainability principles and certification systems**.

There are many similarities and synergies among the different existing schemes that can be exploited to develop a more effective and efficient global approach. **Coordination of the different standards and schemes** and establishing a common approach can become a major driver for the deployment of biomass for energy and the acceptance of biomass as a cost efficient substitute for fossil fuels/resources. A potential solution could be to establish a **meta-standard**, which includes overall sustainability principles and criteria for all regions which can be equitably and transparently applied to develop an effective and efficient certification system on national/regional or local levels depending on the ecological and social context.

Besides effective and enforceable sustainability criteria, strict requirements should be set regarding the **structure and operation of the certification systems** to avoid weak implementation and verification practices. Implementation and verification require a detailed set of procedures to be developed and implemented as part of the sustainability standard. Guidelines for developing these procedures are already in place, e.g. ISEAL and ISO.

Some initiatives try to reach consensus at a high level, e.g. CEN and ISO:

- **CEN** (the European Standardisation Institute) is currently elaborating a European standard for sustainable biomass for energy applications, which is in line with the EU RED requirements. At this moment there is a European pre-norm prEN 16214. This pre-norm is still in the commenting stage, but may lead to a European norm in the short term.
- **ISO** is developing a global standard (ISO 13065) and harmonised criteria on sustainable bioenergy production, which will also address the social, environmental and economic aspects of production, supply and use. This process may take some time as it takes into account criteria and principles of voluntary development of standards and of legislation of multiple countries, which characterize the two main modes of setting standards globally.

Both processes aim to define what is sustainable bioenergy/biofuels. However, many challenges still need to be overcome; e.g. how to reach consensus on global definitions and methodologies or how to tackle indirect effects. The solution could be to work towards a **global governance** of land use principles and guidelines (e.g. a Multilateral Environmental Agreement) and to define a **common language** regarding implementation and verification.

On multilateral level **the Global Bioenergy Partnership (GBEP)**, a **forum for dialogue** on bioenergy set up by the G8+Brazil, China, India, Mexico and South-Africa but open to all countries, created a framework of 24 sustainability indicators to **guide and measure the government programs and policies** in the development of biomass and bioenergy.

A uniform approach could gain credibility, acceptance and market penetration, and might be able to avoid different impacts/effects. It would allow for **more efficient structures, save costs** due to better management practices, **ease administration tasks** involved and make it unnecessary for industries initiatives to create new standards. Costs derived of being part of a broader effort could be offset by a much greater market penetration.

Ideally, **criteria for sustainable production of biomass** should be based on **the same concepts**, and should be meant **for all uses of biomass** since producers of raw materials do not necessarily know about their end users. In this way also indirect and displacement effects (leakage) could be reduced. Sustainability criteria have to be implemented in a very careful and practical way, bearing in mind two key purposes: to ensure the sustainable management of the biomass production and an acceptable greenhouse gas balance of the overall chain.

A cross-sector approach covering harmonised global sustainability principles and certification systems would benefit a uniform application and implementation of sustainability criteria and avoid leakage.

Criteria for sustainable production of biomass should be meant for all uses of biomass (food, feed, fibre, fuel)..

2.8 Role and impact on stakeholders

2.8.1 Stakeholder involvement

Several schemes are **organised and governed** by **multi-stakeholder groups**, all having a similar approach in which they rely on the cooperation among partners. Some schemes allow only members from certain stakeholder groups while other are open to all kinds of organisations or even individuals. Some schemes show dominance of industry or business actors. Stakeholders that are not a member of a scheme may **also** be involved **via public participation** or be invited to participate in **working groups**, e.g., in the standards-setting process .

However, the survey indicated that there is a **need for increased engagement and communication** among stakeholders and certification schemes and decision makers to ensure meaningful solutions that do not lead to unintended effects. The more stakeholders involved in the development of a scheme, the more willingness there is to engage. It is also a precondition for ensuring stakeholders' trust in the scheme. It is however difficult to find a good balance between stakeholder representation and involvement.

The need to engage stakeholders also seems apparent to avoid cases of false sustainability claims due to lack of understanding of requirements and commitment.

Certification schemes should be developed in a multi-stakeholder approach, where communication and transparency are key.

2.8.2 Impact on stakeholders

→ Administrative burden and costs

It is important to consider how sustainability governance can be better designed to be time and cost-efficient, while still remaining effective in meeting sustainability goals.

Certification is a highly administrative process and that can be very costly, in particular for smallholders. Some schemes already allow **group or stepwise certification** as a way of reducing costs of certification and introduce them slowly into full certification. Governments could help in promoting and initiating group certification and lowering the administrative complexity to engage more smallholders in certification.

If different schemes are used in the same supply chain, covering particular aspects/parts of the supply chain, this will be even more time consuming and costly. To alleviate this barrier, **coordination and recognition** (unilateral and mutual) can be a vital measure to reduce administrative requirements. Furthermore, there is a danger that the cost of certification will be mainly carried by the biomass producers and energy consumers. Where costs are significant, there is a need to look at the fairness of the distribution of costs in the supply chain in relation to the profits obtained by various actors. The fair distribution of costs and profits could be a potential role for governments.

Government subsidies may also help to alleviate some of the financial burdens of the biomass or biofuel producers or energy consumers, even if it is more common that energy producers receive governmental subsidies (e.g. the Renewable Obligation Certificates in the UK). However, such subsidies can possibly still have an indirect effect in alleviating economic pressures in other parts of the supply chain.

Further dialogue and development is needed to ensure solutions which balance tradeoffs among beneficiaries and those who must bear the costs directly or indirectly.

Certification can be costly, in particular for small players. Solutions need to be sought to reduce the administrative and cost burden, improve the cost-efficiency of the process and obtain a fair distribution of costs along the supply chain.

→ **Capacity building**

Regardless of certification scheme, **developing countries** (at the global level) are lagging behind with regard to implementation because of financial, institutional and technical reasons. The implementation of sustainability systems - as conceived by developed countries - generally will require a much bigger leap for them to reach a certain threshold because of the lack of technology and capital. Non-tariff barriers to international trade could result from that. The experience from forestry has shown that the introduction of certification schemes like FSC can take years. Based on the experiences of certification and sustainable management of resources in developed countries, support, and also share in technology and investment, should be given to these developing countries to catch up and play an equal role in sustainability certified world markets. Important to notice here is that we should strive not to add bureaucracy, but implement certification schemes in such a way that it helps sustainable production and achieves real world improvements.

Developing countries will require a bigger leap to achieve sustainability targets. Time and support should be given to enable them to catch up.

3. How to proceed: actions and roles of stakeholder groups

The need to secure sustainable biomass/biofuel production and use, together with the fast growing markets, has led to the development of a wide range of sustainability initiatives developed largely without coordination among the organisations involved.

This proliferation of different standards and certification systems, and especially the differences in approach on both scheme and level (country/regional), may create confusion among the actors, depression of markets, and unnecessary cost burdens and restrictions on sustainable trade. A strategy towards a global harmonised approach is considered as the best solution to **secure sustainable biomass/biofuels production and trade, and avoid indirect effects** (e.g. ILUC).

However the path towards this harmonisation is not without hurdles. To **overcome** these **hurdles**, already some actions are being taken (e.g. mutual recognition of some schemes, harmonisation efforts like ISO and CEN on the standardisation and GBEP on the methodological level), but it is obvious that there is still a long way to go.

In the previous sections a number of recommendations have been proposed which can be considered on the path towards the development of a credible, efficient and effective biomass certification system. In this section these recommendations are translated into **key actions** to move forward, and who could play a leading role.

- It is necessary to **agree on a common and cross-sector understanding and approach** not only regarding sustainability principles and criteria (what are controllable criteria that do not incur high costs?) but also on the certification approach (implementation and verification procedures and methodologies used, common approach on how to verify?). Various international bodies or initiatives already have taken action such as GBEP and ISO, but further actions are needed to reach consensus on these issues.
- Some **governmental intervention** might be required to ensure legal and international coherence in the form of an Multilateral Environmental Agreement (translation of standards and certification into (national) policy instruments).
- In the meanwhile existing and developing certification systems should **converge** up to a level that ensures consistency and transparency among schemes, to enable unilateral or mutual recognition and reduce administrative complexity and costs. This should be a task for current (leading) scheme holders and roundtable initiatives during the further development and improvement of the schemes.
- There is a need for increased **communication and engagement** among all stakeholders involved in sustainability certification to ensure meaningful solutions, enhance participation and avoid unintended effects. This is also a role for scheme owners and roundtable initiatives, where international bodies like IEA Bioenergy could facilitate this and bring all relevant people together.
- **Guidance** is key to ensure all stakeholders can/are able to participate e.g. by promoting group certification and providing training and capacity building. Government bodies and neutral actors (NGOs, international organisations) without prejudice or preference for a certain scheme play a leading role.
- **Tools** need to be developed to support operators in the decision to select the 'best fitting' scheme, but also to monitor implementation of certification (e.g. registration tool for certified biomass/biofuels). This is also a role for government bodies and NGOs.

Specific role of IEA Bioenergy:

IEA Bioenergy is a global network of experts in all aspects of the sustainable use of biomass for energy at worldwide level. It is a non-commercial organisation and therefore can play a role in providing an **independent view and analysis** on how certification, legislation and markets interact and getting the facts right.

Furthermore, IEA Bioenergy can **provide a platform** for stakeholders **to discuss** harmonisation, cross-compliance and mutual recognition. They could encourage comparison and learning among systems, even when such systems focus on different commodities or resources, to increase efficiency.

As **facilitator**, IEA Bioenergy members can bring people together to discuss certain issues, like the recent example of a meeting arranged by IEA Bioenergy in Quebec to discuss unintended effects for Canadian wood pellet exports to Europe due to the potential exclusion of primary forests as an acceptable source of biomass fuel raw material for use in the Europe.

IEA Bioenergy could help **establish a common language** on sustainability of biomass and how to define a global framework of definitions, verification requirements and methodologies. It can also give **guidance** to stakeholders on how to use certification to comply with legislative requirements.