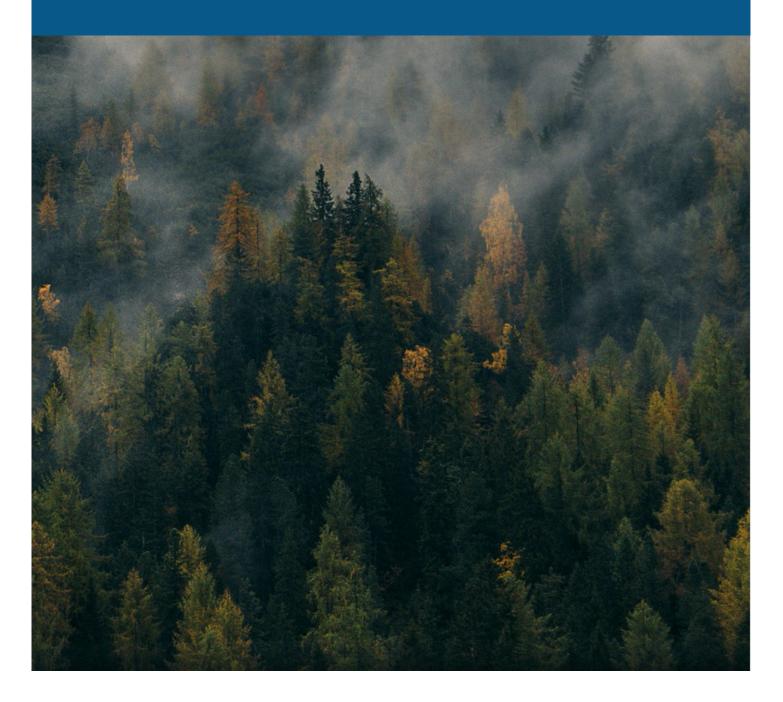


ISCC EU 202-3 FOREST BIOMASS: ISCC PRINCIPLE 1



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Document Title: ISCC EU 202-3 Forest Biomass: ISCC Principle 1

Version 1.0

Valid from: 19 December 2024

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1 Introduction

Biomass used in food, feed, chemical and energy markets should be produced in a sustainable way. This means that the production of biomass should follow best environmental, social and economic practices. Areas which are biodiverse or rich in carbon, which serve to protect threatened or vulnerable species, or which are of other ecological or cultural importance, need to be protected and should not be degraded or destroyed for biomass production. The objective of the International Sustainability and Carbon Certification (ISCC) certification system is to contribute to the sustainable cultivation, processing and use of different kinds of biomass and their products. Thereby, ISCC contributes to the reduction of environmental impacts, the safeguarding of biodiversity and carbon stocks, more efficient resource use and climate resilience.

The ISCC EU System Document 202-3 "Forest Biomass – ISCC Principle 1" covers the legal requirements of Articles 29(6) and 29(7) of the Directive (EU) 2018/2001 of 11 December 2018 on the promotion of the use of energy from renewable sources (recast) (in the following referred to as RED II) as well as the Implementing Act establishing the operational guidance for demonstrating compliance with the sustainability criteria for forest biomass as specified within Article 29(6) and (7) of the RED II.¹ The document focuses solely on biomass cultivated and produced in forestry which is used for the production of biofuels, bioliquids and biomass fuels. This does not include the production of solid biomass in agriculture, e.g. short rotation coppicing, for which the ISCC sustainability requirements for agriculture apply (see ISCC EU System Document 202-1 "Agricultural Biomass – ISCC Principle 1").

The requirements of ISCC Principle 1 for forest biomass ensure the legality of harvesting operations, forest regeneration, the protection of areas designated for nature protection purposes, that harvesting is carried out taking soil quality and biodiversity into account and to ensure the maintenance and improvement of the long-term production capacity of the forest. By applying these requirements, the risk of using forest biomass derived from unsustainable production for biofuels, bioliquids and biomass fuels shall be minimised. Moreover, forest biomass used to produce biofuels, bioliquids and biomass fuels must meet the land-use, land-use change and forestry (LULUCF) criteria.

From 1st January 2008 onwards, users of the ISCC certification system are not allowed to change the status of areas with high biodiversity or high carbon stock. They include primary forests and other woodland (forests and other wooded land of native species where there is no clearly visible indication of human activity and the ecological processes are not significantly disturbed), highly biodiverse forests and other wooded land (areas that are species-rich and not degraded, or areas that have been identified as being highly Sustainable production of raw materials

Requirements of the RED II

ISCC Principle 1 for legality and land related requirements

Cut-off date

¹ Commission Implementing Regulation (EU) 2022/2448 of 13 December 2022 on establishing operational guidance on the evidence for demonstrating compliance with the sustainability criteria for forest biomass laid down in Article 29 of Directive (EU) 2018/2001 of the European Parliament and of the Council

biodiverse by the relevant competent authority); areas designated by law or by the relevant competent authority for nature protection purposes or for the protection of rare, threatened or endangered species or ecosystems (recognised by international agreements or included in lists drawn up by intergovernmental organisations or the International Union for the Conservation of Nature); highly biodiverse grassland (both natural and nonnatural), land with high carbon stock (such as, inter alia, wetlands and continuously forested areas or forested areas with 10-30% canopy cover) and peatland. Violations of ISCC Principle 1 are critical non-conformities and cannot be subject to corrective measures. Conservation and enhancement of biodiversity is an essential objective of sustainable forest management in order to maintain species and habitats in their diversity. All forest biomass certified under ISCC must therefore comply with the requirements of Principle 1 for forest biomass. Annex I contains a list of definitions from Art. 2 of the Implementing Act that are relevant for this document.

ISCC certification goes beyond the legal requirements of the RED II as it covers additional ecological, social and economic requirements. These requirements are covered under ISCC Principles 2-6 for forest biomass and have been developed through a multi-stakeholder dialogue. They are divided into 'immediate requirements', 'short-term requirements, 'mid-term requirements' and 'best practice requirements'. Compliant to all immediate requirements of ISCC Principles 2-6 when starting to supply sustainable forest biomass is a must.

The short-term and mid-term requirements of ISCC Principles 2-6 have to be implemented in a continuous improvement process over a period of 3 and 5 years respectively. Additionally, economic operators can choose to implement the best practice requirements. Further details are stated in ISCC EU System Document 202-4 "Forest Biomass – ISCC Principles 2-6".

Only forest biomass produced in compliance with the requirements of all six ISCC Principles can be considered sustainable. Partial compliance with the requirements is not sufficient to declare the forest biomass produced as sustainable.

Compliance with the ISCC requirements is verified by independent third-party audits. ISCC provides audit procedures, checklists, and numerous other supporting documents to facilitate the implementation and verification of the ISCC requirements (see ISCC EU System Document 201 "System Basics" for further information).

The ISCC requirements are globally applicable. If required, additional guidelines to support the consistent application of ISCC in different regions with different species and technologies can be developed.

ISCC Principles 2-6 for ecological, social and economic requirements

> ISCC Forest Biomass Principles 2-6

> > No partial compliance

Third-party audits

Global applicability

2 Scope and Normative References

ISCC Principle 1 for forest biomass covers the sustainability requirements comprised within the Art 29(6) and (7) of the RED II for forest sourcing areas and the respective Implementing Act providing the operational guidance on these Articles. They apply to all forest biomass which shall be supplied as sustainable under ISCC.

Forest biomass is biomass produced from forestry, including solid biomass such as trunks and bark, and non-wood forest products. Furthermore, the requirements apply to all forestry residues (e.g. branches, needles, tree tops, roots and stumps) occurring as part of any cultivation and harvesting operations and may include wood that has been collected following natural mortality.

This document is valid in addition to the other ISCC EU System Documents.

ISCC Principle 1 – Sustainability Requirements for the Production of Forest Biomass

The forest biomass criteria are fulfilled at national or sub-national level (Level A) when legislation defined in Article 29(6a) and 29(7a) of the RED II are in place. However, if any of these criteria at Level A cannot be demonstrated at national or sub-national level, economic operators will need to demonstrate compliance at the forest sourcing area level (Level B).

In accordance with Art. 29 (6) and (7) of the RED II, verification of conformity with ISCC Principle 1 can be provided by applying a risk-based approach (a risk assessment) to investigate the risk of using unsustainable forest biomass for bioenergy production.

If the risk assessment result confirms that there is no significant lack of enforcement of the national and/or sub-national laws and regulations on A level, forest biomass can be harvested as sustainable, and no further actions are needed. However, if one or more criteria at Level A cannot be confirmed by the risk assessment, these compliance checks have to be implemented at forest sourcing area level (Level B) only for those criteria for which level A evidence could not be provided.

As to ensure a high level of credibility, the risk assessment of determining compliance with the harvesting criteria and LULUCF criteria at national/subnational level shall follow a set of process (see Section 3. *Risk-based approach*) and apply a standard template (see Annex II).

In this document, the term **'management system'** means an information management system run by an economic operator to demonstrate that biomass sourcing is in compliance with the sustainability criteria at forest sourcing area level defined in Articles 29.6(b) and 29.7(b).

Relevant raw materials

Forest biomass

Definition of Level A and Level B

Implementation of risk-based approach

> Definition of 'Management system'

The management system has to document management practices with relevance to the sustainability criteria that have been and are planned to be applied by forest managers/owners in the sourcing area.

The management system ensures that information necessary to demonstrate compliance with all sustainability criteria through a risk-based approach is collected, verified, assessed, securely stored by the economic operator and passed down the supply chain using a chosen chain of custody option.

This document and its annexes can be used to help define the information requirements, identify available information sources, and assess the available information.

The term '(forest) sourcing area' according to Article 2(30) of REDII means; the geographically defined area from which the forest biomass feedstock is sourced, from which reliable and independent information is available and where conditions are sufficiently homogeneous to evaluate the risk of the sustainability and legality characteristics of the forest biomass.

This definition implies:

- > A "geographically defined area" means that the area of origin from which the forest biomass feedstock is harvested, is known and can be shown on a map, typically on the basis of administrative boundaries.
- "From which reliable and independent information is available" means that the information required to assess compliance with the REDII criteria is available from competent organizations, public or private, which have the legal mandate to produce reliable information. For public forests this could be the competent forest management authority. For private forests, this could be directly responsible for the forest management.
- Where conditions are sufficiently homogenous to evaluate the risk of the sustainability and legality characteristics of the forest biomass": this means that within the area, the legislation covering the elements of the sustainability criteria shall be consistence. If an economic operator's supply base spreads over two countries or regions where the elements addressed in REDII are governed through different sets of legislation, then that results in two separate sourcing areas for which the risk-based approach would have to be implemented separately.

Figure 1 shows four examples of different scenarios for the division of an operator's supply base into sourcing areas.

Definition of 'Sourcing area'

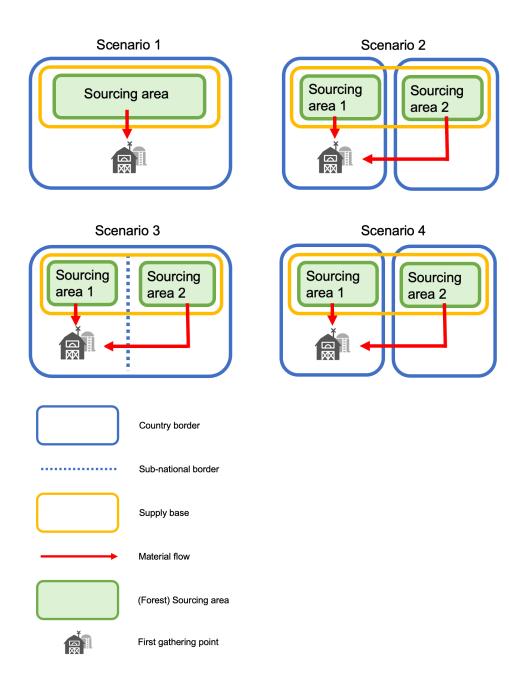


Figure 1: Scenarios of different (forest) sourcing area

> Scenario 1: Country 1 does not comply with one or more sustainable criterial at Level A.

In terms of risk assessment: one risk assessment is needed.

> Scenario 2: Both countries do not comply with one or more sustainable criterial at Level A.

In terms of risk assessment: Two separate risk-based assessments are needed.

Scenario 3: Country 1 has 2 sub-national legislations in the area of harvest. One does comply with sustainable criterial at Level A and one does not.

In terms of risk assessment: one risk assessment is needed for the failed Level A criteria for the entire supply base.

> Scenario 4: Only one of the countries complies at Level A.

In terms of risk assessment: one risk assessment is needed to demonstrate compliance only for the non-complied sourcing area.

1.1 Harvesting Criteria

In accordance with Art. 29 (6), forest biomass used to produce biofuels, bioliquids and biomass fuels must be harvested in a country or territory which has national or sub-national laws applicable to harvesting forest biomass, as well as monitoring and enforcement systems in place or, if there is insufficient evidence of systems like this or a lack of legislative enforcement, a management system shall be in place at forest sourcing area level.

In the following, the requirements and guidance to assess the compliance of harvesting sourcing criteria are described that shall be in place either at the national, sub-national level or at the forest sourcing area level.

1.1.1 Harvesting Criteria at National or Sub-national Level (Level A)

The harvesting criteria need to be fulfilled at national level, for the country where the biomass was harvested. Laws, enforcement and monitoring systems can be a national, or a sub-national competence, in the latter case is such sub-national areas as regions and all regions that need to comply with a criterion for a country to be considered.

The regional level can be referred to differently depending on the country (in federal countries, or in decentralized countries, important parts of the legislative power in the area of forestry have been transferred from the country level to the sub-national level).

By carrying out a risk assessment, the compliance of harvesting with the existing legislation at national or sub-national level shall be verified that the following harvest sourcing criteria are met:

(1) the country of harvest, and, where applicable, the sub-national region where the forest biomass was harvested;

(2) the national or sub-national law applicable to the area of harvest ensures:

(a) Legality of harvesting operations

the legality of harvesting operations by compliance of harvesting with existing legislation in country of harvest; and, as specified in point (h) of Article 2 of Regulation (EU) No 995/2010 of the European Parliament and of the Council of 20 October 2010 laying down the Harvesting criteria at Level A

Harvesting legality criterion at Level A obligations of economic operators who place timber and timber products on the market (EUTR);

the existence of a ruling of the Court of Justice against a Member State, for the violation of relevant Union legislation, such as Regulation (EU) No 995/2010 of the European Parliament and of the Council, shall be considered evidence of such a lack of enforcement, as well as other infringements relating to the REDII and other relevant environmental legislation such as the Habitats Directive;

(b) Forest regeneration of sourcing areas

forest regeneration, which may be proven by providing evidence that the applicable laws require natural or artificial regeneration, or a combination thereof, that is directed at establishing a new forest on the same harvesting site within an appropriate period according to the relevant national legislation;

(c) Effective protection of areas designated by international or national law or by the relevant competent authority for nature protection purposes, including wetlands and peatlands

that areas designated by international or national law or by the relevant competent authority for nature protection purposes, including wetlands and peatlands, are protected and that harvesting activities do not conflict with protection objectives. The list of area could include:

- > National park
- > Natural monument or feature
- > Habitat/species management area
- > Protected landscape/seascape
- > Protected area with sustainable use of natural resources

(d) Maintenance of soil quality and of biodiversity

that harvesting is carried out in a way that minimizes negative impacts on soil quality and biodiversity.

The term '**maintenance of soil quality**' means keeping the physical, chemical, biological and ecological state of the soil after an intervention at comparable level to before the harvesting intervention.

'Minimising negative impacts of soil' means keeping soil disturbance due to harvesting to a minimum by applying a site-

Forest regeneration criterion at Level A

Protected areas criterion at Level A

> Maintenance of soil and biodiversity criterion at Level A

suitable harvesting system and preventing soil erosion, while allowing established sustainable forestry practice.

The term '**maintenance of forest biodiversity**' means that genetic and diversity of animal and plant species is unharmed during an intervention or can establish again after an intervention, which would include conservation of habitats and species.

To '**Minimising negative impacts of biodiversity**', biodiversity and habitat features should be identified and that harvesting operations are planned in such manner that these features are left unharmed, or their establishment encouraged as much as possible.

Maintenance of soil quality and of biodiversity may be proven by providing evidence that the legal compliance at national or subnational level, or relevant forest management rules:

- Protected primary forests and areas (as described above, (c) Effective protection of areas designated by international or national law or by the relevant competent authority for nature protection purposes) must not be degraded or replaced by plantation forests, which includes, but is not limited to, ensuring that the regenerated forest area contains a sufficient and appropriate variety of plants and trees;
- Provides for the protection of soils and of species and habitats including those protected by international or national law. Data on site-specific environmental features must be made available to economic operators so that their work is facilitated; and
- Minimises, where appropriate, the removal of stumps, roots and deadwood;

(e) Maintenance of long-term production capacity of forests

harvesting maintains or improves the long-term production capacity of the forest and that it does not compromise forest health or associated ecological system services. Long-term production capacity of the forest is maintained or increased, which may be proven by providing evidence that the applicable law at national or sub-national level ensures that, based on average annual data, the fellings do not exceed the net increment over an appropriate period according to the relevant national legislation, except in cases where it is temporarily justified due to documented forest pests, storms or other natural disturbances. That may be proven by using:

- > National forest inventory reports;
- > Providing the evidence referred to in 1.1.2 (b) OR;
- > Similar inventory reports at sub-national level;

Maintenance of long-term production capacity criterion at Level A (3) the existence of systems for ensuring monitoring of implementation and enforcement of national and sub-national laws referred to in paragraph (2), including information of: the authorities competent for carrying out monitoring, implementation and enforcement, sanctions for non-compliances, systems for appealing against decisions, and public access to information;

(4) there shall be no significant lack of enforcement of the national and subnational laws and regulations referred to in paragraph (2).

Two steps are described below to demonstrate compliance with harvesting criteria at Level A, where each step should be repeated for each criterion.

> Step 1: Assessment if laws/regulation is in place:

For each criterion within the sustainable harvesting criteria a check is done if legislation is in place in the country covering that criterion. This could be either in specific forest legislation (e.g. forest laws mentioning need for regeneration) or more environmental legislation (e.g. identifying and limiting activities in protected areas).

It aims to identify whether laws exist that explicitly or implicitly aim to achieve the criteria and make sure that it has 'low risk', as they have legislation and monitoring/enforcement in place covering the forest sustainability requirement.

> Step 2: Assessment of monitoring and enforcement in place:

Once relevant laws/regulation has been identified, a review shall be done to ensure that monitoring and enforcement systems are in place and that there is no significant lack of enforcement. This could be done by:

- Review if there is an ongoing infringement procedure by the European Commission against the country in any field relevant to the criteria.
- Review the UNEP-WCMC "briefing notes on the implementation of the EU Timber Regulation" of the past two years to check for any mention of serious offenses. If it is mentioned, the mentioned issues must have been resolved.
- Review any other evidence from governmental organization which can be used to prove a lack of compliance.

It is considered best practice, that any individuals supporting the Level A risk assessment process declare any potential conflict of interests.

Table 1 below may serve as a checklist of type of proof and possible information sources to demonstrate compliance at Level A. The Table 1 may also serve as guidance to fill out the standard template for the assessment of

the risk of unsustainable production of forest biomass (risk assessment), which can be found in Annex II.

REDII Criteria	Requirement	Type of proof	Information source
Harvesting legality	Laws	Adequate and efficient due diligence as required under the EU Timber Regulation (EUTR, (EU) 995/2010) has determined negligible risk of illegal logging	Legislation in the area of forestry can be checked from national official legislation journals and databases or from the UN-FAO FAOLEX database of national legislation, policies and bilateral agreements on environment, forestry, land & soil, agriculture and natural resources management, amongst other: <u>http://www.fao.org/faolex</u> (from below only the link is mentioned)
	Monitoring/	Proof that there is no evidence from national or international governmental organizations that there is significant and continued lack of enforcement	The UNEP-WCMC briefing notes on EUTR implementation: <u>www.unepwcmc.org/featured-projects/eu-timber-regulations-and-flegt</u>
	Enforcement	Evidence that the relevant Member State is not subject to any ongoing EU infringement procedure for non- compliance with the EUTR	For information on EU infringement procedures, query for "MISCELLANEOUS -FORESTS - Non-compliance with EUTR and FLEGT Regulations" in the query form's Title field: <u>https://ec.europa.eu/info/law/infringements_en</u>
	Laws	Legal analysis showing that the relevant legislation complies with the forest regeneration criteria	http://www.fao.org/faolex
Forest regeneration	Monitoring/ Enforcement	Legal analysis showing that the relevant forest legislation includes monitoring and enforcement requirements for forest regeneration	http://www.fao.org/faolex
		Proof that there is no evidence from national or international governmental organizations that there is significant and continue lack of enforcement	The UNEP-WCMC briefing notes on EUTR implementation: <u>www.unepwcmc.org/featured-projects/eu-timber-regulations-and-flegt</u>

REDII Criteria	Requirement	Type of proof	Information source
			Other recent and relevant official information from national governmental or international inter-governmental sources, such as World Bank, FAO, UNEP.
	Laws	Legal analysis showing that the relevant legislation complies with the protect areas requirement	http://www.fao.org/faolex
			European Environment Agency Common Database on Designated Areas for all its 36 member countries. <u>https://www.eea.europa.eu/data-and-maps/data/nationally- designated-areas-national-cdda-14</u>
			World Database on Protected Areas (WDPA), including reports on the effective management of protected areas for most countries in the World. <u>http://www.protectedplanet.net</u>
Protected areas		Legal analysis showing that the relevant forest legislation includes monitoring and enforcement requirements for protected areas	http://www.fao.org/faolex
	Monitoring/ Enforcement	Proof that there is no evidence from national or international governmental organizations that there is significant and continue lack of enforcement	The UNEP-WCMC briefing notes on EUTR implementation: <u>www.unepwcmc.org/featured-projects/eu-timber-regulations-and-flegt</u>
			World Database on Protected Areas (WDPA), including reports on the effective management of protected areas for most countries in the World. http://www.protectedplanet.net
			Other recent and relevant official information from national governmental or international inter-governmental sources, such as World Bank, FAO, UNEP.

REDII Criteria	Requirement	Type of proof	Information source
	Laws	Legal analysis showing that the relevant legislation complies with the maintenance of soil quality and biodiversity criteria	http://www.fao.org/faolex
Maintenance	Monitoring/ Enforcement	Legal analysis showing that the relevant forest legislation includes monitoring and enforcement requirements for protected areas	http://www.fao.org/faolex
of soil & biodiversity		Proof that there is no evidence from national or international governmental organizations that there is significant and continue lack of enforcement	The UNEP-WCMC briefing notes on EUTR implementation: <u>www.unepwcmc.org/featured-projects/eu-timber-regulations-and-flegt</u>
			Other recent and relevant official information from national governmental or international inter-governmental sources, such as World Bank, FAO, UNEP.
	Laws	Legal analysis showing that the relevant legislation complies with the long-term production capacity criteria	http://www.fao.org/faolex
Long-term		Legal analysis showing that the relevant forest legislation includes monitoring and enforcement requirements for long-term production capacity	http://www.fao.org/faolex
production capacity	Monitoring/ Enforcement	Proof that there is no evidence from national or international governmental organizations that there is significant and continue lack of enforcement	The UNEP-WCMC briefing notes on EUTR implementation: www.unepwcmc.org/featured-projects/eu-timber-regulations-and- flegt
			Other recent and relevant official information from national governmental or international inter-governmental sources, such as World Bank, FAO, UNEP.

Table 1: checklist for demonstrating compliance with the harvesting criteria through Level A

1.1.2 Harvesting Criteria at Forest Sourcing Area Level (Level B)

For each criterion for which Level A evidence is not available (section 1.1.1) or if the Level A risk assessment resulted in specific risk, the economic operator shall ensure to demonstrate compliance through management systems at the forest sourcing level (Level B).

The individual(s) responsible for implementing the management system at forest sourcing area level shall possess advanced expertise in forestry conditions specific to the region, country, or area. The individuals shall possess appropriate educational attainment, training, and/or pertinent qualifications, all of which collectively showcase the author's competence in effectively implementing the management system requirements.

Moreover, the spatial boundaries of the sourcing area for which compliance needs to be demonstrated shall be clearly distinguishable by means of geographical coordinates, polygons, plots or parcels. Hence, it shall be verified at the forest sourcing area level that the harvesting sourcing criteria are in place. Criteria and stepwise approaches for the verification with checklists can be found below:

(a) Legality of harvesting operations

the legality of harvesting operations, which shall be proven by providing evidence of the compliance of harvesting with the due diligence system defined in article 6 of Regulation (EU) No 995/2010 of the European Parliament and of the Council;

(b) Forest regeneration of sourcing areas

forest regeneration is carried out in a manner that at least maintains the quality and quantity of the harvested forest areas, which may be proven by providing evidence of the establishment of a new forest in the same area within a maximum of ten years after the harvesting. This may be proven by using forest management plans, operational protocols, environmental impact assessments, and results of relevant compliance audits and inspections. Table 2 presents the checklist (non-exhaustive) for demonstrating compliance with the regeneration criterion, including indicators and related sources of information.

Indicator	Sources of information
Type of forest operation from which forest biomass results	Forest management plans obtained e.g. from the forest owner directly, or from a competent authority that compiles such information from forests within the sourcing area

Harvesting criteria at Level B

Harvesting legality criterion at Level B

Forest regeneration criterion at Level B

Indicator	Sources of information
Quality and quantity of next generation forest resources	Forest management plans obtained e.g. from the forest owner directly, or from a competent authority that compiles such information from forests within the sourcing area

Table 2: Checklist for demonstrating compliance with the regeneration criterion

Below is the stepwise approach which includes key steps for demonstrating compliance with the regeneration criterion:

Step 1: Identify how the forest biomass has been collected. In case of final felling, clearcutting or selective logging or from a calamity, regeneration is required. However, biomass results from thinning (here thinning means: a reduction of the number of stems to give more space for the crowns of the main trees of interest to develop to maturity) or from the pruning of trees, regeneration would not be an issue and the biomass is considered compliant with the criterion.

The information to assess these first step should be specified in forest management plans/operational reports/harvest protocols by specifying the type of forest operation from which forest biomass stems from (e.g. final felling, thinning, salvage cuttings). The information must be specified for each stand individually. The relevant information could be obtained e.g. from the forest owner directly, or from a competent authority that compiles such information from forests within the sourcing area.

- Step 2: If regeneration is required, the operator provides evidence to ensure that regeneration will be carried out, either through natural regeneration, planting and seeding, or coppice regrowth. Evidence is required which shows that forest regeneration is done. Forest regeneration should maintain quality and quantity of the harvested forest areas at least within a fiveyear regeneration period after harvesting; additionally, there should be no indication of a deterioration of the biodiversity within the regenerated forest area. In addition to an on-site audit, this shall be evidenced by forest management plans, operational protocols, environmental impact assessments.
- (c) Forest biomass does not originate from areas designated by international or national law or by the relevant competent authority for nature protection purposes, including wetlands and peatlands

Protected areas criterion at Level B forest biomass does not originate from areas designated by international or national law or by relevant competent authority for nature protection, including in wetlands and peatlands, unless there is evidence that the harvesting of the raw material does not interfere with the protection objectives of the designated areas. That may be proven by using international and national databases, official maps, forest management plans, operational protocols, harvesting protocols, satellite imaging, environmental impact assessments, and official logging permits including conditions or restrictions ensuring that there is no conflict with the relevant nature protection objectives, and the result of relevant compliance audits and inspections. Table 3 presents the checklist (non-exhaustive) for demonstrating compliance.

Indicator	Sources of information
Presence of designated areas for nature protection, including wetlands and peatlands	 IUCN maintains the World Database on Protected Areas (WDPA) Other international networks of designated areas e.g. the UNESCO Biosphere Reserves
Harvesting permission in the protected areas	 Harvesting permission issued by the relevant competent authority Alternatively, proof of compliance with relevant legislation is provided through operational reports/harvest protocols
Implementation of plans/measures in the protected areas	 Operational reports describe compliance measures undertaken in the respective areas, obtained via field inspections with an agent of the relevant competent authority, OR The confirmations are implemented by second or third party and thereafter endorsed by the competent authority

Table 3: Checklist for demonstrating compliance with the protected areas criterion

Below is the stepwise approach which includes key steps for demonstrating compliance with the criterion on protected areas:

Step 1: Areas designated by international or national law or by the relevant competent authority for nature protection purposes, or comprehensive global database on protected areas such as the World Database on Protected Areas (WDPA), including wetlands and peatlands, are protected and that harvesting activities do not conflict with protection objectives.

If no biomass is sourced from such areas, then the criterion on protected areas is de facto complied with. If the sourcing area does include such areas, then it needs to be ensured that the interventions were permitted and that all conditions and restrictions are followed, as laid out in the following steps.

Step 2: Evidence that an official permission for biomass harvesting was granted by the relevant competent authority. Specific conditions and restrictions (such as areas, species, amounts, locations and time periods) to be clarified in prior to any harvesting activities.

This information is to be provided upon every consignment originating partly or fully from nature protection areas. Otherwise, proof of compliance with relevant legislation is provided through operational reports or harvest protocols, describing amounts and harvesting systems in the respective type of nature protection area.

Step 3: In addition to an on-site audit, evidence of compliance with the relevant condictiones and restrictions for harvest activity has to be provided, by means of operational reports that describe measures undertaken in the areas.

Such reports are either implemented by a second or third party and endorsed by the competent authority, or the reports are implemented via field-inspections with an agent of the relevant competent authority. The information is to be provided upon every consignment originating partly or fully from nature protection areas.

(d) Maintenance of soil quality and of biodiversity

forest harvesting is carried out in a way that aims at least at preventing negative impacts on soil quality and biodiversity. This may be proven by providing evidence that the relevant risks associated with the harvesting of forest biomass for energy production have been identified in advance; and that, appropriate mitigation actions have been implemented such as the following:

- > primary forests and areas protected under 1.1.1 (2) (c) are not degraded to or replaced by plantation forests;
- > harvesting of stumps and roots is minimised;
- > no harvesting is carried out on vulnerable soils;
- > harvesting is carried out through logging systems that minimise impacts on soil quality, including soil compaction;
- > harvesting is carried out in a way that minimizes impacts on biodiversity features and habitats, including plants and animals protected under international or national legislation;

Maintenance of soil and biodiversity criterion at Level B

- > a locally-appropriate quantity and assortments of deadwood is left in the forest; and
- > large clear-cuts are minimised except in cases where it is temporarily justified due to documented forest pests, storms or other natural disturbances.

Those mitigation actions may be proven by using international and national databases, official maps and satellite imaging, forest management plans, operational protocols, and harvesting protocols, results of relevant compliance audits and inspections. Table 4 presents the checklist (non-exhaustive) for demonstrating compliance with maintenance of soil quality and of biodiversity.

Indicator	Sources of information	
Biomass includes stumps or roots	Operational post-harvest reports confirm that stumps or roots were not harvested in the sourcing area	
Existence of vulnerable soils in the forest sourcing area	 FAO/UNESCO Soil Map of the World 34 Harmonized World Soil Database – FAO 35 National or regional soil maps Identification of poor or vulnerable soils in forest management plans 	
Harvesting on vulnerable soils are implemented according to requirements of logging permission	Post-harvest report issued or approved by the competent authority	
Impacts on soil quality are minimized during and after harvesting	 Forest management plans/operational reports/harvest protocols could include a "checklist" for the assessment of potential impacts as well as an assessment of measures to minimize such at operational level Operational reports created during or after harvest show proof that precautionary measures have been implemented regarding soil protection and include dated and geo-tagged pictures before-and after- the intervention or written description of impacts on logging trails and damages on the remaining stand Operational reports/harvest protocols confirm that local best practice guidelines or relevant legislation regarding soil protection during harvesting operations are complied with (i.e. chosen harvesting system is justified in respect of soil type and slope) 	
Biodiversity and habitat features are assessed and specified	 Forest management plans Operational reports Pre-harvest inventory Regional biodiversity assessments 	
Required or recommended amounts of deadwoods are known	 Applicable legislation or regulation Regionally applicable best practices Scientific recommendations 	

Indicator	Sources of information
Deadwood amounts are according requirements or best practice recommendation	 Harvesting protocols Operational reports Pre-harvest inventory Post-harvest assessments
Preventive and protective measures are taken to protect biodiversity during harvesting operations	 Harvesting protocols Operational reports Post-harvest assessments

Table 4: Checklist for demonstrating compliance with maintenance of soil quality and of biodiversity criterion

Below is the stepwise approach which includes key steps for demonstrating compliance with the soil and biodiversity criterion:

- Step 1: As a general requirement, removal of stumps and roots are excluded from the biomass harvesting, since it can affect soil quality and its structure.
- Step 2: Identify sensitive and vulnerable soil areas (prone to compaction, erosion through wind or water, steep slopes etc.), which can be done by e.g. on the basis of soil maps, soil sensitivity maps. These areas must be identified before harvesting of forest biomass.

As a general guideline, no biomass extraction is allowed from soil types Rendzina, Lithosol, Ranker, Histosols, Fluvisols, Gleysols and Andosols, unless with explicit permission from the competent authority.

Step 3: If however, the sourcing area includes sensitive and vulnerable soil areas, evidence must be provided during the audit that the correct logging permit has been implemented, otherwise, compliance with local guidelines or best practices (when the local guidelines do not exist) has to be proven through operation protocols.

If such guidelines do not exist, the economic operator may require suppliers and forest owners to adopt specific Best Management Practices for certain tasks. These should be specified in supply contracts, or the suppliers and forest owners include a report from qualified experts regarding soil vulnerability and possible harvesting systems endorsed with a statement that harvesting practices were implemented according to required standards. Officially approved forest management plans specify measures to be taken and operational reports confirm implementation of required protocols.

- Step 4: Requirements of any soil type that measures are planned and implemented to minimize impact on soils (e.g. soil protecting harvesting system, low tire pressure, residue topping on logging trails, logging and removal when soil is frozen or under protective snow cover, optimized trail location without redundant driving, permanent logging trails, power shift clutch, skid chains tractionassisting-winch, exclusion of logging within a certain distance from water bodies, exclusion of logging of forests smaller than a certain size, etc.). Appropriate assessment of impacts and planning to minimize impacts is necessary. The measurement have to be in accordance with the level of vulnerabilities of respective soil types.
- Step 5: Identify biodiversity and habitat features, which shall be taken into consideration when planning harvesting operations (e.g. habitat features for rare and endangered species, features and prevalent species with a high biodiversity value, including estimated or measured amounts of standing and laying deadwood per hectare, veteran trees etc.)
- Step 6: Ensure that deadwood is recognized as an important indicator and substrate for biodiversity. Recommended/ required levels for standing and laying deadwood (including mature dimensions) need to be left in the area. The amounts depends on official regulations or scientifically based recommendations.
- Step 7: Verify if during the harvesting, the level of deadwood was kept. If the deadwood present amount is lower than the recommended level, then biomass sourcing should incur measures to allow deadwood amounts and dimensions to increase.
- > *Step 8:* Verify if the planned mitigation measures were implemented as planned in *step 5*.

(e) Long-term production capacity of forests

the harvest maintains or improves the forest's long-term production capacity. This may be proven by providing evidence that the annual fellings do not exceed the net annual increment in the relevant sourcing area on average within the ten-year period prior to the harvesting intervention, unless different amounts are duly justified in order to enhance the future production capacity of the forest; or because of documented forest pests, storms or other natural disturbance. This may be proven by using public or private forest inventory data. Table 5 presents the checklist (non-exhaustive) for demonstrating compliance with the long-term production capacity of forests. Long-term production capacity criterion at Level B

Indicator	Sources of information	
Sustainable harvest levels	 Regional data for net annual increment is published by national or regional forest inventories but can also be calculated on the basis of forest growth models specifically for the forest sourcing area Regional data for annual harvested timber amounts can be obtained from national or regional forest inventories, or from forest authorities 	
Harvest amounts exceed net annual increments	 Permits or documents including reports of the relevant competent forest authority Specific permits issued by the relevant competent authority allow these temporally higher harvest levels 	

Table 5: Checklist for demonstrating compliance with the long-term production capacity of forests

Below is the stepwise approach which includes key steps for demonstrating compliance with the long-term production capacity criterion:

Step 1: Requires that data for 'annually logged wood amounts' and for 'net annual increment' are available. Inventory and growth data must cover the entire sourcing area and should be based on regional markers, such as growth/drain, harvest level, mortality, and age class distribution, relative to forest types. This requires that a relevant competent party conducts forest inventories periodically, based on in-situ measurements and/or state of the art remote sensing. Detailed harvesting reports need to be compiled periodically.

When national or regional forest inventory data are used, it is important to consider data only for forest available for wood supply. Harvested wood amounts from any illegal logging in the area, also needs to be accounted for. The forest inventory information should be considered for an area that is congruent as much as possible with the forest sourcing area.

- Step 2: The average annual felled timber amounts is compared to the average net annual increment (e.g. an average measured over a 5-year period preceding the harvesting intervention). When the amount of felled timber does not exceed the net annual increment, current wood extraction is assumed not to impede the long-term production capacity.
- Step 3: If however, annual harvest does exceed net annual increment, evidence and justifying reasons must be provided (e.g. restructuring of exotic intensively managed monocultural

single-species even-aged forests into site-natural multi-species uneven-aged woodlands, habitat management or restoration of biodiversity, or that increased extraction took place to counter the effect of biotic or abiotic forest disturbances).

1.2 Land-use, Land-use Change (LUC) and Forestry (LULUCF) Criteria

In accordance with Art. 29 (7), forest biomass used to produce biofuels, bioliquids and biomass fuels must meet the land-use, land-use change and forestry (LULUCF) criteria, either on a national level or at management system level.

1.2.1 Land-use, Land-use Change and Forestry (LULUCF) at National or Sub-national Level (Level A)

To confirm compliance with the criteria on land use, land use change and forestry (LULUCF) at national level, the economic operators have to provide audited information. To that end, the economic operator shall provide accurate, up-to-date, and verifiable evidence that the country or regional economic integration organisation from which the forest biomass originates, is Party to the Paris Agreement² (see Annex I for definition) and fulfils either of the two conditions:

(1) has submitted a *nationally determined contribution* (NDC)³ (see Annex I for definition) to the United Nations Framework Convention on Climate Change (UNFCCC) under the 2015 Paris Agreement on Climate Change that meets the following requirements:

- (a) the NDC includes the agriculture, forestry and land use sectors, either combined as one agriculture, forestry and other land use (AFOLU) sector, or as agriculture and LULUCF sectors separately;
- (b) the NDC explains how the agriculture, forestry and land use sectors have been considered in the NDC;
- (c) the NDC counts the emissions and removals from the agriculture, forestry and land use sectors against the country's overall emission reduction target, including emissions associated with harvesting of forest biomass; or

(2) there are national or sub-national laws, applicable to the area of harvest, to conserve and enhance carbon stocks and sinks in forests. In addition, evidence shall be provided that LULUCF sector emissions do not exceed removals, which may be proven by providing evidence

LULUCF criteria for forest biomass

LULUCF criteria at Level A

² To check which Parties have ratified the Paris Agreement, please see the website of the United Nations Treaty Collection on the current status of ratification: https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXVII-7d&chapter=27&clang=_en.

³ Please find all NDCs enlisted in the following link of the United Nations Framework Convention on Climate Change: https://www4.unfccc.int/sites/NDCStaging/Pages/All.aspx.

that reported LULUCF sector emissions do not exceed removals on average over the ten years preceding the harvesting of the forest biomass and that carbon stocks and sinks are conserved or enhanced between the last two successive ten-year periods preceding the harvesting of forest biomass.

One of the criteria, which, when fulfilled, can in part assure national-level compliance with the requirements of REDII Article 29.7(a), stipulates that national or sub-national laws need to be in place, in accordance with Article 5 of the Paris Agreement, applicable in the area of harvest, to conserve and enhance carbon stocks and sinks, and evidence is provided that reported LULUCF-sector emissions do not exceed removals. This implies that comprehensive national or sub-national monitoring frameworks need to be in place to report on carbon emissions and removals by the LULUCF sector. This could be checked for example from a country's annual greenhouse gas inventory report submitted to the UNFCCC. Greenhouse gas inventory data can be checked e.g. from https://di.unfccc.int/detailed_data_by_party.

Criteria	Evidence of compliance	Sources of information
1.2.1 (1)	The country or regional economic integration organisation is listed as a Party to the Paris Agreement	United Nations list of parties to the Paris Agreement: <u>https://treaties.un.org/pages/Vi</u> <u>ewDetails.aspx?src=TREATY</u> <u>&mtdsg_no=XXVII-7-</u> <u>d&chapter=27&clang=_en</u>
	Presence of a NDC in the UNFCCC registry, submitted by the country or regional economic integration organisation	NDC is included in the UNFCCC NDC Registry: <u>https://unfccc.int/ndc-</u> <u>information/nationally-</u> <u>determined-contributions-ndcs</u>
	Emissions and removals by agriculture, forestry and land use are included in the country's or regional economic integration organisation's NDC	Information provided in the NDC
	Changes in carbon stock associated with biomass harvest are considered in the emissions and removals by agriculture, forestry and land use	Information provided in the NDC
1.2.1 (2)	Presence of national or subnational laws to conserve and enhance carbon stocks and sinks in forests	National or sub-national legislation
	Reported LULUCF-sector emissions for the country or regional economic integration organisation do not exceed removals	Compare emissions and removals for the LULUCF sector, as reported in National Inventory Reports submitted to UNFCCC: <u>https://unfccc.int/process-</u> andmeetings/transparency-

Table 6 presents summary of criteria and related proof of compliance and possible sources of evidence:

Criteria	Evidence of compliance	Sources of information
		andreporting/reporting-and- reviewunder-theconvention/ greenhouse-gasinventories- annex-iparties/national- inventorysubmissions-2019

Table 6: Summary of LULUCF criteria, related proof of compliance and possible sources of evidence

Below is the stepwise approach to estimate compliance with the LULUCF criterion at a national level (Level A).

> *Step 1*: Determine if a country or a regional economic integration organization is a party to the Paris Agreement

As a first step, it is necessary to check whether the country or regional economic integration organisation is listed as a Party to the Paris Agreement. This could be verified from the United Nations list of parties to the Paris Agreement. If this condition is not met, demonstrating compliance at Level A is not possible and an economic operator should proceed with demonstrating compliance Level B

Step 2: Determine if a country or a regional economic integration organization has submitted a Nationally Determined Contribution (NDC)

In the second step, determine whether the country or regional economic integration organisation from which forest biomass is originating has submitted a NDC and whether it has integrated the agriculture, forestry and land use sectors into its NDC (either combined as one AFOLU sector, or as Agriculture and LUCUCF sectors separately). Countries and regional economic integration organisations are requested to submit the next round of NDCs (new or updated NDCs) by 2020 and every five years thereafter (i.e. by 2020, 2025, 2030), regardless of their respective implementation time frames.

As NDCs are nationally determined and there are no mandatory accounting methods for LULUCF in the Paris Agreement, but only provisions aimed at ensuring transparency of the method used. Therefore, countries will have different approaches to setting national targets and apply different methods to account AFOLU emissions and removals towards their climate targets. Similarly, the approaches addressing the AFOLU sector in the NDCs may differ; countries might exclude the AFOLU sector from their NDC at all, they might include the AFOLU sector within the overall target for emission reductions, or they might have a separate target for the AFOLU sector.

The mere existence of a submitted NDC mentioning the AFOLU sector (or the agriculture and the LULUCF sectors) is not enough for LULUCF criteria stepwise approach at Level A demonstrating compliance with the criteria of Art. 29.7. Instead, the NDC should:

- (1) Explain how the AFOLU sector (or separately for agriculture and the LULUCF sectors) has been considered in the NDC; AND
- (2) Count the emissions and removals from the AFOLU sector against the country's overall emission reduction target; AND
- (3) Consider carbon stock changes associated with harvesting forest biomass in the total emissions of the AFOLU sector. In case that all three requirements are met, biomass from any forestry operator in the country/region complies with the LULUCF requirements of REDII.

In case the requirements are not met, an economic operator could proceed with the next (third) step.

> *Step 3*: Determine if national or sub-national laws that aim to conserve and enhance carbon stocks and sinks in forests are in place.

For the third step, check whether national or sub-national laws are in place that aim to conserve and enhance carbon stocks and sinks in forests. For example, such laws could be (sub-) national laws implementing the LULUCF Regulation, or other climate change or protection-related laws in case they require that forest carbon stocks and sinks are maintained or enhanced. The presence of a law that merely requires that forest area should be maintained is not sufficient.

The presence of such laws must be accompanied with evidence that reported LULUCF sector emissions do not exceed removals. Such information can be obtained from National Greenhouse Gas Inventory Reports submitted to UNFCCC. It is recommended to consider emissions and removals data from a period of the last ten years, but can be shorter or longer to mitigate the impact of annual disturbance or any eventual stochastic events on the levels of carbon emissions and removals. Compliance is demonstrated when the sum of reported LULUCF sector emissions (reported as positive values) and removals (reported as negative values) is zero or negative. If this condition is not met, demonstrating compliance at Level A is not possible and an economic operator should proceed with demonstrating compliance at Level B.

1.2.2 Land-use, Land-use Change and Forestry (LULUCF) at Forest Sourcing Area Level (Level B)

Where evidence of compliance with LULUCF criteria at national level as referred to in chapter 1.2.1 is not available, the forest biomass must be harvested in a forest for which forest management systems are in place at forest sourcing area level to ensure that levels of carbon stocks and sinks in

LULUCF criteria at Level B the forest are maintained or strengthened over the long term. Economic operators shall have adequate monitoring and verification systems of the actual development of carbon stock and sinks. They shall provide accurate, up-to-date, and verifiable evidence to cover the stepwise approach below. Compliance proof can be provided by presenting a certificate from recognised (voluntary) schemes to verify carbon balances in forests or through their own calculations based on the methodology mentioned below, in a stepwise approach. All details must be plausible and transparent so that they can be verified during an audit. All information on data, sources and methods used must be readily available.

The individuals entrusted with conducting the LULUCF assessment through a management system at level B must hold a profound understanding of forestry conditions in the country, region or area, possess appropriate educational attainment, training, and/or pertinent qualifications, all of which collectively showcase the author's competence in effectively conducting the assessment for the economic operator. Additionally, the individual shall possess in depth knowledge in GHG methodologies and carbon accounting in the context of forestry. The subsequent section defines a stepwise approach to verify LULUCF criteria through management systems at Level B. The approach builds on existing methodologies, for which publicly available data and tools can be utilized. The economic operator providing evidence for compliance needs to be familiar with calculations on forest carbon stock and sinks, but also is obliged to ensure that the forest management practices implemented at forest sourcing area level will result in equal or higher carbon stock over time.

- Step 1: The identification of the spatial boundaries of the forest sourcing area by means of, for example, plots, geographical coordinates or parcels. The geographical boundaries of the area of carbon sequestration must be clearly outlined and defined and must include the entire sourcing area of forest biomass. Please see the section 4.3 on 'Verification of Land-related Information and Status'. The entire area shall be located in the same administrative region (for example the same country) and the forestry operations and planning shall be homogeneous enough to facilitate forest carbon stocks to be assessed. The boundaries of the assessed area can also consist of unconnected areas.
- > *Step 2:* The identification of relevant carbon pools is aligned with the UNFCCC definitions, all relevant carbon stores are to be considered:
 - Above-ground biomass
 - Below-ground biomass
 - Deadwood
 - Soil Organic Carbon

LULUCF criteria stepwise approach at Level B

- Forest litter
- > Step 3: Determine a historical reference period.

REDII does not specify a historical year as a reference to compare the future development of carbon stocks and sinks in the sourcing area. It is recommended that an economic operator uses the average carbon stocks and sinks over a reference period that will serve as a benchmark against which maintenance/ strengthening of carbon stocks and sinks of a sourcing area.

It is recommended that a fixed period in time is used to avoid the effects of biomass harvest progressively lowering carbon stocks and sinks. In line with the reference period used in the LULUCF Regulation, it is proposed to focus on the period 2000-2009, but it can be shorter or longer to facilitate the use of forest inventory data or to mitigate the impact of annual disturbance or any eventual stochastic events on the levels of carbon stocks and sinks in the sourcing area. In any case, the selected reference period should reflect representative carbon stocks and sinks in the supply area. It is encouraged that the economic operators are to provide argumentation for the definition of their reference period. An economic operator should avoid using short periods (or a single year) as reference period in which significant natural disturbance took place as they may strongly disrupt forest carbon stocks and especially sinks.

Step 4: Quantify carbon stocks and sinks of the sourcing area for the historical reference period.

Existence of a historical reference value is needed that can be used to estimate if a specific carbon stock and sink value has been maintained or increased. Hence, data need to be collected to estimate mean values for carbon sinks and stocks of the sourcing area during a reference period as reference values for a compliance check.

Data on carbon stocks and sinks in the sourcing area may be obtained from (repeated) forest inventories or forest management plans, provided and they should be transparent, accurate and reliable. If there are no existing data on carbon stocks and sinks in the sourcing area, an economic operator can estimate mean carbon data of the sourcing area for the historical reference period, for example by applying forest carbon calculators or models (see Table 8). Data (tree species, growing stock, age-structure, increment rate, see Table 7) to be used in these tools can be gained from historical forest management plans or inventories conducted in the sourcing area, but additional data (e.g. basic wood density, carbon content, factors to estimate whole-tree biomass) may be needed to provide necessary information on all of the relevant carbon pools (see *step* 2).

It is recommended that an economic operator provides or estimates reference values for all the relevant carbon pools individually. When estimating historical data, it is recommended to further stratify the sourcing area in homogenous units. When stratifying the sourcing area, an economic operator can consider below factors:

- Administrative region where sourcing area is located
- Ownership type
- Topography
- Site conditions
- Tree species composition
- Forest management regime

In case an economic operator is not able to quantify one of the above-mentioned pools (e.g. litter or soil carbon, see *step 2*), it is recommended that a justification is provided why a pool cannot be quantified and why omitting the pool does not affect compliance with the requirement to maintain or strengthen carbon stocks in the long term.

> Step 5: Define the length of the future long-term period

The levels of carbon stocks and sinks of a sourcing area are maintained or strengthened, both over the long term. However, the Directive does not specify the period of time that needs to be considered. It is recommended to conduct a compliance check for a period of at least 30 years. It is important to keep in mind that the assessment period is not static and always looking forward. Accordingly, it is recommended that the assessment period covers at least 30 years after a harvesting event from which biomass is sourced.

Step 6: Describe forest management practices in a coursing area for the future long-term period

To prove that carbon stocks and sinks of a sourcing area are strengthened or maintained over a long-term period, an economic operator should describe forest management practices that are reasonably expected to be done in the long term.

Information on future forest management may be derived from existing forest management plans or other verifiable evidence. The future forest management practices must at minimum comply with legal requirements that are valid in a sourcing area. When describing the future forest management practices in the sourcing area, the following factors could be considered that may affect the development and calculation of forest carbon balances and sinks in subsequent steps:

- Annual harvest level;
- Tree species composition;
- Forest reproductive material used;
- Thinning intensity and frequency;
- Cutting regime;
- Other management activities (fertilization, pesticide application, etc.)
- Average minimum and maximum rotation length.

Potential data sources for these factors are listed below in Table 7.

Variable affecting carbon stock and sinks in forest	Potential source of information
Tree species composition	Forest inventoriesForest management plan
Age structure	Forest inventoriesForest management plan
Forest reproductive material used (provenance)	Forest management plan
Growth rate of the selected tree species and forest reproductive material used	 Forest inventories National or regional yield tables Producer of seedlings or seeds used for regeneration
Basic wood density	IPCC 2013 Revised Revised Supplementary Methods and Good Practice Guidance Arising from the Kyoto Protocol
Carbon content	IPCC 2013 Revised Supplementary Methods and Good Practice Guidance Arising from the Kyoto Protocol
Whole-tree biomass in relation growing stock volume	 IPCC 2013 Revised Supplementary Methods and Good Practice Guidance Arising from the Kyoto Protocol National GHG inventory report to UNFCCC FAO method collection, see <u>http://www.fao.org/3/w4095e/w4095e06.htm</u> Scientific literature
Thinning intensity and frequency	 Forest management plan Forest management recommendations applicable to the forest sourcing level
Rotation length	Forest management planForest management recommendations

Variable affecting carbon stock and sinks in forest	Potential source of information	
	 Empirical historic data for the sourcing area on rotation cycles applied 	
Cutting regime	Forest management planForest management recommendations	
Other management decisions	Forest management planForest management recommendations	

Table 7: Potential data sources to demonstrate LULUCF criteria compliance at Level B

> *Step 7*: Quantify mean carbon stocks and sinks over the future long-term period.

It is recommended to develop a projection of development of carbon stocks and sinks in the forest sourcing area, based on forest growth and planned management practices to assess how carbon stocks and sinks will develop over the long term. Assumptions on the effects of future impact of policies and markets should be avoided as much as possible. Forest carbon calculators and models can be used by economic operators as a basis for these calculations (see *Table 8*). In line with the recommendations from step 4, stratifying the sourcing area in homogenous units to improve accuracy of estimates is recommended.

To ensure estimates comparability, taking same carbon pools (see *Step 2*), data and methods is recommended for estimating carbon stocks and sinks in the reference period. The future and historically oriented estimates should be methodologically and quantitatively comparable.

If an economic operator is not able to quantify any of the abovementioned pools (see *Step 2*), providing a justification is recommended. The economic operator can also consider relevant secondary data and information to explain how forest biomass removals are expected to affect these carbon pools in the long term at the sourcing area.

Finally, it is recommended to document the temporal development of all carbon pools to facilitate the comparison with results obtained from monitoring, as basis for the verification of compliance under REDII Article 30.

Name of the tool	Short description of the tool	Link
CO2FIX	Stand level simulation model, which quantifies the C stocks and fluxes in the aboveground biomass, belowground forest	http://dataservices.efi.i nt/casfor/models.htm

Name of the tool	Short description of the tool	Link
	biomass, soil organic matter and the wood products chain	
CBM- CFS3	Stand- and landscape-level modelling framework that simulates the dynamics of all forest carbon stocks required under the Kyoto Protocol (aboveground biomass, belowground biomass, litter, dead wood and soil organic carbon)	https://www.nrcan.gc.c a/climate- change/climate- change-impacts- forests/carbon- accounting/carbon- budget-model/13107
YASSO Soil carbon model	Dynamic model of the cycling of organic carbon in soil. Yasso calculates the amount of soil organic carbon, changes in the amount of soil organic carbon and heterotrophic soil respiration	https://en.ilmatieteenla itos.fi/yasso
CASMOF OR	Tool to assess the amount of carbon sequestered in a forest system (aboveground biomass, belowground biomass, litter, dead wood and soil organic carbon)	http://www.scientia.hu/ casmofor/index.php
FORMIND	Individual tree-based vegetation model that simulates the growth of forests on the hectare scale. It allows to explore forest dynamics and forest structure	http://formind.org/mod el/

Table 8: Checklist of possible tools to demonstrate LULUCF criteria compliance at Level B

Step 8: Compare future carbon stocks and sinks with the historical reference period.

The compliance with the LULUCF criterion may be proven by comparing both the mean carbon sinks and stocks for the long-term period (*Step 7*) with the carbon stocks and sinks of the reference period (*Step 4*). If mean carbon stocks and sinks of a long-term period are higher or equal to mean carbon stocks and sinks of a reference period, an economic operator is compliant with the LULUCF criteria.

Several issues must be noted regarding the above-described stepwise approach for demonstrating compliance at the sourcing area level. These relate inter alia to the need for monitoring of the actual development of forest carbon stocks and sinks to support the verification of compliance with the sustainability and greenhouse gas emissions saving criteria, under REDII Article 30.

3 Risk-Based Approach

Directive (EU) 2018/2001 (RED II) Article 29 (6) and (7) defines the sustainability requirements/ criteria for forest biomass which are referred to in this document as sustainability criteria for forest biomass. Compliance with these requirements can be demonstrated by means of a risk-based approach.

The risk-based approach is to assess whether the sustainability criteria are sufficiently implemented, verified and, if necessary, sanctioned. The risk status is considered as 'low' if the result of the assessment shows that the relevant sustainability criteria are already covered by the laws at Level A. However, if the result shows that at least one of the sustainability criteria at Level A is not fully met, it is considered as 'specific risk'. In such case, the 'specific risk' must be on-site verified following 1.1.2 *Harvesting Criteria at Forest Sourcing Area Level (Level B)* AND 1.2.2 *Land-use, Land-use Change and Forestry (LULUCF) at Forest Sourcing Area Level (Level B)*.

The risk assessment should be undertaken by in country expert organisations (e.g. competent ministries, qualified national-level organisations or associations, independent bodies specifically set up to undertake the risk assessment etc) and not by individual economic operators. Standard templates provided by ISCC should be used for the risk assessment (see Annex II).

The risk assessment approval process should follow below steps:

- ISCC sets up the technical committee (can be internal or external experts) to ensure it has been undertaken according to the specified process, is complete and of required quality.
- (2) The draft of risk assessment report is checked by above-mentioned ISCC technical committee. In case any correction is needed, the draft is to be updated by the authors.
- (3) Public consultation carried out on the ISCC webpage for 30 days, which everyone is allowed to provide their comments on the draft. All received comments are documented, and possibly incorporated into the risk assessment where justified.
- (4) If the result of the public consultation and the risk assessment concludes there is low risk, the report is available publicly on ISCC webpage and it is recognized by ISCC.

The risk assessments that are accepted by other voluntary schemes are also recognized by ISCC. Risk assessments can be valid for up to 5 years but must be updated if the evidence basis changes, including in exchange with other voluntary schemes to ensure a consistent approach.

The economic operator shall submit a signed self-declaration to the first gathering point, including: an up-to-date risk assessment at the time the forest biomass is harvested, which indicates that there is low risk of unsustainable

Evaluation of risk: 'low' risk and 'specific' risk

ISCC Risk assessment approval process

> Recognition of other voluntary schemes' risk assessment

forest biomass in the sourcing area, and the scope of the risk assessment fully covers the sourcing area.

The aim of the risk-based approach is to obtain forest biomass from sourcing areas where the principles of sustainable forest management are upheld in compliance with the requirements of the criteria set out in RED II in Article 29 (6) and (7) and with the requirements of the ISCC:

Aim of riskbased approach

- > forest biomass has been legally obtained, processed and placed on the market / distributed in accordance with national legislation and international conventions
- > areas designated by international or state legislation or by the competent authority as nature conservation areas, including wetlands and peatlands, are protected,
- during harvesting, care is taken to preserve soil quality and biodiversity to minimize damage,
- > the forest in harvesting areas is continuously regenerated and,
- > the long-term production capacity of the forest is preserved,
- > guarantee of carbon sequestration parity in the sourcing area of the forest biomass, (the country or regional economic integration organization of origin of the forest biomass meet LULUCF criteria).

3.1 Methodology

Risk assessment is carried out on the basis of indicators, assessing the compliance of each criterion. For each criterion an assessment of the enforcement and monitoring should be made. As mentioned above, Annex II of this document should be used for the assessment. If all criteria are compliance, it is considered that the sourcing area for which the assessment is conducted has low risk of using non-sustainable biomass.

In case of Level A assessment, if there is any criterion which is noncompliance, then the sourcing area is considered to be Level B, with 'specific risk'. In this case, first gathering point is required to provide proof of all the criteria for the sourcing area that have been identified as non-compliance.

It is recommended to conduct the risk assessment using external sources as listed in the below table (*Table 9*) (non-exhaustive).

Publisher	Title of the source	Link
World Bank	Global world management indicators	http://info.worldbank.org/gov ernance/wgi/
FAO	Global Forest Resource Assessment (FRA)	https://www.fao.org/forest- resources-assessment/past- assessments/fra-2015/en/
Forest Europe	Country reports on SFM indicators	https://foresteurope.org/

Publisher	Title of the source	Link
UNECE	Forests in the ECE region: Trends and Challenges in Achieving the Global Objectives on Forests	https://unece.org/fileadmin/D AM/timber/publications/forest s-in-the-ece-region.pdf
Montréal Process	Country reports	https://montreal- process.org/Resources/Cou ntry_Reports/index.shtml
UN	United Nations Treaty Collection	https://treaties.un.org/
Chatham House	Illegal Logging Portal	https://forestgovernance.chat hamhouse.org/
UNFCCC	NDC Registry	https://unfccc.int/NDCREG

Table 9: The list of publisher and title of the source for the risk assessment

3.1.1 Legality of Wood Harvesting

The risk assessment shall contain the assessment of legality of harvesting. Timber harvesting is not legal if the harvesting, trade / distribution or transportation of timber violates national, sub-national or international laws and agreements. The law enforcement and government structure with rule of law (here rule of law: trust and compliance with the rules of a country, including the enforcement of contracts and property rights. The quality of courts and police and the probability of crime and violence.) and corruption control (here corruption control: extent to which the public sector is determined by private profit interests) should be evaluated.

To assess this criterion, the Global Governance Indicators, a region's timber sourcing, trade / distribution and transportation should be assessed and reported where appropriate. Information such as bodies or departments competent to carry out monitoring, implementation and law enforcement, sanctions for non-compliance, decision appeal system should be provided.

If there is no evidence of illegal activity, the criterion can be assessed as effectively implemented and compiled.

If there are illegal activities, or the effectiveness of the legal framework is weak, it is considered that the criterion is not met, non-compliance. In such case, the first gathering point must prove their compliance at Level B (see 1.1.2 (a)).

3.1.2 Forest Regeneration

The REDII defines the term 'forest regeneration' as the 're-establishment of a forest stand by natural or artificial means following the removal of the previous stand by felling or as a result of natural causes, including fire or storm' (Article 2.31).

In the spirit of the REDII sustainability criteria, highly biodiverse forests cannot be converted into forest stands that would in one rotation evolve into stands of significantly lower biodiversity values. Land-use change, i.e. a conversion Risk assessment methodology: Forest regeneration

Risk assessment methodology: Legality of wood harvesting from forest to another land-use type, would imply that the forest regeneration criterion cannot be fulfilled.

Appropriate factors for forest regeneration can be taken from the results of national forest inventories or from the results of the latest FAO Global Forest Resource Assessment (FRA). In the case where forest area decreases, plausible and verifiable reason must be provided. However, if the decrease in forest area cannot be adequately explained with its reason, the effectiveness of the legal framework is deemed to be unconfirmed, thus non-compliance to this criterion. the first gathering point must prove their compliance at Level B (see 1.1.2 (b)).

3.1.3 Regulations for protected areas

Protected areas are locations which receive protection because of their recognized natural, ecological or cultural values. There are several kinds of protected areas, which vary by level of protection depending on the enabling laws of each country or the regulations of the international organizations involved. Thus, the assessment shall contain verification if protected areas has been designated. IUCN maintains the World Database on Protected Areas (WDPA). This most comprehensive global database on protected areas contains information on location and boundaries of protected areas, legal status and other indicators. Special care should be taken if there are officially approved guidelines, protected area by-laws on management, regulations, etc., which regulates harvesting of forest biomass.

If the results of the assessment show that areas are protected effectively, it is considered compliance. In case of non-compliance to this criterion, the first gathering point must prove their compliance at Level B (see 1.1.2 (c)).

3.1.4 Preservation of soil quality

Soil quality maintenance is assessed based on analysis of soil condition maps, statistics data and etc. A soil condition analysis may include factors such as carbon content, nutrient availability, pH value, and soil physical parameters.

If the results of the assessment show that conservation of soil quality is maintained, it is considered to be compliance. In case of non-compliance to this criterion, the first gathering point must prove their compliance at Level B (see 1.1.2 (d)).

3.1.5 Preservation of biological diversity

Risk assessment of the preventing of biodiversity is assessed on the basis of the following factors (non-exhaustive):

- > dead wood (standing/lying)
- > diversity of tree and plants species
- > animal species

Risk assessment methodology: Regulations for protected areas

Risk assessment methodology: Preservation of soil quality

Risk assessment methodology: Preservation of biological diversity

- > landscape diversity
- > age and structure of trees
- > protected forest areas

It is recommended to use external source to assess this criterion (see *Table 9*).

If the biodiversity criterion in the sourcing area is sufficiently documented and gathered proofs indicate that biodiversity is maintained, it is considered to be compliance. In case of non-compliance to this criterion, the first gathering point must prove their compliance at Level B (see 1.1.2 (d)).

3.1.6 Maintenance of the long-term production capacity of the forest

A typical indicator for maintenance of the long-term production capacity, at country level or at forest sourcing area level, is that the harvested biomass should not exceed the net annual increment. An estimate of the net annual increment (NAI) of the forest - i.e. the net amount of stem wood that grows over a year's time - determines the maximum volume of wood that timber companies can harvest without endangering future possible harvesting levels. A maximum annual allowable cut (AAC) can be country-specific or applicable to smaller areas. This AAC is a very basic guidance to help maintain the long-term production capacity of the forest in a country. Estimates of NAI and AAC can be derived from national forest inventory data or yield tables for example, or they can be prescribed by a local forest management authority.

If the results of the assessment show that the long-term production capacity is maintained, it is considered to be compliance. In case of non-compliance to this criterion, the first gathering point must prove their compliance at Level B (see 1.1.2 (e)).

3.1.7 Guarantee of carbon sequestration parity

To demonstrate compliance with the LULUCF criteria at national level, it must be shown that the country or regional economic integration organisation of origin of the forest biomass is a party of the Paris Agreement and:

- (a) Should have submitted its NDC that covers emissions and removals from agriculture, forestry and land use, ensuring that that changes in carbon stock associated with biomass harvest are accounted towards a country's commitment to reduce or limit greenhouse gas emissions; OR
- (b) Has laws in place to conserve and enhance carbon stocks and sinks applicable in the area of harvest and that evidence is provided that LULUCF sector emissions do not exceed removals.

A three-step approach to estimate compliance with the LULUCF sub-criterion at a national level (Level A):

Risk assessment methodology: Maintenance of the long-term production capacity

Risk assessment methodology: Carbon sequestration parity

- > Step 1: Determine if a country or a regional economic integration organisation is a party to the Paris Agreement
- Step 2: Determine if a country or a regional economic integration organisation has submitted a Nationally Determined Contribution (NDC)
- > Step 3: Determine if national or sub-national laws that aim to conserve and enhance carbon stocks and sinks in forests are in place.

If the results of the assessment show that the country meets LULUCF criterion, it is considered to be compliance. Otherwise, it is considered to be non-compliance, that the criterion is not met ant Level A. In this case, the first gathering point must provide detailed evidence that this criterion is not violated.

3.1.8 Enforcement and Monitoring

Each criterion is assessed in the context of enforcement and monitoring. Performing of the assessment of enforcement and monitoring is needed to ensure that there is no significant lack of enforcement in the national and/or sub-national laws and regulations. The analysis shall take into account the following information:

o methodology: Enforcement and r Monitoring e

Risk assessment

- Competent authorities or departments for carrying out monitoring, implementation and law enforcement
- > sanctions for non-compliance
- > systems for appealing against decisions
- > public access to information

Evidence of compliance with this requirement can be obtained from legal assessments and reports prepared by national or international governmental organizations. If in the context of the criterion being assessed no significant lack of enforcement, the sustainability criterion is deemed to be fulfilled. If in the context of the criterion being assessed no law has been identified, or that an enforcement and monitoring system cannot be documented, the sustainability criterion is deemed to be unfulfilled.

4. Infringements of ISCC Requirements

Forest sourcing areas and economic operators violating ISCC Principle 1 are excluded from ISCC certification. If violations of Principle 1 are detected, a certificate shall not be issued or shall be withdrawn immediately. If economic operators have been audited as part of a group or as part of a First Gathering Point (FGP), they must be excluded as suppliers of sustainable material. Violations of Principle 1 are considered critical non-conformities (for further information see ISCC EU System Document 102 "Governance").

Infringements of ISCC Principle 1

Annex I: Definitions

The definitions of Art. 2 of the Commission Implementing Regulation on establishing operational guidance on the evidence for demonstrating compliance with the sustainability criteria for forest biomass laid down in Art. 29(6) and (7) RED II apply. This annex contains a list of particularly relevant definitions. See the Implementing Regulation and the RED II for a complete list of definitions.

- a) 'country of harvest' means the country or territory where the forest biomass raw material was harvested;
- b) 'nationally determined contribution (NDC)' Nationally determined contribution (NDC) to the United Nations Framework Convention on Climate Change (UNFCCC) embody planned efforts by each country to reduce national emissions and adapt to the impacts of climate change. Each NDC reflects a country's ambition for reducing emissions, taking into account its domestic circumstances and capabilities. NDCs may include emissions and removals from agriculture, forestry and land use (AFOLU) to ensure that changes in carbon stock associated with biomass harvest are accounted towards the country's commitment to reduce or limit greenhouse gas emissions as specified in the NDC.

<u>The Paris Agreement</u> (Article 4, paragraph 2) requires each Party to prepare, communicate and maintain successive nationally determined contributions (NDCs) that it intends to achieve. Parties shall pursue domestic mitigation measures, with the aim of achieving the objectives of such contributions

- c) 'natural forests' means forests composed of indigenous trees regenerated naturally, including both spontaneous and assisted natural regeneration;
- d) 'semi-natural forests' means managed natural forests which, over time, has taken on a number of natural characteristics, including layered canopy, enriched species diversity, random spacing; or, planted forests which acquire more natural characteristics over time, including abandoned plantation forests that diversify with age and which experience natural regeneration of indigenous species;
- e) 'Paris agreement' sets out a long-term goal in line with the objective to keep the global temperature increase well below 2°C above preindustrial levels and to pursue efforts to keep it to1,5°C above preindustrial levels. Forests, agricultural land and wetlands will play a central role in achieving this goal. The Paris Agreement entered into force on 4 November 2016. The Paris Agreement was concluded on behalf of the Union on 5 October 2016 by Council Decision (EU) 2016/1841 (Regulation (EU) 2018/841 of the European Parliament and of the Council of 30 May 2018 on the inclusion of greenhouse gas

emissions and removals from land use, land use change and forestry in the 2030 climate and energy framework, and amending Regulation (EU) No 525/2013 and Decision No 529/2013/EU. Official Journal of the European Union L156/1.)

- h) 'plantation forests' means planted forests that are intensively managed and meet all the following criteria at planting and stand maturity: one or two species, even age class, and regular spacing;
- i) 'stumps and roots' mean parts of the whole tree volume, excluding the volume of the above-stump woody biomass, considering the height of the stump as that at which the tree would be cut under normal felling practices in the relevant country or region;
- 'deadwood' means all non-living woody biomass not contained in the litter, either standing, lying on the ground, or in the soil, including wood lying on the surface, coarse debris, dead roots, and stumps larger than or equal to 10 cm in diameter or any other diameter used by the country concerned;
- k) 'long-term production capacity' means the ability of forest to continuously and sustainably deliver goods, such as wood of various quality grades, and non-wood- forest products and services, including air and water purification, maintenance of wildlife habitat, recreation or cultural capital, over a long period of time, and where applicable, bridging several successive forestry rotations;

Annex II: Risk Assessment Template

In order to carry out the risk assessment, table below should be used and check whether each criterion is compliance. Authors of the assessment may use REDIIBIO report as a useful reference source. As mentioned above in this document, non-compliance is considered as 'specific risk'.

1. Information on the author

[Author(s) of the risk assessment must have expert knowledge of the forestry conditions in the region. In this section of the assessment the author(s) must present a scientific profile. The information must include information about the author's work experience, training/education and other relevant qualifications to demonstrate the author's ability to properly performed the risk assessment.]

2. Scope of risk assessment

[Indicate whether it's national/sub-national level/ geographic scope, description of sourcing area of the risk assessment]

3. Date of risk assessment

[Indicate date of: preparation of the draft, public consultation period, final approval, date of validity]

4. Information on forestry industry relevant to scope of risk assessment

[Description of the structure of forestry and the wood industry relevant to scope of the risk assessment. This description should provide an overall view of the regional forest characteristics and its wood industry]

5. Evaluation of the level of risk for each criterion

5.1 Legality of harvesting operations

[Enter the applicable laws identified, including a description on how they ensure compliance. Describe the practical implementation of the laws, including information on competent authorities for carrying out monitoring, implementation and law enforcement, sanctions for non-compliance, and public access to information]

Sources	[Enter sources here]	
Degree of compliance	□ Compliance	□ Non-compliance
5.2 Forest regeneration		

[Enter the applicable laws identified, including a description on how they ensure compliance. Describe the practical implementation of the laws, including information on competent authorities for carrying out monitoring, implementation and law enforcement, sanctions for non-compliance, and public access to information]

Sources	[Enter sources here]	
Degree of compliance	□ Compliance	□ Non-compliance

5.3 Areas designated b purposes	y international or national	law for nature protection	
compliance. Describe the information on competer	is identified, including a desc e practical implementation of at authorities for carrying out nctions for non-compliance,	the laws, including monitoring, implementation	
Sources	[Enter sources here]		
Degree of compliance	Compliance Non-compliance		
5.4 Biodiversity			
compliance. Describe the information on competer	is identified, including a desc e practical implementation of at authorities for carrying out nctions for non-compliance, a	the laws, including monitoring, implementation	
Sources	es [Enter sources here]		
Degree of compliance	Compliance	□ Non-compliance	
5.5 Soil quality			
[Enter the applicable laws identified, including a description on how they ensure compliance. Describe the practical implementation of the laws, including information on competent authorities for carrying out monitoring, implementation and law enforcement, sanctions for non-compliance, and public access to information]			
Sources	[Enter sources here]		
Degree of compliance	Compliance	□ Non-compliance	
5.6 Maintenance of Ion	g-term production capacity	of forests	
[Enter the applicable laws identified, including a description on how they ensure compliance. Describe the practical implementation of the laws, including information on competent authorities for carrying out monitoring, implementation and law enforcement, sanctions for non-compliance, and public access to information]			
Sources	[Enter sources here]		
Degree of compliance	□ Compliance	□ Non-compliance	
5.7 Guarantee of carbon sequestration parity			
[Enter the applicable laws identified, including a description on how they ensure compliance. Describe the practical implementation of the laws, including information on competent authorities for carrying out monitoring, implementation and law enforcement, sanctions for non-compliance, and public access to information]			
Sources	[Enter sources here]		
Degree of compliance	Compliance	D Non-compliance	

6. Summary of risk assessment

[Describe summary of risk assessment, and any findings]

7. Evaluation of risk assessment

[Indicate risk status, if there's any 'specific-risk (non-compliance)' and written summary of the results]

8. Documentation of public consultation result

[Indicate whether it's national/sub-national level/ geographic scope, description of sourcing area of the risk assessment, applied methodology, results of the assessments]