

Green Gold Label Program

Introduction & scope

GGLS5 is based on the sustainability requirements in the Netherlands and the sustainability criteria from the Renewable Energy Directive (2009/28/EC). GGLS5 has not been developed to replace existing forest management standards or schemes. However this standard can be applied if non-endorsed and non-certified materials are sourced under the scope of a GGL participants certificate in order to verify compliance against the criteria for responsibly managed forests.

GGLS5 also contains additional criteria applicable to wood (fiber) materials sourced with claims from GGL endorsed forest certification schemes to ensure full compliance with national requirements.

This standard offers 3 options for biomass producers when sourcing biomass categories 1 or 2 for GGL product groups:

1. Individual verification
2. Group or regional association (annex B)
3. Risk based approach (annex A)

In all cases is the biomass producer (as GGL Participant) responsible for applying at a Certification Body to include any of the above options in the scope of its GGL certificate.

Requirements for verification against this standard are described in Principle 4 of the GGL chain of custody standard (GGLS1). For option 1 (individual verification) the Certification Body shall conduct onsite audits at all FMU's included in the scope. In this case the biomass producer (as GGL Participant) is not required to conduct its own onsite verification at each FMU. This does not apply to options 2 (group or regional association) or 3 (risk based approach). In these cases the biomass producer shall be responsible for ensuring onsite verification audits are carried out as stipulated in this standard.

Note. Requirement 4.12 from GGLS1 is not applicable when the Certification Body conducts verification audits at 100% of the FMU's.

All GGL standards and supporting documents are considered normative unless stated otherwise.

Glossary

See GGL Glossary

Principles

Criteria for sustainable forest management

Principle 1. Relevant international, national, regional and local laws and regulations are complied with.

Criteria: 1.1. The forest manager holds the legal right to use the forest.

Indicator 1.1.1 Documentation demonstrating legal rights to manage the land as forests and manage and utilise its forest resources (e.g. registrations in the land register, licenses, permits), including associated maps (where applicable), shall be provided.

Criteria 1.2. The forest manager complies with all obligations to pay taxes and royalties.

Indicator 1.2.1 Clear and sufficient evidence (statement from tax authorities, auditor's statement, payment receipts) that all taxes and royalties related to forest management are paid correctly (timely and in full) shall be provided.

Criteria	1.3. All applicable anti-corruption legislation is followed. If no anti-corruption legislation exists, the forest manager shall take alternative anti-corruption measures proportionate to the scale and intensity of the management activities and the risk of corruption.
Indicator	<p>1.3.1. There shall be awareness of any applicable anti-corruption laws and regulations and has a system in place to monitor its performance against these.</p> <p>1.3.2 In countries with a Corruption Perception Index (CPI) lower than 50 and where anti-corruption laws and regulations do not exist or are ineffective, it shall be ensured that staff whose roles carry a higher level of risk in the area of ethical business practice (e.g. sales, harvesting, logistics, dealing with local officials) are trained on what action to take in the event of an issue arising in their area.</p> <p>1.3.3 In countries with a Corruption Perception Index (CPI) lower than 50 and where anti-corruption laws and regulations do not exist or are ineffective, there shall be a transparent and effective system in place for confidentially reporting and dealing with unethical business practices without fear of reprisals towards the reporting party.</p>
Principle 2.	Biodiversity shall be maintained and where possible enhanced.
Criteria:	2.1. Sites with a high conservation value – (HCV) or equivalent – and representative areas of forest types that are found in the forest management unit have been identified and are protected, and where possible enhanced. The sites may contain one or more of the following values: diversity of species, ecosystems and habitats, ecosystem services, ecosystems at landscape level and cultural values.
Indicator	<p>2.1.1 Documentation has shown that a process has been followed for the Forest Management Unit regarding the identification, protection and monitoring of sites with a high conservation value. This process shall contain at least the following elements:</p> <ul style="list-style-type: none"> • identification of sites with a high conservation value: locations of sites with a high conservation value shall be established. This is done using relevant regional scientific information, internationally and/or internationally recognised databases, environmental impact reports and information submitted by interested and affected stakeholders. Involvement of the local inhabitants or indigenous people is a condition for establishing cultural values; • development and implementation of measures to protect sites with a high conservation value: potential threats with regard to the identified sites with a high conservation value shall be established. Effective measures shall be developed and implemented to protect and/or reinforce the sites with a high conservation value. In the development of the measures, the stakeholders affected shall be proactively involved, with interested stakeholders involved on request; • monitoring and feedback: within the framework of the forest management plan, there shall be an effective programme aimed at monitoring the status of the sites with a high conservation value and the effectiveness of the measures that have been taken. If necessary, the conservation measures shall be modified. A key part of the monitoring process is the proactive involvement of affected stakeholders and the involvement of interested stakeholders at their request. <p>2.1.2 Sites that, after the completion of the process, have been identified as sites with a high conservation value shall contain at least one of the following values:</p> <ul style="list-style-type: none"> • diversity of species: concentrations of biological diversity, including indigenous species and endangered species that are of importance on a global, regional or national level; • ecosystems and habitats: rare or endangered ecosystems, habitats or refugia; • ecosystem services: basic ecosystem services in critical situations, such as protection of important water sources and control of erosion of vulnerable soils and slopes; • ecosystems on landscape level: whole forest landscapes or other big whole ecosystems, or mosaics of ecosystems, on landscape level that are of importance on a global, regional or national level because they contain viable populations of the majority of the natural species in natural patterns of spreading and numbers; • cultural values: sites or means of living that are of global or national cultural, archaeological or historical importance and/or of fundamental importance to the traditional culture/beliefs of the local population or indigenous people.

2.1.3 Local communities must be involved in the establishment and evaluation of strategies and actions to maintain and/or enhance the sites of high conservation value if they were consulted to help identify these sites.

Criteria	2.2. Measures have been taken to protect endangered plant and animal species and, if applicable, to increase the populations and enhance the habitat of these species.
Indicator	2.2.1 Threatened and endangered species and their habitats (e.g. nesting and feeding areas) that are present or are likely to be present within the FMU are identified based on "best available information" known to and observed by the FMU/FME, and based on what could be learnt from neighbours and other local stakeholders.
Criteria	2.3. The conversion of forests within the forest management unit to other forms of land use, including wood plantations, is not permitted unless: <ul style="list-style-type: none"> - it concerns a small area (the total converted area over the years is no greater than 5% of the area of the forest management unit on benchmark date 1 January 2008); and - it clearly leads to long-term advantages for nature conservation; and - there is no damage or threat of damage to areas with a high conservation value.
Indicator	2.3.1 Any parts of the FMU that are scheduled for conversion from natural or semi-natural forest to plantation or any other kind of non-forest land use have been clearly identified, documented and mapped. 2.3.2 The areas scheduled for conversion shall total less than 5% of the total area of the FMU as of 1 January 2008. 2.3.3 The areas scheduled for conversion do not damage or threaten any site of high conservation value.
Criteria	2.4. In case of wood plantations, there is a preference for native species, and a relevant percentage of the plantation shall be able to revert to natural forest at a later stage.
Indicator	2.4.1 In the case of wood plantations, it is demonstrated through documented trials that the selection of species for planting is based on their overall suitability for the site and their appropriateness to the management objectives. 2.4.2 Any choice to use exotic species and genotypes must be clearly justified. 2.4.3 Representative samples of existing natural ecosystems, which shall cover at least 5% of the area of the FMU, are managed so as to retain them or restore them to their natural state, based on the identification of key biological areas and consultation of stakeholders, local government and scientific authorities.
Criteria	2.5. The exploitation of non-timber forest products, including products from hunting and fishing, is regulated, monitored and controlled among others to safeguard the maintenance of the biodiversity in the forests.
Indicator	2.5.1 The forest manager identifies and complies with all legal requirements applicable to the management and/or collection of the non-timber forest products in question, including CITES.
Principle 3.	The regulatory effect and the quality, health and vitality of the forest, shall be maintained and, where possible, enhanced.
Criteria	3.1. The quality of the soil in the forest management unit shall be maintained and if necessary improved, with special attention to coasts, river banks, erosion sensitive areas and sloping landscapes.
Indicator	3.1.1 Specific measures have been taken to maintain and if necessary improve the soil within the FMU in terms of structure, fertility and biological activity. As a minimum, site

preparation and harvesting methods within the FMU shall have been designed to minimise soil compaction and maximise the retention of nutrients on-site.

3.1.2 All forestry operations within the FMU with a potential negative environmental impact, with an emphasis on watershed protection (e.g. coasts, riverbanks), areas susceptible to erosion and slopes, are accompanied by appropriate control systems and procedures. Control systems are based on national or regional best practices with regard to erosion and sediment control, minimisation of forest damage during harvesting, road construction and other mechanic disturbances under specific weather conditions (all-weather harvesting vs dry weather harvesting).

.Criteria 3.2. The water balance and quality of both groundwater and surface water in the forest management unit and downstream (outside the forest management unit) shall be at least maintained and where necessary improved.

Indicator 3.2.1 Forest operations within the FMU should not negatively impact the local hydrology of natural water courses, water bodies, riparian zones and their connections.

3.2.2 All forestry operations within the FMU with a potential negative environmental impact shall be accompanied by appropriate control systems and procedures with regard to protection of water resources both within and downstream from the FMU, based on national and regional best practices.

Criteria 3.3. Important ecological cycles present in the forest management unit are preserved, including carbon and nutrient cycles.

Indicator 3.3.1 Site preparation and harvesting methods have been designed to minimise soil compaction and maximise the retention of nutrients on-site.

3.3.2 There is evidence that specific measures have been taken to ensure that sensitive areas are sufficiently protected from erosion or fire.

Criteria 3.4. Unnecessary damage to the ecosystem is prevented by applying the most suitable logging (Reduced Impact Logging) and road construction methods and techniques for the local conditions.

Indicator 3.4.1 There is evidence that the most suitable logging (Reduced Impact Logging (RIL)) and road construction methods and techniques are used in the FMU to prevent unnecessary damage to ecosystems. This may include the use of RIL techniques, adapted to the site-specific characteristics within the FMU.

3.4.2 Harvest planning and harvest operations are carried out in accordance with national or sub-national (e.g. State) best practice guidelines.

Criteria 3.5. If fires are used to achieve the forest management objectives (such as regeneration of specific tree species), then adequate control measures shall have been taken.

Indicator 3.5.1 Where fires are used to achieve forest management objectives, such as regeneration of specific tree species, adequate control systems and procedures shall be in place, including fire control and safety precautions.

Criteria 3.6. Forest management measures are designed to prevent and control diseases and pests, where these form a threat to natural capital.

Indicator 3.6.1 The forest manager has identified pests and diseases that are present and that potentially threaten the natural stock within the FMU.

3.6.2 Where applicable, the forest manager has procedures in place to prevent and control potential and existing pests and diseases that have been identified (e.g. by applying Integrated Pest Management (IPM)).

Criteria	3.7. The use of chemicals is only permitted if the ecological processes and the optimal deployment of sustainable alternatives prove insufficient. Pesticides classified as type 1A and 1B by the World Health Organisation and chlorinated hydrocarbons are not permitted.
Indicator	<p>3.7.1 The forest manager shall not use or store any of the WHO Type 1A and 1B pesticides and chlorinated hydrocarbons.</p> <p>3.7.2 Where chemicals are used, an up-to-date list and their quantities is kept of all pesticides used in the FMU.</p> <p>3.7.3 Where chemicals are used, all staff and contractors involved in their use have received training in handling, application and storage procedures.</p> <p>3.7.4 Where chemicals are used, safe transport, storage, handling, application and emergency procedures have been implemented.</p>
Criteria	3.8. The accumulation of inorganic waste and litter is prevented and such waste and litter is collected, stored in the approved areas and disposed of responsibly.
Indicator	<p>3.8.1 There is a documented system in place for collecting and storing inorganic waste and litter safely, and for safe transportation for disposal.</p> <p>3.8.2 There shall be no evidence that the FME's waste products are disposed of other than at the listed sites, and in accordance with environmentally appropriate and safe methods and applicable legal requirements.</p> <p>3.8.3 All staff and contractors involved in the use of chemicals, fuel and oil have received training and materials for controlling and cleaning up chemicals, fuel and oil in the case of accidental spillage.</p>
Principle 4.	The production capacity of wood products and other relevant non-timber forest products shall be maintained in order to safeguard the future of the forests.
Criteria:	4.1. The production capacity of all forest types represented in the forest management unit is maintained.
Indicator	<p>4.1.1 There is a clear methodology to determine the Annual Allowable Cut (AAC) or harvest per forest type.</p> <p>4.1.2 The allowable harvest level is based on conservative, well-documented and most current estimates of growth and yield in order to not jeopardise the forest's productive potential in the medium to long term.</p> <p>4.1.3 There are clear, accurate and up-to-date records of harvest volumes for all commercial timber species, and of the commercial harvest of any NTFPs.</p>
Indicator	4.2. The forest management unit is sufficiently protected against all forms of illegal exploitation (timber and non-timber forest products including hunting and fishing), illegal establishment of settlements, illegal land use, illegally initiated fires, and other illegal activities.
Criteria	<p>4.2.1 The boundaries of the FMU have been clearly marked and mapped.</p> <p>4.2.2 Concrete measures are taken to prevent illegal harvesting, including of products of hunting and fishing, settlement, illegal land-use, illegal fires and any other unauthorised activities within the FMU.</p>

4.2.3 Appropriate measures are taken when illegal activities are detected.

Principle 5. Wood originating from forests and plantations in which genetically modified trees are utilised shall not be used.

Criteria 5.1. Genetically modified trees shall not be used.

Principle 6. Sustainable forest management shall be achieved through a management system.

Criteria: 6.1. The forest management system is designed to achieve the objectives of a forest management plan and covers the inventory, analysis, planning, implementation, monitoring, evaluation and adjustment cycle.

Indicator 6.1.1 Policies and operational management objectives shall exist for the FMU and shall at least meet national and regional legal requirements.

6.1.2 Depending on the scale and intensity of the forest management, a management plan and/or supporting documents shall exist for the FMU. This management plan shall include the long-term management objectives and a description of the inventory, planning, monitoring and evaluation cycle. An Environmental Impact Assessment is part of the planning.

Criteria 6.2. A forest management plan is drawn up that at least includes:

- a description of the current condition of the forest management unit;
- long-term goals, including economic, social and ecological functions;
- the average annual allowable cut per forest type and, if applicable, the annual allowable harvest of non-timber forest products based on reliable and current data;
- the budget planning for the implementation of the forest management plan.
- Maps, including areas that are protected (e.g. cultural or ecological values)

Indicator 6.2.1 A forest management plan includes the long-term management objectives for the FMU, with due regard for ecological (species, ecosystems, functions) aspects. The forest management plan shall contain at least the following information:

- a description of the inventory and analysis, planning implementation, monitoring, evaluation and review cycle;
- a description of the current state of the FMU;
- long-term objectives aimed at ecological functions;
- the average annual harvest permitted per forest type and, if applicable, the annual exploitation of non-timber forest products permissible, calculated on the basis of reliable and up-to-date data.

Criteria 6.3. Essential elements for the management of the forest are indicated on maps.

Indicator 6.3.1 There are appropriate maps of the forest resource base, indicating protected areas, planned management and land ownership.

6.3.2 Before the commencement of harvesting and road construction, clear and accessible maps shall be made available describing the forest resource base and the boundaries of the FMU, including sites with special ecological, archaeological or cultural values, sites reserved for wildlife and sites where harvesting takes place.

Criteria 6.4. The implementation of the forest management plan is periodically monitored and the ecological effects of the forest management are evaluated on the basis of reliable data.

Indicator 6.4.1 Procedures for collecting the monitoring data have been clearly documented and are consistent and replicable over time to allow comparison and assessment of change.

6.4.2 The frequency, intensity and expense of the monitoring activities are defined and are appropriate to the scale, intensity and risks of the forest operations, as well as to the relative complexity and fragility of the resources under management. Monitoring shall at least include the following information in order to facilitate evaluation:

- data collected during surveys before and after harvesting and the generic inventories in order to identify and describe key changes in forest flora over time;
- data on the presence of key fauna species within the FMU, sufficiently so to allow identification and description of significant changes in the population over time;
- data aimed at demonstrating the conservation of high protection values and representative sites of forest types within the FMU.

Criteria	6.5. Forest management is implemented by professional office and field staff. The staffs' expertise and knowledge is maintained by means of an adequate and regular training programme.
Indicator	6.5.1 Competence/training requirements for all employees are identified and necessary (periodic) training is provided to ensure employees are sufficiently qualified and trained to perform their tasks. 6.5.2 Appropriate employee qualification is available. 6.5.3 Safeguards and verification procedures are in place to ensure that contractors are qualified for the activities they conduct within the FMU.
Principle 7	Production of raw biomass shall not lead to the destruction of carbon sinks.
Criteria:	7.1. Biomass is not sourced from permanently drained land that was classified as peat land on or after January 1 2008, unless it can be demonstrated that the production and harvesting of the biomass does not result in water depletion of a previously undrained soil.
Indicator	7.1.1 It shall be demonstrated that the biomass is not sourced from permanently drained land that was classified as peatland on 1 January 2008, unless Indicator 7.1.2 applies. 7.1.2 If Indicator 7.1.1 cannot be fulfilled, it shall be demonstrated that the production and harvesting of the biomass does not result in water depletion of a previously undrained soil.
Criteria	7.2. Biomass is not sourced from land that was converted from a wetland to an alternative, dryer ecosystem after 1 January 2008.
Indicator	7.2.2 It shall be demonstrated that the biomass is not sourced from land that was converted from wetland to an alternative (dryer) ecosystem after 1 January 2008.
Criteria	7.3. Biomass is not sourced from wood plantations that were created by means of conversion of natural forests after 31 December 1997, unless the forest manager is not directly or indirectly responsible for the conversion. Biomass originating from wood plantations that were created after 1997 by means of conversion of degraded natural forests or degraded land is exempt from this requirement on condition that it is ecologically and economically justified to do so and that the forest manager is not directly or indirectly responsible for the degradation.
Indicator	7.3.1 If biomass originates from wood plantations where conversion has taken place of natural forests, it shall be demonstrated whether this conversion occurred before 31 December 1997. 7.3.2 If biomass originates from wood plantations where conversion of natural forests has taken place after 31 December 1997, it shall be demonstrated that: <ul style="list-style-type: none"> • the forest manager that harvested the biomass was not directly or indirectly responsible for the conversion, or;

- the conversion took place in natural forests that, at the time of conversion, were in a degraded state or of which the soil had degraded, and where the conversion was carried out in an ecologically and economically justifiable manner.

Principle 8	The use of biomass does not result in long-term carbon debt.
Criteria	8.1. The forest management unit where the wood is sourced is managed with the aim of retaining or increasing carbon stocks in the medium or long term.
Indicator	8.1.1 The forest management unit shall provide clear and sufficient evidence that the harvesting rates and methods ensure that carbon stocks, in terms of tree stands or other carbon proxies, are maintained or increased in the medium or long term.
Criteria	8.2. Biomass is not sourced from stumps unless these stumps had to be removed/harvested for other reasons than wood or biomass production.
Indicator	8.2.1 The participant shall demonstrate that the risk of accepting or accidentally accepting unregistered wood or biomass from trunks received from its suppliers can be considered low. 8.2.2 The GGL participant shall register all wood or biomass received from stumps. 8.2.3 In the event stumps are removed and used for biomass, the biomass producer shall demonstrate that these stumps had to be removed from the site for other reasons than wood or biomass production (e.g. road construction).
Criteria	8.3. On average, less than half the volume of the annual round wood harvest from forests is processed as biomass for energy generation. Round wood from thinnings or from production forests with a rotation period of 40 years or less is exempt from this requirement.
Indicator	8.3.1 The GGL participant shall have relevant information available showing that less than 50% of annual harvested round wood (excluding thinning) in its sourcing region is used for production of biomass products for energy generation. Round wood from production forests with a rotation period of 40 years or less is exempt from this criterion. Relevant information in this regard is any government report, NGO report, local economy statistics or similar information reflecting the allocation of biomass coming from the region. 8.3.2 In the absence of regional biomass allocation information (as indicated in 8.1.1), there shall be clear and sufficient evidence (e.g. total harvested and supplied wood and volumes supplied to pellet mills) that less than 50% of annual harvested round wood (except thinning wood) is sold to pellet mills. Round wood from production forests with a rotation period of 40 years or less is exempt from this criterion.
Principle 9.	Biomass production shall not result in Indirect Land Use Change (ILUC)
	<i>Note: Principle 9 is only applicable for biomass sourced from FMU's >500 ha in size (category 1 biomass)</i>
Criteria	9.1. Biomass sourced from new bioenergy plantation systems that were planted after January 1, 2008 shall have a demonstrably low ILUC risk.

In the GLOBIOM study¹ (2015) commissioned by the European Commission, it is demonstrated that in case of new biomass energy production systems (with a short rotation time):

¹ https://ec.europa.eu/energy/sites/ener/files/documents/Final%20Report_GLOBIOM_publication.pdf

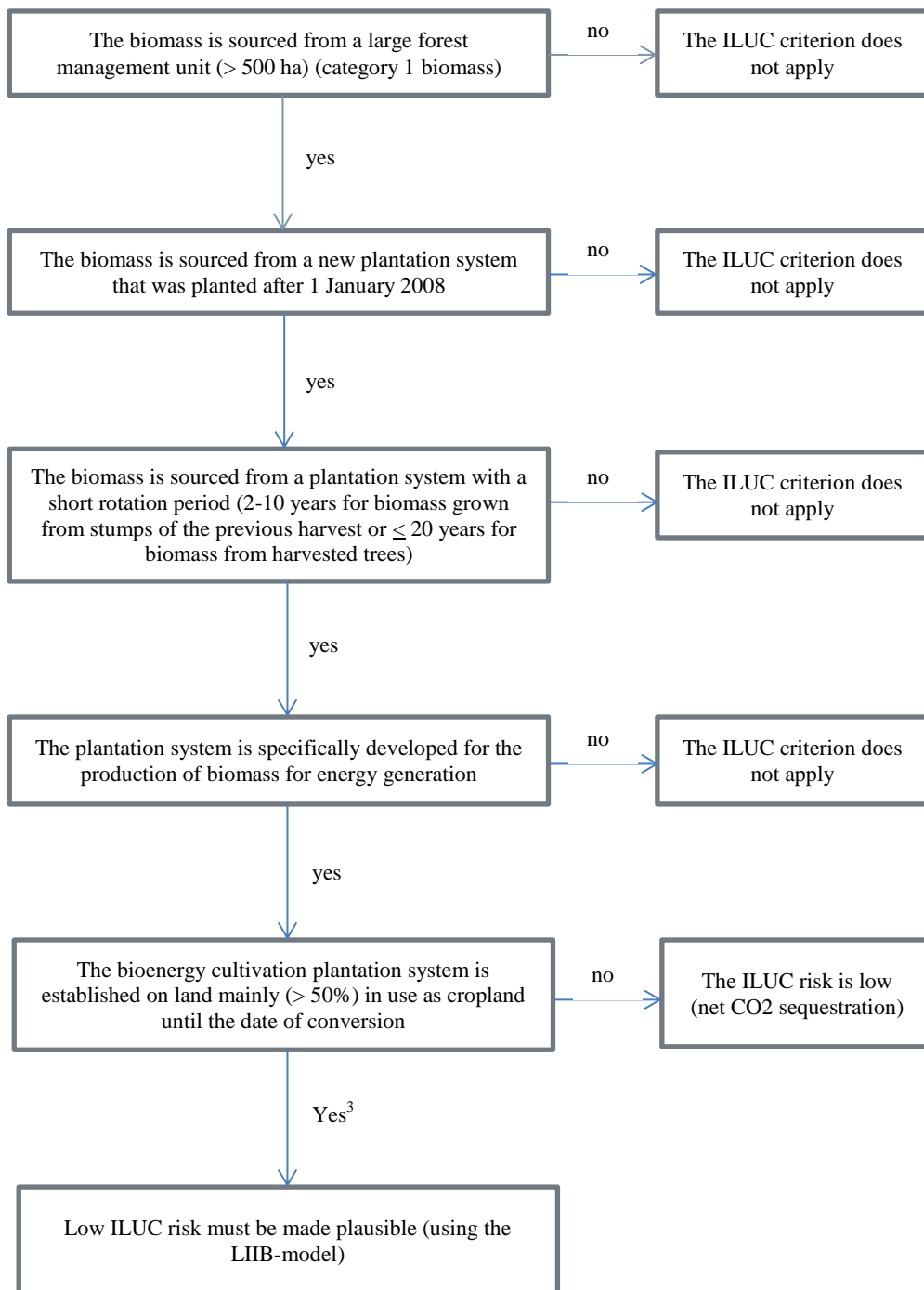
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- *Land conversion due to new energy plantations does not lead to displacement of food production (because in particular it takes place on abandoned land and other natural land)*
- *Overall no CO₂ emissions take place, but CO₂ sequestration (i.e. negative ILUC emissions due to large carbon storage in biomass)*

Even in case new biomass energy production systems are (partly) established on land used as cropland until the date of conversion, overall no CO₂ emissions take place (comparable with the scenario of perennial crops in the GLOBIOM study). The ILUC impact because of the use of (partly) agricultural land, leads to a displacement effect of food / feed production. However, this (emission) effect is more than offset by sequestration carbon in biomass and soil through the energy wood production. The GLOBIOM study is taken as a basis for assessing ILUC risk of biomass as elaborated in the decision tree below.

ILUC risks must be calculated using the LIIB methodology and requirements (LIIB = Low Indirect Impact Biofuels). The methodology shall be evaluated every three years (if there is sufficient cause to do so) and modified to incorporate any improvements.

Decision tree ILUC criterion



³ There is a risk that a possible increase in CO₂-emissions cannot be fully compensated by carbon sequestration in plantations (net ILUC emission), however this risk is expected to be low.

Principle 10. Basic labour rights of forest workers are safeguarded.

Criteria

10.1. Freedom of Association and the right to collective bargaining are respected for the forest workers.

10.2. Pay wages shall meet or exceed minimum forest industry standards or other recognized wage agreements.

10.3. It shall be ensured that the principles and rights at work as defined in the ILO Declaration on Fundamental Principles and Rights at Work (1998) are maintained and complied with.

Principle 11. Health and safety of the forest workers shall be protected

Criteria

11.1. The health and safety of forest workers shall be protected through risk identification, safety programs mitigating risks, training and personal protection equipment.

11.2. The recommendations from the ILO Code of Practice on Safety and Health in Forestry Work shall be followed.

Appendix A. Area risk based approach

This Annex describes the risk-based approach to sustainable forest management (SFM) at a regional level by a biomass producer.

As described in GGLS1 the sustainability of woody biomass from areas smaller than 500 hectares may until 2022 be temporarily determined by a risk assessment on a regional level. With this procedure the risks of noncompliance with the SFM criteria of GGLS5 is determined at a regional level, and shall be mitigated to 'low risk' for all forest management criteria of GGLS5.

This appendix describes the risk-based approach methodology. How risk assessment on area level shall be assessed and mitigating measures shall be evaluated. The participant shall provide all documents and information necessary for evaluation by the Certification Body in order to determine that all requirements in this annex are met.

General

1.1 The raw materials may only be included as GGL certified materials under this exemption rule until 2022 and only after the risk assessment, applicable to the area (FMU <500ha) where the material is sourced, was approved during a GGL audit by the applicable certification body.

1.2 The participant determines the area or areas where the FMU's with a forest area size of <500 ha are located. The borders shall be clearly mapped.

1.3 The participant shall keep registrations of the origin of the raw material / biomass in order to ensure that raw material / biomass covered by the RBA originates from FMU <500 ha.

1.4 When applying the RBA for small FMUs, the participant shall keep an administration in which the FMUs are registered from which biomass is sourced and showing that they each cover less than 500 ha in size.

1.5 The participant shall demonstrate that its supply base is fully covered by the RBA and that the RBA was carried out in a manner as indicated in this annex.

1.6 The RBA shall cover all principles and criteria from this standard (principles 1 – 11).

1.7 The following steps shall be covered in the RBA:

- a. Determination of the region;
- b. Gathering of information in relation to the requirements in this standard;
- c. Risk assessment;
- d. Establishment and regular monitoring of measures to prevent the sourcing of raw materials / biomass with specified risk;
- e. Regular monitoring of the risk assessment and mitigation measures.

Determination of regions

2.1 The participant shall identify one or more homogeneous areas (regions) to source raw materials / biomass from. Areas can be determined both on a geographical scale (e.g. states, counties, province) and on a functional scale (forest type, ownership, scope of management, type/quality of forest). The requirements from this standard play a key role in determining the homogeneity of a region.

2.2 The boundaries of a region shall be clearly identified on maps and in other relevant documentation. Boundaries may be described as a reference to the existing administrative or environmental divisions whilst functional scale can refer to characteristics that determine the functional scale, e.g. plantations vs. natural forests.

Gathering of information

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3.1 The participant shall gather information on the identified areas that are relevant for a risk analysis with respect to the requirements from this standard.

3.2 The gathering of relevant documentation such as laws and regulations, government statistics, NGO reports, expert studies and maps is part of the information gathering step. The participant assesses the relevance and reliability of the information using objective criteria such as date of publication, reliability and independence of the source (academic institutions, international agencies, NGOs and government bodies), methodology etc.

Data sources shall be referenced so that they can be verified by the Certification Body and other external parties.

Consultation of stakeholders and experts

3.3 The participant shall consult relevant stakeholders as part of the RBA.

3.4 As part of the information gathering exercise, the participant shall document and implement effective procedures for consultation on the principles and criteria from this standard with stakeholders in specific regions. The procedures shall at least include:

- a) Responsibilities for stakeholder consultation;
- b) Description of the various stages in the consultation process;
- c) Identification of the stakeholders to be involved;
- d) A proactive approach of stakeholders, who must be given sufficient time to respond (at least one month);
- e) Consultation of qualified and independent experts where specialised knowledge is required.

3.5 The participant shall keep the reports and the contributions and comments from stakeholders and experts, including reactions and measures taken in response.

3.6 The Participant shall make the results of the risk-based method (risk assessment and mitigating measures taken) publicly available as part of the stakeholder consultation. The risk assessment and mitigation measures shall be available to interested parties following the stakeholder consultation.

Risk assessment

Risk assessment methods

4.1 The participant shall conduct a risk analysis for each identified region (criteria 1.7, step a), based on information gathered (criteria 1.7, step b).

4.2 The risk of non-compliance shall be assessed for each principle and criteria from this standard, using adequate risk analysis methods. When requirements from this standard are not suitable for a risk assessment at the regional level (e.g. indicators can only be used at an FMU level), other means of verification are allowed, provided that this is properly substantiated by the participant for the assessment by the Certification Body.

4.3 Using a list of the qualifications of the persons involved, the participant shall demonstrate that the persons performing the risk analyses are qualified (through training and experience) to perform risk analyses tailored to the complexity of the processes and information being assessed, and the country or region under assessment. A peer review by experts can provide additional assurance as to the quality of the risk assessment.

Assessment of risks

4.4 The risk of non-compliance for each criterion from this standard is expressed as 'specified risk' or 'low risk', based on the analysed information and application of the requirements set out in this standard. For each criteria, the rationale for risk designation shall be provided in relation to the information used.

4.5 A 'low risk' is identified when there are clear indications that the chance of non-compliance with the relevant sustainability criteria in combination with the consequences is small and the risk assessment has yielded no information that leads to a 'specified risk' designation.

4.6 A 'specified risk' is identified when there is not enough information for the risk assessment to establish whether the risk is low or when the mitigating measures are not sufficiently effective in reducing the chance that identified risks materialise or in reducing the consequences of such risks. In case of doubts a precautionary approach shall be applied.

Risk mitigation and measures

5.1 For a region with criteria designated as 'specified risk', mitigating measures must be defined in order to reduce the risk level to 'low risk'.

5.2 Mitigation measures can comprise additional information gathering (e.g. through on-site verification by the participant), reduction of the region size by excluding risk areas, or other appropriate measures (involvement of experts).

5.3 In the event that the risk of non-compliance for one or more criteria from this standard remains a 'specified risk', then raw material / biomass from that region cannot be classified as eligible input under the GGL standards.

Regular monitoring of the risk assessment

6.1 The participant shall conduct a review of the risk assessment and the mitigating measures at least once per year and in the event of relevant developments in the region sustainable biomass is sourced from and/or relevant changes in the information gathered for a particular region or criterion.

Appendix B. Group or regional association

This Annex covers the requirements that apply when a biomass producer (GGL participant) wishes to include a group or regional association of multiple forest management units in its supply base. All requirements from this annex shall be met.

Criteria	1.1 A group or regional association is led and supervised by an independent legal entity.
Indicator	<p>1.1.1 The group or regional association shall be led and supervised by an independent legal entity or by a person acting as a legal entity (the group manager).</p> <p>1.1.2 The group manager shall be responsible for the full group and individual group members in relation to conformity to all applicable GGL requirements.</p> <p>1.1.3 The entity shall meet all statutory requirements, such as registrations and the paying of taxes.</p> <p>1.1.4 The division of responsibility between the entity and the members of the group in relation to sustainable forest management and the requirements of this standard has been clearly laid down.</p>
Criteria	2.1 A group or regional association shall meet the requirements for sustainable forest management (principles 1 – 11 of this standard). The separate forest management activities of the individual members of the group or regional association shall also meet these requirements, if applicable for the management of the forest concerned.
Indicator	<p>2.1.1 The group or the regional association shall have procedures in place for the membership of the group, in which the requirements of this standard have been incorporated in relation to the scale and complexity of the group, containing, for example:</p> <ul style="list-style-type: none">• the organisational structure;• the responsibilities of the entity and the members with corresponding activities;• rules regarding membership of the group;• rules regarding suspending or revoking membership;• complaints procedures for group members;• procedures for taking corrective measures following an internal request or a request from the certification body, including deadlines and consequences if the measures are not complied with. <p>2.1.2 The group manager shall have a documented quality management system ensuring that all relevant requirements are met. This shall include procedures, training and competence building for both group manager and group member staff.</p> <p>2.1.3 The status of the FMUs in the relevant region shall be outlined in a forest management plan or a similar document.</p>
Criteria	3.1 The functioning of the group in relation to this standard shall be managed by the group manager to ensure conformity to all applicable GGL requirements.
Indicator	<p>3.1.1 A list of group members shall be maintained specifying for each group member:</p> <ul style="list-style-type: none">• name (FMU & FME);• status of the member as a legal entity;• description of (forest) area included within the group;• size of area included;• date of joining and/or leaving the group;• date and status of last internal audit carried out (including any follow-up of non-conformities);

3.1.2 The group manager shall annually carry out internal audits of a sample of the group members. The formula to determine the sample shall be: $y = \sqrt{x}$ rounded to the upper whole number.

Where “x” is the total amount of group members and “y” the minimum sample.

The selected group members shall be based on scale, risk, forest type and results from previous internal audits.

Note: requirement 4.12a and 4.13 from GGLS1 are replaced with the sampling rates from this indicator (above).

3.1.3 The internal audit reports shall be documented in a clear and systematic way and cover all applicable requirements from the GGL standards. Verifiers adapted to local conditions shall be developed for sustainable forest management principles (principles 1 – 11) and included in the internal audit reports.

3.1.4 The group manager shall have a contract or consent form in which the group member acknowledges the GGL requirements and agrees to the general obligations and responsibilities for participation in the group, including solving all identified non-conformities by both the certifying body and the group manager.

3.1.5 The group manager shall suspend the group member and inform the Certification Body if not all requirements are met within the given timeframe. Material originating from a suspended group member shall not be accepted as GGL certified and sufficient measures taken to avoid any risk of mixing.

3.1.6 The group manager shall provide to the group member all necessary documents in meeting the GGL requirements.

Criteria 4.1 A chain of custody system is in place for the biomass, that covers the entire chain from the group member to the group manager that links the source to the material used in the biomass.

Note: the chain of custody requirements apply to each group member and the group as a whole included into the group or regional association.

Indicator 4.1.1 Each link in the chain of custody bears final responsibility and has a quality management system in place that provides safeguards for compliance with the requirements of the chain of custody system.

4.1.2 Each group member in the chain of custody keeps all necessary documentation for demonstrating compliance with the applicable sustainability requirements available for a minimum of five years.

4.1.3 Each group member in the chain of custody registers for all incoming or outgoing consignments the quantities and the required sustainability information under this standard.

4.1.4 Each group member in the chain of custody has the relevant data available to allow the group manager to determine the correct greenhouse gas emissions information.

Note: the group manager shall use GGL 1a. instruction document to calculate the correct GHG values and communicate these based on the GGLS1 and GGLS4 standards.

4.1.5 If a group member in the chain of custody mixes consignments with different sustainability characteristics a mass balance is used. For the mixing the following applies:
 - The method may be applied up to the level of a location;
 - The organisation defines a period with a maximum of a year, during which incoming and outgoing consignments are measured and reports the results;

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- the sustainability characteristics of mixed biomass output can be traced back to the characteristics and quantities of the individual incoming consignments, taking account of the applicable conversion factors

Appendix C. SDE+ / verification protocol & GGLS5 requirements matrix

This Annex provides a list of all sustainability requirements from the Dutch regulation on sustainability for biomass categories 1 and 2 (SDE+) and the corresponding requirements from GGLS5. This list can be used to cross check the requirements between GGL and SDE+.

GGLS5	SDE+ principles
Requirements for greenhouse gas (GHG) emission savings and calculation	
Covered in GGLS1	Principle 1: The use of biomass shall lead to a substantial reduction in greenhouse gas emissions calculated across the entire chain in comparison to the use of fossil fuels.
Requirements for soil management when using residues from nature and landscape management and agriculture	
Covered in GGLS2 (only applicable to biomass category 3 and 4)	Principle 2: Soil quality shall be maintained and where possible improved.
Carbon and land use change requirements	
Principle 7	Principle 3: Production of raw biomass does not result in the destruction of carbon sinks.
Principle 8	Principle 4: The use of biomass does not result in long-term carbon debt.
Principle 9	Principle 5: Biomass production does not result in Indirect Land Use Change (ILUC).
Sustainable Forest Management (SFM) requirements	
Principle 1	Principle 6: Relevant international, national, regional and local legislation and regulations are complied with.
Principle 2	Principle 7: Biodiversity is maintained and where possible enhanced.
Principle 3	Principle 8: The regulating effect and the quality, health and vitality of the forest are maintained and where possible enhanced.
Principle 4	Principle 9: The production capacity for wood products and relevant non-timber forest products is maintained in order to safeguard the future of the forests.
Principle 5 Wood originating from forests and plantations in which genetically modified trees are utilised shall not be used.	Not included in SDE+
Principle 6	Principle 10: Sustainable forest management is achieved through a management system.
Annex B	Principle 11: Forest management by a group or regional association offers sufficient safeguards for sustainable forest management.
Principle 10 Basic labour rights of forest workers are safeguarded.	Not included in SDE+
Principle 11 Health and safety of the forest workers shall be protected	Not included in SDE+