# Supply Base Report:

## Dalgas GmbH
## Main (Initial) Audit

**Sustainable Biomass Program**
sbp-cert.org

## Completed in accordance with the Supply Base Report Template Version 2.2 and SBP Bridging Requirements for Meeting the Directive EU/2023/2413 (REDIII)

For further information on the SBP Framework and to view the full set of documentation see **www.sbp-cert.org**

### Document history

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| **Version 1.0** | **Published 26 March 2015** |
| **Version 2.0** | Published 10 August 2023 |
| **Version 2.1** | Published 15 April 2024 |
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# 1 Overview

| | |
|---|---|
| **Producer name:** | Dalgas GmbH |
| **Producer address:** | Technologiepark 24, DE-22946 Trittau, Germany |
| **SBP Certificate Code:** | SBP-05-35 |
| **Geographic position:** | 53.612025, 10.387458 |
| **Primary contact:** | Simon Thorfinn,<br>+45 204 032 40,<br>sith@dalgas.com |
| **Company website:** | |
| **Date report finalised:** | 18 Sep 2026 |
| **SBR reporting period from:** | 01 Jul 2025 |
| **SBR reporting period to:** | 30 Jun 2026 |
| **Name of the Certification Body:** | DNV Business Assurance Finland Oy Ab |
| **Certification Body Approval date:** | 21 Sep 2026 |
| **SBP Standard(s) used:** | SBP Standard 1: Feedstock Compliance v2.0, SBP Standard 2: Feedstock Verification v2.0, SBP Standard 4: Chain of Custody v2.0, SBP Standard 5: Collection and Communication of Data v2.0, Instruction Document 1A: SBP Requirements for Primary Feedstock from Trees Outside Forests (TOF) v1.0, Instruction Document 5E: Collection and Communication of Energy and Carbon data. v2.1, Instruction Document EU RED: Bridging Requirements for Meeting the Directive EU/2023/2413 |
| **Feedstock origin (countries)** | Germany (Forest and TOF) |
| **Weblink to Standard(s) used:** | https://sbp-cert.org/documents/standards-documents/standards |

# 2 Description of the Biomass Producer and the Supply Base

## 2.1 Description of the company

Dalgas GmbH is a wholly owned subsidiary of Dalgas A/S.

Dalgas GmbH has activities in forest management and timber harvesting, transport and trading in Germany. Dalgas is CoC certified according to both FSC and PEFC.

**Products included in the scope of SBP Certification:** *WB 2.1 Wood chips, WB 4.1 Roundwood*

**Number of employees:** *20*

**Annual maximum production capacity (metric tonnes):** *250000*

**Number of direct feedstock suppliers:** *20*

**Approximate number of feedstock sub-suppliers:** *10*

**Description of the chain-of-custody and upstream supply chain**:

The company produces and trades wood chips from forest and TOF sources. Some of the material is sourced from the forests or projects that the company manages. In those cases the company is in control of the whole supply chain from the point of planning the felling to the final delivery to the end user. In other cases the company trades wood or wood chips from suppliers where the company takes control of the material at some point between felling the trees and the final delivery to the end user.
The company trades processing industry residues.

The origin of the material is always known and documented throught the CoC system.

The tranport is done with truck directly from the forest to the end user or with a combination of truck and coastersize vessel in cases of longer transport routes. Some material is handled through stockyards.

## 2.2 Detailed description of the Supply Base

*Guidance: Tables below have been generated automatically for each sourcing country based on the selection of 'Feedstock origin (countries)' in section 1 above.*

*Annex 1 is generated by the system if the SBP SBE is used without Regional Risk Assessment(s) (RRAs). In case RRA(s) is used, further details shall be given only in section 3 below.*

*Annex 2 is generated if EU RED SBE is in the scope for each country separately.*

| | |
|---|---|
| **Country** | Germany |
| **Area/Region** | Forest and TOF |
| **Exclusions** | |
| **Feedstock types** | Primary feedstock, Processing residues |
| **Feedstock Product Groups** | Forest feedstock (1A), Trees outside forest (TOF) - Urban and landscape feedstock (2A), Processing residues feedstock (4A) |
| **Feedstock inputs** | SBP Compliant feedstock |

| | |
|---|---|
| **Is the forest managed to supply energy and non-energy markets?** | No |
| **For the forests in the Supply Base, is there an intention to retain, restock or encourage natural regeneration within 5 years of felling?** | Yes - Majority |
| **Risk assessment(s)** | Yes – Biomass Producer's own risk assessment used (SBE) |
| **Provide a concise summary of why a SBE was determined to be required or not required here:** | |
| The CRA is used in a process to mitigate the identified risks when sourcing material. | |
| **Feedstock types included in SBE:** | Primary feedstock |
| **Includes EU RED SBE:** | Yes |
| **Includes EU RED II SBE grandfathering** | No |
| **Includes EU RED TOF:** | Yes |
| **Includes EU RED II TOF grandfathering** | No |
| **Size of Supply Base area (million ha):** | 35.7600 |
| **Map(s) of the Supply Base area:** | |

Kiel
Rostock
Lübeck
Hamburg
Bremen
Berlin
Hannover
Wolfsburg
Potsdam
Braunschweig
Magdeburg
Nederland
Netherlands
Dortmund
Essen
Düsseldorf
Köln
Leipzig
Deutschland
Germany
Dresden
Frankfurt
am Main
Praha
Luxembourg
Česká
Czech
Mannheim
Nürnberg
Karlsruhe
Stuttgart
Strasbourg
Augsburg
München
Salzburg
Österreich
Austria
Zürich

## 2.3 Feedstock information

a. **Total volume of Feedstock:** 1-200,000 tonnes

b. **Volume of primary feedstock:** 1-200,000 tonnes

c. **List of all the species in primary feedstock, including scientific name:**

| | |
|---|---|
| Fagus spp | Beech |
| Quercus spp | Oak |
| Abies spp | Fir |
| Picea spp | Spruce |
| Pinus spp | Pine |
| Fraxinus spp | Ash |
| Acer spp. | Maple |
| Betula spp | Birch |
| Alnus spp | Alder |
| Pseudotsuga spp | Fir |
| Tilia spp | Lime |
| Larix spp | Larch |
| Populus spp | Poplar |
| Salix spp | Willow |
| Carpinus spp | Hornbeam |

d. **Was the feedstock used in the biomass removed from a forest as part of a pest/disease control measure or a salvage operation?** Yes - Minority

**Explanation:** Some windblow and areas with insect infected trees wil be included but only as a smal percentage of the total voume.

e. **Hardwood (i.e. broadleaf trees): specify proportion of feedstock from (%)**: 75.00

f. **Softwood (i.e. coniferous trees): specify proportion of feedstock from (%):** 25.00

g. **Proportion of feedstock composed of or derived from saw logs by weight (%):** 0.01

h. **Indicate how you determine the proportion of saw log:** Specification used by the sawmill closest to where the wood was grown.

i. **Roundwood from fellings from forests with > 40 yr rotation times - Average % volume of fellings delivered to BP (%):** 20.00

j. **Select forest type(s) where the primary feedstock was sourced from:** Mix of The Above

k. **Select the main harvesting system(s) used for the sourced primary feedstock:** Mix of the above

l. **Volume of primary feedstock from primary forest:** 0

m. **Volume of processing residues feedstock:** 1-200,000 tonnes

**Physical form of the feedstock:** Chips

**n. Share of SBP-recognised system claim for processing residues:**

**o. Volume of post-consumer feedstock:** 0
**Physical form of the feedstock:** Chips

**p. Estimated amount of EU RED-compliant sustainable feedstock that could be collected annually by the BP:** 250000 tonnes

**q. What is the estimated amount of EU RED-compliant sustainable feedstock that could be harvested annually in a Supply Base (estimated):** 5000000.00 tonnes

**Explanation**: n/a

# 3 Supply Base Risk Assessments and Risk Management Measures

*Guidance: Biomass Producers shall demonstrate that any specified risks of sourcing feedstock not in compliance with SBP Standard 1 have been adequately reduced to low risk, following Standard 2 requirements. Following section applies to Biomass Producer's implementing SBP Supply Base Evaluation (SBP RRA or company own risk assessment). EU RED Supply Base Evaluation details are reported in Annex 2.*

☐ **Not Applicable – Supply Base Evaluation not implemented**

## 3.1 Summary of the Supply Base Evaluation

For subscope Germany Forest the CRA for Germany indentifies 1 risk as being specied for all forests in Germany and 2 different risks as being specified only for private forests. For subscope Germany TOF the CRA for Germany identifies low risk for all indicators.

## 3.2 Conflicts with applicable national and sub-national legislation

There are no known conflicts with legislation.

## 3.3 Risk Management Measures

*Guidance: Please provide more details about specified risk indicators in each supply country and describe mitigation measures taken to address all specified risks associated with indicators.*

| | |
|---|---|
| **Country:** Germany | |
| **Area/sub-scope:** Private forest | |
| **Risk Assessment used:** | |
| | ☐SBP-RRA-AS-VN-FOR_v1.0 RRA for Vietnam FOR_Interim<br>☐SBP-RRA-US-NF-FOR_v1.0 RRA for US National FOR_Interim<br>☐SBP-RRA-US-PF-FOR_v1.0 RRA for US Private FOR_Interim<br>☐SBP-RRA-EU-DK-FOR_v2.0 RRA for Denmark FOR_Endorsed<br>☐SBP-RRA-EU-DK-TOF_v1.0 RRA for Denmark TOF_Interim<br>☐SBP-RRA-EU-EE-FOR_v2.0 RRA for Estonia FOR_Endorsed<br>☐SBP-RRA-EU-LV-FOR_v2.0 RRA for Latvia FOR_Endorsed<br>☐SBP-RRA-EU-LT-FOR_v2.0 RRA for Lithuania FOR_Endorsed<br>☐SBP-RRA-CA-QC-FOR_v2.0 RRA for Quebec FOR_Interim<br>☐SBP-RRA-CA-AB-FOR_v1.0 RRA for Alberta FOR_Interim<br>☐SBP-RRA-CA-BC-FOR_v2.0 RRA for British Columbia FOR_Interim<br>☐SBP-RRA-CA-NB-FOR_v1.0 RRA for New Brunswick FOR_Interim<br>☐SBP-RRA-CA-NS-FOR_v1.0 RRA for Nova Scotia FOR_Interim<br>☐SBP-RRA-EU-NO-FOR_v1.0 RRA for Norway FOR_Interim<br>☒ Biomass Producer's own risk assessment |
| **Indicator with specified risk:** | |
| 2.1.3 Key species, habitats, ecosystems, and areas of high conservation value (HCV) pertaining to biodiversity in the Supply Base shall be maintained or enhanced. | |
| **Description of the specific risk:** | |

Germany's forests are home to a wide variety of flora and fauna, many of which are key species integral to the forest ecosystem. These include trees like the European Beech (Fagus sylvatica), Norway Spruce (Picea abies), Scots Pine (Pinus sylvestris), and Silver Fir (Abies alba). These species are foundational to the forest structure and provide habitat and food for numerous other organisms. Conservation efforts focus on preserving genetic diversity within these species. For example, the Forest Genetic Resources Program (GENRES) in Germany works to protect and sustainably use the genetic diversity of forest tree species. This involves maintaining seed banks, promoting natural regeneration, and implementing breeding programs that enhance the resilience of tree species to pests, diseases, and climate change. German forests encompass a variety of habitats, each supporting distinct communities of plants and animals. Key habitats include mixed deciduous forests, coniferous forests, and unique wetland forests. These habitats are crucial for the survival of numerous species, including some that are rare or endangered. The Habitats Directive (92/43/EEC) of the European Union, transposed into German law through the Federal Nature Conservation Act (Bundesnaturschutzgesetz, BNatSchG), mandates the protection of significant habitats. Special Areas of Conservation (SACs) are designated to protect these habitats, ensuring that land use and management practices do not adversely affect their integrity. This includes measures such as restricting logging activities during breeding seasons of sensitive species and controlling invasive species that threaten native biodiversity. The forest ecosystems in Germany provide a wide range of ecological services, including carbon sequestration, water regulation, soil protection, and the maintenance of biodiversity. Sustainable forest management practices are crucial to maintaining these ecosystems. The principle of close-to-nature forestry (Naturnahe Waldwirtschaft) is widely practiced in Germany. This approach mimics natural processes to maintain the health and functionality of forest ecosystems. It includes strategies like selective logging, promoting mixed species stands, and allowing natural regeneration. This method not only sustains the ecosystem services provided by forests but also enhances their resilience to environmental changes.Areas of High Conservation Value (HCV) are regions identified as having significant ecological, social, or cultural importance. In Germany, these include ancient woodlands, biodiversity hotspots, and areas important for rare species. The Natura 2000 network, a cornerstone of the EU’s nature conservation policy, plays a critical role in protecting HCV areas. This network includes Special Areas of Conservation and Special Protection Areas (SPAs), which are designated under the Birds Directive (2009/147/EC). In Germany, over 5,200 Natura 2000 sites cover approximately 15 % of the land area, many of which are forested regions of high conservation value. Forest certification schemes such as the Forest Stewardship Council (FSC) and the Programme for the Endorsement of Forest Certification (PEFC) also emphasize the protection of HCV areas. These certifications require forest managers to identify and protect these areas, ensuring that forestry operations do not degrade their value. For example, FSC-certified forests must maintain the ecological integrity of HCV areas by implementing management plans that include measures like buffer zones and restricted logging practices.Protected biotopes, which are designated under both federal and state nature conservation laws, represent another key aspect of biodiversity protection. Activities that could harm these biotopes are generally prohibited or subject to restrictions, effectively safeguarding rare habitats such as wetlands, oldgrowth stands, and riparian zones. Germany continuously seeks to enhance its conservation efforts through research, policy development, and international cooperation. The National Biodiversity Strategy aims to increase the area of forests with natural forest characteristics and improve habitat connectivity. This includes increasing the share of unmanaged forest areas, restoring degraded forest ecosystems, and promoting biodiversity-friendly management practices. One example of a successful enhancement effort is the wilderness areas (Wildnisgebiete) initiative, which designates specific forest areas to be left entirely to natural processes. These areas are allowed to develop without human intervention, providing reference ecosystems for scientific study and contributing to biodiversity conservation. The German Forest Damage Compensation Act (Forstschäden-Ausgleichsgesetz, ForstSchAusgIG) also indirectly supports biodiversity by ensuring that forest owners take necessary actions to prevent large-scale damage from natural events, such as pest outbreaks. By controlling pests in an

environmentally friendly manner, forest owners help maintain a balanced ecosystem that supports a wide range of species, including those of high conservation value.Official authorities at multiple levels coordinate and enforce these measures. The Federal Agency for Nature Conservation (Bundesamt für Naturschutz, BfN) oversees national biodiversity policy and provides scientific expertise to guide conservation efforts. The Federal Ministry of Food and Agriculture (Bundesministerium für Ernährung und Landwirtschaft, BMEL) is responsible for implementing forestry policy and ensuring sustainable management. At the state level, forestry departments and environmental agencies manage dayto-day enforcement of forest and conservation laws, conduct inspections, and provide guidance to forest owners.Financial incentives are another critical control mechanism. The government offers subsidies to private and municipal forest owners who adopt biodiversity-friendly practices (see indicator 2.1.1.), such as planting native species, maintaining buffer zones around waterways, and preserving high conservation value areas. Compensation payments are also provided for restrictions on land use in protected areas, ensuring that economic burdens do not discourage conservation. To ensure accountability, penalties are imposed for violations of biodiversity and forestry laws, ranging from fines to legal actions. Public participation and stakeholder engagement are integral to Germany's conservation approach, with local communities, NGOs, and scientific institutions actively involved in planning and monitoring efforts. Nevertheless, there may be concerns regarding the enhancement or maintenance of conservation values, habitats, and species in the absence of formal certification systems within private forests.While national forestry laws and biodiversity regulations apply, enforcement may be inconsistent, and gaps in management practices could threaten key species such as European Beech (Fagus sylvatica) and Scots Pine (Pinus sylvestris). Therefore, the risk is designated as "Low Risk" for state forests and "Specified Risk" for private forests. In Germany, the conservation and management of trees outside forests are governed by multiple laws and regulations, which aim to protect biodiversity, maintain key ecosystems, and manage the removal and replanting of such trees responsibly. Beyond the Federal Nature Conservation Act, the Federal Forest Act also contains provisions relevant to trees outside forests, particularly where their ecological functions intersect with broader forest management goals, emphasizing sustainable practices and maintaining ecological balance. Each German federal state has its own specific nature conservation ordinances (Naturschutzverordnungen der Länder) that provide additional protection, such as regulations for preserving hedgerows, solitary trees, and riparian zones. These ordinances establish strict criteria for when tree removal is permissible and mandate compensatory planting to maintain regional biodiversity. Furthermore, municipalities often have local tree protection statutes (Baumschutzsatzungen) that regulate the felling of trees, particularly in urban environments. Such statutes typically require permits for removing mature trees and often require replanting as a condition, aiming to protect urban biodiversity and maintain green infrastructure.The Federal Building Code (Baugesetzbuch, BGB) also plays a role by mandating that urban development projects consider environmental impacts, including the protection of trees outside forests. Developers are required to compensate for any loss of green spaces to prevent biodiversity loss in urban and peri-urban areas. Agricultural legislation, including the Common Agricultural Policy (CAP) guidelines at the EU level and their implementation in Germany, also impacts trees outside forests. Farmers are encouraged through subsidies and incentives to maintain features like hedgerows and solitary trees within agricultural landscapes, as these contribute to soil health, water retention, and habitat provision. The Water Resources Act (Wasserhaushaltsgesetz,WHG) provides protection for trees and shrubs in riparian areas along streams and rivers, recognizing their importance in maintaining the ecological integrity of aquatic habitats and preventing erosion. TheWHG mandates that vegetation along water bodies must be preserved to support biodiversity and protect water quality. Federal Species Protection Regulations (Bundesartenschutzverordnung) ensure that the removal of trees does not negatively affect protected species that rely on these trees for nesting, roosting, or feeding. Surveys must be conducted prior to tree felling to identify any protected species, and appropriate mitigation measures must be taken if such species

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|---|
| are found. In addition, EU directives such as the Habitats Directive and Birds Directive (92/43/EEC and 2009/147/EC) are implemented in Germany and play a significant role in protecting trees outside forests. Trees that provide habitats for endangered species may be part of designated Natura 2000 sites, offering them additional protection. Even individual trees that serve as important habitats for species such as bats or certain birds are protected under these<br>frameworks. Furthermore, Germany participates in international conservation initiatives, such as the Convention on Biological Diversity (CBD) and the United Nations' Sustainable Development Goals (SDGs). These commitments drive national policies and actions aimed at achieving long-term sustainability and conservation of forest ecosystems. **Therefore,**<br>**this indicator is assessed as "Low Risk" for trees outside forests.** |
| **Mitigation measure:** |
| • Dalgas foresters and closely connected external suppliers are trained forest professionals and are aware of the relevant SBP rules. They will follow the Dalgas work procedures for wood chip production in Germany.<br>• In connection with planning a harvesting operation the harvesting area will be mapped.<br>• During the mapping process the forester will check for areas of high conservation value and/or nature protection areas. This is done through the interactive map provided by Bundesamt für Naturschutz.<br>• If there are any protections covering the working area then the Dalgas forester will implement the relevant mitigation measures before work is carried out.<br>• Any project that cannot comply with the SBP requirements will be excluded from the sourcing.<br><br>For all projects<br>Heathlands: no material is sourced from these areas. |
| **Monitoring and outcomes:** |
| Dalgas will continuously monitor the implemented control systems through desk and field spot checks to ensure their effectiveness.<br>If evidence is found of non conformance then appropriate actions will be taken to correct the discovered issues and improve the system.<br>Procedures are detailed in the RMP and Dalgas' wood chip production procedure document. |

| | |
|---|---|
| **Country:** Germany | |
| **Area/sub-scope:** Private forests | |
| **Risk Assessment used:** | |
| | ☐SBP-RRA-AS-VN-FOR_v1.0 RRA for Vietnam FOR_Interim<br>☐SBP-RRA-US-NF-FOR_v1.0 RRA for US National FOR_Interim<br>☐SBP-RRA-US-PF-FOR_v1.0 RRA for US Private FOR_Interim<br>☐SBP-RRA-EU-DK-FOR_v2.0 RRA for Denmark FOR_Endorsed<br>☐SBP-RRA-EU-DK-TOF_v1.0 RRA for Denmark TOF_Interim<br>☐SBP-RRA-EU-EE-FOR_v2.0 RRA for Estonia FOR_Endorsed |

| | |
|---|---|
| | ☐SBP-RRA-EU-LV-FOR_v2.0 RRA for Latvia FOR_Endorsed<br>☐SBP-RRA-EU-LT-FOR_v2.0 RRA for Lithuania FOR_Endorsed<br>☐SBP-RRA-CA-QC-FOR_v2.0 RRA for Quebec FOR_Interim<br>☐SBP-RRA-CA-AB-FOR_v1.0 RRA for Alberta FOR_Interim<br>☐SBP-RRA-CA-BC-FOR_v2.0 RRA for British Columbia FOR_Interim<br>☐SBP-RRA-CA-NB-FOR_v1.0 RRA for New Brunswick FOR_Interim<br>☐SBP-RRA-CA-NS-FOR_v1.0 RRA for Nova Scotia FOR_Interim<br>☐SBP-RRA-EU-NO-FOR_v1.0 RRA for Norway FOR_Interim<br>☒ Biomass Producer's own risk assessment |

**Indicator with specified risk:**

2.2.2 Ecosystems, their health, vitality, functions and services in the Supply Base shall be maintained or enhanced.

**Description of the specific risk:**

Important large-scale landscape ecosystems have been identified for forests and trees outside forests and placed under protection in the form, for example, of national parks or biosphere reserves. Management for forestry purposes is either prohibited or partially regulated. Although representatives of nature conservation interests may wish to see specific improvements in relation to the management of HCVs, essentially the risk based on the foreseeable threat of further fragmentation of the overall area of the landscape ecosystem and mosaics is low. The size of clear-cutting is regulated by law in Germany. Clear cuttings, which could lead to fragmentation on the size of landscape ecosystems, are in any case subject to approval and may require compensation. The licensing requirement also applies to the conversion of forest areas. To protect landscape ecosystems and mosaics from fragmentation, different approaches are pursued in Germany. Forest habitats and landscape ecosystems with forests are under protection and often set aside from forest management activities or are managed with low intensity forestry. The conservation value is present in the form of Natura 2000/habitat types of the Habitats directive and in the form of sites protected under the Federal Nature Conservation Act (Bundesnaturschutzgesetz, BNatSchG) as landscape-level ecosystems and small habitats. Germany possesses 23,051 protected areas (Biodiversity Information System for Europe, 2024). In addition, the Federal Nature Conservation Act (§30), the Federal State Nature Conservation Laws (e.g., LNatSchG BaWü, §24a) and the State Forest Laws specify special biotopes. Relevant forest biotopes in this context are fen woods, swamp forest, riparian forest, ravine forest, forest on stone runs, talus forest and subalpine larch and Swiss larch-pine forests. According to the third national forest inventory, especially protected biotopes occupy ca. 593,000 ha, or 5 % of the forest area. The fourth national forest inventory (2012-2022) showed a slight increase up to 664,000 ha, means +1 % of the whole forested area, compared to 2012. And it's still that in most cases these are fen woods, swamp forest or riparian forests and other wet biotopes. Regular forest inventories and monitoring programs provide data on forest health, growth rates, species composition, and biodiversity. This information guides sustainable management decisions. In reference to the aspect of sustainability, forest management in Germany ensures the preservation of health, vitality, and ecosystem services of the forests. The status of protected sites is documented and monitored in the midterm planning (Forsteinrichtung) and is therefore respected when planning management measures. Controls are carried out by forest control (Forstaufsicht), employees of the Nature Conservation Federal Agency or by the police. Certificates of exemption that give priority to timber production over other ecosystem services are issued only after an official impact assessment in individual cases. The threat assessment is, therefore, classified as "low risk."
Environmental values in relation to timber harvesting activities are covered by Articles 8, 9 and 11 in the National Forest Act (Bundeswaldgesetz, BWaldG), which contains effective regulations, but also the regulative framework for federal state laws. The Act regulates activities such as logging, reforestation, and

pest control to minimize negative impacts on forest ecosystems. It also enforces the restoration of forest areas affected by natural disasters or human activities. Further environmental requirements are also defined by each federal state in their guidelines for silviculture which are binding for municipal forests and state forests. The Federal Nature Conservation Act defines environmental requirements at a national level in Article 5 (Agriculture, forestry, and fisheries). In addition to these Acts are various laws and regulations that define protection of environmental values (e.g. soils, water resources) and which must be followed when working in forests or in landscaping. These are equally binding for all forest owners (e.g. Soil Protection Act: Bundes- Bodenschutzgesetz, BBodSchG; Fertilizer legsilation: Düngemittelgesetz, DüV; Fertilizer ordinance: Düngemittelverordnung (DüMV); Water Resource Act: Wasserhaushaltsgesetz, WHG); European Water
Framework Directive: Europäische-Wasserrahmenrichtlinie).
Before conducting significant forestry projects, an Environmental Impact Assessment (EIA) is required to assess potential impacts on ecosystems and biodiversity, ensuring that any negative effects are mitigated.
Furthermore, Germany signed the Convention on Biological Diversity in 1992. In cases of violations penalties are in place and are implemented.
Important large-scale landscape ecosystems have been identified for forests and trees outside forests and placed under protection in the form, for example, of national parks or biosphere reserves. Forests can be divided into several categories. Most beech forest habitats and mixed ravine and hillside forests in Germany are in a favourable condition. In the Atlantic and continental regions, however, the situation is critical for oak forests, bog forests, riparian forests and certain small-scale pine forest types. Beech forests would naturally occur on around two thirds of the land area in Germany. The favourable conservation status of many beech forest habitats protected by the Habitats Directive can also be attributed to near-natural forest management, which has been the main objective in public forests since 1990. Only in the Atlantic region are the beech forests not yet in a favourable conservation status. The trends for most beech forest habitat types also indicate a positive development. This is primarily due to improvements in the ‘specific structures and functions’ of the forests with an increased proportion of deadwood and more numerous old growth stands and habitat trees, but also to an increase in the proportion of area (TI 2012).
The analyses of breeding bird species have shown that the populations of forest-dwelling species have declined significantly overall over the last 24 years. For almost 10 years, however, there has been a change in population trends that has led to an increase in the numbers of woodland birds. For many forest birds that remain in Germany in winter, the increased vailability of seeds, which provide a suitable food source, has had a positive effect. The increase in mast years is largely due to climatic changes (Weigel 2019). However, it is also clear that not all forest bird species are benefiting from the developments. In particular, species that favour special, especially historical forms of use or certain rare forest types are negatively affected. For example, hazel grouse populations in Germany outside the Alps have declined sharply and their range has also shrunk considerably. In their habitats, hazel grouse are dependent on special forms of utilisation such
as coppice forests and / or young stages of forest development. Due to the loss of structurally rich forests with young and mid-successional stages, there is no longer enough food and cover available. There are many reasons for the poor condition of riparian forests, bog forests and pine forests. While changes in hydrological conditions and drainage are the main impairments in peatland and riparian forests, changes in the species composition of pine forests due to unguided succession on secondary sites or a lack of active maintenance measures such as or a lack of active maintenance measures, as well as the input of air pollutants and nutrients. Under undisturbed anthropogenic conditions, oak forests can only survive in mixtures with beech and deciduous hardwoods where the competitive strength of beech is reduced. This can be the case on groundwater-influenced sites or on drier, shallow sites. However, the vast majority of oak forest habitat types (9160, 9170, 9190) are historically determined cultural assets of great value for the

protection of native biodiversity. The current stands are partly the result of historical coppice and coppice management. These management methods are now only practised on a small scale for nature conservation purposes, meaning that the open structures that oaks need for regeneration are no longer present on a large scale. In addition, many of today's old oak forests, which are worthy of protection, were planted in the Middle Ages as replacement communities on potential beech sites due to their utilisation at the time. Due to the strong competitive power of beech on these sites, active management in favour of oaks is necessary for the conservation of oak forest habitat types (cf. fact sheet 13LRT 9160). Another obstacle in most forests is a density of ungulates that is not adapted to the habitat, which leads to damage to regeneration. In order to improve the conservation status of the various forest habitats, efforts towards ecological forest conversion must be significantly intensified, also against the backdrop of climate change (BfN 2019b). Forest management should be more strongly orientated towards ecosystem aspects, e.g. by improving the water
balance and water retention, better protecting forest soils, allowing forests and trees to grow older and increasing the proportion of deadwood. The focus should be on the site variability of native tree species. The introduction of non-native tree species should generally be avoided, especially in nature conservation areas and FFH areas (BfN 2019b); the same applies to areas of forest habitat types outside these areas. In order to minimise the effects of climate change, the aim of forest management must be to improve the
adaptability and resilience of forests. Areas with unguided forest development contribute to an improvement in the conservation status of beech forests, for example, by allowing the old-growth and deadwood phases in particular to develop with their biological diversity.
The proportion of these areas should be 5 % by 2020 in accordance with the biodiversity strategy, the proportion of these areas should be 5 % by 2020. It currently stands at 2.8 % (as at 2019) and must increase further. By utilising the site variability of native tree species and increasing the areas with unguided forest development, forest habitats in protected areas in particular should be developed into model areas for adaptation to climate change.
Historical forms of forest utilisation such as coppice and coppice forests should be continued on sufficiently large areas in order to preserve the species associated with them. Forest habitats on secondary sites should be maintained in favour of the tree species present. This applies above all to oak forests, but also to small areas of pine forests such as lichen and pine forests. Forests should be managed with a view to maintaining and developing a favourable condition and adapted to the respective habitat type. The fourth National Forest Inventory (BWI IV), conducted in 2021 and 2022, provides detailed insights into the health and vitality of Germany's forests. The results reveal both positive developments and concerning trends. Crown thinning, which indicates tree vitality, remains at a high level. Currently, only about 20% of forest areas show no crown damage, highlighting the ongoing stress on forests due to factors like drought and pest infestations. The average crown thinning across all tree species is 25.8%. Younger trees up to 60 years old have a lower crown thinning rate of 16.5%, while older trees are more affected. Another alarming trend is the shift of forests from a carbon sink to a carbon source. Since 2017, the carbon stock in living biomass has decreased by 41.5 million tons. Currently, 1.184 billion tons of carbon are stored in living trees and 46.1 million tons in deadwood. This loss is primarily due to climate-related damages such
as storms, drought, and pest infestations. Annual wood growth is now at 101.5 million cubic meters, a 16% decline compared to the previous
inventory. The total wood stock amounts to 3.6 billion cubic meters after having peaked at 3.8 billion cubic meters in 2017. This reduction is also attributed to climate-related damages. The results of the fourth National Forest Inventory emphasize the urgent need to strengthen the resilience of
Germany's forests to climate change. Measures such as transitioning to climate-resilient mixed forests, promoting natural regeneration, and maintaining deadwood structures are essential to securing

forest vitality
in the long term and preserving their diverse ecosystem services.
Due to the lack of good health in further prospects of some habitat types (https://natureart17.eionet.europa.eu/article17/habitat/report/?period=5&group=Forests&country=DE®ion=) **this indicator needs to be classified as "Specified Risk" for private forests, but can be classified as "Low Risk" for state forests.**
In Germany, the harvesting of trees outside designated forests is subject to stringent regulations aimed at preserving ecosystem health, vitality, and the myriad functions and services these trees provide. The Federal Nature Conservation Act (Bundesnaturschutzgesetz, BNatSchG) serves as the primary legal framework governing such activities. According to Section 39 of the BNatSchG, it is prohibited to cut down or significantly prune trees between March 1 and September 30 to protect wildlife during their breeding and nesting periods. Exceptions are made only for gentle shaping and maintenance cuts necessary for plant health or safety reasons. Additionally, many municipalities have their own tree protection ordinances that may impose further restrictions. The enforcement of these laws is carried out by local environmental and nature conservation authorities, ensuring compliance through permits and inspections. Unauthorized tree felling or pruning can result in substantial fines, which vary depending on the severity of the violation and the specific regulations of the federal state or municipality. **Therefore, the risk for trees outside forests is considered as "Low Risk".**

**Mitigation measure:**

See mitigation measures for 2.1.3 for sub scope Germany/private forest.

**Monitoring and outcomes:**

Dalgas will continuously monitor the implemented control systems through desk and field spot checks to ensure their effectiveness.
If evidence is found of non conformance then appropriate actions will be taken to correct the discovered issues and improve the system.
Procedures are detailed in the RMP and Dalgas' wood chip production procedure document.

**Country:** Germany

**Area/sub-scope:** Forest

**Risk Assessment used:**

| | |
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| | ☐SBP-RRA-AS-VN-FOR_v1.0 RRA for Vietnam FOR_Interim<br>☐SBP-RRA-US-NF-FOR_v1.0 RRA for US National FOR_Interim<br>☐SBP-RRA-US-PF-FOR_v1.0 RRA for US Private FOR_Interim<br>☐SBP-RRA-EU-DK-FOR_v2.0 RRA for Denmark FOR_Endorsed<br>☐SBP-RRA-EU-DK-TOF_v1.0 RRA for Denmark TOF_Interim<br>☐SBP-RRA-EU-EE-FOR_v2.0 RRA for Estonia FOR_Endorsed<br>☐SBP-RRA-EU-LV-FOR_v2.0 RRA for Latvia FOR_Endorsed<br>☐SBP-RRA-EU-LT-FOR_v2.0 RRA for Lithuania FOR_Endorsed<br>☐SBP-RRA-CA-QC-FOR_v2.0 RRA for Quebec FOR_Interim<br>☐SBP-RRA-CA-AB-FOR_v1.0 RRA for Alberta FOR_Interim<br>☐SBP-RRA-CA-BC-FOR_v2.0 RRA for British Columbia FOR_Interim |

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| | ☐SBP-RRA-CA-NB-FOR_v1.0 RRA for New Brunswick FOR_Interim<br>☐SBP-RRA-CA-NS-FOR_v1.0 RRA for Nova Scotia FOR_Interim<br>☐SBP-RRA-EU-NO-FOR_v1.0 RRA for Norway FOR_Interim<br>☒ Biomass Producer's own risk assessment |

**Indicator with specified risk:**

3.2.3 feedstock shall not be sourced from forest areas in the Supply Base which, according to local definitions or norms, are classified as having combined attributes of high carbon stocks and high conservation value (HCV).

**Description of the specific risk:**

In Germany, the term "high carbon stock" (HCS) forests is not commonly used as a formal classification in national forest management or environmental policy. Instead, it is more often associated with international standards and conservation practices, particularly in tropical regions, where it identifies forests with high carbon storage capacity for conservation and climate mitigation. In contrast, German forest classification is based on ecological and management characteristics rather than explicitly on carbon stock alone. However, carbon sequestration is an integral aspect of Germany's forest policies. Germany monitors and reports
forest carbon storage as part of its commitments under the United Nations Framework Convention on Climate Change (UNFCCC). The EU (e.g. RED II) considers high carbon stocks to be in wetlands, peatlands and forests. In the context of forest ecosystems, mature and old-growth forests have the highest carbon stocks, and are also important for biodiversity, especially those with a higher degree of naturalness. However, high carbon stock has been observed to be independant of the degree of naturalness and the maximum live carbon can be reached at earlier stages than old-growth stage although structural complexity does pplay into the maintenance of high carbon storage. The European Green Deal and the EU Biodiversity
strategy for 2030 emphasise the need to protect the remaining primary and old-growth forests overall. In Germany, there is no official definition for 'old-growth forests' or 'primeval forests'. In general, an oldgrowth forest is a forest that has developed naturally over a very long period of time without significant human intervention. Such forests are characterised by a high degree of structural and species diversity, including different ages of trees and a considerable proportion of deadwood. In Germany, true primeval forests are extremely rare, as almost all forest areas have been influenced by humans at some point. Nevertheless, there are some near-natural forests that have characteristics of primeval forests, such as the Hainich National Park in Thuringia or the Jasmund National Park on the island of Rügen. The old-growth forests can be recognized by several characteristics. They have a diverse age structure with very old trees, often over 200 years, alongside younger ones. A significant presence of deadwood, both standing and
fallen, provides habitats for fungi, insects, and mosses. These forests exhibit natural dynamics with minimal human intervention, allowing regeneration through natural seeding rather than replanting. Forest ecosystems in Germany are categorized based on biomes, such as temperate forests, and specific forest types, such as beech forests or spruce monocultures. Older, unmanaged, or naturally regenerating forests generally exhibit higher carbon stocks compared to younger or intensively managed stands. While not directly equivalent to the HCS framework, Germany employs classifications that emphasize ecological value and carbon storage, including Natura 2000 sites protected under EU biodiversity conservation policies, which often overlap with high carbon stock forests due to their ecological importance and minimal disturbance; natural forest reserves, which are unmanaged forests maintained for biodiversity and ecological research and frequently meet high carbon storage criteria because of their maturity and lack of human intervention; and old-growth forests, which, although rare in Germany, are recognized for their significant carbon storage and biodiversity value. Protected areas exist in various categories, both nationally and internationally, to preserve biodiversity, landscapes, and natural ecosystems. Areas with a high

conservation value are of particular importance due to their rich biodiversity, presence of rare or endangered species, and crucial ecological functions. These areas often serve as essential habitats, migration corridors, or natural carbon sinks, such as named wetlands and old-growth forests. Their protection is vital for maintaining ecosystem balance, supporting wildlife populations, and mitigating climate change. Germany has a comprehensive system of protected areas, each serving a specific role in conservation. Nature reserves (Naturschutzgebiete, NSG) represent the strictest form of protection, where human activities are highly restricted to safeguard vulnerable species and ecosystems. Landscape protection areas (Landschaftsschutzgebiete, LSG), while less restrictive, aim to conserve the natural beauty and ecological integrity of a region while permitting controlled agricultural and recreational activities. National parks (Nationalparks, NP) cover large areas where nature is left to develop with minimal human interference, allowing only regulated tourism and scientific research. Biosphere reserves (Biosphärenreservate) are recognized by UNESCO and integrate conservation with sustainable development, dividing the area into core zones with strict protection, buffer zones with limited activities, and transition zones where environmentally friendly economic practices are encouraged. Nature parks (Naturparks) balance conservation with tourism and education, promoting sustainable recreation while allowing traditional land use. In addition, Germany protects smaller but ecologically valuable areas. Protected landscape components (Geschützte Landschaftsbestandteile) include specific natural structures such as hedgerows, small wetlands, or old trees that play a role in local biodiversity and for the sourcing for trees outside forests. Natural monuments (Naturdenkmale) protect individual features like ancient trees, rock formations, or caves with unique ecological or cultural significance. Legally protected biotopes (Gesetzlich geschützte Biotope) include certain habitat types that are automatically protected under German law, such as bogs, heathlands, or natural streams. On a European level, Germany participates in the Natura 2000 network, which provides a framework for protecting high-value conservation areas. This includes Fauna-Flora-Habitat (FFH) sites, which focus on preserving rare species and ecosystems, and Special Protection Areas (SPA) that specifically safeguard wild birds and their habitats. These sites are designated based on scientific criteria and play a crucial role in maintaining Europe's biodiversity.
Internationally, several conservation frameworks ensure the protection of ecologically valuable areas. UNESCO designates natural World Heritage Sites for their exceptional ecological significance, ensuring strict preservation measures. Biosphere Reserves, also under UNESCO, serve as models for sustainable coexistence between humans and nature. The Ramsar Convention protects wetlands of global importance, recognizing their role in biodiversity conservation, water regulation, and climate stability. Additionally, the International Union for Conservation of Nature (IUCN) classifies protected areas into six categories, ranging from strict nature reserves with minimal human interference to regions where sustainable resource use is permitted. These international designations help reinforce national protection efforts and ensure the longterm preservation of areas with a high conservation value. Furthermore, the Federal Forest Act (Bundeswaldgesetz, BWaldG) and state-specific forest laws emphasize sustainable forest management and conservation. These laws, combined with the country's commitment to the European Union's Natura 2000 network, ensure the protection of the most seriously threatened habitats
and species across Europe, including forested regions identified as having high conservation value and significant carbon stocks.
The prohibition on sourcing primary feedstock from high carbon stock and HCV areas is implemented through detailed management plans and certification schemes. Forest management plans in Germany must
include assessments of carbon stocks and conservation values, identifying areas where logging and biomass extraction are prohibited or strictly controlled. Certification schemes such as FSC and PEFC require forest managers to identify and protect HCV areas and high carbon stock regions within their management units. For instance, FSC-certified forests must maintain the ecological integrity of HCV areas

and ensure that any harvesting activities do not deplete high carbon stocks. Many private forest owners in Germany follow certification standards like FSC and PEFC, which require the protection of HCV and high carbon stock areas, ensuring that feedstock sourcing does not compromise these critical areas.
In addition, The Forest Inventory System plays a critical role in identifying high-carbon stock forests with high conservation values. Conducted by the Federal Ministry of Food and Agriculture (BMEL) through its subordinate agency, the Thünen Institute, this system collects comprehensive data on forest composition, structure, and carbon content. Using this information, authorities can identify and monitor forests with significant carbon storage potential, informing sustainable management practices and conservation
priorities. Additionally, sustainable forest management in Germany is regulated by the Forest Act and certification systems such as PEFC and FSC, which ensure sustainable forest management, though they do not specifically target HCS forests. Within carbon accounting, forests are monitored for their carbon storage capacity at the national level, such
as through the Climate Action Plan 2050 and the National Inventory Report under the UNFCCC.
Protected areas like Natura 2000 sites or nature conservation areas often include forests that are significant carbon
stores and may overlap with HCS forests, as they are typically old, undisturbed, and species-rich.
These conservation measures help preserve carbon-rich forests. Even outside designated protected areas, "best practice" forestry encourages leaving old forests intact wherever possible. Old forests, characterized by mature trees, rich biodiversity, and significant carbon storage, are often managed under frameworks that prioritize non-intervention. This approach aligns with the philosophy of “close-to-nature forestry” (naturnahe Waldwirtschaft), which seeks to emulate natural processes and maintain forest ecosystems' resilience and functionality. For example, old-growth forests are frequently excluded from timber production plans and are left to develop naturally, enhancing their capacity to store carbon and support diverse habitats. By leaving these forests untouched, managers not only contribute to carbon sequestration but also ensure the longterm stability and health of the broader forest ecosystem. Control authorities and forestry experts further promote the preservation of old forests by providing guidance and incentives. Forest owners may receive subsidies or financial support under programs that reward conservation-oriented management, reinforcing the economic viability of leaving high-carbon-stock forests undisturbed (e.g. see indicator 2.1.1).
While Germany has made significant strides in protecting high carbon stock and HCV areas, challenges remain, such as balancing economic interests with conservation goals and managing the impacts of climate change on forest ecosystems. **Therefore, it's necessary to classify the forest area under assessment as**
**"Specified Risk"**.
Specifically we translate the above indentified risk into two sub elements for forest in Germany.
1) Identifying protected nature areas..
2) Identifying areas of high carbon stocks.
There is only a specified risk under this indicator where those two elements are present in the same area.

**Mitigation measure:**

Mitigation of the two identified risks above
1) Identifying protected nature areas. For private forest then the processes as described under indicator 2.1.3 for Germany/Private Forest are followed. If no protected nature areas are identified then this indicator is considered to be low and no futher action is taken.
For state forest a seperate control regime will apply as per Dalgas' work procedure for woodchip production in Germany. This control regime will involve supplier meetings, at least one time per year, and focuses on general information around the restrictions on supplying material that would fall under 3.2.3.
2) If protected nature areas are identified in the work area then the sub element of high carbon stock will be

considered. This assessment is done using a combination of age and standing volume.
This table shows a combination of a maximum volume/hectare that can be achieved in a stand of the different species. It also shows an age which can be considered to be beyond the normal maturity for a stand meant for timber harvesting. This is defined as the midpoint between the normal age of harvest and the shortest natural lifespan of a tree.
If a crop is both higher in volume and older in age than showed below then it is considered to be high carbon stock and material will not be sourced from this area.

| Tree species | Volume/ha (m3) | Age (years) |
|---|---|---|
| Spruce | 800 | 160 |
| Larch | 450 | 170 |
| Pine | 600 | 170 |
| Douglas | 900 | 250 |
| Poplar | 400 | 75 |
| Oak | 450 | 400 |
| Beech | 700 | 180 |
| Alder | 400 | 90 |
| Fir | 800 | 315 |
| Birch | 250 | 90 |
| Lime | 600 | 420 |
| Others | 400 | 150 |

This multi-tiered approach facilitates the identification of areas with high conservation value and substantial carbon stock.
If the harvesting site includes a protected nature area then the site will also be screened for "no go" areas: Wetlands, grassland, heathlands, peatlands, old growth and primary forests. No sourcing allowed from these areas.

**Monitoring and outcomes:**

Dalgas will continuously monitor the implemented control systems through desk and field spot checks to ensure their effectiveness.
If evidence is found of non conformance then appropriate actions will be taken to correct the discovered issues and improve the system.
Procedures are detailed in the RMP and Dalgas' wood chip production procedure document.

# 4 Stakeholder engagement

## 4.1 General description

**Biomass Producer's stakeholder engagement start date:** 17 Aug 2026

**Biomass Producer's stakeholder engagement end date:** 17 Sep 2026

**Total number of stakeholders contacted:** 10

**Give a general description of the process of Stakeholders Engagement, including stakeholders contacted, method of communication and a summary of the comments received:**

Email sent out to identified stakeholders with the complete CRA for Germany. Also highligted are the indicators that have specified risk along with the items in RED III and the suggested mitigation measures for all of them.

No stakeholder comments were received.

## 4.2 Response to stakeholder comments

# 5 Report updates and approval

**This document is:** New Supply Base Report (Assessments/reassessments)

**Summary of changes:** N/A

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|---|---|
| **Name** | Simon Thorfinn |
| **Title** | Management representative |
| **Date of report approval** | 18 Sep 2026 |

## Annex 1: Detailed findings for Supply Base Evaluation indicators

| Germany Forest and TOF | Indicator |
|---|---|
| 1.1.1 | Operations related to feedstock sourcing and biomass production shall comply with all existing applicable laws and regulations. |
| Supply Base Verifiers | • FSC Controlled Wood Risk Assessment for Germany, assigned code: FSC-NRA-DE V1-1 (approved 03.04.2018, updated 31.07.2020)<br>• strong national legal framework<br>• FSC-GUI-30-009 V1-0 EN<br>• Bundeswaldgesetz (BWaldG) vom 02. Mai 1975 (BGBl. I S. 1037) - “National Forest Act”<br>• Bundesnaturschutzgesetz (BNatSchG) vom 29. Juli 2009 (BGBl. I S. 2542) - “Federal Nature Conversation Act"<br>• Erneuerbaren-Energien-Gesetz (EEG) vom 01. April 2000 - "Renewable Energy Act"<br>• Bundes-Bodenschutzgesetz (BBodSchG) vom 17. März 1998 (BGBl. I S. 502) – “Soil Protection Act”<br>• Baugesetzbuch (BauGB) vom 23. Juni 1960 (BGBl. I S. 341) - "Federal Building Code"<br>• Tierschutzgesetz (TierSchG) vom 18. Mai 2006 (BGBl. I S. 1206, 1313) - "Animal Welfare Act" |
| Risk Rating justification | In Germany, the collection and processing of forest feedstock for thermal use is a well-regulated activity, bound by a series of stringent laws and regulations aimed at ensuring environmental sustainability, economic viability, and social acceptability. Forest residual wood, also known in Germany as "Waldrestholz," includes tree branches, tops, and other woody debris left after timber harvesting operations. Additionally, stem wood infested by beetles, fungi, or other pests, rendering it unsuitable for material use is sourced. The utilization of both residual wood and pest-damaged stem wood for energy production has gained significant attention as part of Germany’s commitment to renewable energy and reduction of carbon emissions.<br>The Federal Forest Act (Bundeswaldgesetz, BWaldG) serves as the cornerstone of forest management in Germany. It mandates that forests must be managed in a way that ensures their sustainable use, conservation, and enhancement. According to the BWaldG, the primary objectives include maintaining the forest's biodiversity, productivity, and ability to regenerate. Harvesting of biomass must therefore adhere to these sustainability principles. The Act also emphasizes the multifunctionality of forests, balancing economic, ecological, and social functions. Importantly, these regulations apply not only to large, certified forest enterprises but also to smaller, uncertified private woodlands. Even in small, uncertified forests, owners are required to follow these legal frameworks, ensuring that sustainability remains a priority. |

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| | At the state level, specific regulations and guidelines further detail the requirements for forest management, including the harvesting of forest residual wood and pest-damaged stem wood. These regulations often mandate the preparation of forest management plans that include measures for soil protection, water conservation, and biodiversity preservation. This ensures that the extraction of biomass does not compromise the forest's health and resilience. The Nature Conservation Act (Bundesnaturschutzgesetz, BNatSchG) provides a legal framework to protect biodiversity and natural habitats, which is also applicable to private and small-scale forests. It plays a critical role in the management of forests by requiring that any harvesting activities do not harm protected species or habitats. Compliance with the BNatSchG ensures that biomass production respects ecological integrity and contributes to the conservation of wildlife.<br>The Renewable Energy Act (Erneuerbare-Energien-Gesetz, EEG) promotes the use of renewable energy, including biomass, by providing financial incentives for energy producers. It sets out criteria for the sustainable sourcing of biomass, ensuring that feedstock for energy production, such as forest residual wood and pest-damaged stem wood, meets specific sustainability standards. These standards include requirements related to greenhouse gas savings, sustainable forest management, and biodiversity protection.<br>To demonstrate compliance with these laws, forest managers and biomass producers often seek certification from recognized sustainability schemes. Certifications such as the Forest Stewardship Council (FSC) and the Programme for the Endorsement of Forest Certification (PEFC) provide assurance that the biomass sourcing adheres to high environmental and social standards. However, uncertified small and private forests, governed by the same legal frameworks, still operate in a sustainable manner by following the regulations set out in the BWaldG, BNatSchG, and EEG, ensuring that their contribution to biomass energy remains in line with national and international sustainability goals.<br>Compliance with forest management laws in Germany is overseen by a combination of federal and state authorities. The Federal Forest Act (BWaldG) and related state regulations are enforced by local forestry offices (Forstbehörden), which are responsible for monitoring and ensuring that forest operations adhere to sustainability guidelines. These offices conduct regular inspections and audits of forest management practices, regardless of whether the forest is certified. They check for adherence to legal requirements concerning biodiversity conservation, soil and water protection, and sustainable harvesting limits. In cases where violations are detected, forest owners may be subject to fines or required to implement corrective measures. Additionally, environmental agencies ensure that the Nature Conservation Act is respected, particularly regarding the protection of species and habitats during biomass extraction.<br>Therefore, the indicator is assessed as "Low Risk" for forest feedstock.<br>Also, tree care measures, such as trimming, pruning, or removing trees, as well as maintaining hedges in urban areas or between fields, are legal but subject to strict regulations. These regulations ensure that such actions are |

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| | carried out in a way that protects the environment, biodiversity, and the general landscape. The primary legal framework governing these activities is the Federal Nature Conservation Act (Bundesnaturschutzgesetz, BNatSchG), which applies across the country. According to this law, tree care measures are permissible if they adhere to the guidelines aimed at protecting wildlife habitats, especially during breeding and nesting seasons.<br>Specifically, § 39 of the BNatSchG outlines restrictions on cutting trees, hedges, and other woody plants. From March 1 to September 30, the so-called "felling ban" applies, during which the cutting or clearing of trees, hedges, and shrubs is generally prohibited. This is to protect breeding birds and other wildlife that depend on these habitats during this time of year. However, exceptions are allowed for necessary care measures, such as removing deadwood or trees that pose a safety hazard, provided these actions are approved by the local nature conservation authority.<br>Local city ordinances, often referred to as "Baumschutzsatzungen" (tree protection statutes), may also impose further restrictions. These municipal laws can protect certain trees based on size, species, or location, and they may require a permit to carry out any tree care work, especially if it involves the removal of a tree.<br>One key additional law is the Federal Soil Protection Act (Bundesbodenschutzgesetz, BBodSchG), which aims to protect the soil and ensure the sustainable use of land. This law is particularly relevant for hedges located between fields, as it focuses on preventing soil erosion and maintaining the ecological integrity of the landscape. The removal or trimming of hedgerows can lead to soil degradation, which is why the BBodSchG requires careful consideration of the potential impacts on the ground before any action is taken.<br>Another law that may apply is the Federal Building Code (Baugesetzbuch, BauGB), especially in urban areas where trees and green spaces play an important role in urban planning and the quality of life. In many cases, tree preservation orders (Baumschutzsatzungen) exist, requiring a permit to remove or significantly alter trees within designated areas. These regulations help to preserve urban greenery and maintain the environmental benefits that trees provide in densely populated areas, such as improving air quality and reducing heat.<br>Additionally, the Animal Welfare Act (Tierschutzgesetz, TierSchG) may come into play, as tree and hedge care could impact animals that use these spaces as habitats. For example, the cutting of trees or shrubs during the breeding season of birds, even outside the standard prohibition period defined in § 39 of the BNatSchG, could require special permits if animal welfare is at risk.<br>When it comes to proving compliance with these laws, a variety of documentation is typically required. This often includes a permit from the local authorities, particularly when trees are removed, or significant landscape changes are made. Before any work begins, a formal application may need to be submitted to the relevant environmental or forestry authority, outlining the necessity of the tree care or removal. This application often needs to include photographs of the site, expert assessments (for example, from arborists or environmental specialists), and a detailed description of the intended |

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| | measures.<br>In some cases, an environmental impact assessment (Umweltverträglichkeitsprüfung) may be required, particularly if the planned work affects large areas of woodland, protected landscapes, or areas of significant biodiversity. For hedgerow maintenance in agricultural areas, farmers and landowners are often required to provide evidence that their actions are in line with agri-environmental measures or other agricultural support schemes that promote biodiversity and sustainable land use. Local nature conservation authorities often inspect the work site to ensure that regulations are being followed, and ongoing monitoring may be required for larger projects.<br>In summary, while tree and hedge care measures are legal in Germany, they are tightly regulated under federal and local laws. Compliance with the Federal Nature Conservation Act, the Federal Forest Act, and local ordinances is necessary, and proper documentation is required to prove that such actions respect the environment and biodiversity.<br>Therefore, the indicator is assessed as "Low Risk" for trees outside forests (urban and landscape feedstock). |
| **Risk Rating** | Low Risk |

| **Germany<br>Forest and TOF** | **Indicator** |
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| **1.1.2** | Legal ownership of land and resource use rights shall be respected. |
| **Supply Base Verifiers** | • Strong national framework<br>• FSC Controlled Wood Risk Assessment for Germany, assigned code: FSC-NRA-DE V1-1 (approved 03.04.2018, updated 31.07.2020)<br>• Grundbucheintrag - "entry in the Land Book"<br>• Pachtverträge - "contracts of farm leasing"<br>• Steuerbescheide - "tax assessment<br>• Bürgerliches Gesetzbuch (BGB) in der Fassung der Bekanntmachung vom 02. Januar (BGBI. I S. 42,2909; 2003 I S. 738) - "German Civil Code.<br>• Grundbuchordnung (GBO) in der Fassung der Bekanntmachung vom 26. Mai 1994 (BGBI. I S. 1114) - "Landbook Rule"<br>• Grundgesetzbuch für die Bundesrepublik Deutschland vom 23. Mai 1949 (BGBI. I S. 2438) - "German Constitution" - Article 14<br>• Bürgerliches Gesetzbuch (BGB) in der Fassung der Bekanntmachung vom 02. Januar 2002 (BGBI. I S. 42, 2909; 2003 I S. 738 - §585) - "Declaration and Definition of Farm Leasing"<br>• Bürgerliches Gesetzbuch in der Fassung der Bekanntmachung vom 02. Januar 2002 (BGBI. I S. 42, 2909; 2003 I S. 738 - §581) - "Contracts and Duties concerning from leasing"<br>• Bundes-Bodenschutzgesetz (BBodSchG) vom 17. März 1998 (BGBI. I S. 502) – “Soil Protection Act”<br>• Baugesetzbuch (BauGB) vom 23. Juni 1960 (BGBI. I S. 341) - |

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| | "Federal Building Code"<br>• Wasserhaushaltsgesetz (WHG) vom 31. Juli 2009 (BGBI. I S. 2585) - "Water Resources Act" |
| **Risk Rating justification** | Dalgas has a Risk Assessment in place to meet the requirements of FSC Controlled Wood within the defined supply base.<br>In Germany, the legal ownership of land and the associated resource use rights are deeply rooted in a well-defined and comprehensive legal framework. The foundation for land ownership and the utilization of resources in Germany is based on both federal and state legislation, and these laws are designed to ensure that private property rights are respected while also balancing environmental protection, sustainable development, and social interests. The primary laws governing land ownership and resource use in Germany include the German Basic Law (Grundgesetz), the German Civil Code (Bürgerliches Gesetzbuch, BGB), the Federal Building Code (Baugesetzbuch, BauGB), the Federal Mining Act (Bundesberggesetz, BBergG), and environmental regulations such as the Federal Nature Conservation Act (Bundesnaturschutzgesetz, BNatSchG) and the Federal Water Resources Act (Wasserhaushaltsgesetz, WHG).<br>The cornerstone of land ownership rights in Germany is Article 14 of the German Basic Law, which guarantees the right to private property. It states that "Property and the right of inheritance shall be guaranteed. Their content and limits shall be determined by the laws." This article establishes that property rights, including land ownership, are inviolable and can only be limited or restricted by law. However, it also adds an important caveat: "Property entails obligations. Its use shall also serve the public good." This principle of balancing private ownership with public interest is central to Germany's approach to land and resource management. It allows the state to intervene under certain circumstances, especially when environmental protection or sustainable resource management is at stake.<br>The German Civil Code is the primary legal document that outlines the specifics of land ownership and property rights. The BGB regulates how land can be bought, sold, and transferred, as well as the rights and obligations of landowners. It defines property ownership as including both the surface of the land and everything located above and below it, in accordance with the Latin principle "cuius est solum, eius est usque ad coelum et ad inferos" – meaning "whoever owns the soil, owns it up to the heavens and down to the depths." However, in practice, this principle is subject to limitations, especially when it comes to the exploitation of resources like minerals or groundwater, which are often regulated separately by the state.<br>The Federal Building Code plays a crucial role in determining how land can be used and developed in Germany. It sets out the planning framework for municipalities and regulates urban development, zoning, and land use planning. The purpose of this code is to ensure orderly urban and rural development while considering economic, social, and environmental concerns. The BauGB gives municipalities significant control over land use within their boundaries, allowing them to create local development plans (Bebauungspläne) that dictate how land can be used for housing, industry, |

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| | agriculture, or conservation. These plans are binding and must be adhered to by landowners. This system ensures that land development is coordinated and that the public interest, such as environmental protection and infrastructure needs, is respected.<br>In terms of resource use rights, particularly for underground resources such as minerals and fossil fuels, the Federal Mining Act governs the exploration and extraction of these resources. According to this law, the state holds sovereign rights over certain natural resources, even if they are located on privately owned land. This means that private landowners do not automatically have the right to exploit mineral resources beneath their land. Instead, the state grants licenses for resource extraction, and these activities are subject to strict environmental and safety regulations. The Bundesberggesetz ensures that resource extraction is carried out in a way that balances economic interests with environmental protection and public safety. It also provides for compensation to landowners if their property is affected by mining activities.<br>Environmental protection is another critical factor influencing land use and resource rights in Germany. The Federal Nature Conservation Act and the Federal Water Resources Act are two of the key environmental laws that place restrictions on how land and natural resources can be used. The Bundesnaturschutzgesetz aims to protect biodiversity, landscapes, and ecosystems by imposing strict rules on land development in environmentally sensitive areas. It ensures that any land use must consider its impact on the environment, and it often requires environmental assessments for large construction projects. The Wasserhaushaltsgesetz regulates the use and protection of water resources, including groundwater and surface water. It sets out the conditions under which water can be extracted, used, or diverted, and it establishes measures to protect water quality and ensure the sustainable use of water resources.<br>The implementation and enforcement of these laws in Germany are overseen by a combination of federal, state, and local authorities. While the federal government sets the overall framework for land use and resource management, state governments (Länder) have significant powers to regulate land and resource use within their territories. This federal structure allows for regional differences in land use policy while maintaining consistency in key areas such as environmental protection and resource conservation. Local governments also play a crucial role, particularly in urban planning and land development, where they have the authority to create zoning regulations and development plans in line with state and federal laws.<br>One reason why these laws are strictly adhered to in Germany is the strong tradition of legalism and the rule of law. German society places a high value on legal certainty, and the judicial system is robust, ensuring that laws are applied fairly and consistently. In cases of disputes over land or resource rights, German courts provide an avenue for resolving conflicts in a manner that respects both individual rights and the public interest.<br>Additionally, European Union (EU) regulations also play an important role in shaping land and resource use policies in Germany. As a member of the EU, Germany is bound by EU directives on environmental protection, water |

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| | management, and sustainable development, which often require national laws to be aligned with broader European standards. For example, the EU's Water Framework Directive has influenced the Wasserhaushaltsgesetz by setting out common objectives for water quality and sustainable water use across member states.<br>Tenure rights are determined through the German Consultation and the Civil Code. Ownership of estates is documented in the Land Charge Register (Grundbuch). The legal owner of an estate also owns the management right of the estate if no other laws are violated.<br>Ownership of land is not legally valid, until the owner is registered in the Land Charge Register. Purchase of land requires a formal agreement by both parties. If there is no entry in the Land Charge Register or if the ownership of the land tenure is not yet registered in the Land Charge Register (e.g. in the event of new structuring and merging of plots), the organization must prove with appropriate documentation, that it owns the forest/land and therefore has the right to manage it. To establish a more efficient management, some small private forest owners are incorporated in forest enterprises associations (Forstbetriebsgemeinschaften). Here, organizations keep the land ownership and the right to manage, but the management of several small forests is centralized. All owners must agree to the management and harvesting plans of the association.<br>When considering the different ownership relationships, the types of ownerships have been designated as habitats sites by varying parts: 5 % state forest, 46 % federal forest, 21 % municipal, communal forest and 28 % private forest (with different shares in the federal states).<br>Risks can arise when ownership is shifted between generations and the Land Charge Register entry takes time due to lengthy administrative processes. A few problematic cases are known, involving heritage issues and difficulties with the identification of the heirs. Identified laws are upheld. |
| **Risk Rating** | Low Risk |

| **Germany Forest and TOF** | **Indicator** |
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| **1.1.3** | Feedstock shall be legally harvested, supplied and produced, including in compliance with CITES, EUTR and other applicable legal trade requirements. |
| **Supply Base Verifiers** | • checklist of CITES Species in Germany<br>• transparent International Corruption Perception Index<br>• Federal Agency for Nature Conversation ("Bundesamt für Naturschutz")<br>• Import permit of wood from tree species in appendices A and B of the Council regulation (EC) No 338/97 of 9th December 1996 Document showing a notification of import of wood from tree species in appendix c of the Council Regulation (EC) No 338/97 of 9th December 1996<br>• Council Regulation (EC) No 338/97 of 9th December 1996 on the protection of species of wild fauna and flora by regulating trade |

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| | therein<br>• Bundesartenschutzverordnung (BArtSchV) vom 16. Februar 2005 (BGBI. I S. 258, 896 - "Federal Species protection Ordinance"<br>• existing legislation<br>• EUTR<br>• Corruption Perception Index (2023)<br>• Federal Customs Authority ("Bundeszollverwaltung")<br>• results of Bundeswaldinventur ("national inventory 2012")<br>• WWF report: Failing the Forests; Europe's illegal timber trade<br>• 1. Holzhandels-Sicherungs-Gesetz (HolzSiG) vom 11. Juli (BGBI. I S. 1345) - "Timber trading security act"<br>• FSC Controlled Wood Risk Assessment for Germany, assigned code: FSC-NRA-DE V1-1 (approved 03.04.2018, updated 31.07.2020)<br>• EUDR |
| **Risk Rating justification** | Germany is signatory to numerous International and European agreements and regulations on the protection of biodiversity, such as the Habitats Directive, the Convention on Biological Diversity, and CITES. Dalgas has a FSC Controlled Wood Risk Assessment that addresses the requirements of CITES (FRF-DP-05).<br>Referring to export: No woody species produced in Germany are included on the CITES lists and the risk is considered as low.<br>Regarding the import: Importing CITES species is only possible with permission and due to the good rank on the CPI the risk is considered as low.<br>The European Union directive No. 995/2010 (EUTR) was transposed into German Law through the Timber Trading Security Act (Holzhandels-Sicherungs-Gesetz or HolzSiG) in 2011 and was reviewed in 2013. WWF Germany rates Germany as "a constantly high performer since 2007" in implementation of the EUTR. The authority for enforcing the law is the Federal Office for Agriculture and Food (Bundesministerium für Landwirtschaft und Ernährung, BLE).<br>Germany will also align with the European Union Deforestation Regulation (EUDR), adopted in 2023, which extends the principles of the EUTR to address a wider range of commodities linked to deforestation. The EUDR mandates that products entering the EU market must be deforestation-free, meaning they cannot be linked to deforestation or degradation after December 31, 2020, and must comply with the legal requirements of the country of origin. This regulation imposes due diligence obligations on companies, requiring them to assess risks in their supply chains, ensure traceability through geolocation data, and mitigate any identified risks. Member states, including Germany, enforce strict penalties for non-compliance. The EUDR also encourages global collaboration, fostering partnerships with producing countries to promote sustainable forestry practices. Germany has adopted advanced technologies like satellite monitoring and blockchain systems for real-time tracking, reinforcing its commitment to sustainability and transparency in timber and other relevant supply chains.<br>The regulation of Trees Outside Forests (TOF), including urban and |

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| | landscape feedstock, is also covered by these legal frameworks. Germany, through its transposition of the EUTR/EUDR, ensures that all timber, whether sourced from traditional forests or TOF, complies with legal trade requirements. In the case of TOF, which includes trees found in parks, between fields, and along roadsides, the legal frameworks prevent illegal logging and ensure that any harvesting activities respect biodiversity and land use regulations. The same due diligence applies, meaning that operators handling TOF feedstock must verify that it is legally harvested and complies with both national and EU laws, including CITES where relevant.<br>Legally required documents or records for legal harvesting in clarified ownership relations are the entry in the land book (Grundbucheintrag), contracts of farm leasing (Pachtverträge), and tax assessments (Steuerbescheide). The harvest is documented previously by the strategic planning (Forsteinrichtung) and documented in the midterm framework (Forsteinrichtungswerk), annual planning of forest organizations, annual business planning of organizations, and in private forests by the planning reports, tax returns, and notice of tax assessments.<br>In cases of TOF, the legal framework also mandates clear documentation of ownership and permits where necessary. Although TOF areas are often managed differently from forests, legal clarity in ownership, harvesting rights, and compliance with planning frameworks remains crucial. Municipal and regional authorities typically regulate TOF within urban environments, ensuring the sustainable management of urban and landscape trees through local ordinances and regulations, which may require permits for tree removal or impose replanting obligations.<br>Every legal company must be registered in the business register (Unternehmensregister).<br>Planning and sustainable management is described in the statute books: Mid-term management planning and annual planning (Forstbetriebsgutachten) are required in most cases. When plans are submitted and approved by forest departments, harvesting measures are assumed, based on this planning. There is no special approval for each harvesting activity, but there are prescribed laws and regulations providing a framework in which a forest owner can execute his activities.<br>For TOF, the situation is similar: while individual harvesting activities may not require separate approvals, they must be conducted in accordance with the relevant environmental, conservation, and land-use laws that govern urban and rural landscape management. Municipal planning frameworks often dictate how TOF feedstock can be harvested, with sustainability and biodiversity protection being key components.<br>Central foreign-trade documents for the import of goods are the certificate of origin and the import permit. Reports are controlled by the Federal Customs Authority (Bundeszollverwaltung). Traders need to follow the procedures. Otherwise, they must face penalties in form of fines or even trials.<br>Germany scores 78 points on the Corruption Perceptions Index 2023 on a scale from 0 (highly corrupt) to 100 (very clean). Germany ranks 9th out of 180 with rank nr. 1 being the cleanest country.<br>There were no reports from international organizations such as FAO, |

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| | Transparency International, The Royal Institute for International Affairs or others stating that logging without harvesting permissions is a problem in Germany, whether in traditional forests or for Trees Outside Forests.<br>In conclusion, the criterion is considered "Low Risk". |
| **Risk Rating** | Low Risk |

| **Germany<br>Forest and TOF** | **Indicator** |
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| **1.1.4** | Payments for harvest rights and feedstock, including duties, relevant royalties and taxes related to timber harvesting shall be complete and up-to-date. |
| **Supply Base Verifiers** | • strong national legislation and adequate level of enforcement<br>• transparent International Corruption Perception Index<br>• Inhouse procedures in accounting<br>• Bills, trading documents<br>• Handelsgesetzbuch (HGB) vom 10. Mai 1897 (BGBI: I S. 1474) - "German Commercial Code" 1. Article 2<br>• Umsatzsteuergesetz (UStG) in der Fassung der Bekanntmachung vom 21. Februar 2005 (BGBI. I S. 386) - "Value Added Tax Act": 1. §1 Taxable sales<br>• FSC Controlled Wood Risk Assessment for Germany, assigned code: FSC-NRA-DE V1-1 (approved 03.04.2018, updated 31.07.2020) |
| **Risk Rating justification** | The forest legislation does not include the payment and harvesting fees. Tax related issues are controlled by finance authorities. Every company must state its financial turnover in a tax return and, in addition, must demonstrate certain accounting practices (§§140, 141 AO respectively § Abs. 1 HGB for incorporated enterprises).<br>Companies have two kinds of tax-paying systems: Imputed taxation and actual taxation. All documents are sent to the finance authorities for verification - also irrespective of size, turnover and form of organization. All cash flows must be documented to verify and avoid illegal and black markets profits. Not mentioning income is seen as tax evasion which attracts several fines (§§369, 379 AO). Tax evasion also occurs in Germany, but legal requirements for documentation and control measures by finance authorities are very strict.<br>Germany has value-added taxes (VAT), described in the Value Added Tax Act. All domestic deliveries and benefits for which a company is paid are affected by the VAT (§ 1 UStG). Companies can levy VAT with sales and must discharge VAT when buying (§§ 13, 15 UStG).<br>Germany has had a Corruption Perception Index 2023 of 78 (above the threshold of 50) and is ranked worldwide as 9th in CPI ranking.<br>Tax fraud investigation is carried out intensively in Germany by finance authorities.<br>In conclusion, the criterion is considered "Low Risk". |

| Risk Rating | Low Risk |
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| Germany Forest and TOF | Indicator |
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| 1.1.5 | There shall be adequate protection of the Supply Base from unauthorised and illegal activities, such as illegal logging, mining, and encroachment. |
| Supply Base Verifiers | • Corruption Perception Index (2023)<br>• WWF report: Failing the Forests; Europe's illegal timber trade<br>• FSC Controlled Wood Risk Assessment for Germany, assigned code: FSC-NRA-DE V1-1 (approved 03.04.2018, updated 31.07.2020)<br>• Handelsgesetzbuch (HGB) vom 10. Mai 1897 (BGBl. I S. 1474) - "German Commercial Code"<br>• Holzzentralblatt (Nummer 10; 2012) – "Holz aus illegalem Einschlag in Deutschland und in der EU"<br>• Bundesberggesetz (BBergG) vom 13. August 1980 (BGBl. I S. 1310) - "Federal Mining Act"<br>• Bürgerliches Gesetzbuch (BGB) in der Fassung der Bekanntmachung vom 02. Januar (BGBl. I S. 42,2909; 2003 I S. 738) - "German Civil Code"<br>• Grundbuchordnung (GBO) in der Fassung der Bekanntmachung vom 26. Mai 1994 (BGBl. I S. 1114) - "Landbook Rule"<br>• Baugesetzbuch (BauGB) vom 23. Juni 1960 (BGBl. I S. 341) - "Federal Building Code"<br>• Grundbuchordnung (GBO) in der Fassung der Bekanntmachung vom 26. Mai 1994 (BGBl. I S. 1114) - "Landbook Rule"<br>• Bundesnaturschutzgesetz (BNatSchG) vom 29. Juli 2009 (BGBl. I S. 2542) - "Federal Nature Conversation Act"<br>• 1. Holzhandels-Sicherungs-Gesetz (HolzSiG) vom 11. Juli (BGBl. I S. 1345) - "Timber trading security act"<br>• The European Union Forest Law Enforcement, Governance and Trade Action Plan (EU FLEGT) from 2003 |
| Risk Rating justification | Germany enjoys a well-established forest legislation across all the federal states. The legislation is applied reliably with respect to the legality of forest wood harvesting measures. Furthermore, Germany has had a Corruption Perception Index 2023 of 78 (above the threshold of 50) and is ranked worldwide as 9th in CPI ranking.<br>To combat illegal logging and trade in timber products of illegal origin, the European Union (EU) adopted the Forest Law Enforcement, Governance and Trade (FLEGT) Action Plan in May 2003. This action plan provides for the conclusion of voluntary partnership agreements between timber supplying countries (FLEGT partnership agreements) and the EU as well as a licensing procedure to help ensure that only legally harvested timber and timber products made from it are imported into the EU. Regulation (EC) No. 2173/2005 of 20 December 2005 regulates the details for the implementation of the FLEGT licensing system. As a further step in the implementation of the |

‘FLEGT Action Plan’, the EU has issued the EU Timber Regulation, Regulation (EU) No. 995/2010 of 20 October 2010, which has been applicable in all its parts since 3 March 2013. Since this date, the placing on the market of timber and timber products from illegal logging has been prohibited. The provisions of the EU regulations have been transposed into national law by the Timber Trade Security Act (Holzhandels-Sicherungs-Gesetz, HolzSiG). In particular, the HolzSiG regulates the Federal Office for Agriculture and Food (Bundesanstalt für Landwirtschaft und Ernährung, BLE) agree powers of intervention and sanction.
Legal authority is given by the Federal Ministry of Finance and wood trading is recorded. Germany is not reported as a source for illegal timber. As far as FSC Germany is aware, Germany is not deemed to be a source of conflict wood. There is a high level of law enforcement in Germany.
Trading within Germany is regulated as described in the Commercial Code (Handelsgesetzbuch, HGB), which is also binding for forestry companies (HGB §§2, 3). Forestry companies must follow the trading laws described in the Commercial Code. A special case exists for companies that harvest timber in primary forests (HGB § 341), but this has no practical relevance in Germany. All documents are sent to the finance authorities for verification – also irrespective of size, turnover quantity, and form of organization. All cash flows must be documented to verify and to avoid illegal and black-market profits. There are only occasional reports on timber thefts, what is backed up by the following statistic that shows the estimated illegal logging volume in Germany is 0.

**Einschlag (ohne Brennholz), Einfuhren und Inl**
**verbrauch von Holz und Produkten auf Basis H**
**– insgesamt und aus illegalem Einschlag – für**

| Betrachtungsebene | | untere Schätzung [Mio. m³(r)] | [%] | ober [Mio. |
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| **Einschlag (ohne Brennholz)** | | | | |
| Welt | gesamt | 1541 | 100 | |
| | davon illegal | 103 | 7 | |
| Länder der EU | gesamt | 322 | 100 | |
| | davon illegal | 5 | 2 | |
| Deutschland | gesamt | 39 | 100 | |
| | davon illegal | 0 | 0 | |

Figure 1: Estimated illegal logging in Germany (Thünen-Institut, 2012).

According to staff interviews and discussions with federal state foresters, illegal logging in Germany is, if any, happening due to unclear property boundaries, misread maps, or comparable reasons. Dalgas implemented control mechanisms like detailed mapping and work instructions combined

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| | with on-site visits of responsible personal, to avoid the risk of accidental illegal harvest. As already mentioned, Germany ranks high on the worldwide governance indicator with rule of law as well as above the Corruption Perception Index, which states the effectiveness of law enforcement. Legal authority is the Federal Ministry of Finance and wood trading is recorded with the aid of bills or purchase agreements.<br>In addition, Germany does not experience illegal mining due to several key factors that ensure the regulation and control of mining activities within the country. One of the primary reasons is the strict regulatory framework established by the Federal Mining Act (Bundesberggesetz, BBergG), which governs all aspects of mining operations. This comprehensive legislation, enforced by agencies such as the Federal Institute for Geosciences and Natural Resources (Bundesanstalt für Geowissenschaften und Rohstoffe, BGR) and the respective state mining authorities, mandates that mining activities must adhere to stringent legal and safety standards.<br>Effective law enforcement further supports this regulatory framework. German law enforcement agencies, in collaboration with mining authorities, conduct regular inspections and monitoring of mining sites to ensure compliance. The BBergG outlines significant penalties for illegal mining, including hefty fines and imprisonment, which serve as strong deterrents against unlawful activities.<br>Next, Germany's advanced technology and infrastructure play a crucial role in preventing illegal mining. The use of satellite surveillance, drones, and other modern technologies allows for the continuous monitoring of mining areas, making it difficult for any unauthorized operations to go unnoticed. The Federal Ministry for Economic Affairs and Climate Action (Bundesministerium für Wirtschaft und Klimaschutz, BMWK) supports these efforts by promoting technological advancements and ensuring their integration into regulatory practices.<br>Illegal encroachment is virtually non-existent due to a robust legal framework and effective enforcement mechanisms that protect property rights and public lands. The country’s stringent regulations and vigilant oversight by various authorities ensure that all land use and property boundaries are respected and maintained. Germany's legal framework is comprehensive, starting with the German Civil Code (Bürgerliches Gesetzbuch, BGB), which contains detailed provisions on property rights and boundary disputes. Sections 903-924 of the BGB outline the rights of property owners, including the protection of property boundaries and the legal recourse available in case of encroachment. For instance, Section 1004 BGB allows property owners to demand the removal of any unauthorized structure or use of their land. The Federal Building Code (Baugesetzbuch, BauGB) regulates land use planning and construction. It ensures that all construction activities comply with zoning laws and land-use plans. The BauGB mandates that building permits must be obtained before any construction begins, ensuring that structures are built within legal boundaries and designated areas. The Land Register Act (Grundbuchordnung, GBO) mandates the maintenance of a detailed and accurate land registry. The Grundbuch (land register) records all property rights, including boundaries and ownership details. This system provides |

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| | legal certainty and transparency, making unauthorized encroachments easily identifiable and legally contestable. Local building authorities (Bauaufsichtsbehörden) are responsible for overseeing and enforcing building regulations. They conduct inspections and ensure that all constructions have the necessary permits and comply with legal standards. These authorities have the power to halt unauthorized construction and order the demolition of illegal structures. Land Survey Offices (Vermessungsämter) play a crucial role in maintaining accurate land records and property boundaries. They provide official surveys and boundary determinations, which are legally binding and help prevent disputes. Any alterations to property boundaries must be registered and approved by these offices. Environmental protection agencies (Umweltämter) ensure that land use does not violate environmental laws. They monitor activities in protected areas, such as nature reserves and forests, to prevent illegal encroachment and environmental degradation. These agencies enforce laws such as the Federal Nature Conservation Act (Bundesnaturschutzgesetz, BNatSchG), which safeguards protected areas from unauthorized use. To prevent and address encroachment, Germany requires building permits and regular inspections by local authorities. This ensures that any construction is legal and complies with zoning laws. Unauthorized constructions are identified and addressed promptly, preventing illegal encroachment. Public awareness and involvement in land use issues are also high. Citizens are encouraged to report any suspicious activities or unauthorized constructions to the authorities, providing an additional layer of oversight. Property owners have clear legal recourse to address encroachment. They can file lawsuits to demand the removal of illegal structures and seek compensation for any damages. The courts enforce these rights diligently, supported by the clear and comprehensive laws provided by the BGB and other regulations. Advanced technology, such as geographic information systems (GIS) and satellite imagery, is used to monitor land use and property boundaries. These tools help authorities detect and prevent unauthorized encroachments effectively.It is assessed that the risk from unauthorised activities in German forests is "Low Risk". |
| **Risk Rating** | Low Risk |

| **Germany Forest and TOF** | **Indicator** |
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| **2.1.1** | Key species, habitats, ecosystems, and areas of high conservation value (HCV) pertaining to biodiversity in the Supply Base shall be identified. |
| **Supply Base Verifiers** | • Biodiversity Information System for Europe (2024)<br>• Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora - Article 2, 6, 12, 17<br>• Bundesnaturschutzgesetz (BNatSchG) vom 29. Juli 2009 (BGBl. I S. 2542) - “Federal Nature Conservation Act”<br>• Bundeswaldgesetz (BWaldG) vom 02. Mai 1975 (BGBl. I S. 1037) - “National Forest Act” |

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| | • FSC Controlled Wood Risk Assessment for Germany, assigned code: FSC-NRA-DE (approved 03.04.2018, updated 31.07.2020)<br>• Council Directive 2009/147/EC of 30 November 2009 on the conservation of wild birds<br>• Common Agricultural Policy (CAP) of Germany<br>• European Union's Green Infrastructure Strategy<br>• Baugesetzbuch (BauGB) vom 23. Juni 1960 (BGBI. I S. 341) - "Federal Building Code"<br>• BfN Schutzgebiete<br>• Bundeswaldinventur IV (BMEL, 2024) |
| **Risk Rating justification** | Forests in Germany have a high diversity of typical forest animal, fungal, and plant species. Almost 2,900 plant species can be found in forests. Among the 1,216 vascular plant species, there are 76 tree species, 4 epiphyte species, 116 shrub species, and 1,020 herbaceous plant species. Examples of tree species include English oak (*Quercus robur*), European beech (*Fagus sylvatica*), Scots pine (*Pinus sylvestris*), and Norway spruce (*Picea abies*). These species represent both the ecological and economic foundations of German forests. The European beech is particularly significant as it is one of the dominant tree species in Germany, forming extensive deciduous forests. Scots pine and Norway spruce are major species in managed forests, valued for timber and habitat creation. Notable shrubs include European hazel (*Corylus avellana*) and blackthorn (*Prunus spinosa*). They are common understorey plants, providing food and shelter for wildlife such as birds and insects. Herbaceous plants like lily of the valley (*Convallaria majalis*) and wood anemone (*Anemone nemorosa*) are also widespread and are indicators for healthy forest ecosystems, as they thrive in undisturbed, nutrient-rich soils. Epiphytes, such as the common polypody (*Polypodium vulgare*) play a role in forest biodiversity by growing on trees and contributing to vertical habitat layers. This diversity represents 41 % of the vascular plants, 58 % of the mosses, and 51 % of the lichens found in Germany. Among lichens, species like reindeer lichen (*Cladonia rangiferina*) are notable as they are sensitive to environmental changes, making them excellent indicators of air quality and ecosystem health. Invasive plant species are currently of minor importance according to BWI 4 (2022). Forests in Germany are also home to 140 vertebrate species, from red deer (*Cervus elaphus*) and wild boar (*Sus scrofa*) to the diminutive pygmy shrew (*Sorex minutus*). They represent different ecological niches: red deer are key herbivores influencing forest structure through grazing, wild boars contribute to seed dispersal and soil aeration, and the pygmy shrew demonstrates the importance of small mammals in the food web. A significant proportion of the approximately 30,000 insect species in Germany are found in forests, including key species such as the stag beetle (*Lucanus cervus*) and European hornet (*Vespa crabro*). The stag beetle is a flagship species for deadwood-dependent insects, which are vital for nutrient cycling, while the European hornet illustrates the importance of predators in regulating insect populations. Of the 254 confirmed breeding bird species in Germany, 105 species (41 %) are linked to forests. Examples include the Eurasian jay (*Garrulus glandarius*), |

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| | black woodpecker (*Dryocopus martius*), and common chaffinch (Fringilla coelebs). The Eurasian jay aids in forest regeneration through acorn dispersal, the black woodpecker is a keystone species creating nesting cavities used by other animals, and the common chaffinch is a widespread insectivorous bird, playing a vital role in pest control. In addition to plants and animals, forests in Germany are rich in fungal species, such as the fly agaric (*Amanita muscaria*) and oak mazegill (*Daedalea quercina*). The fly agaric forms symbiotic relationships with tree roots, enhancing nutrient absorption, while the oak mazegill decomposes dead wood, contributing to nutrient recycling. This rich biodiversity highlights the importance of German forests as ecosystems that support a wide variety of species, all contributing to their ecological complexity and resilience.<br>In general, Germany is hosting 19 recognized habitat types that reflect its diverse climates and landscapes. Among these, five habitat types stand out as the most prevalent and ecologically significant: hornbeam forests (habitat type 9110), woodrush beech forests (habitat type 9130), starry oak-hornbeam forests (habitat type 9160), ragged oak-hornbeam forests (habitat type 9170), and montane to alpine acidophilous spruce forests (habitat type 9410). Hornbeam forests are dominated by *Carpinus betulus*, providing critical habitats for shade-tolerant plants and ground-dwelling invertebrates. Woodrush beech forests, with their smooth-barked beech trees and woodrush-dominated understory, thrive in well-drained soils and support diverse fungi, mammals, and bird species. Starry oak-hornbeam forests, named for their canopy mix of oak (*Quercus* spp.) and hornbeam, create a semi-open structure that fosters a mosaic of species, including rare insects and birds. Ragged oak-hornbeam forests, with their uneven canopies and abundant deadwood, are crucial for saproxylic organisms, lichens, and mosses. Finally, montane to alpine acidophilous spruce forests, adapted to acidic soils and high altitudes, provide habitats for cold-adapted species and play a key role in carbon sequestration and soil stabilization. Together, these forest types represent a vibrant tapestry of life, each contributing uniquely to Germany's natural heritage. They support a myriad of plant, animal, and fungal species, many of which are rare or endangered. Conservation efforts and sustainable management are essential to preserving these ecosystems, ensuring their resilience in the face of climate change and human pressures. By protecting these habitats, Germany safeguards not only its biodiversity but also the ecological services these forests provide to both people and the planet.<br>At federal state level, particularly high-quality biotope structures located in forest areas are mapped. These rare, specially protected biotopes cover around 664,000 ha, or 6 % of the forested area within Germany. Around half of these are swamp, marsh and riparian forests. Profound data is collected within the scope of forest biotope mapping to enable an integral balancing of aspects of biotope and species protection as well as the diverse planning goals in the field of forestry and out of this range and for the management planning of Natura 2000 sites on the other hand. The data is digitally accessible and allows determining which areas and area percentages are subject to certain laws or regulations, without additional onsite surveys. |

Figure 2: Interactive map of protected areas within Germany (BfN, 2024)

Through these interactive maps all protected areas within Germany can be retrieved. The categories of protected areas in Germany are based on the Federal Nature Conservation Act (Bundesnaturschutzgesetz, BNatSchG). The protected areas can be categorised according to their size, their conservation purpose and their conservation objectives and the resulting restrictions on use. The most important categories of protected areas are Nature conservation areas, national parks, biosphere reserves, landscape conservation areas and nature parks, as well as protected areas under NATURA 2000. They can overlap or, in a few individual cases, are even congruent. For example, many nature conservation areas are also FFH areas and large parts of the nature parks are protected as landscape conservation areas. For this reason, the areas of the individual protected area categories cannot be added together to determine the total area of protected areas in Germany. As part of the amendment to the Federal Nature Conservation Act in 2009, National Nature Monuments were newly included in the Federal Nature Conservation Act. There are also natural monuments pursuant to Section 28 and protected landscape features pursuant to Section 29 BNatSchG. These are selective or very small-scale protected areas for the protection of individual creations of nature or elements of particular importance for the ecosystem and for the revitalisation and structuring of the landscape. There is an ongoing monitoring of HCVs and mapping of new species and areas, as well as the identification of new HCVs. It is intended to implement conservation measures as well as measures for further improvement of the biological diversity of forests in Germany with the help of the National Biodiversity Strategy and the Forest Strategy 2020, i.e. to set aside up to 5 % of the German forest area.Germany possesses 23,051 protected areas (Biodiversity Information System for Europe, 2024).

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| | Currently, 37.4 % of terrestrial area of Germany is designated as protected areas, which is significantly above the EU value of 26.4 %. Around 17 % of the German forest area is designated as a protected area under the European Habitats Directive (92/43/EEC) and is therefore part of the European Natura 2000 network of protected areas. The EU Biodiversity Strategy has set a target of reaching 30 % protected area coverage at the EU level by 2030. With a coverage of 45.38 % in its marine waters, Germany surpasses the EU value of 12.1 %.Responsible for ensuring that laws are upheld and operating within protected areas is sharply monitored is the Federal Agency for Nature Conservation (Bundesamt für Naturschutz, BfN), which is overseeing and advising on conservations matters, conducting research, and supporting the implementation of international agreements such as the Convention on Biological Diversity. State-level authorities (Länder) are primarily responsible for the management and enforcement of conservation measures within their territories. These authorities designate protected areas, regulate activities within them, and oversee compliance with conservation laws. Local governments often work in partnership with state authorities to implement practical conservation efforts, including habitat restoration, species monitoring, and community education programs. For example, in Schleswig-Holstein, state-level authorities such as the Ministry of Energy Transition, Climate Protection, Environment, and Nature (Ministerium für Energiewende, Klimaschutz, Umwelt und Natur) is primarily responsible for managing and enforcing conservation measures. It is designating protected areas, such as Schleswig-Holstein Wadden Sea National Park, which is part of a UNESCO World Heritage Site. They regulate activities within these areas, ensuring that development, tourism, and other human activities align with conservation goals. Protection is ensured through zoning regulations, permits, and restrictions on activities that could harm the environment, such as construction, logging, or intensive agriculture. Regular inspections and monitoring programs are conducted to ensure compliance with conservation objectives. Violations are subject to fines and legal action, ensuring that regulations are taken seriously. Germany also engages with NGOs and scientific institutions to enhance conservation strategies, integrate sustainable practices, and promote public awareness of the importance of protecting natural areas. This multi-tiered approach ensures that Germany's nature reserves remain safeguarded for future generations. Furthermore, monitoring of the whole German forest area is prescribed by law in the National Forest Act Article (Bundeswaldgesetz, BWaldG) 41a. The monitoring must be repeated every ten years in the "Bundeswaldinventur". Each category has regulations in terms of timber harvesting activities, access rights and management of endangered species and their habitats, partially statutory. The different types/categories are classified by the Federal Nature Conservation Act (Bundesnaturschutzgesetz, BNatSchG) Articles 20–36 (including Natura 2000 or N2000) and vary by size, protection purpose and by the restrictions on land use. Protected sites that are covered by European Law, are sites that are under the regime of the Habitats Directive and Birds Directive.For some strictly protected areas, harvesting, access and management are highly restricted (national parks, nature conservation areas, |

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| | biosphere reserves). Whether managing and harvesting is allowed, is regulated by management plans based on the Federal Nature Conservation Act.<br>The status of protected sites is documented and monitored in the midterm planning (Forsteinrichtung) and is therefore respected when planning management measures. Also, the results of the forest biotope mapping support forest owners in fulfilling their duties under the Forest Act (see Figure 2 or: https://geodienste.bfn.de/schutzgebiete?lang=de&l=~schgeb%28-4%29). Controls are carried out by forest control (Forstaufsicht), employees of the Nature Conservation Federal Agency or by the police. Various types of protected sites in Germany are legally defined and mapped at international, national, and federal state level.<br>To classify the key species, habitats, ecosystems, and areas of high conservation value (HCV) relevant to biodiversity in Germany's uncertified private forests, which lack formal management plans, as "low risk," a thorough understanding of the legal framework, common best practices, and practical conservation efforts is essential. Despite the absence of certification or formal plans, German private forests are subject to stringent regulations and widely accepted sustainable forestry practices that ensure the protection of biodiversity.<br>The legal framework in Germany plays a pivotal role in safeguarding biodiversity in private forests. The Federal Forest Act (Bundeswaldgesetz, BWaldG) mandates sustainable forest management across all forest types, including private forests. Section 1 of the BWaldG emphasizes the preservation and enhancement of forest ecosystems, requiring forest owners to balance economic use with the protection of ecological functions. Even without formal management plans, forest owners are legally obligated to maintain biodiversity and avoid practices that harm ecosystems, such as overharvesting or habitat destruction. The authorities, "Landesforsten" for the forest laws and "Landkreis" for nature conversation, are very active in controlling that the laws are also adhere to private land. Moreover, there is a generally high interest but also knowledge in the German public around what rules covers tree felling. The public along with very NGO communities also function as a control to ensure that rules are adhered to. The authorities are easily to contact and respond to concerns and complaints. Breaches of laws, that cannot be resolved, are handled by the police.<br>Similarly, the Federal Nature Conservation Act (Bundesnaturschutzgesetz, BNatSchG) provides critical protection for species, habitats, and ecosystems. It enforces strict regulations against harming protected species and designates certain habitats, such as wetlands and old-growth forests, as protected biotopes. These laws apply to all forest types ensuring that key species and ecosystems are preserved regardless of individual management practices. Additionally, Germany’s participation in European Union biodiversity directives, such as the Habitats Directive and the Birds Directive, further strengthens the legal protections. Many private forests are included within Natura 2000 sites, which are protected by EU law. Private forest owners in these areas must adhere to stringent rules designed to maintain the habitats of endangered species and conserve biodiversity. |

In the absence of formal certification, many private forest owners in Germany still adhere to common best practices for forest management. In the whole country are public forest advisory services available for private forest owners. The schemes vary a bit between the different Länder but are in the framework of a "Landwirtschaftskammer" or the local Landesforst. The services are not expensive and are widely used in connection with felling projects by forest owners who do not have their own forester attached. These services help to ensure that there are forest professionals, with good knowledge of all rules and best practices, involved in harvesting projects also in private forests.
One widely adopted practice is the retention of natural forest structures, which involves maintaining mixed stands of trees, preserving deadwood, and protecting old-growth trees. In German forests, there is an average of 29.4 m³ of deadwood per hectare, totalling 323 million m³. This corresponds to 9 % of the living wood stock. 43 % is lying deadwood, 34 % is standing deadwood, 22 % is rootstocks and 1 % is removal residue. The deadwood stock has thus once again exceeded the high level of the last inventory. There is 9.5 m³ more deadwood per hectare than in the 2012 BWI.

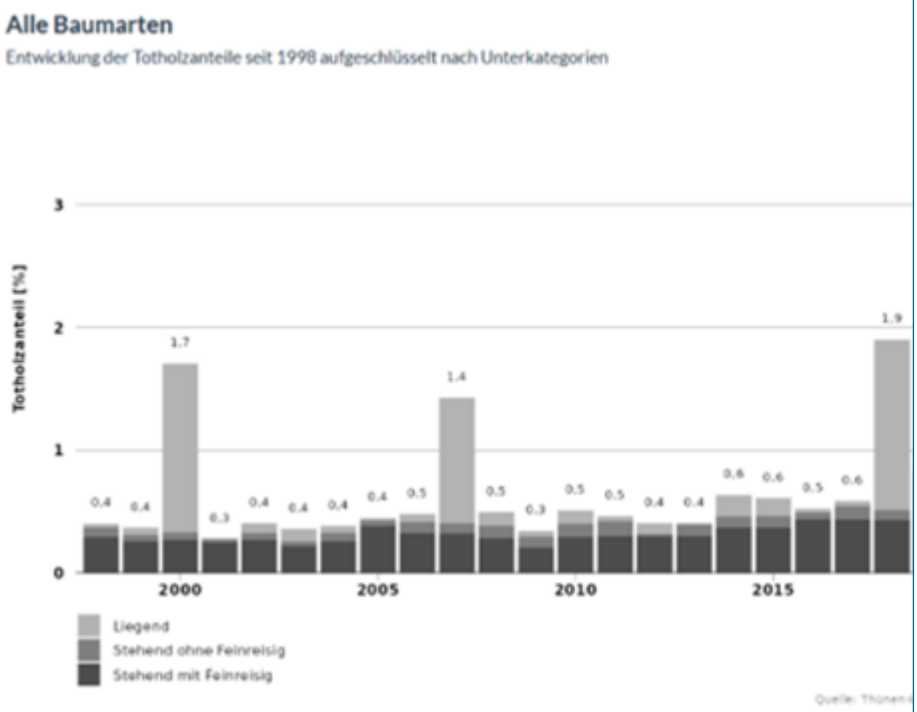


Figure 3: Deadwood within German forests (Thünen-Institut, 2025)

Furthermore, compared to the BWI 2012, the forests in Germany have become older. In 2022, over 30 % of the forest will be older than 100 years and over 20 % older than 120 years. In the 2012 inventory, only 14 % of forests were older than 120 years. The area with trees over 100 years old has increased by almost 378,000 hectares compared to 2012. The increase in old

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| | trees promotes biodiversity. This is because old trees are more likely than young trees to have special microhabitats such as coarse bark, crown deadwood, broken branches or woodpecker cavities. Many rare species that specialise in certain stages of decay are dependent on these microhabitats. Old trees are also an attractive eye-catcher for forest owners. The National Forest Inventory identifies an average of 8 trees with ecologically significant characteristics per hectare. This amounts to almost 83 million trees in the entire German forest. Deciduous trees are disproportionately represented with a share of 81 %. Of the approximately 27 million woodpecker and cavity trees, 86 % are deciduous trees with an average of 2.1 m³ solid cubic metres per tree. Trees with mushroom brackets were included for the first time. The approx. 1 million marked biotope trees are characterised by a high stock of deciduous trees in particular, with an average of 4.3 m³ per tree. However, the labelled conifer biotope trees are also rich in stocks with an average of 2.4 m³. Biotope trees are mostly thick and old trees with a high value for biodiversity. This approach provides critical habitats for species like woodpeckers, bats, and various insects, aligning with biodiversity conservation goals.<br>In general, most state and private forests avoid intensive forestry practices, such as clear-cutting, in favour of selective logging and natural regeneration, both of which minimize habitat disruption and support long-term ecosystem health. Now, natural regeneration is the predominant type of regeneration in German forests, accounting for 91 % of the young stocking area. It has increased by 6 % compared to 2012.<br>Voluntary participation in local conservation initiatives is another best practice. Many private forest owners collaborate with local forestry associations, government agencies, and conservation organizations to monitor species, protect key habitats, and implement biodiversity-friendly management practices. This collaborative approach helps ensure that even uncertified forests contribute to biodiversity conservation. For example, the demand for the "Climate-adapted forest management" programme is encouragingly high, meaning that the funds provided have been used up. The programme is to be continued in 2025 for projects that have already been approved. The programme was launched in 2022 by the Federal Ministry of Agriculture (Bundesministerium für Ernährung und Landwirtschaft, BMEL) and has been funded by the Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (Bundesministerium für Umwelt, Naturschutz, nukleare Sicherheit und Verbraucherschutz, BMUV) from the Natural Climate Protection Action Programme (ANK) since this year. This has made it possible to secure funding for the support programme. Almost 9,000 applications submitted to the project management organisation FNR by private and municipal forest owners in 2023 were approved in 2024. A total of 134 million euros in funding was disbursed. The total area of forest supported by this funding is around 1.6 million hectares. As part of their joint leadership of the programme, the BMUV and BMEL are committed to ensuring that - if the funding requirements are met - the same amount of funding can be disbursed in 2025 so that the Climate-adapted forest management funding programme can be reliably continued. One of the |

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| | primary legal instruments in Germany that protects trees outside forests is the Federal Nature Conservation Act (Bundesnaturschutzgesetz, BNatSchG). This law provides the legal basis for the protection of nature and landscapes, with a focus on ensuring that biodiversity is maintained. Under the BNatSchG, certain trees and hedgerows in urban and rural areas are given special protection if they serve as habitats for wildlife or are deemed to be ecologically significant. For instance, urban trees are often protected if they provide nesting sites for birds, which are safeguarded under the European Union's Birds Directive (Directive 2009/147/EC). The Birds Directive requires member states to protect bird species and their habitats, and this protection extends to urban trees that serve as critical nesting or feeding areas. The removal or alteration of trees is often restricted during the breeding season to avoid disturbing wildlife.<br>In agricultural landscapes, hedgerows and bushes between fields are critical for maintaining biodiversity and ecological connectivity. These features are protected under the Common Agricultural Policy (CAP) of the European Union, which includes the Cross Compliance framework. Cross Compliance requires farmers to adhere to certain environmental standards, including the maintenance of landscape features such as hedgerows. The removal of hedgerows or bushes is often prohibited unless justified by environmental or land management needs. These measures help preserve habitat corridors for wildlife, reduce soil erosion, and support pollinator populations, all of which are essential for maintaining ecosystem health.<br>Germany's implementation of the European Union's Habitats Directive (Council Directive 92/43/EEC) further reinforces the protection of areas of high conservation value, including trees and hedgerows that contribute to the preservation of species and habitats. The directive obliges member states to identify and protect areas that support species and habitats of European importance. While the directive primarily focuses on designated conservation areas, it also promotes the conservation of features like hedgerows and tree lines that connect habitats and enhance ecological networks. These landscape elements are crucial for ensuring species mobility and genetic exchange, especially in fragmented agricultural landscapes.<br>Another key element of Germany's legal framework is its participation in the European Union's Green Infrastructure Strategy. This strategy promotes the integration of natural elements, such as trees and hedgerows, into both urban and rural landscapes to improve biodiversity and ecosystem services. The strategy emphasizes the role of trees outside forests in providing green corridors that facilitate the movement of species between habitats and help mitigate the effects of habitat fragmentation. In addition, Germany's National Biodiversity Strategy sets targets for enhancing biodiversity in human-dominated landscapes, which include maintaining and expanding green infrastructure like hedgerows and urban trees.<br>Moreover, the Landscape Planning Regulations under the Federal Building Code (Baugesetzbuch, BGB) ensure that trees and green spaces are incorporated into urban development plans. These regulations require municipalities to include environmental considerations in land-use planning, particularly in densely populated areas. Trees in parks, along streets, and |

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| | within residential areas are often preserved or replaced when urban expansion occurs, further reducing the risk to biodiversity.For this indicator the area under assessment is determined to be "Low Risk". |
| **Risk Rating** | Low Risk |

| **Germany Forest and TOF** | **Indicator** |
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| **2.1.2** | Threats to and impacts on the identified key species, habitats, ecosystems, and areas of high conservation value (HCV) pertaining to biodiversity in the Supply Base shall be identified and evaluated. |
| **Supply Base Verifiers** | • FSC-GUI-30-009 V1-0 EN<br>• Bundeswaldgesetz (BWaldG) vom 02. Mai 1975 (BGBl. I S. 1037) - “National Forest Act”<br>• Richtlinie zur Forsteinrichtung - "Guideline for Forest Planning“<br>• Bundes-Bodenschutzgesetz (BBodSchG) vom 17. März 1998 (BGBl. I S. 502) – “Soil Protection Act”<br>• Bundesnaturschutzgesetz (BNatSchG) vom 29. Juli 2009 (BGBl. I S. 2542) - “Federal Nature Conversation Act"<br>• Bundesministerium für Ernährung und Landwirtschaft (BMEL), „Bundeswaldinventur: Unser Wald - nutzen und bewahren.“<br>• FSC Controlled Wood Risk Assessment for Germany, assigned code: FSC-NRA-DE (approved 03.04.2018, updated 31.07.2020)<br>• CORINE Land Cover - Copernicus Land Monitoring Service (2018) |
| **Risk Rating justification** | High conservation values (HCVs) refer to biological, ecological, social, or cultural values of exceptional or key significance. There are six HCV categories that are taken into consideration.<br>High value forests (HVFs) are forests that are of special importance due to the occurrence of rare species or unusually high occurrence of rare species. Similarly, the importance of a forest can be important for the local communities because the forest provides them with food, water, or income, or because of it is a place of spiritual significance.<br>There are six HCV categories that are taken into consideration. To date, there is no official definition, interpretation, or formal anchoring of the HCVRN's six categories of high conservation value forests for Germany. An expert group developed a definition during the process revising the German FSC Forest Standard taking into consideration the political, legal, social, and ecological framework conditions in Germany. This permits an approximate assessment of the individual HCV categories.<br>**HCV 1**: Species diversity. Concentration of biological diversity including endemic, rare, and endangered species of significance on a global, national, and regional level.<br>• **Risk**: Habitat removal, habitat fragmentation and introduction of invasive species.<br>• **Definition for Germany**: Occurrence of strictly protected species. |

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| | These are stated in the Red List (Rote Liste) provided by the Federal Ministry for Nature Conservation (Bundesministerium für Naturschutz, BfN).<br><br>Red Lists are lists of extinct, lost, and endangered animal, plant and fungal species, plant communities, biotope types and biotope complexes. They are scientific expert opinions in which the threat status for a specific reference is presented. They are assessing the risk based on the population size and population development.<br>Red Lists serve to inform the public about the endangered situation of species and biotopes and are, as a permanently available expert opinion, argumentation aids for spatial and environmental planning, show need for action in nature conservation, increase the political significance of nature conservation, are a data source for legislative measures and International Red Lists serve to coordinate international nature conservation, serve to review the degree of fulfilment of the National Biodiversity Strategy and show further need for research. Red Lists are usually compiled or published by the nature conversation authorities.<br>In Germany, the Red Lists of the Federal Government and the Federal States are of particular importance. Germany's Red List of endangered animals, plants and fungi covers the plant groups of terrestrial, limnic and marine habitats (except for marine macroalgae, which were already published in Volume 2 under marine organisms). This concludes the risk analysis of the plants in this series.<br>According to a forest report from the Federal Ministry of Food and Agriculture (Bundesministerium für Ernährung und Landwirtschaft, BMEL) in 2017, the Red List of endangered biotope types in Germany shows that the development of many forest biotopes has stabilized since then. The most important legal basis for nature conservation in Germany is the Federal Nature Conservation Act (Bundesnaturschutzgesetz, BNatSchG), which transposes European nature conservation directives, in particular the Flora-Fauna-Habitat Directive (RL 92/43/EEC) and the Birds Directive (RL 2009/147/EC), into national law. In contrast, European regulations such as the EC Species Protection Regulation (Regulation 338/97/EC) have a direct effect on citizens without requiring further implementation by the national legislator. The Federal Nature Conservation Act was comprehensively amended with effect from the 01.03.2010. In addition to provisions on species and area protection, it contains, among other things, regulations on landscape planning, compensation for interventions in nature and the landscape, biotope networks and interlinking, marine nature conservation, recreation in nature and the landscape and the participation of recognised nature conservation associations in certain decision-making procedures. It is supplemented by regulations under the laws of the 16 federal states, although deviations may occur. In practice, it is therefore essential that the relevant state nature conservation legislation is also taken as a basis. According to the division of competences in the Basic Law (GG), the enforcement of nature conservation law is, with few exceptions, the exclusive responsibility of the |

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| | Länder. According to Article 83 of the Basic Law, this applies even when federal laws such as the Federal Nature Conservation Act are enforced. This is based not least on practical considerations, as the Land authorities are best placed to assess the special circumstances on the ground. In contrast, the Federal Agency for Nature Conservation itself can only enforce laws in a few exceptional cases and is not an authority superior to the Länder authorities.<br>The contact persons for practical questions concerning the application of nature conservation law are therefore generally the lower nature conservation authorities (in the administrative districts or independent towns). In the case of questions of national importance or of principle, the highest nature conservation authorities of the Länder are also available for further inquiries.<br>Germany imposes strong penalties for the violation of the German Animal Welfare Act (Tierschutzgesetz, TierSchG), especially regarding endangered species. Such violations can be punished with imprisonment of up to 5 years.<br>The German federal states take different approaches to the management of Natura 2000 sites. Some federal states are initially developing concepts for uniform procedures in drawing up management plans, while others are starting directly to draw up test or sample management plans for selected sites. In some cases, the initial recording of habitat types and species within the FFH areas is still in the foreground as a basis for management planning. Despite considerable differences in the preparation and implementation of management plans in the various German federal states, the following generalizations can be made about management planning in Germany:<br><br>• Management planning is usually independent nature conservation planning.<br>• Habitat types (Annex I Habitats Directive) and species (Annex II Habitats Directive) and birds (Annex I Birds Directive) are the subject of management planning in all federal states.<br><br>Even when there aren't any management plans, because the harvest is done by forest owners with forest parcels below 30 ha, they need to comply with laws identified in 2.1.1 of protected areas, which are places of retreat for endangered species. Enforcement and monitoring of these laws are primarily the responsibility of the forest authorities in the federal states (Länder). These authorities conduct regular assessments to ensure compliance with forest and land use-related laws. To monitor the condition and development of forests, Germany employs several systematic approaches. The National<br><br>• Forest Inventory is conducted every ten years, measuring trees at permanent sample points and collecting data on various forest attributes, such as area, species diversity, age structure, timber stock, and logging activities. The Thünen Institute coordinates this effort, collaborating with experts from the Länder to manage data and evaluate findings. The Forest Condition Survey is an annual assessment of forest health, examining crown condition to provide insights into environmental stressors affecting forests. The Forest Soil Survey, conducted at longer intervals, evaluates forest soils, |

vegetation, and nutrition to understand changes over time. These monitoring activities have yielded valuable data. The National Forest Inventory provides detailed reports on forest structure, biodiversity, and the impact of management practices. Such data inform policy decisions and help in assessing the effectiveness of enforcement measures. Germany's commitment to sustainable forest management is also evident in its participation in international frameworks like the EU Timber Regulation and the Forest Law Enforcement, Governance and Trade Regulation. These initiatives aim to prevent illegal logging and promote sustainable practices. Evaluations have shown that the EU Timber Regulation has led to improvements in forest governance and a reduction in illegal logging activities.

- In many federal states, area- wide planning takes place in Natura 2000 sites.
- Half of the federal states plan on a parcel-by-parcel basis. A cost estimate is mostly part of the management planning.
- Implementation is preferably carried out through contractual nature conservation, further through compensation measures, own funds, sponsoring or EU co-financing.
- The regular participation of public bodies and the public is provided for management planning in almost all federal states. The type and extent of participation varies greatly and ranges from information events to round tables and planning advisory boards.

**HCV 2**: Landscape ecosystems and mosaics. Large landscape ecosystems and ecosystems mosaics of significance on a global, regional, or national level and which contain viable populations of the large majority of the naturally occurring species in their natural composition with respect to distribution and frequency.

- **Risk:** Fragmentation, including access (roading).

**Definition in Germany**: In Germany these are all forests subject to a protection status under German nature conservation law and that are of national significance. These are designated national parks, biosphere reserves, SACS areas (Special Areas of Conservation, meaning areas protected under the Habitat Directive and Birds Directive), SPAs (Special Protection Areas). Excluded are natural

- monuments, protected landscape components, landscape protection areas.

Whereas the status reports, and the nature conservation assessment of the SAC status reports, paint a largely positive picture of the conservation status of forest habitat types in Germany, a mix of silvicultural concepts on the ground would appear to be of fundamental importance to the maintenance of conservation values in SACs and to counter fragmentation (cf. HCV 1). Apart

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| | from the issue of the primary conservation objective of these areas, the difficulties experienced in the implementation of these areas, and so their effectiveness, would appear to reside chiefly on an administrative level. The greatest adjustment and/or challenge in connection with the conservation of species and habitats would appear to concern stipulations of the habitat's directive with respect to the designation and management of SACs in private forest. Private forest accounts for a smaller proportion of the SACs, however, and so the impacts are limited to only a limitedproportion of the overall area. Potential threats to SACs in private forest ownership can be specified, and may be minimized by means of investment, advisory services, and efforts at promotion at national and European level. Fragmentation because of clear-cuts is legally regulated.<br>According to the national definition, however, this HCV category includes all forests in Germany with a designated protection status under nature conservation law and that are of national significance. These are national parks, biosphere reserves, SACs, and SPAs. According to the Federal Agency for Nature Conservation, these areas – distinguished by protected area category – are: 16 national parks (terrestrial area: 208,238 ha) 18 biosphere reserves (2,028,346 ha) and 104 nature parks (9,8 million ha).<br>As there are no intact forest landscapes in Germany according to the definition provided by Global Forest Watch, the main thread to this HCV category is further fragmentation. Possible threats related to fragmentation in forest habitats by forest management could be:<br>• clear-cuts that need permission because of their extend<br>• construction of roads<br>• land conversion into different management systems<br>• large-scale planting of foreign species<br>• deer overpopulation<br><br>The FSC National Risk Assessment specifically deals with this concerns in detail and concludes a "low risk" designation for Germany.<br>Important large-scale landscape ecosystems have been identified and placed underprotection in the form, for example, of national parks. Management for forestry purposes is either prohibited or partially regulated. Although representatives of nature conservation interests may wish to see specific improvements in relation to the management of HCVs, essentially the risk based on the foreseeable threat of further fragmentation of the overall area of the landscape ecosystem and mosaics, especially the SACs, is considered low.<br>**HCV 3**: Ecosystems and habitats. Rare, threatened, or endangered ecosystems, habitats, and refuges.<br>• **Risk**: Lack of effective protection of HCV 3<br>• **Definition for Germany**: In Germany these are nature protection measures, mapped SAC habitat types (except for the beech habitat types 9110 and 9130), biotopes protected under the German federal nature conservation act (§30) and the state nature conservation laws, |

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| | and the protection forests designated under the state forest laws as they serve the protection or the promotion of certain species, forest associations or forest biotopes.<br><br>Silvicultural use is permitted in Natura 2000 areas, when the silvicultural measures do not contribute to a deterioration in the conversation status of FFH habitat types or of habitats home to species protected under the Habitats and Birds Directives. An important basis for identifying landscapes in Germany worthy of protection is a Germany-wide landscape classification, typification, and evaluation. Cultural landscapes can be understood as the result of the interactions between landnature and land use. Conceptually, the landscape differs from the natural area above all in that in the former, the actual use that takes place is included as a significant formative factor.<br>The criteria used for delimiting the landscapes are natural boundaries, current land use based on satellite image evaluations (Corine Land Cover) and other landscape delimitations applicable to sub-areas. The landscape types are defined in such a way that the characteristic and landscape-forming elements easily recognisable in the terrain are in the foreground. Landscape qualities that are not obviously recognisable are not used for typification. A total of 858 individual landscapes, including 59 densely populated areas, can be delimited in this way in Germany. The individual landscapes are each assigned to one of 24 landscape types due to similar characteristics of certain features. In addition, each landscape is assigned to one of the three major regions "lowland/plain", "low mountain range" and "Alps and Alpine foreland".<br>The assignment to the landscape types in 2004 was based on the land use data of the Corine Land Cover data with the reference year 2000. In the meantime, satellite data on land use with the reference year 2006 are available (2012 and 2018 as well). But in some landscapes (approx. 11 %) the land uses have changed so significantly between these two reference years that a new classification of the landscape type has been made. Particularly, striking is the decline in landscapes characterised by grassland in Schleswig-Holstein and west of Berlin.<br>A two-stage assessment procedure is used to identify landscapes of importance for nature conservation. Only data and information that is available for the whole of Germany in a comparable density of information and up to date is used for the assessment. Each landscape is first assigned a "type value" based on its affiliation to a landscape type. This basic value of each individual landscape is then further specified because of the individual characteristics of the individual landscapes within the scope of a second evaluation step, the "object evaluation". In 2006, the undissected nature of the landscape, the significance for biotope and species protection based on the proportion of protected areas (national parks, nature reserves, Natura 2000 areas, core areas of biosphere reserves) and the proportion of historically old forest sites were included in the object valuation. Type and object value are then combined into an overall valuation in five value levels. The landscape valuation was updated in 2011. On the one hand, updated data on landscape fragmentation were used. On the other hand, the data |

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| | available at that time on the proportions of protected areas (status 2010) were included in the assessment. In addition, the proportion of areas of national importance for the biotope network in the respective landscapes was integrated into the assessment. The areas of national importance for the biotope network were determined based one the biotope mapping of the federal states.<br>The result of this evaluation procedure in 2006 showed that 402 individual landscapes (approx. 49 % of the federal territory) could be designated as worthy of protection. Of these, 91 landscapes (12.3 % of the federal territory) were classified as "landscapes particularly worthy of protection", 90 landscapes (9.6 % of the federal territory) as "landscapes worthy of protection" and 221 landscapes (26.8 % of the federal territory) as "landscapes with deficits worthy of protection".When the landscape evaluation was updated in 2011, 89 landscapes were classified as "particularly worthy of protection" (approx. 12.3 % of the federal land area), 99 landscapes as "worthy of protection" (10.8 % of the federal land area) and 273 landscapes as "worthy of protection with deficits" (31.6 % of the federal land area). As a result of the new evaluation procedure, which considers not only the protected areas but also the other mapped valuable biotopes in each landscape, the area share of landscapes in the highest three evaluation levels has risen to just under 55 % of the federal land area.<br>There are claims that the requirements of Natura 2000 implementations regarding the habitat directive are not met in concerns of the time schedule. This is also reason for infringement proceedings from the EU commission against Germany.Nevertheless Dalgas concludes a “low risk” designation for the risk of HCV 3 areas being threatened by non-identification and negative impacts by forest management activities. This assumption is mainly based on the FSC national risk assessment for Germany and its argumentation. Where the SACs and SPAs are implemented in Germany, the protection and monitoring are on a high level with a high and trustworthy level of enforcement. Silvicultural use is permitted in Natura 2000 sites, provided the silvicultural measures employed do not contribute to a deterioration of the conservation status of FFH -habitat types or of habitats home to species protected under the Habitats and Birds Directives. Measures of forest restructuring and to increase the share of deciduous forests are taking place on the whole German forest area since several years and are a consequence of long-term forest management planning towards more diverse and stable forests, which pay tribute to local and regional preconditions. The trend towards more deciduous trees in Germany's forests is still continuing. They currently (2024) account for 47% of the timber land area (2012: 43%). This means that the area of deciduous trees has increased by around 300,000 hectares to 5.1 million hectares compared to 2012. Additionally, the naturalness of the tree species composition in the main stand has changed slightly towards more naturalness compared to the last inventory. There are slightly fewer cultivated forests and slightly more near-natural forests. 16 % of the forests have a very near-natural and a further 22 % a near-natural composition of tree species. The proportion of these two naturalness levels is particularly high in beech forests (84 %) and fir forests (66 %). However, the |

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| | investments in near-natural forest conversion are evident in the young stocking (trees up to 4 metres in height): Here, the proportion of very near-natural and near-natural tree species composition is around 50 %. Cultivated trees account for 6 % and cultivated trees for 14 % of the young stocking. It is assumed that the current efforts to observe the prohibition on deterioration and to implement management plans have a positive effect. Most SACs are in public forests but there are also some on private land. Private forest owners generally have their own forester attached or use the public advisory services available from Landwirtschaftskammer of Landesforst when engaging in felling projects. The authorities are active in controlling the regulations in private forests. There is generally a strong and professional forest culture with close cooperation between the authorities (foresters working for the Landesforsten) and forest advisors (private or working for the Landwirtschaftkammern or Landesforsten) ensuring high compliance with regulations and best practice also in private forests.<br>The differences in implementation the Habitat Directive in public and private forests do not lead to a divergent risk determination for the different types of ownership.Germany ranks on place 4 (2022) of the so-called Environmental Performance Indicators (EPI) for the aspect of biodiversity / habitats in 1st place as compared to international standards.<br>**HCV 4**: Special ecosystem services. Fundamental, endangered ecosystem services including the protection of water catchment areas and protection against the erosion of endangered soils and slopes.<br><br>• **Risk**: Reduction of water quality/quantity - negative impact on human's health (e.g. poisoning water etc.)<br><br>**Definition for Germany**: In Germany, these are forests bearing a legally binding protection status, which fulfil the following functions (in acc. with the Federal Forest Act, §12): Protection against damaging environmental influences sensu the German Federal Emissions Protection Act (Bundes-Immisionsschutzgesetz, BImSchG), erosion<br><br>• by water and wind, desiccation, damaging run-off of precipitation and avalanches.<br><br>In the case of fertilisation in forests, nutrients that are lacking are specifically added to the soil. This is intended to stimulate the nutrient cycle. Together with an adapted use, damaged soils are thus to be restored to a condition that enables ecologically sustainable wood use without further fertilisation. Soil acidification can also be counteracted by means of liming. The pH value is increased, soil organisms become more active, and the organic layer decomposes more quickly, mobilising nutrients. Plant ash has a similar effect to lime due to its high calcium and magnesium content. The different methods of soil improvement are controversially discussed. Improper and excessive use can have serious consequences. For example, some plants react very sensitively to direct contact with the substances applied. Roots and soil organisms are also very susceptible to abrupt changes in pH. Naturally acidic |

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| | or lean sites must also be considered. Here, measures for "soil improvement" would destroy the naturally occurring, rare plant communities. Soil erosion can be reduced by permanent growth. The plants reduce the wind speed on the soil surface and strengthen the soil with their roots. In this way, a plant stocking can also reduce erosion on steep slopes. Furthermore, more water can be absorbed by the soil through rooting. This also reduces water-induced erosion.<br>In addition to preventing soil erosion and improving soil quality, it is also necessary for the ecosystem to give special protection to water bodies and alluvial areas. Here, too, Germany is constantly implementing measures to stabilise the ecosystem.Watercourse and floodplain development serves to restore ecologically functional riverine landscapes. This makes an important contribution to sustainable flood protection, to the self-purification of water bodies, to the creation of attractive leisure and recreational areas and to the improvement of living conditions for plants and animals. Since the early 1980s, increased efforts have been made to restore water bodies and floodplains to a near-natural state. The possibilities for implementation are manifold and range from the dismantling of transverse structures, bank revetments and dikes, the reconnection of artificially cut-off oxbow lakes, the promotion of extensive forms of use, the re-establishment of floodplain forests to the renaturation of entire river landscapes. Within the framework of federal funding programmes, the department "Inland Waters, Floodplain Ecosystems and Water Balance" is responsible for large-scale nature conservation projects as well as testing and development projects that serve to protect, develop, and permanently safeguard running waters and floodplains.<br>**HCV 5**: Needs of the resident communities. Sites and resources satisfying the basic needs of resident communities and indigenous populations (for their basis of existence, health, nutrition, water, etc.); identified with the participation of the local communities/indigenous population.<br><br>• **Risk**: Compromising (impacting) fundamental needs of local communities by management activities.<br>• **Definition for Germany**: Official recreation forest and forests with a level 1 recreation function according to the national map of forest function.<br><br>Recreational use frequently occurs in sensitive areas as these locations often possess an especially high nature experience value. Often these are large, protected areas such as biosphere reserves, national parks, and forests in metropolitan catchment areas. The latter is not a category of protection forests but represents a conglomerate of nature and landscape protection areas (e.g., SACs) and forest sites subject to normal forest use. The recreational use by local recreation seekers is of huge significance in densely populated areas. A fifth of the German forest area is situated in the catchment areas of metropolitan areas. Forest management of these forests is often perceived as a disturbance by the population. Most public forest owners take this into account. |

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| | **HCV 6**: Cultural values. Sites, resources, habitats, and landscape of global or national cultural,<br>archaeological, or historical significance and/or key cultural, ecological, economic, or religious significance for the traditional cultures of the resident communities or indigenous population; identified with the participation of the resident communities.<br><br>• **Risk**: Destruction and/or disturbance of rights/values determining HCV 6 presence<br>• **Definition for Germany**: In Germany these include woodland cemeteries, relicts of historical forms of land use worthy of conservation (coppice and coppice with-standards, forest pasture) and monuments of built and archaeological heritage identified by regulatory agencies.<br><br>Mapping of forest functions for the individual forest areas, presents an overview and valuation basis concerning utility, protection, and recreation functions. In addition to forest areas with particular importance for individual forest functions, the forest function map also includes topography and protected areas such as natural forest reserves, water protection areas, soil monuments or nature reserves. E.g. the Federal Forest Authority of Baden-Württemberg has extended the forest function mapping, soil and culture heritages need to be mapped as well. Forest management activities must be adapted to avoid damages to those sites.<br>Designated cultural monuments in the forest are considered in the midterm planning (Forsteinrichtung) and respected accordingly during the execution of forest management activities. Where new conservation values worthy of a heritage designation are discovered, the necessity for protection is assessed by the responsible authorities. Woodland cemeteries are a relatively new form of forest use and are only found at a small number of selected locations at present.<br>Sites falling under HCV 6 definition are, even more than a regular forest, a site of interest by the public and therefore visited more often. As argued before, the public is a strong control mechanism. This applies for private forests as well as for public ownership. It can be assumed that private forests can be evaluated with the same risk as public forests regarding HCV 6 protection.<br>In general, direct threats or impairments to the recreational use of forests posed by forest management activities may stem from, among other things, machine traffic and timber harvesting. These activities involve the installation of extraction trails, the use of heavy machinery and corresponding effects on the aesthetics of trails in the forest and on the appearance of the forest. The right to access may be restricted temporarily and locally for the purposes of harvesting and other operations. Protection forests are covered by additional protection designations that apply tighter restrictions to forest management activities. When planning harvesting measures or other forest management activities (e.g. road construction), attention to environmental values and |

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| | protected sites is required. In mid-term management planning sites and protective measures, functions of forests are addressed. Germany has numerous laws, regulations, ordinances, and directives designed to regulate environmental values and requirements. Federal state Forestry Departments are dutybound to enforce and supervise regulations or obligations equally in all forest types.<br>On site visits by authorities for water protection and nature conservation are done on a regular basis. It is obligatory to notify/register water and soil damages, e.g. as mentioned in the Soil Protection Act (Bundes-Bodenschutzgesetz, BBodSchG) or the Water Resources Act (Wasserhaushaltsgesetz, WHG).Forest management measures are subjected to the Federal Forest Act (Bundeswaldgesetz, BWaldG) and the State Forest Acts (Landeswaldgesetz, LWaldG), which fulfil the requirements of the BWaldG and require management and site planning. The occurrence of special conservation values is also considered, i.e. in forest management plans. The §11 of the BWaldG requires a principle to consider the forest function “ecosystem” in forest management activities.<br>In addition to the BNatschG, the Federal Environmental Ministry and the BfN, as a subordinate authority, ensure that the threats from forest management are identified and that the forests are effectively protected against them. Since 01. March 2010, the rules apply to this protection period nationally uniformed regarding the felling and felling pruning bans for all trees outside the forest or horticultural of the land used by the company. The Federal Nature Conservation Act regulates nationwide uniform in § 39 BNatSchG certain felling and cutting bans for closer designated trees and for hedges, live fences, bushes, and other woodland in a fixed period. The legally provided exceptions are very far-reaching and have no significant tightening of the felling and cutting bans, if compared with the previous arrangements guided. However, roadside trees, alleys on roads and trees in the open countryside are now specially protected.<br>All hedges, live fences, bushes, and other woody plants are subject to the felling and cutting bans of § 39 BNatSchG, even if they are, for example, in gardens and green spaces.<br>Finally, Dalgas is strictly working according to the requirements of the FSC Controlled Wood Standard. Dalgas staff is at least annually educated regarding the requirements. Also, annually an internal and external audit is performed to survey the handling of mentioned procedures. The FSC-CW Standard in combination with the national risk assessment, provided by the FSC as guidance, the HCV forests and areas are reliable to be identified. The FSC National Risk Assessment states for all HCV Categories in Germany a low risk for being threatened by forest management activities. There is room for improvement in implementing the designated protection status for certain areas, and Germany is not yet fully aligned with the planned schedules, but there is significant progress and effort made in catching up to specified biodiversity aims, that Germany committed itself to with the Nagoya Protocol. The tendency towards more divers forests, more area under protection status, and environmental protection in general, is clearly to see in legislative and regulatory frameworks. |

| Risk Rating | Low Risk |
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| Germany Forest and TOF | Indicator |
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| 2.1.3 | Key species, habitats, ecosystems, and areas of high conservation value (HCV) pertaining to biodiversity in the Supply Base shall be maintained or enhanced. |
| Supply Base Verifiers | • Bundeswaldgesetz (BWaldG) vom 2. Mai 1975 (BGBl. I S. 1037) - “National Forest Act”<br>• Bundesnaturschutzgesetz (BNatSchG) vom 29. Juli 2009 (BGBl. I S. 2542) - “Federal Nature Conservation Act”<br>• Habitat Directive (29/43/EEC)<br>• Birds Directive (2009/147/EC)<br>• Common Agricultural Policy (CAP) of Germany<br>• Baugesetzbuch (BauGB) vom 23. Juni 1960 (BGBl. I S. 341) - "Federal Building Code"<br>• Wasserhaushaltsgesetz (WHG) vom 31. Juli 2009 (BGBl. I S. 2585) - "Water Resources Act"<br>• Forest Genetic Resources Program (GENRES)<br>• Convention on Biological Diversity (CBD)<br>• Forstschäden-Ausgleichsgesetz (ForstSchAusglG) vom 26. August 1985 (BGBl. I S. 1756) - "The Forest Damage Compensation Act" |
| Risk Rating justification | Germany's forests are home to a wide variety of flora and fauna, many of which are key species integral to the forest ecosystem. These include trees like the European Beech (*Fagus sylvatica*), Norway Spruce (*Picea abies*), Scots Pine (*Pinus sylvestris*), and Silver Fir (*Abies alba*). These species are foundational to the forest structure and provide habitat and food for numerous other organisms. Conservation efforts focus on preserving genetic diversity within these species. For example, the Forest Genetic Resources Program (GENRES) in Germany works to protect and sustainably use the genetic diversity of forest tree species. This involves maintaining seed banks, promoting natural regeneration, and implementing breeding programs that enhance the resilience of tree species to pests, diseases, and climate change.<br>German forests encompass a variety of habitats, each supporting distinct communities of plants and animals. Key habitats include mixed deciduous forests, coniferous forests, and unique wetland forests. These habitats are crucial for the survival of numerous species, including some that are rare or endangered. The Habitats Directive (92/43/EEC) of the European Union, transposed into German law through the Federal Nature Conservation Act (Bundesnaturschutzgesetz, BNatSchG), mandates the protection of significant habitats. Special Areas of Conservation (SACs) are designated to protect these habitats, ensuring that land use and management practices do not adversely affect their integrity. This includes measures such as restricting logging activities during breeding seasons of sensitive species and controlling invasive species that threaten native biodiversity. |

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| | The forest ecosystems in Germany provide a wide range of ecological services, including carbon sequestration, water regulation, soil protection, and the maintenance of biodiversity. Sustainable forest management practices are crucial to maintaining these ecosystems. The principle of close-to-nature forestry (Naturnahe Waldwirtschaft) is widely practiced in Germany. This approach mimics natural processes to maintain the health and functionality of forest ecosystems. It includes strategies like selective logging, promoting mixed species stands, and allowing natural regeneration. This method not only sustains the ecosystem services provided by forests but also enhances their resilience to environmental changes.<br>Areas of High Conservation Value (HCV) are regions identified as having significant ecological, social, or cultural importance. In Germany, these include ancient woodlands, biodiversity hotspots, and areas important for rare species.<br>The Natura 2000 network, a cornerstone of the EU's nature conservation policy, plays a critical role in protecting HCV areas. This network includes Special Areas of Conservation and Special Protection Areas (SPAs), which are designated under the Birds Directive (2009/147/EC). In Germany, over 5,200 Natura 2000 sites cover approximately 15 % of the land area, many of which are forested regions of high conservation value. Forest certification schemes such as the Forest Stewardship Council (FSC) and the Programme for the Endorsement of Forest Certification (PEFC) also emphasize the protection of HCV areas. These certifications require forest managers to identify and protect these areas, ensuring that forestry operations do not degrade their value. For example, FSC-certified forests must maintain the ecological integrity of HCV areas by implementing management plans that include measures like buffer zones and restricted logging practices.<br>Protected biotopes, which are designated under both federal and state nature conservation laws, represent another key aspect of biodiversity protection. Activities that could harm these biotopes are generally prohibited or subject to restrictions, effectively safeguarding rare habitats such as wetlands, old-growth stands, and riparian zones.<br>Germany continuously seeks to enhance its conservation efforts through research, policy development, and international cooperation. The National Biodiversity Strategy aims to increase the area of forests with natural forest characteristics and improve habitat connectivity. This includes increasing the share of unmanaged forest areas, restoring degraded forest ecosystems, and promoting biodiversity-friendly management practices. One example of a successful enhancement effort is the wilderness areas (Wildnisgebiete) initiative, which designates specific forest areas to be left entirely to natural processes. These areas are allowed to develop without human intervention, providing reference ecosystems for scientific study and contributing to biodiversity conservation.<br>The German Forest Damage Compensation Act (Forstschäden-Ausgleichsgesetz, ForstSchAusgIG) also indirectly supports biodiversity by ensuring that forest owners take necessary actions to prevent large-scale damage from natural events, such as pest outbreaks. By controlling pests in an environmentally friendly manner, forest owners help maintain a balanced |

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| | ecosystem that supports a wide range of species, including those of high conservation value.<br>Official authorities at multiple levels coordinate and enforce these measures. The Federal Agency for Nature Conservation (Bundesamt für Naturschutz, BfN) oversees national biodiversity policy and provides scientific expertise to guide conservation efforts. The Federal Ministry of Food and Agriculture (Bundesministerium für Ernährung und Landwirtschaft, BMEL) is responsible for implementing forestry policy and ensuring sustainable management. At the state level, forestry departments and environmental agencies manage day-to-day enforcement of forest and conservation laws, conduct inspections, and provide guidance to forest owners.<br>Financial incentives are another critical control mechanism. The government offers subsidies to private and municipal forest owners who adopt biodiversity-friendly practices (see indicator 2.1.1.), such as planting native species, maintaining buffer zones around waterways, and preserving high conservation value areas. Compensation payments are also provided for restrictions on land use in protected areas, ensuring that economic burdens do not discourage conservation.<br>To ensure accountability, penalties are imposed for violations of biodiversity and forestry laws, ranging from fines to legal actions. Public participation and stakeholder engagement are integral to Germany's conservation approach, with local communities, NGOs, and scientific institutions actively involved in planning and monitoring efforts.<br>Nevertheless, there may be concerns regarding the enhancement or maintenance of conservation values, habitats, and species in the absence of formal certification systems within private forests. While national forestry laws and biodiversity regulations apply, enforcement may be inconsistent, and gaps in management practices could threaten key species such as European Beech (*Fagus sylvatica*) and Scots Pine (*Pinus sylvestris*). Therefore, the risk is designated as "Low Risk" for state forests and "Specified Risk" for private forests.<br>In Germany, the conservation and management of trees outside forests are governed by multiple laws and regulations, which aim to protect biodiversity, maintain key ecosystems, and manage the removal and replanting of such trees responsibly. Beyond the Federal Nature Conservation Act, the Federal Forest Act also contains provisions relevant to trees outside forests, particularly where their ecological functions intersect with broader forest management goals, emphasizing sustainable practices and maintaining ecological balance. Each German federal state has its own specific nature conservation ordinances (Naturschutzverordnungen der Länder) that provide additional protection, such as regulations for preserving hedgerows, solitary trees, and riparian zones. These ordinances establish strict criteria for when tree removal is permissible and mandate compensatory planting to maintain regional biodiversity. Furthermore, municipalities often have local tree protection statutes (Baumschutzsatzungen) that regulate the felling of trees, particularly in urban environments. Such statutes typically require permits for removing mature trees and often require replanting as a condition, aiming to protect urban biodiversity and maintain green infrastructure. |

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| | The Federal Building Code (Baugesetzbuch, BGB) also plays a role by mandating that urban development projects consider environmental impacts, including the protection of trees outside forests. Developers are required to compensate for any loss of green spaces to prevent biodiversity loss in urban and peri-urban areas. Agricultural legislation, including the Common Agricultural Policy (CAP) guidelines at the EU level and their implementation in Germany, also impacts trees outside forests. Farmers are encouraged through subsidies and incentives to maintain features like hedgerows and solitary trees within agricultural landscapes, as these contribute to soil health, water retention, and habitat provision. The Water Resources Act (Wasserhaushaltsgesetz, WHG) provides protection for trees and shrubs in riparian areas along streams and rivers, recognizing their importance in maintaining the ecological integrity of aquatic habitats and preventing erosion. The WHG mandates that vegetation along water bodies must be preserved to support biodiversity and protect water quality.<br>Federal Species Protection Regulations (Bundesartenschutzverordnung) ensure that the removal of trees does not negatively affect protected species that rely on these trees for nesting, roosting, or feeding. Surveys must be conducted prior to tree felling to identify any protected species, and appropriate mitigation measures must be taken if such species are found. In addition, EU directives such as the Habitats Directive and Birds Directive (92/43/EEC and 2009/147/EC) are implemented in Germany and play a significant role in protecting trees outside forests. Trees that provide habitats for endangered species may be part of designated Natura 2000 sites, offering them additional protection. Even individual trees that serve as important habitats for species such as bats or certain birds are protected under these frameworks.<br>Furthermore, Germany participates in international conservation initiatives, such as the Convention on Biological Diversity (CBD) and the United Nations' Sustainable Development Goals (SDGs). These commitments drive national policies and actions aimed at achieving long-term sustainability and conservation of forest ecosystems.<br>Therefore, this indicator is assessed as "Low Risk" for trees outside forests |
| **Risk Rating** | Specified Risk |

| **Germany Forest and TOF** | **Indicator** |
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| **2.2.1** | Feedstock shall not be sourced from land that had one of the following statuses in January 2008 and no longer has that status due to land conversion: a. Forests b. Wetlands c. Peatlands d. Highly biodiverse grasslands. |
| **Supply Base Verifiers** | • Bundeswaldgesetz (BWaldG) vom 2. Mai 1975 (BGBl. I S. 1037) - "NationalForest Act"<br>• LÖWE Programm (Programme for long-term forest development)<br>• Bundesnaturschutzgesetz (BNatSchG) vom 29. Juli 2009 (BGBl. I S. 2542) - "Federal Nature Conservation Act"<br>• Baugesetzbuch (BauGB) vom 23. Juni 1960 (BGBl. I S. 341) - |

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| | "Federal Building Code"<br>• Common Agricultural Policy (CAP)<br>• Renewable Energy Directive (RED)<br>• Nature Restoration Law (NRL)<br>• Environmental Impact Assessment Act (EIA)<br>• Habitat Directive (29/43/EEC)<br>• Erneuerbaren-Energien-Gesetz (EEG) vom 01. April 2000 - "Renewable Energy Act"<br>• Bundeswaldinventur IV (BMEL, 2024)<br><br>**Federal State Forest Acts**:<br><br>• Berlin: §§ 6 “Forest conversion”, 8 “Environmental impact assessment”<br>• Baden-Württemberg: §§ 9 “Preservation of the Forest”, 10 “Special cases of conversion”<br>• Bayern: §§ 9 “Preservation of the Forest”, 39a “Environmental Impact Assessment”<br>• Brandenburg: §8 “Conversion of forest to other land uses”<br>• Bremen: §8 “Forest conversion”<br>• Hamburg: §4 “Forest conversion”<br>• Hessen: §12 “Forest preservation and Conversion”<br>• Mecklenburg-Vorpommern: §15 “Conversion of forest to other land uses”, 15a “Special cases of forest conversion<br>• Niedersachsen: §8 “Forest conversion”<br>• Nordrhein-Westfalen: §§39 “Conversion of forest”, 42 “Procedure”, 43 “Exceptions”<br>• Rheinland-Pfalz: §14 “Preservation and increase of forest area”<br>• Thüringen: § 10 “Change in Land use”<br>• Sachsen: § 8 “Forest preservation” 9 “Special cases of forest conversion”<br>• Sachsen-Anhalt: § 8 “Forest conversion to other land uses”<br>• Saarland: § 6 “Forestry frameworks”, § 8 “Preservation of forest”<br>• Schleswig-Holstein: § 9 “Conversion of forest” |
| **Risk Rating justification** | **a. Forests**: Official national forest inventories ("Bundeswaldinventur") do exist in Germany; the last one was finished 2024. The inventories are subject to binding regulations in the German Forest Act (Bundeswaldgesetz, BWaldG). Forest inventories form the basis of forest planning for each forest organization. Conversion of natural forests to plantations or non-forest use in the area under assessment is less than 0.02 % or- 5,000 hectares average net annual loss for the past 5 years.<br>According to the third Federal Forest Inventory from 2012 the forest area only showed slight changes between 2002 and 2012. In total, the forest area has increased by 0.4 % or 50,000 hectares. Also, the fourth Federal Forest Inventory showed a slight increase of 15,000 ha from 2012 to 2022.<br>There is a Programme for long-term forest development called LÖWE |

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| | Program. The §2 of the National Forest Act excludes areas that are used for short rotation coppice or short rotation forestry, these areas are not defined as forests and are subjected to other legislation than forest legislation. Article 9 (1) of the National Forest Act states that conversion of forests to any other land use is allowed only with the permission of the corresponding federal state authority. If necessary, the Environmental Impact Assessment Act (EIA) is applied to assess potential environmental impacts and develop mitigation or compensation measures, if a conversion of land use shall take place. By making the decision as to whether conversion will be permitted, the rights, duties, and economic interests of the forest owner as well as public interests must be evaluated. The request to permit conversion will be declined, if conservation of the forest is of public interest - particularly if the forest is considered highly significant due to characteristics of its ecosystem, its silvicultural production level, or its use for public recreation.<br>In addition, due to the National Forest Act §9 (3), Federal states can determine whether an approval for another type of land use is necessary for a particular forest area e.g. for infrastructure. In this case permits are granted under the planning law and compensation (e.g. afforestation, compensation payments) must take place as required by legal regulations. This is regulated through the Federal Building Code (Baugesetzbuch, BauGB) §§1a, 35 and Federal Nature Conservation Act (Bundesnaturschutzgesetz, BNatschG) §§14, 15. The procedure of intervention into nature is regulated in §17 BNatschG and in the Environmental Impact Assessment Act.<br>However, in any case of conversion in Germany, compensation measures must be undertaken, it is legally binding to create such measures, several court decisions offer guidelines and describe requirements (e.g. afforestation, payment) for the extent (e.g. area size, at least the same area that has been converted) and quality of this measure. The type (e.g. afforestation, payment) and quantity (e.g. area size) of the compensation varies by the federal states. Penalties exist for conversions occurring without permission and are defined by the forest acts of the federal states (usually afforestation is required, or a heavy fine imposed). In protected areas as defined by the Federal Nature Conservation Act (§§ 23, 24, 25, 26, 27, 28, 29, 30, 31), by the National Forest Act (§§12, 13), by Federal Forest Acts or in Habitat Directive areas, stricter rules apply in relation to conversions and levels of compensation. Without an extraordinary reason, permissions are normally not granted for any conversion in these areas.<br>Due to the complex and non-uniform system in the federal states, enforcement and monitoring is executed by different authorities. Depending on administrative structures, these authorities can be lower forest authorities, higher forest authorities, municipal forest authorities, Federal Ministry of Food and Agriculture, Federal Agency for Nature Conservation, Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety.<br>In 2016, in Germany, only 5,700 ha were stocked with short rotation plantation. Dalgas is not using material from those areas. Those materials are also excluded in the delivery contracts with the customers so far for several reasons. The risk for material from plantations becoming part of the biomass is low as the origin and forest type are always known. According to the |

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| | BWaldG plantations are not defined as forest area.For this criterion, the area under assessment is considered as "low risk".<br>**b. Wetlands**: Wetlands, including areas such as marshes, swamps, bogs, and fens, are critical ecosystems that play essential roles in biodiversity, water purification, flood control, and carbon storage. In Germany, these areas are subject to stringent regulations to ensure their protection and sustainability.<br>Under the Renewable Energy directive (RED), biomass cannot be harvested from wetlands that were classified as such before January 1, 2008. This directive ensures that the ecological functions of these vital areas are not compromised, maintaining their role in environmental protection and carbon sequestration.<br>The Nature Restoration Law (NRL) sets specific targets for restoring degraded wetlands. It emphasizes rewetting and maintaining high water levels to enhance biodiversity and carbon storage capacity. Article 9.4 of the NRL specifically addresses the need to restore and rewet peatlands and wetlands to achieve long-term environmental sustainability.<br>For this criterion, the area under assessment is considered as "low risk".<br>**c. Peatlands**: Peatlands are a type of wetland characterized by a thick, waterlogged layer of dead plant material known as peat. These ecosystems are highly significant carbon sinks, storing more carbon per unit area than any other type of ecosystem. Peatlands play a crucial role in carbon sequestration, making their conservation vital for climate change mitigation.<br>Similar to wetlands, the RED prohibits the harvesting of biomass from peatlands that existed before January 1, 2008. This regulation is designed to protect these critical carbon stores and their unique biodiversity. By restricting biomass harvesting from these areas, the directive helps maintain the ecological integrity and carbon storage capacity of peatlands.<br>As part of the European Green Deal, the European Climate Law sets binding targets to achieve climate neutrality by 2050. The protection of peatlands is integral to meeting these targets due to their significant role in carbon sequestration. Ensuring the preservation and restoration of peatlands is a key strategy within this broader framework to mitigate climate change impacts.<br>Article 9 of the NRL requires EU member states to restore and rewet drained peatlands. This comprehensive approach includes peatlands used for agriculture, forestry, and peat extraction. The goal is to improve hydrological conditions and restore the ecological functions of these areas, which are crucial for biodiversity and carbon storage. The NRL mandates actions to reverse the degradation of peatlands and enhance their role as effective carbon sinks and biodiversity hotspots.<br>In Germany, these EU regulations are implemented through national laws and policies that align with the overarching European directives (e.g. BNatSchG and Renewable Energy Act, EEG).<br>For this criterion, the area under assessment is considered as "low risk".<br>**d. Highly biodiverse grasslands**: Highly biodiverse grasslands are rich in species diversity and provide critical habitats for numerous plants and animals. These grasslands contribute significantly to ecosystem services such as soil protection, water regulation, and carbon sequestration, making |

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| | their conservation vital for maintaining ecological balance and supporting biodiversity.<br>The RED explicitly bans the harvesting of biomass from highly biodiverse grasslands that were classified as such by January 1, 2008. This directive ensures the preservation of these ecosystems and their ecological functions, which are essential for maintaining biodiversity and ecosystem health.<br>The Common Agricultural Policy (CAP) supports the preservation of permanent grasslands and includes measures to maintain biodiversity. It integrates biodiversity conservation into agricultural practices, reinforcing the protection of grasslands through various initiatives and financial incentives for sustainable land management.<br>The Habitat Directive (92/43/EEC) aims to protect natural habitats and species across Europe. Grasslands listed in Annex I of the directive are strictly protected, and any activities that could degrade their biodiversity are regulated. This ensures that these valuable ecosystems are maintained, and their biodiversity is preserved.<br>For this criterion, the area under assessment is considered as "Low Risk". |
| **Risk Rating** | Low Risk |

| **Germany<br>Forest and TOF** | **Indicator** |
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| **2.2.2** | Ecosystems, their health, vitality, functions and services in the Supply Base shall be maintained or enhanced. |
| **Supply Base Verifiers** | • Bundeswaldgesetz (BWaldG) vom 02. Mai 1975 (BGBl. I S. 1037) - “National Forest Act”<br>• Bundes-Bodenschutzgesetz (BBodSchG) vom 17. März 1998 (BGBl. I S. 502) – “Soil Protection Act”<br>• Bundesnaturschutzgesetz (BNatSchG) vom 29. Juli 2009 (BGBl. I S. 2542) - “Federal Nature Conservation Act”<br>• Wasserhaushaltsgesetz (WHG) vom 31. Juli 2009 (BGBl. I S. 2585) - “Water Resources Act”<br>• Düngeverordnung (DüV) in der Fassung der Bekanntmachung vom 27. Februar 2007 (BGBl. I S. 221) – “Fertilizer legislation”<br>• Düngemittelverordnung (DüMV) vom 5. Dezember 2012 (BGBl. I S. 2482) - “Fertilizer ordinance”<br>• Chemikaliengesetz (ChemG) in der Fassung der Bekanntmachung vom 28. August 2013 (BGBl. I S. 3498, 3991) – “Chemicals Act”<br>• Forest function mapping (mapping of forest functions like water, soil, air)<br>• FSC Controlled Wood Risk Assessment for Germany, assigned code: FSC-NRA-DE (approved 03.04.2018, updated 31.07.2020) |
| **Risk Rating justification** | Important large-scale landscape ecosystems have been identified for forests and trees outside forests and placed under protection in the form, for example, of national parks or biosphere reserves. |

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| | Management for forestry purposes is either prohibited or partially regulated. Although representatives of nature conservation interests may wish to see specific improvements in relation to the management of HCVs, essentially the risk based on the foreseeable threat of further fragmentation of the overall area of the landscape ecosystem and mosaics is low. The size of clear-cutting is regulated by law in Germany. Clear cuttings, which could lead to fragmentation on the size of landscape ecosystems, are in any case subject to approval and may require compensation. The licensing requirement also applies to the conversion of forest areas. To protect landscape ecosystems and mosaics from fragmentation, different approaches are pursued in Germany. Forest habitats and landscape ecosystems with forests are under protection and often set aside from forest management activities or are managed with low intensity forestry.<br>The conservation value is present in the form of Natura 2000/habitat types of the Habitats directive and in the form of sites protected under the Federal Nature Conservation Act (Bundesnaturschutzgesetz, BNatSchG) as landscape-level ecosystems and small habitats. Germany possesses 23,051 protected areas (Biodiversity Information System for Europe, 2024).<br>In addition, the Federal Nature Conservation Act (§30), the Federal State Nature Conservation Laws (e.g., LNatSchG BaWü, §24a) and the State Forest Laws specify special biotopes. Relevant forest biotopes in this context are fen woods, swamp forest, riparian forest, ravine forest, forest on stone runs, talus forest and subalpine larch and Swiss larch-pine forests. According to the third national forest inventory, especially protected biotopes occupy ca. 593,000 ha, or 5 % of the forest area. The fourth national forest inventory (2012-2022) showed a slight increase up to 664,000 ha, means +1 % of the whole forested area, compared to 2012. And it's still that in most cases these are fen woods, swamp forest or riparian forests and other wet biotopes.<br>Regular forest inventories and monitoring programs provide data on forest health, growth rates, species composition, and biodiversity. This information guides sustainable management decisions.<br>In reference to the aspect of sustainability, forest management in Germany ensures the preservation of health, vitality, and ecosystem services of the forests. The status of protected sites is documented and monitored in the midterm planning (Forsteinrichtung) and is therefore respected when planning management measures. Controls are carried out by forest control (Forstaufsicht), employees of the Nature Conservation Federal Agency or by the police. Certificates of exemption that give priority to timber production over other ecosystem services are issued only after an official impact assessment in individual cases. The threat assessment is, therefore, classified as "low risk."<br>Environmental values in relation to timber harvesting activities are covered by Articles 8, 9 and 11 in the National Forest Act (Bundeswaldgesetz, BWaldG), which contains effective regulations, but also the regulative framework for federal state laws. The Act regulates activities such as logging, reforestation, and pest control to minimize negative impacts on forest ecosystems. It also enforces the restoration of forest areas affected by natural disasters or human activities. |

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| | Further environmental requirements are also defined by each federal state in their guidelines for silviculture which are binding for municipal forests and state forests.<br>The Federal Nature Conservation Act defines environmental requirements at a national level in Article 5 (Agriculture, forestry, and fisheries). In addition to these Acts are various laws and regulations that define protection of environmental values (e.g. soils, water resources) and which must be followed when working in forests or in landscaping. These are equally binding for all forest owners (e.g. Soil Protection Act: Bundes- Bodenschutzgesetz, BBodSchG; Fertilizer legsilation: Düngemittelgesetz, DüV; Fertilizer ordinance: Düngemittelverordnung (DüMV); Water Resource Act: Wasserhaushaltsgesetz, WHG); European Water Framework Directive: Europäische-Wasserrahmenrichtlinie).<br>Before conducting significant forestry projects, an Environmental Impact Assessment (EIA) is required to assess potential impacts on ecosystems and biodiversity, ensuring that any negative effects are mitigated.<br>Furthermore, Germany signed the Convention on Biological Diversity in 1992. In cases of violations penalties are in place and are implemented.<br>Important large-scale landscape ecosystems have been identified for forests and trees outside forests and placed under protection in the form, for example, of national parks or biosphere reserves.<br>Forests can be divided into several categories. Most beech forest habitats and mixed ravine and hillside forests in Germany are in a favourable condition. In the Atlantic and continental regions, however, the situation is critical for oak forests, bog forests, riparian forests and certain small-scale pine forest types. Beech forests would naturally occur on around two thirds of the land area in Germany. The favourable conservation status of many beech forest habitats protected by the Habitats Directive can also be attributed to near-natural forest management, which has been the main objective in public forests since 1990. Only in the Atlantic region are the beech forests not yet in a favourable conservation status. The trends for most beech forest habitat types also indicate a positive development. This is primarily due to improvements in the ‘specific structures and functions’ of the forests with an increased proportion of deadwood and more numerous old growth stands and habitat trees, but also to an increase in the proportion of area (TI 2012). The analyses of breeding bird species have shown that the populations of forest-dwelling species have declined significantly overall over the last 24 years. For almost 10 years, however, there has been a change in population trends that has led to an increase in the numbers of woodland birds. For many forest birds that remain in Germany in winter, the increased availability of seeds, which provide a suitable food source, has had a positive effect. The increase in mast years is largely due to climatic changes (Weigel 2019). However, it is also clear that not all forest bird species are benefiting from the developments. In particular, species that favour special, especially historical forms of use or certain rare forest types are negatively affected. For example, hazel grouse populations in Germany outside the Alps have declined sharply and their range has also shrunk considerably. In their habitats, hazel grouse are dependent on special forms of utilisation such as coppice forests and / or |

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| | young stages of forest development. Due to the loss of structurally rich forests with young and mid-successional stages, there is no longer enough food and cover available. There are many reasons for the poor condition of riparian forests, bog forests and pine forests. While changes in hydrological conditions and drainage are the main impairments in peatland and riparian forests, changes in the species composition of pine forests due to unguided succession on secondary sites or a lack of active maintenance measures such as or a lack of active maintenance measures, as well as the input of air pollutants and nutrients. Under undisturbed anthropogenic conditions, oak forests can only survive in mixtures with beech and deciduous hardwoods where the competitive strength of beech is reduced. This can be the case on groundwater-influenced sites or on drier, shallow sites. However, the vast majority of oak forest habitat types (9160, 9170, 9190) are historically determined cultural assets of great value for the protection of native biodiversity. The current stands are partly the result of historical coppice and coppice management. These management methods are now only practised on a small scale for nature conservation purposes, meaning that the open structures that oaks need for regeneration are no longer present on a large scale. In addition, many of today's old oak forests, which are worthy of protection, were planted in the Middle Ages as replacement communities on potential beech sites due to their utilisation at the time. Due to the strong competitive power of beech on these sites, active management in favour of oaks is necessary for the conservation of oak forest habitat types (cf. fact sheet 13LRT 9160). Another obstacle in most forests is a density of ungulates that is not adapted to the habitat, which leads to damage to regeneration. In order to improve the conservation status of the various forest habitats, efforts towards ecological forest conversion must be significantly intensified, also against the backdrop of climate change (BfN 2019b). Forest management should be more strongly orientated towards ecosystem aspects, e.g. by improving the water balance and water retention, better protecting forest soils, allowing forests and trees to grow older and increasing the proportion of deadwood. The focus should be on the site variability of native tree species. The introduction of non-native tree species should generally be avoided, especially in nature conservation areas and FFH areas (BfN 2019b); the same applies to areas of forest habitat types outside these areas. In order to minimise the effects of climate change, the aim of forest management must be to improve the adaptability and resilience of forests. Areas with unguided forest development contribute to an improvement in the conservation status of beech forests, for example, by allowing the old-growth and deadwood phases in particular to develop with their biological diversity.<br>The proportion of these areas should be 5 % by 2020 in accordance with the biodiversity strategy, the proportion of these areas should be 5 % by 2020. It currently stands at 2.8 % (as at 2019) and must increase further. By utilising the site variability of native tree species and increasing the areas with unguided forest development, forest habitats in protected areas in particular should be developed into model areas for adaptation to climate change. Historical forms of forest utilisation such as coppice and coppice forests should be continued on sufficiently large areas in order to preserve the |

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| | species associated with them. Forest habitats on secondary sites should be maintained in favour of the tree species present. This applies above all to oak forests, but also to small areas of pine forests such as lichen and pine forests. Forests should be managed with a view to maintaining and developing a favourable condition and adapted to the respective habitat type.<br>The fourth National Forest Inventory (BWI IV), conducted in 2021 and 2022, provides detailed insights into the health and vitality of Germany's forests. The results reveal both positive developments and concerning trends. Crown thinning, which indicates tree vitality, remains at a high level. Currently, only about 20% of forest areas show no crown damage, highlighting the ongoing stress on forests due to factors like drought and pest infestations. The average crown thinning across all tree species is 25.8%. Younger trees up to 60 years old have a lower crown thinning rate of 16.5%, while older trees are more affected.<br>Another alarming trend is the shift of forests from a carbon sink to a carbon source. Since 2017, the carbon stock in living biomass has decreased by 41.5 million tons. Currently, 1.184 billion tons of carbon are stored in living trees and 46.1 million tons in deadwood. This loss is primarily due to climate-related damages such as storms, drought, and pest infestations.<br>Annual wood growth is now at 101.5 million cubic meters, a 16% decline compared to the previous inventory. The total wood stock amounts to 3.6 billion cubic meters after having peaked at 3.8 billion cubic meters in 2017. This reduction is also attributed to climate-related damages.<br>The results of the fourth National Forest Inventory emphasize the urgent need to strengthen the resilience of Germany's forests to climate change. Measures such as transitioning to climate-resilient mixed forests, promoting natural regeneration, and maintaining deadwood structures are essential to securing forest vitality in the long term and preserving their diverse ecosystem services.<br>Due to the lack of good health in further prospects of some habitat types (https://nature-art17.eionet.europa.eu/article17/habitat/report/?period=5&group=Forests&country=DE®ion=) this indicator needs to be classified as "Specified Risk" for private forests, but can be classified as "Low Risk" for state forests.<br>In Germany, the harvesting of trees outside designated forests is subject to stringent regulations aimed at preserving ecosystem health, vitality, and the myriad functions and services these trees provide. The Federal Nature Conservation Act (Bundesnaturschutzgesetz, BNatSchG) serves as the primary legal framework governing such activities. According to Section 39 of the BNatSchG, it is prohibited to cut down or significantly prune trees between March 1 and September 30 to protect wildlife during their breeding and nesting periods. Exceptions are made only for gentle shaping and maintenance cuts necessary for plant health or safety reasons. Additionally, many municipalities have their own tree protection ordinances that may impose further restrictions.<br>The enforcement of these laws is carried out by local environmental and nature conservation authorities, ensuring compliance through permits and inspections. Unauthorized tree felling or pruning can result in substantial |

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| | fines, which vary depending on the severity of the violation and the specific regulations of the federal state or municipality. Therefore, the risk for trees outside forests is considered as "Low Risk". |
| **Risk Rating** | Specified Risk |

| **Germany Forest and TOF** | **Indicator** |
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| **2.2.3** | Soil quality in the Supply Base shall be maintained or enhanced |
| **Supply Base Verifiers** | • Bundeswaldgesetz (BWaldG) vom 02. Mai 1975 (BGBl. I S. 1037) - "National Forest Act"<br>• Bundes-Bodenschutzgesetz (BBodSchG) vom 17. März 1998 (BGBl. I S. 502) - "Soil Protection Act"<br>• Bundesnaturschutzgesetz (BNatSchG) vom 29. Juli 2009 (BGBl. I S. 2542) - "Federal Nature Conservation Act"<br>• Wasserhaushaltsgesetz (WHG) vom 31. Juli 2009 (BGBl. I S. 2585) - "Water Resources Act"<br>• Düngeverordnung (DüV) in der Fassung der Bekanntmachung vom 27. Februar 2007 (BGBl. I S. 221) - "Fertilizer legislation"<br>• Düngemittelverordnung (DüMV) vom 05. Dezember 2012 (BGBl. I S. 2482) - "Fertilizer Ordinance"<br>• Chemikaliengesetz (ChemG) in der Fassung der Bekanntmachung vom 28. August 2013 (BGBl. I S. 3498, 3991)<br>• Forest function mapping<br>• FSC Controlled Wood Risk Assessment for Germany, assigned code: FSC-NRA-DE (approved 03.04.2018, updated 31.07.2020)<br>• Umweltbundesamt (2014): Permanent soil observation is a key instrument of the environmental observation<br>• Thünen- Institut (2023): Bodenzustandserhebungen (BZEs) I, II und III<br>• Gesetz über die Umweltverträglichkeitsprüfung (UVPG) vom 12. Februar 1990 (BGBl. I S. 205) - "Environmental Impact Assessment Act" |
| **Risk Rating justification** | Regulations of the silvicultural guidelines are based on the National Forest Act (Bundeswaldgesetz, BWaldG) and the Federal Nature Conservation Act (Bundesnaturschutzgesetz, BNatSchG), which are including the stipulations that forests must be managed properly, advantageously, and sustainably, retaining the function of the forest. Because of that, the site-adapted selection of species and a persistent soil fertility for long-term usability must be ensured, the natural features of the managed site (soil, water, flora, fauna) must not be impaired beyond the extent required to achieve a sustainable yield, fertilizers and pesticides must only be used in accordance with the provisions of the agricultural and forest legislation and in accordance with the German legislation. Fertilization in a conventional sense is excluded to a major extent for forest management. This applies to all federal states in |

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| | Germany.<br>More precise details for timber harvesting activities, technologies and forest management rules are incorporated in the silviculture guidelines, including minimum age, diameter, felling activities, skidding trails etc. German forestry practices are designed to minimize soil disturbance and promote soil health. Rather than clear-cutting large areas, German foresters employ selective logging methods. This approach minimizes soil erosion and compaction, preserving the soil structure and its nutrient content. Planting a diverse array of tree species is a common practice in Germany. Mixed-species forests are more resilient to pests and diseases, and they enhance soil health by creating a more balanced and sustainable nutrient cycle. Furthermore, Forestry operations use specialized machinery designed to minimize soil compaction. For instance, forwarders and harvesters with wide tires or tracks distribute weight more evenly, reducing pressure on the soil.<br>In addition to forest laws various other relevant laws do exist that (e.g.) regulate protection of soils, water bodies and other environmental values. They need to be considered when working in forests (e.g. Soil Protection Act: Bodenschutzgesetz, BBodSchG). Every federal state has the authority to monitor the implementation of the law by the forest supervision (Forstaufsicht). Since state forest organizations are supervised by the federal forest department, forest activities are monitored in both private forest and public forest. The forest supervision is the implementing authority of the federal state, whereby the state secures legal implementation. Forest supervision overall is executed by officials of the corresponding low-level forest department with help of the police.<br>On almost 800 permanent soil observation plots under arable land, grassland, forest, and special use (e.g. settlements, viticulture), the soil in Germany is monitored on a long-term basis. The aim of the monitoring programme is to record the current condition of the soils, to monitor their changes over the long term and to map development trends. The federal states are responsible for long-term soil monitoring. The permanent soil monitoring data are collected and used in the federal states and by the Federal Environment Agency for a wide range of soil protection issues. The accuracy of the series of measurements will increase with each further investigation. The Federal Environment Agency collates the data in a specialist information system and has the possibility of carrying out cross-state evaluations. |

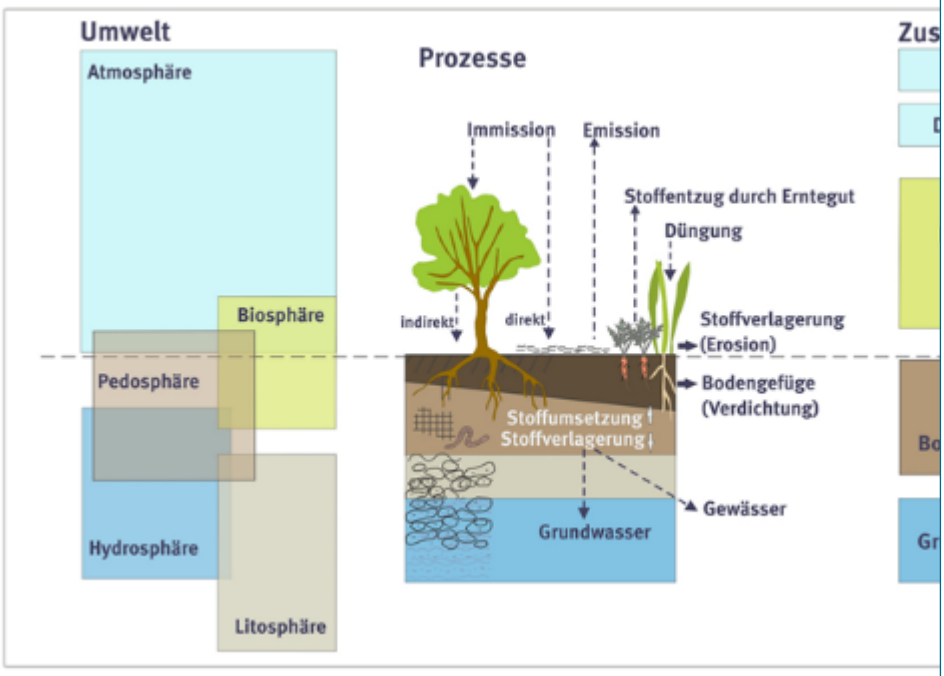


Figure 4: Permanent soil observation is a key instrument of theenvironmental observation (S. Marahrens/Umweltbundesamt, 2014).

The BZE Forest and ICP Forest projects assess and monitor forest condition and the condition of forest soils. The data can be used, for example, to make statements on the carbon cycle, the nutrient and water balance and diffuse material loads in the soil. The Federal and State Working Group on Soil Condition Surveys (BZE) coordinates and regulates the establishment and operation of the monitoring sites, the minimum set of parameters and the investigation methods. The programme is the responsibility of the Federal Ministry of Food, Agriculture and Consumer Protection (Bundesministerium für Ernährung und Landwirtschaft, BMEL). The Thünen Institute, Institute of Forest Ecology and Forest Inventories, keeps the data in a central database and is responsible for the coordination and analysis of the data.
The result of the last BZE (II) showed that actions taken regarding air emissions, soil protection and forest restructuring to more mixed forests in the past, were making impacts. The sampling for the next BZE already takes place (2022-2024), but the results won't be published before 2028.
The key results from the last BZE (II) are:
• Soil acidity decreased.
• Status of humus and bases saturation increased.
• Carbon stock up to 30 cm and 90 cm depth increased.
• Heavy metals depositions and content in humus layer decreased.
• Nutritional conditions of trees are predominantly good.
• Sample points of critical loads of eutrophicating nitrogen decreasing.
The Federal Nature Conservation Act defines environmental requirements at a national level in Article 5 (Agriculture, forestry, and fisheries). In addition to

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| | these Acts are various laws and regulations that define protection of environmental values (e.g. soils, water resources) and which must be followed when working in forests. These are equally binding for all forest owners (e.g. Soil Protection Act, Bundes-Bodenschutzgesetz, BBodSchG; Fertiliser Act, Düngemittelgesetz, DüV; Fertilizer ordinance, Düngemittelverordnung, DüMV; Water Resources Act, Wasserhaushaltsgesetz, WHG; European Water Framework Directive, Europäische – Wasserrahmenrichtlinie).<br>Mapping of forest functions for the individual forest areas, presents an overview and valuation basis concerning utility, protection, and recreation functions. In addition to forest areas with particular importance for individual forest functions, the forest function map also includes topography and protected areas such as natural forest reserves, water protection areas, soil monuments or nature reserves. For example, the Federal Forest Authority of Baden-Württemberg has extended the forest function mapping, soil and culture heritages need to be mapped as well. Forest management activities must be adapted to avoid damages to those sites.<br>Between 2022 and 2024, the government is performing the third, nationwide soil condition survey (Bodenzustandserhebung) to determine the soil situation in German forests and to monitor impacts of forest management activities. The aim is to detect changes in soil properties in the period between the surveys.<br>The Federal Soil Protection Act also directly contributes to the protection of soil quantity throughout Germany, including in areas with trees outside forests. This act mandates measures to prevent soil degradation and erosion, thus directly linking land management practices with the protection of soil resources. Trees play an important role in these measures by maintaining soil structure and reducing erosion risks. Landowners must comply with soil protection standards, and violations could result in penalties, further reinforcing the low-risk classification regarding soil quantity.<br>Furthermore, Germany's Environmental Impact Assessment (EIA) requirements, set out in the Environmental Impact Assessment Act (Gesetz über die Umweltverträglichkeitsprüfung, UVPG), apply to certain land use changes that might involve the removal or alteration of trees outside forests. Any significant changes that could affect soil health, such as development or land conversion, are subject to a thorough assessment to identify potential risks to the environment, including soil erosion and depletion. This helps ensure that the removal of trees does not lead to adverse impacts on soil quantity.<br>Another important regulatory mechanism is the German Agricultural Landscape Program (Kulturlandschaftsprogramm), which provides incentives for farmers and landowners to maintain landscape features like hedgerows, field margins, and individual trees. These features are essential in preventing soil erosion by acting as windbreaks and barriers against surface water runoff. By incentivizing the conservation of trees outside forests, this program directly supports the preservation and enhancement of soil quantity.<br>In addition, municipal tree protection statutes (Baumschutzsatzungen) are often enacted by local governments to regulate the removal of trees outside |

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| | forests. These statutes require that permits be obtained before any significant tree can be felled, and they often include provisions for compensatory planting. This ensures that the environmental benefits provided by trees, including soil stabilization, are not lost even if some trees are removed.<br>There are several non-governmental organisations like the “Kuratorium für Waldarbeit und Forsttechnik e.V. (KWF)” that research harvesting activities and their impact on, among other terms, the soil quality and present technical and process orientated recommendations to reduce the impacts on the soil.<br>Furthermore, To ensure these laws are adhered to, Germany has a robust monitoring and enforcement system. Local authorities conduct regular inspections to assess land management practices. For instance, environmental agencies check for compliance with soil protection standards through assessments of land use changes, forest management plans, and timber harvesting operations. Specific methods such as satellite monitoring, on-site inspections, and reports from landowners or operators are used to track the impact of these activities on soil quality.<br>For this indicator the area under assessment is determined to be "Low Risk". |
| **Risk Rating** | Low Risk |

| **Germany Forest and TOF** | **Indicator** |
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| **2.2.4** | Where the removal of harvest forest residues and/or stumps occurs, this shall not lead to irreversible negative impacts to the ecosystem. |
| **Supply Base Verifiers** | • Bundeswaldgesetz (BWaldG) vom 02. Mai 1975 (BGBl. I S. 1037) - “National Forest Act”<br>• Bundesamt für Naturschutz - "German Federal Agency for Nature Conservation"<br>• Umweltbundesamt<br>• Natura 2000 und Wälder: Teil I-III<br>• Bayerische Landesanstalt für Wald und Forstwirtschaft (LWF) (2007): Energieholz nachhaltig nutzen. LWF aktuell 61, S. 32-36. - "sustainable use of energy wood"<br>• Bundesnaturschutzgesetz (BNatSchG) vom 29. Juli 2009 (BGBl. I S. 2542) - “Federal Nature Conservation Act”<br>• Environmental Impact Assessment Act (EIA) |
| **Risk Rating justification** | The German Forest Act (Bundeswaldgesetz, BWaldG) states the intention to maintain and protect forests of Germany and increase the forest area. An additional intention is to promote the sustainable management of the forests, including an explicitly stated objective of maintaining and increasing the biological diversity of the forests.<br>Forest residues are removed in connection with thinning's, selective logging, and clear cuts, carried out as an integrated part of the logging operations in forests. It is common practice to remove the residues after felling operations, |

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| | either to produce biomass feedstock or for firewood. Removal of residues occur in connection with removal of wood vegetation from protected open habitats like heaths and bogs where the aim is to regulate the wood vegetation to maintain the characteristic of tree open habitats. As these habitats are generally protected by law, the removal of wooden vegetation shall be carried out without negative impact on the ecosystem and consequently it would be illegal if residues are removed in a way that causes harm to these ecosystems.<br>As already mentioned, there are appropriate control systems and procedures to ensure ecosystems are protected.<br>Unavoidable interventions and removal of high conservation value forests or habitats require a prior environmental impact assessment or a separate authorization from superior forest authorities. Water and soil are protected. Because of that, the damage by processes of forest residue removal is excluded or of minimised harm to various ecosystems.<br>The demand for energy wood has also made weaker assortments and crown material more profitable, which led to increased use. In the environmental policy debate, too, the use of energy wood plays an increasingly important role in reducing CO2-emissions. Forestry products are a considerable carbon sink both in conventional use and in the form of energy wood, or at least have a positive effect on the CO2-balance by substituting fossil fuels. In the general euphoria, it is often overlooked that there are also restrictions on different legislative levels on the use of energy wood, which result from the functioning of forest ecosystems and their nutrient balance. Also, as significant parts of the German forests are PEFC and/or FSC certified, the respective regulations apply for the use of biomass.<br>In the long term and sustainably, forest ecosystems only function according to the principle of closed nutrient cycles, as a "closed loop economy" (Fig., left). In the unaffected primeval forest, all absorbed nutrients are sooner or later returned to the soil via litterfall and deadwood. The nutrient losses here are very low and are in balance with the additional supply from the weathering of minerals and the input with precipitation.<br>The situation is different when humans intervene: When forests are heavily polluted by pollutant inputs, the originally closed material cycles break down and nutrient losses occur with the seepage water (Fig., right). Pollutants are introduced, nutrients leave the forest soil in exchange with the leachate. The material balance is disturbed, and the soil acidifies. A similar situation occurs when nutrients are removed from the forest together with the biomass during use. The orange arrow in the figure below symbolizes this withdrawal. The material inputs from the atmosphere also contain nutrients which, together with the weathering of minerals in the soil, can at least partially compensate for the nutrient losses caused by leachate discharge and use withdrawal. However, through intensified biomass use, forests can quickly experience greater losses than are covered by the revenues. This situation must be avoided to maintain the fertility of the soil as working capital undiminished.<br>In practice the forest owner, besides being bound by law, is interested to preserve the soil quality as one cornerstone of sustainable forest management and therefore future yields and profits from growth of the forest. |

As most of nutrients are accumulated in needles and leaves, this prevents a significant loss of nutrients. If the nutrients supply is decreasing, expensive countermeasures must be taken to restore the supply by fertilizing. This is widely known and respected by forest owners, so the preservation of soil fertility and quality is in their own interest. Therefore, the soil situation is considered in common practice by the forest
owners to which extend biomass is removed. For instance, in spruce or pine forests most of the harvest residues are left in the forests and when broadleaf trees are harvested, the biomass removal is significantly later than the harvest to retain the leaves in the forest. If the forest is certified, the respective regulations must be met anyway.
As mentioned in indicator 2.2.3, the BZE ranked the nutritional conditions of trees in general as good. This indicator helps monitoring the soil conditions and gives indications on the necessary remain of biomass in the forests.

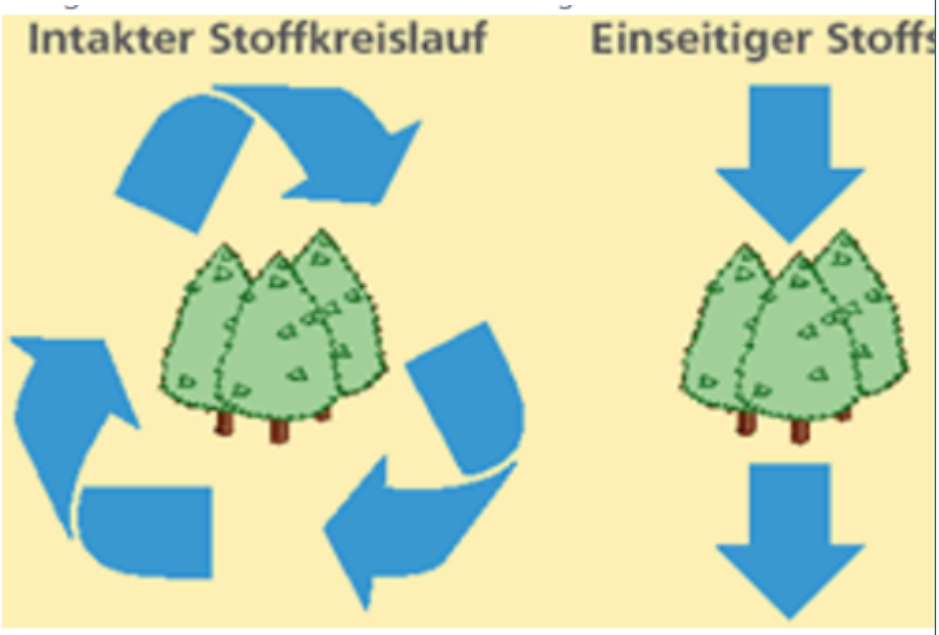


Figure 5: Developed, self-regulated material cycle (left) and one-sided material flow determined externally by material inputs and utilisation (right) (LWF, 2007).

Since 2009 there is data from the second Bodenzustandserhebung (BZE II), to categorize forest soils according to their nutrients supply (see also 2.2.3). The development of growth in forests with biomass use in form of forest residues is partially monitored by federal state forest authorities and by several research institutes to develop a documentation system and to give recommendations for future use of forest residues.
While the Federal Forest Act primarily applies to forested areas, its influence extends to practices involving trees outside forests. It mandates that any activity affecting trees, even outside forest boundaries, must align with sustainable land management principles and promote ecological balance.

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| | This ensures that the removal of forest residues or stumps does not result in irreversible damage to the environment. The Federal Nature Conservation Act (Bundesnaturschutzgesetz, BNatSchG) further protects species, habitats, and ecosystems, requiring that land use activities, including tree residue removal, consider their potential impacts on local wildlife and plant species. It ensures that any removal practices do not lead to significant degradation of biodiversity or disruption of ecological functions. Specific regulations for non-forest areas, as outlined in the Nature Conservation Act, focus on maintaining the integrity of local ecosystems when removing stumps or residues. These measures include preventing soil erosion, safeguarding rare plant species, and ensuring that wildlife habitats are not disturbed. The European Union also plays a crucial role in regulating land management practices through directives such as the EU Habitats Directive and the Environmental Impact Assessment Directive. These laws protect areas designated as Special Areas of Conservation and Special Protection Areas for birds, requiring that any activity involving the removal of trees outside forests undergoes a thorough environmental assessment. The EU's Environmental Impact Assessment Directive ensures that projects likely to have significant environmental effects must assess their potential risks and consider mitigation measures to protect sensitive ecosystems. In addition to these laws, the Federal Soil Protection Act addresses concerns related to soil quality. It aims to prevent soil contamination, erosion, and compaction, ensuring that land management practices, including tree residue removal, do not harm the soil's fertility or structure. Activities that could result in irreversible soil degradation or long-term land damage are prohibited. To comply with these regulations, several management practices and monitoring mechanisms are put in place. One of the primary tools for ensuring compliance is the Environmental Impact Assessment, which evaluates the potential risks of tree residue and stump removal to the environment. The EIA process assesses factors such as soil health, water quality, and the potential impact on biodiversity. If an EIA indicates significant environmental risks, the project may be modified or halted to prevent ecological harm. Sustainable harvesting practices are also emphasized to minimize the environmental impact of residue removal. These practices involve removing only a portion of the available material while leaving enough residues in place to support soil fertility and maintain ecosystem functions. By adhering to these guidelines, landowners can ensure that their activities do not disturb local vegetation or cause excessive soil disruption. After residue removal, regular monitoring is conducted to assess the health of the land and ensure compliance with environmental regulations. This includes checking for signs of erosion, soil degradation, or damage to local wildlife habitats. If negative effects are detected, corrective actions such as replanting vegetation or reinforcing soil protection may be required. Landowners bear responsibility for ensuring that their activities comply with legal requirements. This includes conducting necessary environmental assessments, developing land management plans that focus on ecosystem preservation, and applying for permits when necessary. In some cases, compensatory measures may be required if tree residue removal negatively impacts protected species or habitats. Public consultation |

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| | is often part of the approval process for projects involving land-use changes. Local stakeholders, including environmental groups and residents, are given the opportunity to voice concerns or provide input on how land management activities are carried out. This process helps ensure that local and broader environmental interests are considered in the decision-making process. There is no available evidence challenging a "Low Risk" designation. |
| **Risk Rating** | Low Risk |

| **Germany Forest and TOF** | **Indicator** |
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| **2.2.5** | Quality and quantity of ground water, surface water and water downstream shall be maintained or enhanced. |
| **Supply Base Verifiers** | • Wasserhaushaltsgesetz (WHG) vom 31. Juli 2009 (BGBI. I S. 2585) - "Water Resources Act"<br>• Bundes-Bodenschutzgesetz (BBodSchG) vom 17. März 1998 (BGBI. S. 502) - "Soil Protection Act"<br>• Umweltbundesamt (2023): Anteil nach PEFC bzw. FSC zertifizierter Waldfläche 2000-2023 - Forest area in Germany by certification scheme<br>• FSC Controlled Wood Risk Assessment for Germany, assigned code: FSC-NRA-DE V1-1 (approved 03.04.2018, updated 31.07.2020)<br>• Bundeswaldgesetz (BWaldG) vom 2. Mai 1975 (BGBI. I S. 1037) - “National Forest Act”<br>• Bundesnaturschutzgesetz (BNatSchG) vom 29. Juli 2009 (BGBI. I S. 2542) - “Federal Nature Conservation Act”<br>• Water Framework Directive (WFD) 2000/60/EC |
| **Risk Rating justification** | In Germany, the forests are bearing a legally binding protection status, which fulfil the following functions (in accordance with the federal forest act, §12): protection against damaging environmental influences within the meaning of the Federal Emmission Control Act (Bundes-Immissionsschutzgesetz, BImSchG) of 15 March 1974 (Bundesgesetzblatt I, p. 721), erosion by water and wind, desiccation, damaging run-off of precipitation and avalanches. Mapping of forest functions for the individual forest areas, presents an overview and valuation basis concerning utility, protection, and recreation functions. In addition to forest areas with particular importance for individual forest functions, the forest function map also includes topography and protected areas such as natural forest reserves, water protection areas, soil monuments or nature reserves.<br>Regulations of the silvicultural guidelines are based on the National Forest Act (Bundeswaldgesetz, BWaldG) and the Federal Nature Conservation Act (Bundesnaturschutzgesetz, BNatSchG), which include the stipulations that forests must be managed properly, advantageously, and sustainably, retaining the function of the forest. The natural features of the managed site (soil, water, flora, fauna) must not be impaired beyond the extent required to |

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| | achieve a sustainable yield.<br>This applies to all federal states in Germany. More precise details for timber harvesting activities, technologies and forest management rules are incorporated in the silviculture guidelines, including minimum age, diameter, felling activities, skidding trails etc. The specific measure (harvesting under various conditions, forest road maintenance or building, pest, or calamity management, etc.) provides specific risks to the environment. Not only regarding water protection, but these guidelines also request an individual risk potential analysis when planning the operations. Basis are for instance data from the Forsteinrichtung and all accompanying data like the mentioned Waldfunktionskarten etc. Result of the planning must be, that the risk to harm ecosystems, habitats or applicable is negligible. The use of such guidelines is mandatory to consider and implemented in common practice.<br>Also, Forest management plans often include the establishment of buffer zones along rivers, streams, and lakes. These zones, where logging and heavy machinery use are restricted, help prevent soil erosion and reduce the runoff of pollutants into water bodies. Additional, Forest management includes the protection and restoration of wetlands within forest areas. Wetlands act as natural water filters and storage systems, improving water quality and regulating water flow, which benefits both groundwater and surface water systems.<br>Further to forest laws various other relevant laws do exist that (e.g.) regulate protection of soils, water bodies and other environmental values. They need to be considered when working in forests (e.g. Soil Protection Act: Bundes-Bodenschutzgesetz, BBodSchG). Every federal state has the authority to monitor the implementation of the law by the forest supervision (Forstaufsicht).<br>In general, there are two kinds of negative impacts on water by biomass generation.<br>Contamination with substances: Certified forests and companies (PEFC and FSC) are obliged to use bio-oils in machinery that are biodegradable. As contractors with own machinery work on order of the forest owners and most of forest areas are PEFC or FSC or both certified (see graphic below) the vast majority works with applicable certification standards and use biodegradable fluids. From time to time, federal state forest authorities take fluid samples and test for biodegradability. Therefore, most contractors work in private forests as if in certified forests, they do not change back to mineral oil or switch to tires that are not soil protecting, for works in private forests. |

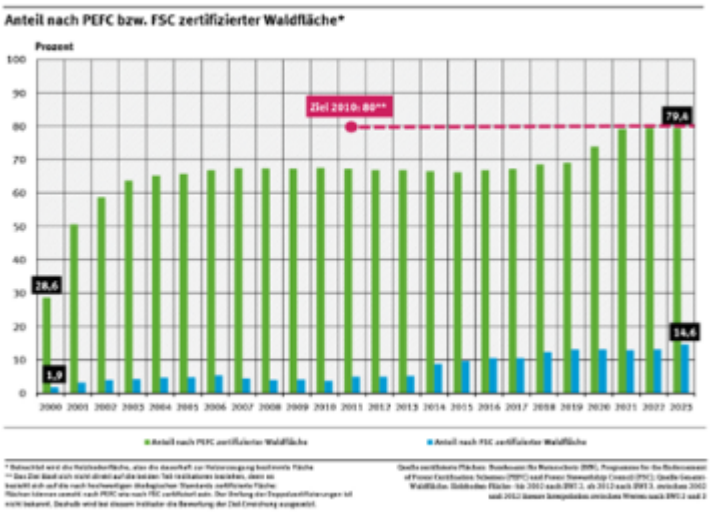


Figure 6: Forest area in Germany by certification scheme (Umweltbundesamt, 2023).

Consequences of biomass harvest: This concerns changed waterflow, erosion protection etc. Prevention of such consequences is a matter of following best practises, certification requirements and applicable laws. Biomass is typically a by-product of round wood harvest which has more economic value and therefore such harvesting operations are usually accompanied and controlled by the ordering forester. Those controls then include the biomass harvest as well, so to say as side-effect of roundwood harvest. Maintaining the forests productivity is a crucial aim for future incomes and water protection, protection from erosion etc. So, beside laws and regulations, an intrinsic motivation of forest owners results in respective control mechanisms.
Forestry is a land use that is particularly beneficial to water protection. In this context, compliance with the legal framework, such as forest and water laws, is a basic requirement for water-protective forestry. The aim of sustainable and near-natural forestry, to preserve forest ecosystems adapted to the location, is generally in line with the requirements of effective water protection. The water-protecting effect of forests can be impaired by external factors, e.g. germination by wildlife, acidification, and nutrient surpluses due to the combing effects of trees in the presence of air pollution.
Non-forest biomass is harvested under the same preconditions as biomass from forests. Applicable laws and regulations are to be known and followed by executing companies. Depending on the federal state, the legislation predefines measures and behaviour when working near or next to open water or with regards to ground water.
As described before, planned operations are often, sometimes mandatorily discussed with relevant authorities and detailed work instructions to ensure environmental protection in general.
Also, in contrast to forest works, the non-forest biomass is harvested under the eye of the public, what leads to an enhanced sensitivity with the

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| | contractors, as they must expect every violation against laws and regulations will be reported to police or authorities. According to interviews, the public opinion on allowed measures is usually stricter than the applicable legislation.<br>The Federal Nature Conservation Act defines environmental requirements at a national level in Article 5 (Agriculture, forestry, and fisheries). In addition to these Acts are various laws and regulations that define protection of environmental values (e.g. soils, water resources) and which must be followed when working in forests. These are equally binding for all forest owners.<br>On sites visits by authorities for water protection and nature conservation are done on a regular basis. It is obligatory to notify/register water and soil damages, e.g. as mentioned in the Soil Protection Act (Bundes-Bodenschutzgesetz, BBodSchG), the Water Resources Act (Wasserhaushaltsgesetz, WHG).<br>In Germany, the harvesting of wood in private forests, even in uncertified forests and without a formal forest management plan, can still be classified as low risk in terms of maintaining or enhancing the quality and quantity of groundwater, surface water, and downstream water systems. This is due to the comprehensive legal framework and regulations that apply to all forestry activities, regardless of certification status or formal planning.<br>First, the Wasserhaushaltsgesetz (WHG), Germany's Water Management Act, is the primary legislation governing water protection. According to §6 WHG, any land use activity, including timber harvesting, must ensure that water resources are not polluted and that the ecological functionality of water bodies is preserved or enhanced. Even private forest owners without certification or a forest management plan must comply with this law. WHG §5 mandates that activities affecting water must not lead to pollution, alter the natural water balance, or significantly reduce groundwater levels. This ensures that timber harvesting practices, even in uncertified forests, are controlled to avoid negative impacts on water quality and availability.<br>Additionally, the Bundeswaldgesetz (BWaldG), or Federal Forest Act, governs all forestry practices in Germany. §1 BWaldG stipulates that forests must be managed sustainably, which includes protecting water resources. While uncertified forests may not be bound by certification requirements like FSC or PEFC, forest owners are still legally required to conduct harvesting activities in a way that protects soil and water, as forests naturally contribute to water regulation and prevention of erosion.<br>The EU Water Framework Directive (WFD), 2000/60/EC, also plays a critical role. This directive, transposed into German law through the WHG, requires all member states, including Germany, to achieve a "good status" for all water bodies. The WFD applies to all land use activities, including forestry, and ensures that timber harvesting does not lead to the deterioration of water quality or quantity. Forest owners, even those managing uncertified private forests, must avoid any activity that could negatively affect water bodies, such as causing erosion, which could lead to sediment runoff into rivers or streams.<br>At the state level, individual Landeswaldgesetze, or State Forest Laws, provide additional regulations that protect water resources during forestry |

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| | activities. For example, the Bayrisches Waldgesetz (BayWaldG) in Bavaria emphasizes the importance of forests for water regulation, particularly in sensitive regions like the Alps. Similarly, the Niedersächsisches Waldgesetz (NWaldG) in Lower Saxony includes provisions that prevent soil erosion and protect watercourses from contamination during timber harvesting. Even without a formal forest management plan, private forest owners must adhere to these state laws, which ensure that water resources are preserved during logging activities.<br>Another important piece of legislation is the Bundesnaturschutzgesetz (BNatSchG), or Federal Nature Conservation Act. This law mandates the protection of natural habitats, including water bodies and riparian zones within forest areas. §2 BNatSchG requires that all land use practices, including forestry, be conducted in a way that preserves the natural balance of ecosystems. This includes maintaining water quality and preventing activities that could cause harm to wetlands or other sensitive water systems.<br>In addition to these legal requirements, there are well-established Best Management Practices (BMPs) in Germany that provide guidelines for sustainable forestry, including the protection of water resources during wood harvesting. While BMPs are not legally binding, they are widely promoted and followed by forest owners, even those without certification or formal management plans. These practices include measures such as maintaining buffer zones around water bodies, using low-impact harvesting techniques, and minimizing soil disturbance to prevent erosion and runoff. Adopting these practices helps reduce the risk of water pollution and degradation during timber harvesting.<br>Furthermore, Germany has a robust system of monitoring and enforcement to ensure compliance with these laws. Forest authorities, environmental agencies, and water management bodies regularly inspect forestry operations to verify that they are following legal guidelines. If violations are detected, such as activities that could harm water quality, authorities can impose penalties or require corrective actions. This regulatory oversight helps maintain the low-risk classification for water impacts, even in uncertified private forests without detailed forest management plans.<br>In conclusion, the harvesting of wood in uncertified private forests without a formal forest management plan can still be classified as low risk regarding the protection of groundwater, surface water, and downstream water systems. This is due to the strong legal framework provided by the Wasserhaushaltsgesetz (WHG), the Bundeswaldgesetz (BWaldG), the EU Water Framework Directive (WFD), state forest laws such as the Bayrisches Waldgesetz (BayWaldG) and the Niedersächsisches Waldgesetz (NWaldG), and the Bundesnaturschutzgesetz (BNatSchG). These laws, combined with voluntary Best Management Practices and the enforcement mechanisms in place, ensure that timber harvesting is conducted in a way that protects water resources, even in the absence of certification or a formal forest management plan.<br>Although there is no specific distinction between water quality in private versus public forests, the available data suggest that water quality in forested areas, including those privately owned, remains high across the country. |

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| | Several studies and assessments provide evidence that forests in Germany, whether privately or publicly owned, contribute positively to maintaining good water quality. According to a report by the German Federal Environment Agency (Umweltbundesamt), forests are crucial in filtering and protecting groundwater resources. In fact, forests in general, including private forests, act as natural water filters, reducing the risk of pollution by capturing contaminants and regulating water flow. Forest soils have a high capacity to absorb and retain water, preventing runoff and erosion, both of which could harm water quality. This natural filtration process ensures that groundwater and surface water originating from forested areas are typically of high quality. Moreover, Germany's Water Framework Directive (WFD) assessments, which aim to achieve "good status" for all water bodies by setting ecological and chemical standards, indicate that forested regions, including privately owned forests, contribute positively to achieving these targets. In particular, forests reduce nutrient and sediment inputs into water bodies, mitigating the effects of agricultural runoff and other land uses. The positive impact of forests on water quality is underscored by the fact that many of the country's drinking water reservoirs are located in or near forested areas, benefiting from the natural purification processes provided by the forest ecosystem.<br>A study conducted by the Thünen Institute, a German research institution for forestry and agriculture, further emphasizes that sustainable forest management practices, common in both private and public forests, play a key role in preserving water quality. The institute's research has shown that well-managed forests, including those under private ownership, are effective in preventing soil erosion, reducing the risk of flooding, and maintaining high levels of water purity.<br>In conclusion, while there is no specific data that isolates water quality in private forests from public ones, the legal framework governing private forests, combined with the inherent benefits of forest ecosystems in water purification, leads to the conclusion that water quality in privately owned forests in Germany is generally good.<br>Therefore, the risk designation is "Low Risk". |
| **Risk Rating** | Low Risk |

| **Germany Forest and TOF** | **Indicator** |
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| **2.2.6** | Air emissions shall comply with national legislation or in the absence of national legislation with industry best practice. |
| **Supply Base Verifiers** | • Umweltbundesamt (2023): nationale Trendtabellen für die deutsche Berichterstattung atmosphärischer Emissionen seit 1990 – Development of air quality 1990-2023<br>• Bundes-Immissionsschutzgesetz (BImSchG) vom 15. März 1974 (BGBI. I S. 721) - "Federal Emission Control Act"<br>• FSC Controlled Wood Risk Assessment for Germany, assigned code: FSC-NRA-DE V1-1 (approved 03.04.2018, updated 31.07.2020) |

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| **Risk Rating justification** | Germany has numerous laws, regulations, ordinances, and directives designed to regulate environmental values and requirements. Federal state Forestry Departments are dutybound to enforce and supervise regulations or obligations equally in all forest types. On sites visits by authorities for water protection and nature conservation are done on a regular basis.<br>The aim of the German Air pollution Prevention and climate Protection Policy is to reduce air pollution and climate emissions in the long term. The Federal Emission Control Act (Bundes-Immissionsschutzgesetz, BImSchG) serves as the cornerstone of air quality regulation in Germany. It sets binding emission limit values for pollutants such as particulate matter (PM), nitrogen oxides (NOx), sulphur dioxide (SO2), volatile organic compounds (VOCs), and other harmful substances. For example, the sulphur dioxide emissions from 1990 to 2022 fell from 5.5 to just 0.25 mio t (-95,3 %). These regulations apply to industrial activities, including those related to forestry operations within or outside of forests that may emit pollutants during wood processing, biomass combustion, or machinery use. In instances where specific national legislation does not explicitly cover certain forestry activities, adhering to industry best practices becomes crucial. The forestry sector in Germany has adopted comprehensive guidelines and standards to mitigate air emissions. These practices often exceed legal requirements and emphasize pollution prevention strategies, emission monitoring, and the use of advanced technologies to minimize environmental impact. For example, during biomass combustion for energy production or wood processing in sawmills, emission control technologies such as electrostatic precipitators, scrubbers, and modern combustion techniques are employed to reduce particulate matter and other pollutants released into the atmosphere. Additionally, sustainable forest management practices promote the efficient use of resources, including minimizing emissions associated with logging, transportation, and processing. The exact knowledge of the emission situation is fundamental for the necessary strategies and measures. For this purpose, a reporting system has been set up with which the proportionate emission quantities are determined and published annually. This information and data are collected and calculated based on national, European, and international conventions and agreements. Emissions are reported in uniform structures, on specified dates and accompanied by comprehensive documentation and quality assurance and control regulations.<br>In the national trend tables, the contributions of the individual source groups to the total emissions of greenhouse gases are shown. Other emissions are the absolute dominance of energy related emissions. Overall, emissions of greenhouse gases and other air pollutants have fallen significantly since 1990. Considerations of the individual components prove this trend to a different degree.<br>In addition, it needs to be mentioned, that most of the emissions referred to in the following statistic is emitted by the transport sector, the energy sector, industry, and the agricultural sector. |

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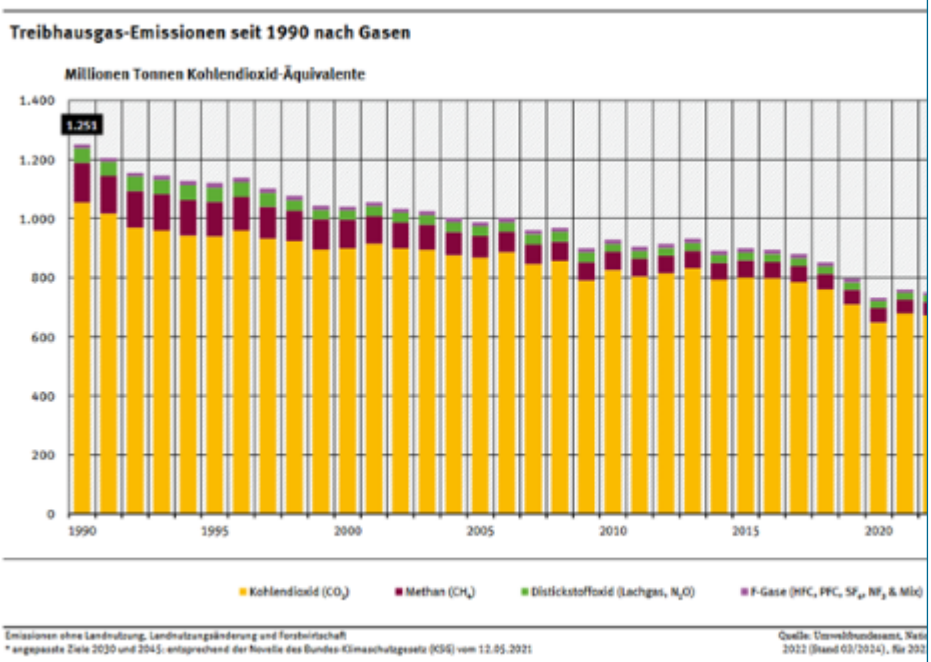
| | <br>Figure 7: Greenhouse gas emissions by gas since 1990 (Umweltbundesamt, 2023).<br><br>There is no available evidence challenging a "Low Risk" designation. |
| **Risk Rating** | Low Risk |

| Germany Forest and TOF | Indicator |
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| **2.2.7** | Pesticides shall only be used as part of an Integrated Pest Management (IPM) plan in compliance with national legislation, chemical safety data sheets and industry best practice. Banned pesticides shall not be used. |
| **Supply Base Verifiers** | • Bundeswaldgesetz (BWaldG) vom 2. Mai 1975 (BGBl. I S. 1037) - “National Forest Act”<br>• Bundesnaturschutzgesetz (BNatSchG) vom 29. Juli 2009 (BGBl. I S. 2542) - “Federal Nature Conservation Act”<br>• Düngeverordnung (DüV) in der Fassung der Bekanntmachung vom 27. Februar 2007 (BGBl. I S. 221) – “Fertilizer legislation”<br>• Düngemittelverordnung (DüMV) vom 5. Dezember 2012 (BGBl. I S. 2482) - “Fertilizer ordinance”<br>• Chemikaliengesetz (ChemG) in der Fassung der Bekanntmachung vom 28. August 2013 (BGBl. I S. 3498, 3991) – “Chemicals Act”<br>• Pflanzenschutzgesetz (PflSchG) vom 6. Februar 2012 (BGBl. I S. 148, 1281) – “Plant Protection Act”<br>• Merkblatt - Aufzeichnungspflicht für die Anwendung von Pflanzenschutzmitteln gemäß Verordnung (EG) 1107/2009 und § 11 PflSchG |

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| | • FSC Controlled Wood Risk Assessment for Germany, assigned code: FSC-NRA-DE V1-1 (approved 03.04.2018, updated 31.07.2020) |
| **Risk Rating justification** | Germany has numerous laws, regulations, ordinances, and directives designed to regulate environmental values and requirements. Federal state Forestry Departments are duty-bound to enforce and supervise regulations or obligations equally in all forest types.<br>There are no statistics available relating to regular on-site visits by relevant authorities focusing on environmental requirements; however on-site visits are a known measure of control and planning. On sites visits by authorities for water protection and nature conservation are done on a regular basis. It is obligatory to notify/register water and soil damages, e.g. as mentioned in the Soil Protection Act (Bundes-Bodenschutzgesetz, BBodSchG), or the Water Resources Act (Wasserhaushaltsgesetz, WHG). In cases of violations penalties are in place and are implemented.<br>Environmental NGOs function as watchdogs, also the public is present in most of the forests and natural sites for recreational purposes. According to forest authorities, most of the reported pollutions and violations of laws and restrictions, are reported by the public. For private forests, the silvicultural guidelines are only recommendations, but of course private forests are also bound to national and federal law. Regulations of the silvicultural guidelines are based on the National Forest Act (Bundeswaldgesetz, BWaldG) and the Federal Nature Conservation Act (Bundesnaturschutzgesetz, BNatSchG), which include the stipulations that forests must be managed properly, advantageously, and sustainably, retaining the function of the forest.<br>Fertilizers and pesticides must only be used in accordance with the provisions of the agricultural and forest legislation. In accordance with the German legislation fertilization in a conventional sense is excluded to a major extend for forest management.<br>Pesticides may only be applied in Natura 2000 areas if their use has been carefully tested for compatibility in a nature conservation approval procedure under EU nature conservation law. The Federal Agency for Nature Conservation (Bundesamt für Naturschutz, BfN) and the Federal Environment Agency (Umweltbundesamt, UBA) have developed a guideline for the competent state authorities on how to carry out this assessment.<br>Natura 2000 sites, i.e. fauna, flora, habitat, and bird sanctuaries, together form the EU network of protected areas Natura 2000, which was established to protect particularly endangered animal and plant species and habitat types. New scientific findings now show that the use of pesticides is particularly problematic in nature conservation terms. This is especially true when the agents are to be applied by helicopter, because such an application from the air does not allow the targeted treatment of individual trees, but inevitably affects larger areas. If impairments of a Natura 2000 area and its protected assets cannot be reliably excluded using pesticides, an FFH compatibility assessment must be carried out in any case. A permit may only be granted after a thorough investigation. BfN and UBA explain in their updated information paper "Plant protection with aircraft" which exact nature conservation regulations must be observed in the approval procedure for |

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| | such applications.<br>Common practise and communicated aim of all federal state forests and most of private forests is to keep the use of chemicals as low as possible. For cost reasons and not at least because of the (public) awareness. A core principle of integrated pest management in German forests is, that the use of pesticides is only to be considered as an ultima ratio, when all organisatory and technical countermeasures have proven insufficient. In recent times hot and dry summers and mild winters lead to a wide spread of bark beetles in the central European regions. The mitigation measures are mostly harvesting of infected trees and areas. Those logs are commonly transported as fast as possible out of the forests to prevent further spreading. In parts this is not possible, and the use of approved chemicals come to use on the log piles. This is regulated by applicable laws mentioned in the means of verification. Also, it is common practise, that this work is closely monitored by foresters. In praxis, the use of chemicals in large scale is not efficiently to handle, as the piles to treat should not exceed 2 m height and 20 scbm in volume. Otherwise only the top layer of logs is treated. Due to the very high volumes of bark beetle infested logs that are harvested, the piles usually exceed hundreds of scbm. The method of choice of several federal state forest administrations for the moment is, to sell the beetle logs for very low prices under the condition to remove all volume shortly after the sale.<br>Therefore, the use of chemicals in German forests is according to interviews with forest owners and foresters only an exemption in the scope of pest management. Federal states have different legislation and regulation regarding the integrated pest management, the common practice does also differ due to different forest types, but laws like the National Forest Act and the Federal Nature Conservation Act and more on state level, are forming the framework for chemical use, as state legislation is superior to federal state legislation. If chemicals are used in forests, there is the obligation to have documentation of the details like what chemical was used, how much, where it was used and who was involved. However, the use of chemicals on forest management unit is not reported to any entities, so there is no statistical data available. Interviews with forest management in federal state forests confirmed, that the extreme bark beetle outbreak led to increased chemical usage in the hope to slow down or even prevent new infestation. One reported observation is, that the chemical pest control had only a negligible effect on the spreading. So, the cost-benefit equation seems to be negative. Also working staff is rare and needed in other fields of pest control. According to interview partners, the use of chemicals in large scale, like treatment of log piles etc. is predicted to decrease. A selective use on small scale areas with regards to the individual situation with higher chance of success, will increase instead.<br>The chemicals law (Chemikaliengesetz, ChemG) function as a protection of dangerous substances. Germany ranks high on the worldwide governance indicator with rule of law and control of corruption; therefore, it can be concluded that the existing legislation is effectively enforced. Chemicals can only be bought with a "Sachkundenachweis", a proof of competence according to §23 of the Plant Protection Act (Pflanzenschutzgesetz, PflschG). |

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| | Now, 2 insecticides (Karate Forst Flüssig and Fastact Forst) are approved by the Federal Office for Consumer safety and Food Safety (Bundesamt für Verbraucherschutz und Lebensmittelsicherheit). The closest distance for allowed use next to surface water is 40 meters. When applied correctly in the intended purpose, all are rated not dangerous for bees. The active agents are instable in water and adhere to soil particles, where a degradation to non-toxic metabolites happens. According to research, no significant eluviation into ground water occurs. PEFC takes all above into consideration and allows the uses of pesticides in cases of substantial dangers for the forest, under consideration of applicable plant- and environmental protection laws. FSC does not allow the use of pesticides. If wood was treated, a period of 6 months needs to pass, before it could be sold with a valid FSC claim.<br>As the form of application for products mentioned above, is direct and thick spraying on logs, an application by spraying from planes or helicopters would have almost no effect. The agent would deposit on branches and needles and not reach infested stem parts. In general, the application by aircraft is forbidden in Germany and needs to be individually permitted by authorities. There is on the other hand reported pest management by helicopter, against oak processionary. This caterpillar is benefiting from consequences of climate change as well and occurs in larger numbers as in the past. Not only is it a danger for oak forests, but also a significant danger to human health if getting in contact. Therefore, an enforced fight against the spread is intended, especially in urban and non-rural areas. Forest areas are hardly target for this attention. The application via aircraft is only approved when other ground-based methods are inadequate. As the oak processionary mainly lives in tree crowns, the tree height is one factor and helicopters come to use for heights above 20 m. Also, in contrast to bark beetle pest control, a deposition of active agents in the crown will be highly effective.<br>For this indicator the area under assessment is determined to be "Low Risk". |
| **Risk Rating** | Low Risk |

| **Germany Forest and TOF** | **Indicator** |
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| **2.2.8** | Waste shall be disposed of in an environmentally appropriate manner. |
| **Supply Base Verifiers** | • Existing legislation<br>• Level of enforcement<br>• Regional best management practices<br>• Kreislaufwirtschafts- und Abfallgesetz (KrW-/AbfG) vom 27. September 1994 - "circular economy and waste disposal law"<br>• Bundesnaturschutzgesetz (BNatSchG) vom 29. Juli 2009 (BGBl. I S. 2542) - “Federal Nature Conservation Act” |
| **Risk Rating justification** | There are no significant impacts – from forest management activities or other forest owner-mandated activities – due to waste disposal in forests under any type of ownership in Germany. Interviews with foresters did not show that |

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| | harvesting or any other forest works lead to waste disposal in the forests, put aside single cases that were reported and pursued. The majority of waste disposal originates from forest visitors. Littering and illegal waste disposal in German forests do occur along roads, parking spaces and recreational facilities, especially when there are cities nearby and recreational sites that are often visited by forest guests. Whenever possible, the source of the waste is identified, and authorities notified.<br>The purpose of the circular economy and waste disposal law (Kreislaufwirtschafts- und Abfallgesetz, KrW-/AbfG) promotes the circular economy to conserve natural resources and ensure the environmentally sound disposal of waste. This law applies naturally to forest works and landscaping measures as well.<br>Moreover, the Federal Nature Conservation Act (Bundesnaturschutzgesetz, BNatSchG) emphasizes the importance of preserving natural habitats, including trees outside forests, and mandates the responsible management of these areas to ensure their ecological balance. Under this legislation, it is crucial that any waste generated during the management of trees within and without forests is disposed of in a manner that does not harm the environment or biodiversity.<br>The risk of negative impacts from waste disposal in forest or for trees outside forests is assessed as "Low Risk". |
| **Risk Rating** | Low Risk |

| **Germany Forest and TOF** | **Indicator** |
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| **2.2.9** | Harvesting levels shall be justified as to how they can be sustained with reference to inventory and growth data for the Supply Base. |
| **Supply Base Verifiers** | • Bundeswaldgesetz (BWaldG) vom 02. Mai 1975 (BGBl. I S. 1037) - “National Forest Act”<br>• Richtlinie zur Forsteinrichtung - "Guideline for Forest Planning“<br>• Bundes-Bodenschutzgesetz (BBodSchG) vom 17. März 1998 (BGBl. I S. 502) – “SoilProtection Act”<br>• FSC Controlled Wood Risk Assessment for Germany, assigned code: FSC-NRA-DE V1-1 (approved 03.04.2018, updated 31.07.2020)<br>• Bundeswaldinventur IV (BMEL, 2024) |
| **Risk Rating justification** | Harvesting permits do not exist in Germany. The legal owner of the forest is allowed to harvest or to sell harvesting rights, without additional permits. Related to activities in private to the purchase tenancy of claims the legislation shall not be violated (concerning taxes protection).<br>Official national forest inventories (Bundeswaldinventur) do exist in Germany, the last one was finished in 2022 and published 2024. The inventories are subject to binding regulations in the German Forest Act (Bundeswaldgesetz, BWaldG). Forest inventories form the basis of forest planning for each forest organization. The main goals of management planning are to plan and |

evaluate the sustainable use of forest resources, to control felling activities and to comply with sustainability. To take account of long-term developments in forestry, every ten to 20 years, public organizations establish a mid-term framework report (Forsteinrichtung), for which responsibility occurs at sovereign level.
In general, it could be stated, that continuously the forest area and the growing stock (see below) is increasing (+ 120 scbm), even though there where extreme bark beetle calamities between 2018 and 2022 (detailed discussion in indicator 2.2.12).

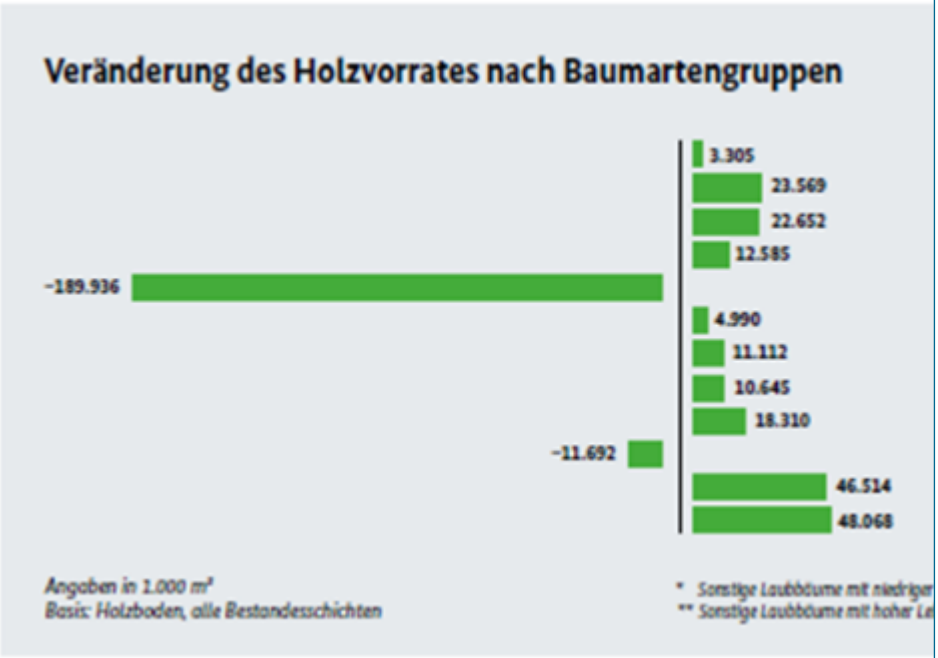


Figure 8: Stock changes of standing wood between 2012 and 2022 (BMEL, 2024).

When planning occurs in relation to public or private forests, reports must be sent to the corresponding forest authorities for evaluation and control. Private organizations that are not obliged to do planning are subjected to a control mechanism by the tax assessment. The preparation of mid-term framework reports is done by officials or freelancing consultants. The results of the National Forest Inventory 2022 have demonstrated that the average timber stocks in German forests rose compared to earlier inventories, which is an indicator for sustainable forestry and proper planning. The legal background for monitoring and planning is clearly regulated and enforced. Due to the good governance and law enforcement indicators described in the introduction, it can be concluded that are no enforcement deficits. Management plans are publicly available. Planning and sustainable management are described in the statute books: Mid-term management planning (Forsteinrichtung) and annual planning (Forstbetriebsgutachten) are required in most cases. When plans are submitted to and approved by forest departments, harvesting measures are assumed, based on this planning.

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| | Therefore, the owner of the area or the harvesting rights does not need to ask for permission to carry out harvesting activities.<br>Regulations of the silvicultural guidelines are based on the National Forest Act and the Federal Nature Conservation Act, which include the stipulations that forests must be managed properly, advantageously, and sustainably, retaining the function of the forest. A site-adapted selection of species and a persistent soil fertility for long-term usability must be ensured, the natural features of the managed site (soil, water, flora, fauna) must not be impaired beyond the extent required to achieve a sustainable yield. Regarding the use of woodlands for forestry purposes, the aim must be to establish seminatural forests and to manage these sustainably without clear-cuts; with an adequate proportion of native woodland plants retained. Clear-cutting is prohibited unless afforestation is completed in a reasonable time. Conversion of forests into any other form of land use is only allowed with a permission of a Federal State authority (Forstbehörde) when appropriate compensation measures take place. This applies to all federal states in Germany. More precise details for timber harvesting activities, technologies and forest management rules are incorporated in the silviculture guidelines, including minimum age, diameter, felling activities, skidding trails etc. In addition to forest laws, various other relevant laws do exist that (e.g. regulate protection of soils,<br>water bodies and other environmental values). These laws need to be considered when working in forests.<br>Forestry in Germany adheres to the concept of the multifunctionality of forests, as is reflected among other things in the legal intent of the Federal Forest Act. This means that the forest area shall be preserved, increased, and sustainably managed not only for its economic utility but also for its environmental values (e.g., the hydrological cycle, climate, landscape aesthetics, recreation).<br>Municipal public forests in most federal states are managed and thus supervised by state authority foresters, so that control mechanisms exist. Private forest organizations, which are bound to ten-year planning, are thus controlled every ten years and, if the forests are not sustainably managed, the organizations are sentenced. For small forests with no planning, statutory possibilities for punishment do exist, if laws are not adhered to. Germany is not aware of relevant cases in which sustainability was seriously compromised by small forest organizations.<br>Because of storms, extreme dry years and a following bark beetle calamity, the volumes of calamity roundwood grew since 2017 from 12 mio scbm to 70 mio scbm in 2019. After this peak, a steady reduction was observed with a downfall to 38,7 mio scbm damaged timber in 2023.<br>Mainly affected by bark beetles is spruce in mid Germany and in the southern regions. Also, eastern France, Czech Republic and Poland are reporting bark beetle outbreaks and significant volumes of damaged wood. Those monoculture-like areas are often historically planted spruce forests on sites, where Spruce normally would not be dominant. One example is the Harz-Region in the middle of Germany, where Spruce was planted in past centuries to meet the demand of fast-growing wood for the mining industry, to smelt ore and stabilize mineshafts. After World War II, reparation claims of |

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| | victorious powers lead to clear cuts in many forests. Replanting Spruce was a common way to aim for a quick reforestation.<br>Exponential growth of bark beetles in the extreme years 2018 and 2019 lead to high volumes of infested trees. A high population pressure among the beetles lead to quick infestation and death of healthy trees, even beyond pure spruce. Those infested trees and harvested logs are to be removed from the forests as quickly as possible, to prevent surrounding trees to be infested as well. As a result, some beetle infested areas had happened to be clear-cuts.<br>The Federal Ministry of Agriculture and Food (Bundesministerium für Landwirdschaft und Ernährung, BMEL) stated in June 2020, that 285.000 ha are to be replanted as the forest is a key factor for climate protection, biodiversity, and raw material source. In 2019, a key issue paper was published to address the most important topics to deal with this crisis and open discussion for the announced Forest Strategy 2050. One result of the discussion are financial aids of about 800 million € until 2024. This includes beside replanting, the removal of infested trees, slowing down/preventing further infestation.<br>To cope with the changing conditions due to the climate change, scientific projects have been started on many levels, as several challenges are to be met.<br>• Selection of species to plant. The specific impact of changing climate is only based on modulation. Diversification should be a key element. Also following an approach of the LWF - Bavaria, to generate maps with regional risk-based planting recommendations.<br>• Establishing high supplies of seeds and nursed trees. In addition, an infrastructure to be able to replant such areas in adequate time.<br>• Transfer the knowledge to private forests. Strongly specified financial aids could act as incentives to restock forests in sustainable ways, instead of financially focused.<br>At this moment, there is no definite strategy what to plant and how to do it. Undoubtedly, the areas are planned to be restocked with trees that cope with the upcoming challenges of the ongoing climate change and lead to an ongoing, emotional debate, on how to achieve this. One approach is to decrease the game density massively in afflicted regions to maximize natural regeneration. This debate started in the 1980´s and is now more up to date than ever. Interviews showed that foresters are pleading for an amendment toward lower game density, as traditional hunters care for higher numbers to pursue their hobby.<br>The approach of lower density is also favoured by forest scientists. Even though non-forest biomass is not assessed in this indicator, it is worth mentioning, that, where applicable, the long-term viability and productivity is taken care of. As mentioned in other indicators, there are often close cooperations with authorities in advance, when it is not a standard measure. This results in quite specific work regulations and instructions. Non-forest biomass is mainly generated while areas are (completely) cleared for construction projects like industrial site or infrastructure projects. In those cases, there is always an official approval from one or more authorities with regards to binding laws. This ensures appropriate compensatory measures |

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| | and guarantees that the whole process was revised by governmental officials, regarding legal, social, and ecological aspects.<br>Another source is road, rail, canal, etc. maintenance and securing the traffic safety. Top priority here is the avoidance of harm to human health, which ranks higher than ecological concerns. Nevertheless, those measures are carefully planned and underlie defined regulations, depending on the state and responsible authority. As the correct execution of commissioned works is relevant to safety, the control mechanisms are quite strong. The public sector is the biggest contracting entity for landscaping companies in Germany. From interviews and reviewed evidence, it is fair to contend, that biomass from those measures is bound by laws, closely controlled and often in cooperation with competent authorities.<br>For this indicator the area under assessment is determined to be "Low Risk". |
| **Risk Rating** | Low Risk |

| **Germany<br>Forest and TOF** | **Indicator** |
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| **2.2.10** | Harvested areas shall be regenerated |
| **Supply Base Verifiers** | • Bundeswaldgesetz (BWaldG) vom 02. Mai 1975 (BGBl. I S. 1037) - “National Forest Act”<br>• Statistisches Bundesamt - Offizielle Statistiken zur Waldfläche und Holzernte<br>• Forest Stewardship Council (FSC) - Informationen zur Waldzertifizierung und nachhaltigem Waldbau<br>• Forest Strategy 2020 - sustainable forest management in the Federal Republic of Germany<br>• Bundeswaldinventur IV (BMEL, 2024) |
| **Risk Rating justification** | Forestry in Germany plays a crucial role both economically and ecologically, with the country being known for its extensive forest cover. As of recent statistics, forests in Germany cover approximately 11,5 (2024) million ha, which is about 32 % of the total land area. This substantial forest cover supports biodiversity, contributes to carbon sequestration, and underpins a significant portion of the economy through timber production and other forest-related activities.<br>Germany's forestry sector is regulated by a robust legal framework designed to ensure sustainable forest management. The primary legislation is the Federal Forest Act (Bundeswaldgesetz, BWaldG), which sets out guidelines for forest conservation, management, and use. This Act, along with state-specific forest laws, enforces principles such as sustainable yield, biodiversity protection, and forest health maintenance, which applies to every forest type within Germany.<br>A key provision of the Federal Forest Act is that all harvested areas must be regenerated. This regeneration can occur naturally or through artificial planting. The law mandates that regeneration efforts must start immediately |

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| | after the harvest and be completed within a set period, typically three years, to ensure the continuity of forest resources.<br>Also, Germany is a global leader in sustainable forest management (SFM). The country follows criteria and indicators established by international organizations such as the Forest Stewardship Council (FSC) and the Programme for the Endorsement of Forest Certification (PEFC). As of 2023, around 76 % of Germany's forest area, which is approximately 8.7 million hectares, is certified under these schemes, ensuring high environmental, social, and economic standards.<br>Regeneration and reforestation are vital for maintaining the sustainability of Germany's forests. According to the Federal Forest Inventory, about 120,000 hectares of forest were harvested in 2022 (mostly damaged wood, because of a variety of calamities; the huge areas of harvested forests were not usual). Out of this, approximately 95 % of the harvested areas were regenerated successfully, either through natural regrowth or by replanting. This high regeneration rate demonstrates the effectiveness of Germany's forestry policies and practices.<br>Reforestation efforts often involve planting tree species that are more resilient to climate change. For example, species such as the European Beech (*Fagus sylvatica*) and Douglas Fir (*Pseudotsuga menziesii*) are increasingly being planted because of their ability to adapt to changing climatic conditions. In 2022, approximately 40 million seedlings were planted across Germany, with a significant portion being these climate-resilient species.<br>Despite these efforts, German forestry faces significant challenges, primarily due to climate change. Extreme weather events such as prolonged droughts and severe storms have caused considerable damage to forests. Additionally, pest infestations, especially by the bark beetle, have devastated large forest areas. For instance, in 2021, over 170,000 hectares were affected by bark beetle infestations, leading to a significant loss of timber.<br>To address these challenges, the German government has launched several initiatives. The Forest Strategy 2020, introduced in 2011 and updated in 2020, aims to balance the ecological, economic, and social functions of forests. This strategy emphasizes the importance of mixed forests, which are more resilient to pests and climate change than monocultures. The strategy includes measures such as improved forest monitoring, enhancement of genetic diversity in tree species, and financial support for forest owners to implement sustainable practices.<br>Forest owners have strong economic motivations to ensure successful regeneration. The economic value of these forests—through timber production, ecosystem services, and land value—provides a significant incentive for owners to invest in proper regeneration practices.<br>The German Forest Act and various state regulations provide financial incentives and support for reforestation efforts. Programs such as the "Forest Climate Fund" offer subsidies and financial assistance to forest owners who undertake regeneration and sustainable management practices. These incentives are designed to reduce the financial burden associated with reforestation and encourage compliance.<br>The effectiveness of regeneration efforts is further ensured by rigorous |

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| | monitoring and reporting systems. The German Federal Ministry of Food and Agriculture (BMEL) conducts regular surveys and audits of forest management practices. According to the BMEL's 2022 report, approximately 95 % of private forest owners complied with regeneration requirements following timber harvesting. This high compliance rate reflects the successful implementation of reforestation measures.<br>Forest owners are also required to submit detailed reports on their regeneration activities. These reports are reviewed by forestry authorities to verify that the regeneration meets legal and ecological standards. The transparency provided by this reporting system ensures that any issues are promptly addressed and that regeneration efforts are on track.<br>Empirical data supports the effectiveness of regeneration practices. According to a study by the Thünen Institute, which monitors forest conditions and management in Germany, approximately 89 % of harvested areas in private forests were successfully regenerated within the stipulated timeframes. This high success rate indicates that the majority of regenerated areas are meeting the required standards for forest cover and ecological restoration. For instance, a review by the German Institute for Tropical and Subtropical Agriculture noted a steady rise in the area of reforested land, with annual increases of approximately 1.5 % in private forests.<br>Historical data also demonstrates a positive trend in regeneration outcomes. A review of forest management practices over the past two decades reveals that advancements in regeneration techniques and increased awareness among forest owners have contributed to improved outcomes. This historical evidence supports the argument that regeneration practices are generally effective.<br>Adaptive management approaches further reduce the risk of failed regeneration. Forest owners can adjust their practices based on observed outcomes and environmental conditions. This flexibility allows for timely interventions if initial regeneration efforts are not successful.<br>Collaborations between public authorities and private forest owners also play a crucial role. Public-private partnerships provide additional resources, expertise, and support for effective regeneration. These partnerships enhance the overall success of regeneration efforts and help address any challenges that may arise.<br>Research by the Forest Research Institute (Institut für Waldökologie) highlights that technical assistance programs have significantly improved regeneration outcomes. These programs have led to a 10 % increase in successful regeneration cases over the past decade, demonstrating the effectiveness of support and guidance provided to private forest owners.<br>Within Germany, the concept of trees outside forests encompasses woody vegetation such as hedgerows, field trees, and small wooded areas not classified as part of traditional forests. These elements are significant for landscape feedstock, biodiversity, soil protection, and carbon sequestration. Germany employs a combination of legal frameworks, incentives, and management practices to ensure the sustainable use and regeneration of these areas. The Federal Nature Conservation Act (BNatSchG) provides a broad framework for the protection of landscape elements, including trees |

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| | outside forests, by imposing restrictions on their removal and requiring permits for significant interventions. Additionally, the Federal Forest Act (BWaldG) emphasizes the sustainable management of forest-related resources, indirectly influencing the care of trees outside forests. Landowners and farmers are incentivized to maintain and regenerate such areas through agri-environmental schemes under the Common Agricultural Policy (CAP). These programs provide financial support for activities like planting and maintaining hedgerows or buffer strips with trees. Moreover, Germany integrates ecological requirements into its agricultural subsidies, linking payments to compliance with environmental standards such as the maintenance of landscape features. Control mechanisms involve monitoring at multiple levels. Local authorities oversee compliance with regulations, ensuring that protected trees and hedgerows are not removed unlawfully. National and EU-level audits monitor the proper allocation of subsidies and adherence to sustainability criteria. Germany also employs spatial planning tools to designate areas for conservation, afforestation, or landscape enhancement, considering the ecological role of trees outside forests. To promote regeneration, Germany encourages replanting efforts, often tied to environmental impact assessments. Developers must compensate for any loss of vegetation by planting new trees or restoring equivalent areas elsewhere. In addition to federal laws, state-specific nature conservation laws may impose stricter regulations, reflecting regional ecological priorities. Municipalities also have the authority to enact tree protection ordinances that specify which trees are protected and the permissible measures that can be undertaken.<br>Due to the strong legal framework and silvicultural measures this indicator is considered as "Low Risk". |
| **Risk Rating** | Low Risk |

| **Germany Forest and TOF** | **Indicator** |
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| **2.2.11** | The impacts of natural processes such as fires, pests and diseases shall be managed. |
| **Supply Base Verifiers** | • FSC Controlled Wood Risk Assessment for Germany, assigned code: FSC-NRA-DE V1-1 (approved 03.04.2018, updated 31.07.2020)<br>• Bundesnaturschutzgesetz (BNatSchG) vom 29. Juli 2009 (BGBl. I S. 2542) - “Federal Nature Conservation Act”<br>• Bundeswaldgesetz (BWaldG) vom 02. Mai 1975 (BGBl. I S. 1037) - “National Forest Act”<br>• Statistisches Bundesamt (StaBu) (2024): Logging caused by damaged trees in Germany |
| **Risk Rating justification** | Germany has numerous laws, regulations, ordinances, and directives designed to regulate environmental values and requirements. Federal State Forestry Departments are duty-bound to enforce and supervise regulations or obligations equally in all forest types. There are no statistics available relating |

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| | to regular onsite<br>visits by relevant authorities focusing on environmental requirements; however on-site visits are a known measure of control and planning. On sites visits by authorities for water protection and nature conservation are done on a regular basis. Environmental NGOs function as watchdogs (see also CW Category 3) and bring up cases of non-compliances, which might lead to law cases and/or penalties respectively correction measures.<br>For example, the German Federal Nature Conservation Act (Bundesnaturschutzgesetz, BNatSchG) regulates the general protection of nature and landscape, the protection of certain parts of nature and landscape as well as of wild animal and plant species. Species and area protection, recreational use, provision for fines and penalties are addressed as well. But also, an adapted forest management, compatible and connected with nature conservation aspects, is reflected. Each federal state has its own land conservation law, which is linked to<br>the Federal Nature Conservation Act according to Art. 72 of the National Constitution (Grundgesetz).<br>Due to a very good structure of fire brigades in Germany, forest fires are effectively dealt with. In case of bigger fires, within the scope of administrative assistance, the German armed forces could be installed as support. The forest act requires that forest owners maintain forest cover on forest land, as well as establishing resistant and resilient forests towards calamities such as pests, wind, and climate change.<br>The main natural process that has negative impact on forests are storm calamities. Since 2017 exceptional growth in bark beetle populations, due to already weakened by storm, in forest areas, lead to a new form of calamity. It is the responsibility of the forest owners and/or managers to apply silvicultural methods that improve the stability of forest stands. As a response to this thread, the government decided in 2019 to provide financial aids of 800 million € for the next 4 years to protect forest resources and replant infected areas. In addition, the forest structure at least in federal state forests is going to be changed from partially monoculture to a wider mix of species to help the forest dealing with calamities by natural resistance. Those measures are included in the strategic forest management planning.<br>Official national forest inventories (BWI) do exist in Germany, the last one was finished in 2022 and published in 2024. The inventories are subject to binding regulations in the German Forest Act (Bundeswaldgesetz, BWaldG). Forest inventories form the basis of forest planning for each forest organization. The main goals of management planning are to plan and evaluate the sustainable use of forest resources, to control felling activities and to comply with sustainability. That ensures the development of sustainable and stable forests to resist calamities.<br>As a countermeasure the salvage loggings overall and specifically due to bark beetle infection were increased. The following statistic shows the regional effects on federal state level. |

Figure 8: Logging caused by damaged trees in Germany (StaBu, 2024)

In 2023, a total of 70,6 million cubic metres of wood were logged in German forests. More than 50 % (38,7 million cubic metres) were caused by damaged wood.

- Because of insects: 27,2 mio solid cubic metres
- Because of storm/wind: 4,9 mio solid cubic metres
- Because of snow: 0,7 mio solid cubic metres
- Because of other things: 5,9 mio solid cubic metres

After the record year of 2020, when 60.1 million cubic metres of damaged timber were harvested, the amount of damaged timber harvested fell for the third time in a row, by 5.9 million cubic metres (13.2 %) compared to 2022. Representative areas of natural forest habitats and valuable ecosystems are identified and some of these have been given a protection status. Nature conservation and species protection as well as biodiversity conservation are already incorporated in the German legislation both at federal and state level. The Federal nature conservation act regulates the conferral of protection status on monuments of natural heritage and natural monuments. Protection measures are effective and sufficient, as several laws do exist, and intensive mapping takes place.
The risk designation is "Low Risk".

| Risk Rating | Low Risk |
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| Germany Forest and TOF | Indicator |
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| 2.2.12 | Genetically modified trees shall not be used. |
| Supply Base Verifiers | • Forstvermehrungsgutgesetz (FoVG) ("Act of Forestry Reproductive Material") §4, 3<br>• Gentechnikgesetz (GenTG) ("Genetic Engineering Act") §§14-16 (release, bringing into the market, admissions)<br>• Further overview over German Acts, laws and decrees concerning genetic engineering<br>• Overview over European Law<br>• Prohibition of GMO cultivation<br>• Genetic engineering in Germany<br>• Expert interviews in forest research centres and federal authorities (e.g. for consumer protection)<br>• Detailed report of research project with GMO trees (17/04/2003)<br>• FSC Controlled Wood Risk Assessment for Germany, assigned code: FSC-NRA-DE V1-1 (approved 03.04.2018, updated 31.07.2020) |
| Risk Rating justification | Laws and acts in Germany strictly regulate the use of GMO species in Germany. GMO is an important topic in agriculture, so the regulation of transport, agricultural use, or commercial use. All regulations are also binding for forest management activities.<br>In German forestry GMOs have no importance at all. This is strictly regulated by the mentioned laws and acts and the long-term objectives in forestry, which makes the use of GMOs unsecure and uninteresting. There is no relevant sign of motivation for using GMOs by German forest owners. Interviewed experts stated that, to receive possible gains from GMO trees, it would be required to do research on GMOs as well as to put them into tests in experiments under natural conditions on a large scale over several decades. It is also unclear what the effects of climate change will be and how the tree species could react. Against this background GMOs in German forestry are irrelevant and in addition, the existing legislation calls for strict regulation and supervision. The strict legislation prohibiting and limiting the use of GMO in agriculture as well as in forestry also reflects the negative and sceptical attitude of the German population towards GMOs. The GMO lobby in Germany is negligible. There is no prohibition in Germany. The commercial use of GM trees is regulated by law and requires a permit, which is preceded by an inspection, including consideration of the reasons for the use of GM trees. Regulated in the Act of Forestry Reproductive material (Forstvermehrungsgutgesetz, FoVG), Genetic Engineering Act (Gentechnikgesetz, GenTG) and European Law, here mainly EU-guideline 2001/18. No source of the unauthorized use of genetically modified trees was found in Germany, since laws, controls and measures are effectively enforced. There are some cases linked to agricultural activities, but these are |

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| | individual cases, as the legislation in Germany is strict and the social and political attitude towards genetic modified organisms is negative.<br>Commercial use does not have any relevance in the German forestry sector. According to the Expert interviews, but also based on investigations, scientists come to the result that the use of GMOs in forestry in Germany makes no sense. The costs are too high, and the negative environmental impacts are unknown. The precautionary approach of the German Environmental legislation applies.<br>Four trials for research purposes since 1991, which have been strictly monitored by research centres (prevention of reproduction by bud control, daily monitoring of area, duty of documentation), are known.<br>There are licenses required for commercial use of genetically modified trees in form of FoVG (§4, 3 admission of original material) and GenTG (§§ 14-16 release, bringing into the market, admissions). Any use and release into the market must be registered and approved due to the requirement for assessment and monitoring.<br>There is no commercial use of GMO species in the area under assessment and other available evidence does not challenge a "Low Risk" designation. |
| **Risk Rating** | Low Risk |

| **Germany<br>Forest and TOF** | **Indicator** |
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| **3.1.1** | LULUCF emissions shall be accounted for through one of the following routes: Route A Feedstock may be sourced from a country of origin which is party to the Paris Agreement, and which has submitted a Nationally Determined Contribution to the United Nations Framework Convention on Climate Change (UNFCCC) covering carbon emissions and removals from agriculture, forestry and land use which ensure the changes in carbon stock associated with biomass harvest are counted towards the country's commitment to reduce or limit greenhouse gas emissions, or Route B Feedstock may be sourced from a country of origin which is party to the Paris Agreement and has national or sub-national laws in place (developed in accordance with Article 5 of the Paris Agreement and applicable in the area of harvest), to conserve and enhance carbon stocks and sinks, and provided there is evidence that reported LULUCF-sector emissions do not exceed removals, or Route C Feedstock may be sourced from a Supply Base where an assessment demonstrates that both the carbon stock is stable, and the forests' capacity to act as a carbon sink is stable or increasing over the long term. |
| **Supply Base Verifiers** | • SBP-endorsed REDII Level A risk assessment for Article 29(7) LULUCF<br>• Bundeswaldgesetz (BWaldG) vom 02. Mai 1975 (BGBl. I S. 1037) - "National Forest Act"<br>• Bundesklimaschutzgesetz (KSG) vom 12. Dezember 2019 (BGBl. I S. 2513) - "Climate Change Act"<br>• Klimaschutzplan 2050 - "Climate Action Plan"<br>• Bundesnaturschutzgesetz (BNatSchG) vom 29. Juli 2009 (BGBl. I S. 2542) - "Federal Nature Conservation Act"<br>• Erneuerbaren-Energien-Gesetz (EEG) vom 01. April 2000 - "Renewable Energy Act" |

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| | • The Land Use, Land-Use Change, and Forestry (LULUCF) Regulation (EU) 2018/841<br>• Common Agricultural Policy (CAP) of Germany<br>• Effort Sharing Regulation (ESR)<br>• National Forest Inventory Report 2022 |
| **Risk Rating justification** | Route A: Germany is party to the Paris Agreement, and which has submitted a Nationally Determined Contribution to the United Nations Framework Convention on Climate Change (UNFCCC) covering carbon emissions and removals from agriculture, forestry and land use which ensure the changes in carbon stock associated with biomass harvest are counted towards the country's commitment to reduce or limit greenhouse gas emissions |
| **Risk Rating** | Low Risk |

| **Germany Forest and TOF** | **Indicator** |
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| **3.2.1** | All feedstock sourcing shall be consistent with either of these two options: Option A. Feedstock may be sourced from Supply Bases where an assessment of the Supply Base shows that the forest carbon stocks are stable or increasing, or Option B. Feedstock may be sourced, if the assessment shows that the forest carbon stocks are declining in the Supply Base, provided that the decline is due to natural processes (fire, pests etc.), and sourcing of feedstock has the aim to recover feedstock that would otherwise be lost or to assist regeneration. |
| **Supply Base Verifiers** | • National Forest Strategy 2020<br>• Bundeswaldinventur IV (BMEL, 2024)<br>• Forest Condition Report (2023) |
| **Risk Rating justification** | Option A: The National Forest Strategy 2020 provides a comprehensive framework for sustainable forest management in Germany, aligning with broader environmental goals. A key objective of the strategy is to enhance the carbon sequestration capacity of forests. It outlines specific measures such as promoting reforestation and afforestation, improving forest structure, and implementing sustainable harvesting techniques. These measures are designed to ensure that forest carbon stocks are maintained or increased. Accurate assessment and monitoring of forest carbon stocks are essential for ensuring compliance with sustainability principles. Advanced technologies such as remote sensing, satellite imagery, and LiDAR are used to measure and monitor carbon stocks in forests. These tools provide detailed data on tree biomass, soil carbon, and dead organic matter, which are critical components of forest carbon stocks. Recent data from the Federal Ministry of Food and Agriculture (Bundesministerium für Ernährung und Landwirtschaft, BMEL) indicate that Germany's forests store approximately 2,2 billion tonnes of carbon (soil included). This significant carbon reservoir is a testament to the effectiveness of Germany's sustainable forest management practices. 1,184 million tonnes of carbon (108 tonnes of carbon per hectare) are currently (2022) sequestered in the living trees (above and below ground) in |

Germany's forests. Dead wood contains 46.1 million tonnes of carbon (4.2 tonnes of carbon per hectare). The National Forest Inventory and the Carbon Inventory provide the data basis for estimating the carbon stocks for living biomass and deadwood. Soil modelling based on the results of the soil condition survey estimates a further 936 mio t of carbon in litter and mineral soil. This means that a total of around 2,200 million tonnes of carbon (197.4 tonnes of carbon per hectare) is stored in the forest. The carbon stock of living biomass in the forest has increased by 1 % compared to the last BWI 2012.

When comparing this recent data to the past five years, several trends and changes become evident. In the period from 2018 to 2022, Germany's forest carbon stocks also showed signs of stability and gradual increase, but with notable fluctuations due to various environmental and management factors. In 2018, Germany's forest carbon stock was estimated to be around 1,15 billion tonnes. Over the following years, there was a slight but consistent increase, reaching approximately 1,2 billion tonnes by 2023. This incremental growth reflects the positive impact of sustainable forest management practices, such as selective logging, reforestation, and natural regeneration efforts.

Compared to the data from the National Forest Inventory I and II, the increase of carbon stock is even more remarkable.

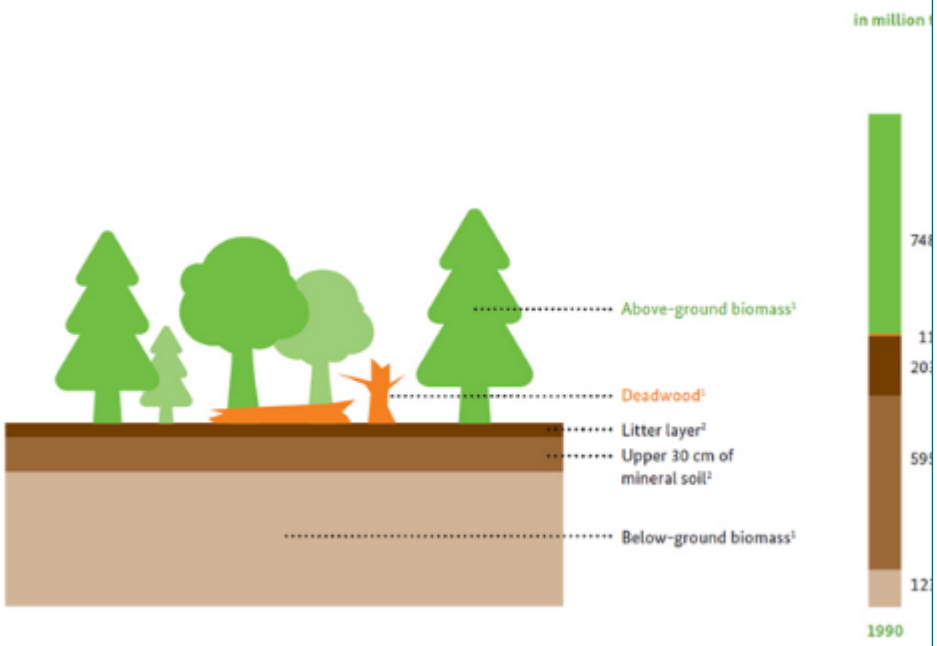


Figure 10: Data from the National Forest Inventories (Wellbrock et al., 2014)

The confirmed increase in Germany’s forest carbon stocks is a clear indicator of the country’s successful sustainable forest management practices. Through robust legal frameworks, strategic initiatives like the National Forest Strategy 2020, extensive reforestation efforts, and the adoption of certification schemes, Germany has made significant progress in enhancing its forest

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| | carbon sequestration capacity.<br>The indicator is assessed as "Low Risk". |
| **Risk Rating** | Low Risk |

| Germany<br>Forest and TOF | Indicator |
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| **3.2.2** | Primary feedstock shall not be sourced from forest areas where site productivity is low and, according to local definitions or norms, the areas are classified as low-productive or difficult to regenerate. |
| **Supply Base Verifiers** | • Bundeswaldgesetz (BWaldG) vom 02. Mai 1975 (BGBl. I S. 1037) - “National Forest Act"<br>• FSC Controlled Wood Risk Assessment for Germany, assigned code: FSC-NRA-DE V1-1 (approved 03.04.2018, updated 31.07.2020)<br>• Bundesnaturschutzgesetz (BNatSchG) vom 29. Juli 2009 (BGBl. I S. 2542) - “Federal Nature Conservation Act”<br>• National Forest Strategy 2020<br>• Waldgesetz für das Land Schleswig-Holstein (Landeswaldgesetz, LWaldG) vom 05. Dezember 2005 |
| **Risk Rating justification** | The German Forest provides a vital and sustainable source of feedstock, supported by a robust legal framework and adherence to sustainable management principles. Primary feedstock shall not be sourced from forest areas classified as low-productive or difficult to regenerate. Low-productive areas are those where site productivity, defined as the capacity of a site to produce biomass or timber, is significantly limited due to poor soil quality, water scarcity, or extreme climatic conditions. These areas often exhibit minimal annual growth rates and are identified through local definitions, site assessments, or forest management norms. For example, in Schleswig-Holstein, the State Forest Act (Landeswaldgesetz Schleswig-Holstein) and the Forest Development Plan (Waldentwicklungsplan) play a key role in identifying and protecting low-productive sites. Examples include inland dunes with nutrient-poor soils, such as those near the Lüneburg Heath; peatlands like Königsmoor, which are difficult to regenerate and prioritized for conservation; and coastal areas exposed to salinity and strong winds, such as those along the North Sea coast. These areas are managed under conservation-oriented principles to ensure long-term ecological stability. These laws ensure that forest management practices are adapted to the ecological capacities of each site, preventing degradation, and promoting long-term sustainability.<br>The National Forest Strategy 2020 outlines Germany's vision for sustainable forest management. This strategy emphasizes the necessity of adapting forest management practices to site-specific conditions to avoid compromising forest health and productivity. It provides guidelines for maintaining forest productivity and regeneration capacity, essential for preventing the overuse of low-productive areas. The strategy also advocates |

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| | for the use of forest certification schemes such as FSC and PEFC to ensure adherence to sustainable practices.<br>In practice, the prohibition on sourcing primary feedstock from low-productive areas is enforced through detailed forest management plans. These plans must include assessments of site productivity and regeneration potential, helping forest managers identify areas where logging and biomass extraction should be limited or avoided. This approach ensures that forest operations do not compromise the ecological integrity of these areas.<br>Several examples illustrate how Germany effectively implements this principle. The Eifel National Park, for instance, includes areas deemed low-productive due to rocky soils and steep slopes. These regions are shielded from logging activities to preserve their natural state and biodiversity. The park's management plan focuses on conservation and natural regeneration, ensuring these low-productive areas remain undisturbed. In the Black Forest, forest management practices are adapted to the area's diverse productivity levels. Low-productive sites, such as those with poor soil quality or difficult terrain, are managed with conservation in mind, avoiding intensive harvesting and emphasizing natural regeneration processes. Many private forest owners in Germany follow certification standards that include guidelines on avoiding low-productive areas. FSC-certified forests, for example, must maintain ecological functions and avoid exploiting areas where site productivity is low, ensuring sustainable forest management across various ownership structures.<br>Therefore, this indicator is assessed as "Low Risk" |
| **Risk Rating** | Low Risk |

| **Germany Forest and TOF** | **Indicator** |
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| **3.2.3** | feedstock shall not be sourced from forest areas in the Supply Base which, according to local definitions or norms, are classified as having combined attributes of high carbon stocks and high conservation value (HCV). |
| **Supply Base Verifiers** | • Renewable Energy Directive (RED) 2018/2001<br>• European Green Deal<br>• EU Biodiversity Strategy<br>• Bundeswaldgesetz (BWaldG) vom 02. Mai 1975 (BGBl. I S. 1037) - “National Forest Act"<br>• FSC Controlled Wood Risk Assessment for Germany, assigned code: FSC-NRA-DE V1-1 (approved 03.04.2018, updated 31.07.2020)<br>• Bundesnaturschutzgesetz (BNatSchG) vom 29. Juli 2009 (BGBl. I S. 2542) - “Federal Nature Conservation Act”<br>• National Forest Strategy 2020 |
| **Risk Rating justification** | In Germany, the term "high carbon stock" (HCS) forests is not commonly used as a formal classification in national forest management or environmental policy. Instead, it is more often associated with international |

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| | standards and conservation practices, particularly in tropical regions, where it identifies forests with high carbon storage capacity for conservation and climate mitigation. In contrast, German forest classification is based on ecological and management characteristics rather than explicitly on carbon stock alone. However, carbon sequestration is an integral aspect of Germany's forest policies. Germany monitors and reports forest carbon storage as part of its commitments under the United Nations Framework Convention on Climate Change (UNFCCC).<br>The EU (e.g. RED II) considers high carbon stocks to be in wetlands, peatlands and forests. In the context of forest ecosystems, mature and old-growth forests have the highest carbon stocks, and are also important for biodiversity, especially those with a higher degree of naturalness.<br>However, high carbon stock has been observed to be independant of the degree of naturalness and the maximum live carbon can be reached at earlier stages than old-growth stage although structural complexity does pplay into the maintenance of high carbon storage. The European Green Deal and the EU Biodiversity strategy for 2030 emphasise the need to protect the remaining primary and old-growth forests overall.<br>In Germany, there is no official definition for ‘old-growth forests’ or ‘primeval forests’. In general, an old-growth forest is a forest that has developed naturally over a very long period of time without significant human intervention. Such forests are characterised by a high degree of structural and species diversity, including different ages of trees and a considerable proportion of deadwood. In Germany, true primeval forests are extremely rare, as almost all forest areas have been influenced by humans at some point. Nevertheless, there are some near-natural forests that have characteristics of primeval forests, such as the Hainich National Park in Thuringia or the Jasmund National Park on the island of Rügen. The old-growth forests can be recognized by several characteristics. They have a diverse age structure with very old trees, often over 200 years, alongside younger ones. A significant presence of deadwood, both standing and fallen, provides habitats for fungi, insects, and mosses. These forests exhibit natural dynamics with minimal human intervention, allowing regeneration through natural seeding rather than replanting. Forest ecosystems in Germany are categorized based on biomes, such as temperate forests, and specific forest types, such as beech forests or spruce monocultures. Older, unmanaged, or naturally regenerating forests generally exhibit higher carbon stocks compared to younger or intensively managed stands. While not directly equivalent to the HCS framework, Germany employs classifications that emphasize ecological value and carbon storage, including Natura 2000 sites protected under EU biodiversity conservation policies, which often overlap with high carbon stock forests due to their ecological importance and minimal disturbance; natural forest reserves, which are unmanaged forests maintained for biodiversity and ecological research and frequently meet high carbon storage criteria because of their maturity and lack of human intervention; and old-growth forests, which, although rare in Germany, are recognized for their significant carbon storage and biodiversity value.<br>Protected areas exist in various categories, both nationally and |

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| | internationally, to preserve biodiversity, landscapes, and natural ecosystems. Areas with a high conservation value are of particular importance due to their rich biodiversity, presence of rare or endangered species, and crucial ecological functions. These areas often serve as essential habitats, migration corridors, or natural carbon sinks, such as named wetlands and old-growth forests. Their protection is vital for maintaining ecosystem balance, supporting wildlife populations, and mitigating climate change. Germany has a comprehensive system of protected areas, each serving a specific role in conservation. Nature reserves (Naturschutzgebiete, NSG) represent the strictest form of protection, where human activities are highly restricted to safeguard vulnerable species and ecosystems. Landscape protection areas (Landschaftsschutzgebiete, LSG), while less restrictive, aim to conserve the natural beauty and ecological integrity of a region while permitting controlled agricultural and recreational activities. National parks (Nationalparks, NP) cover large areas where nature is left to develop with minimal human interference, allowing only regulated tourism and scientific research. Biosphere reserves (Biosphärenreservate) are recognized by UNESCO and integrate conservation with sustainable development, dividing the area into core zones with strict protection, buffer zones with limited activities, and transition zones where environmentally friendly economic practices are encouraged. Nature parks (Naturparks) balance conservation with tourism and education, promoting sustainable recreation while allowing traditional land use.<br>In addition, Germany protects smaller but ecologically valuable areas. Protected landscape components (Geschützte Landschaftsbestandteile) include specific natural structures such as hedgerows, small wetlands, or old trees that play a role in local biodiversity and for the sourcing for trees outside forests. Natural monuments (Naturdenkmale) protect individual features like ancient trees, rock formations, or caves with unique ecological or cultural significance. Legally protected biotopes (Gesetzlich geschützte Biotope) include certain habitat types that are automatically protected under German law, such as bogs, heathlands, or natural streams.<br>On a European level, Germany participates in the Natura 2000 network, which provides a framework for protecting high-value conservation areas. This includes Fauna-Flora-Habitat (FFH) sites, which focus on preserving rare species and ecosystems, and Special Protection Areas (SPA) that specifically safeguard wild birds and their habitats. These sites are designated based on scientific criteria and play a crucial role in maintaining Europe's biodiversity.<br>Internationally, several conservation frameworks ensure the protection of ecologically valuable areas. UNESCO designates natural World Heritage Sites for their exceptional ecological significance, ensuring strict preservation measures. Biosphere Reserves, also under UNESCO, serve as models for sustainable coexistence between humans and nature. The Ramsar Convention protects wetlands of global importance, recognizing their role in biodiversity conservation, water regulation, and climate stability. Additionally, the International Union for Conservation of Nature (IUCN) classifies protected areas into six categories, ranging from strict nature reserves with minimal |

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| | human interference to regions where sustainable resource use is permitted. These international designations help reinforce national protection efforts and ensure the long-term preservation of areas with a high conservation value. Furthermore, the Federal Forest Act (Bundeswaldgesetz, BWaldG) and state-specific forest laws emphasize sustainable forest management and conservation. These laws, combined with the country's commitment to the European Union's Natura 2000 network, ensure the protection of the most seriously threatened habitats and species across Europe, including forested regions identified as having high conservation value and significant carbon stocks.<br>The prohibition on sourcing primary feedstock from high carbon stock and HCV areas is implemented through detailed management plans and certification schemes. Forest management plans in Germany must include assessments of carbon stocks and conservation values, identifying areas where logging and biomass extraction are prohibited or strictly controlled. Certification schemes such as FSC and PEFC require forest managers to identify and protect HCV areas and high carbon stock regions within their management units. For instance, FSC-certified forests must maintain the ecological integrity of HCV areas and ensure that any harvesting activities do not deplete high carbon stocks.<br>Many private forest owners in Germany follow certification standards like FSC and PEFC, which require the protection of HCV and high carbon stock areas, ensuring that feedstock sourcing does not compromise these critical areas.<br>In addition, The Forest Inventory System plays a critical role in identifying high-carbon stock forests with high conservation values. Conducted by the Federal Ministry of Food and Agriculture (BMEL) through its subordinate agency, the Thünen Institute, this system collects comprehensive data on forest composition, structure, and carbon content. Using this information, authorities can identify and monitor forests with significant carbon storage potential, informing sustainable management practices and conservation priorities. Additionally, sustainable forest management in Germany is regulated by the Forest Act and certification systems such as PEFC and FSC, which ensure sustainable forest management, though they do not specifically target HCS forests.<br>Within carbon accounting, forests are monitored for their carbon storage capacity at the national level, such as through the Climate Action Plan 2050 and the National Inventory Report under the UNFCCC. Protected areas like Natura 2000 sites or nature conservation areas often include forests that are significant carbon stores and may overlap with HCS forests, as they are typically old, undisturbed, and species-rich. These conservation measures help preserve carbon-rich forests. Even outside designated protected areas, "best practice" forestry encourages leaving old forests intact wherever possible. Old forests, characterized by mature trees, rich biodiversity, and significant carbon storage, are often managed under frameworks that prioritize non-intervention. This approach aligns with the philosophy of “close-to-nature forestry” (naturnahe Waldwirtschaft), which seeks to emulate natural processes and maintain forest ecosystems' resilience and functionality. For example, old-growth forests are frequently excluded from |

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| | timber production plans and are left to develop naturally, enhancing their capacity to store carbon and support diverse habitats. By leaving these forests untouched, managers not only contribute to carbon sequestration but also ensure the long-term stability and health of the broader forest ecosystem. Control authorities and forestry experts further promote the preservation of old forests by providing guidance and incentives. Forest owners may receive subsidies or financial support under programs that reward conservation-oriented management, reinforcing the economic viability of leaving high-carbon-stock forests undisturbed (e.g. see indicator 2.1.1). While Germany has made significant strides in protecting high carbon stock and HCV areas, challenges remain, such as balancing economic interests with conservation goals and managing the impacts of climate change on forest ecosystems. Therefore, it's necessary to classify the forest area under assessment as "Specified Risk". |
| **Risk Rating** | Specified Risk |

| **Germany Forest and TOF** | **Indicator** |
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| **3.3.1** | Feedstock sourcing shall be in compliance with the principles of cascading use, high quality stem wood shall not be used as feedstock if it is in substantial demand for long-lived products in the Supply Base. |
| **Supply Base Verifiers** | • Bundeswaldgesetz (BWaldG) vom 02. Mai 1975 (BGBl. I S. 1037) - “National Forest Act”<br>• Erneuerbaren-Energien-Gesetz (EEG) vom 01. April 2000 - "Renewable Energy Act"<br>• FSC Controlled Wood Risk Assessment for Germany, assigned code: FSC-NRA-DE V1-1 (approved 03.04.2018, updated 31.07.2020)<br>• Rahmenvereinbarung für den Rohholzhandel in Deutschland (RVR) - "Framework agreement for the raw timber trade in Germany |
| **Risk Rating justification** | Germany's forestry sector is governed by principles that ensure the sustainable and efficient use of forest resources. One key principle is the cascading use of biomass, which prioritizes the use of high-quality stem wood for long-lived products over its use as feedstock for energy production or other short-term applications. This approach maximizes the value derived from forest resources and contributes to both economic and environmental sustainability.<br>The cascading use principle is a hierarchical approach to utilizing biomass, particularly wood, to ensure its most efficient and sustainable use. According to this principle, wood should be used in the following order of priority: |

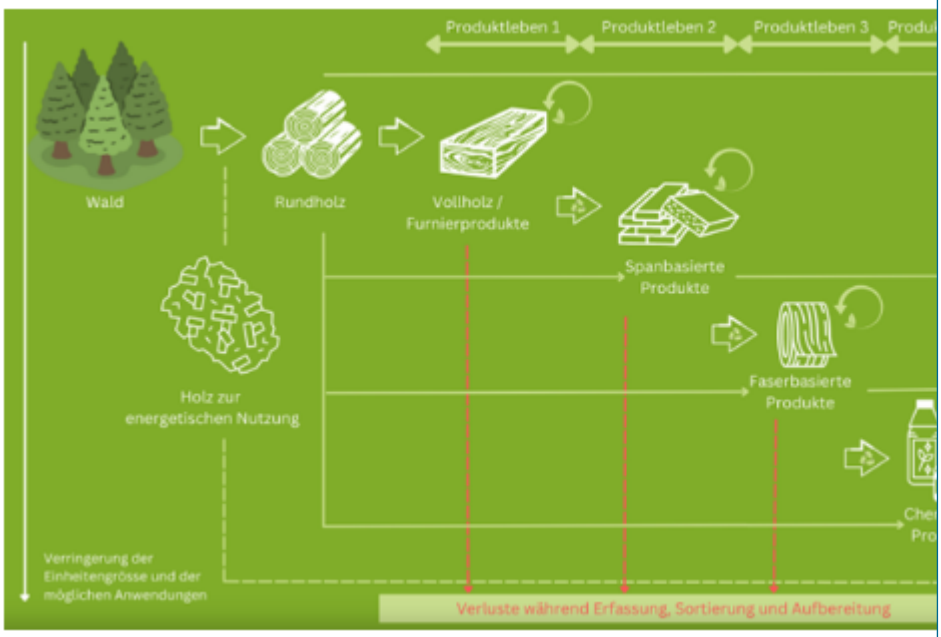


Figure 11: Cascade principle of wood (changed by WaldSchweiz from Höglmeier, 2015)

Material use in long-lived products, recycling, and energy production. High-quality stem wood is first used for products that have a long lifespan, such as construction materials, furniture, and other durable goods. These products sequester carbon for extended periods and provide significant added value. After the end of the initial product's life cycle, the material should be recycled and used in secondary products. Only when the material can no longer be recycled, it should be used for energy production through processes like combustion or bioenergy generation. This hierarchy ensures that the highest possible value is extracted from wood resources, both economically and environmentally.
Germany's commitment to the cascading use principle is supported by various laws and regulations. The Federal Forest Act (Bundeswaldgesetz, BWaldG) and state-specific forest laws promote sustainable forest management practices, including the efficient use of forest resources. Additionally, the Renewable Energy Sources Act (Erneuerbare-Energien-Gesetz, EEG) and the Bioeconomy Strategy outline policies that align with the cascading use principle. The EEG, for example, provides guidelines and incentives for the use of biomass in energy production, emphasizing the use of residues and low-quality wood rather than high-quality stem wood.
Adhering to the cascading use principle has significant economic and environmental benefits. By prioritizing the use of high-quality stem wood for long-lived products, the forestry sector can generate greater economic value, as it is now (2024). Products like timber for construction and high-end furniture have higher market value compared to energy production. Of course, it is difficult to predict where the prices of timber will be in the next few years' time in purely price terms. In general, forecasts over such long

periods of time are very difficult to make and also involve a considerable amount of speculation.

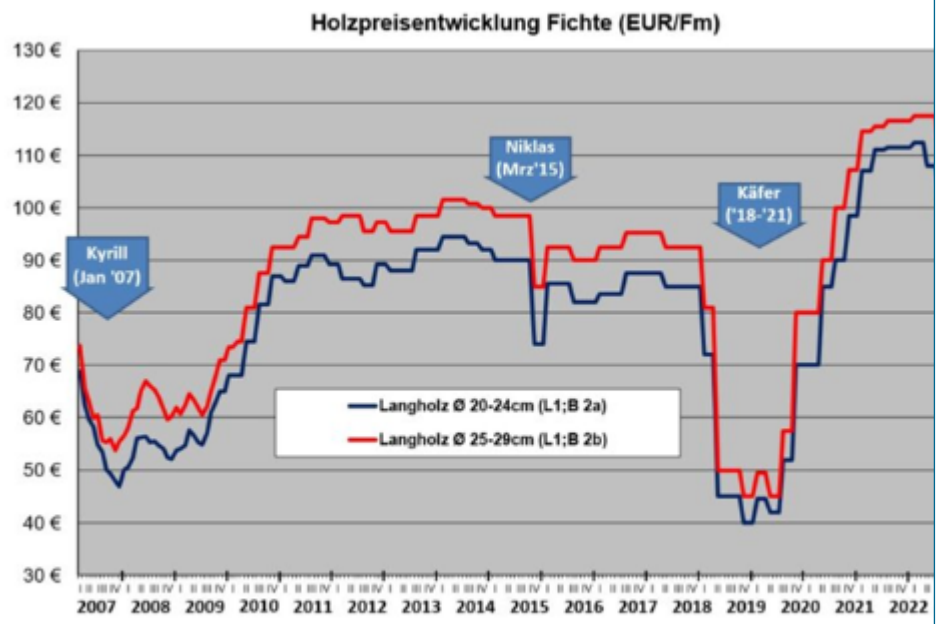


Figure 12: Price of spruce, dm 20 - 24 cm blue and dm 25-29 cm red (Wald-Prinz, 2024)

The wood market is volatile and influenced by various factors. In the graphic above is the Index price for spruce roundwood with diameters up to 29 cm. Since 2008 is an ongoing increase visible with a crash during the bark beetle calamity (2018 – 2022). Only during that time, it would have been economic valuable to use this roundwood for energy production. At the same time the prices for roundwood with lower quality specifications, making it suitable for energy production, dropped as well. In some places even below the symbolic 1 € / scbm. Therefore, the gap between the prices remained “high”. In addition, it was even necessary to utilise the wood thermally sometimes, as the timber industry could no longer absorb all the logs (the sawmills, pulp mills and board factories had already been working nonstop) and for phytosanitary reasons, the wood was not allowed to remain in the forest; the only solution was thermal utilisation. Furthermore, the domestic timber industry is really strong. There are over 1,600 sawmills in Germany with a combined planned cutting of approx. 34 mio scbm / year, about 6 pulp mills which produce around 2,2 mio t of pulp (means over 4,5 t of wood are necessary) and a wood-based panels industry with a turnover with more than 5 bn €/year. In the last few years Germany important about 6 mio cbm of industrial grade stemwood. So, when there is competition to the energy sector this industry is always in the position to make better offers to the forest owners. Next, ethics play an important role, experience has shown that it matters for many forest owners’ what happens with their wood (e.g. lots of

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| | forest owners are opposed to export outside of Europe, even when they getting paid better). Also, Dalgas makes sure that the wood is used for its right purpose through its diversified customer structure. In general, at least from a purely fundamental and technical perspective, there are no signs that the price of wood will plummet, because the calamity situation in Germany has become significantly better. It can therefore be predicted with certain reservations that the price of wood will be higher in 10 years' time than it is today.<br>Long-lived wood products act as carbon sinks, storing carbon dioxide absorbed by trees for extended periods. This contributes to climate change mitigation by reducing the overall carbon footprint. Efficient use of wood resources through cascading use reduces waste and ensures that materials are utilized to their full potential. This enhances the sustainability of the forestry sector.<br>In practice, the cascading use principle is implemented through various strategies and practices in the forestry and wood industry. Forest management plans prioritize the harvesting of wood based on its intended use. High-quality stem wood is allocated for sawmills and manufacturers of long-lived products, while lower quality wood is directed towards pulp, paper, and bioenergy production. Collaboration between forestry, woodworking, and energy sectors ensures that the cascading use principle is adhered to. This includes agreements and guidelines on the sourcing and allocation of wood resources. Forest certification schemes such as the Forest Stewardship Council (FSC) and the Programme for the Endorsement of Forest Certification (PEFC) promote sustainable forest management practices that align with the cascading use principle. These certifications require adherence to guidelines that prioritize the efficient and sustainable use of wood.<br>Several initiatives and case studies in Germany illustrate the successful implementation of the cascading use principle. The construction industry in Germany has seen a significant increase in the use of timber for building homes and commercial structures. High-quality stem wood is used for beams, flooring, and other structural components, ensuring long-term carbon storage and high economic value. German furniture manufacturers prioritize the use of high-quality wood for producing durable and high-end furniture. This not only provides economic benefits but also aligns with sustainable practices by prolonging the life cycle of the wood. Bioenergy plants primarily use wood residues, such as sawdust and wood chips, rather than high-quality stem wood. This practice aligns with the cascading use principle by ensuring that only low-quality wood or waste materials are used for energy production.<br>Furthermore, through RED III, Germany will emphasize the cascading use of wood and its thermal applications to ensure sustainability and efficiency into national law. The cascading principle prioritizes using wood for the highest-value applications, such as construction materials or furniture, before recycling or reusing it for products like paper and, finally, using residues or end-of-life products for energy. The Renewable Energy Directive III (RED III), formally known as Directive (EU) 2023/2413, entered into force on 20 November 2023. EU Member States are required to transpose its provisions into national law by 21 May 2025. It says that Member States must design |

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| | support schemes for bioenergy that align with the cascading principle. This ensures that woody biomass is first utilized for higher-value material applications before being considered for energy production. Also, the directive prohibits financial support for energy produced from "industrial-grade roundwood," directing subsidies away from high-quality wood suitable for material uses. The Member States are tasked with defining "industrial-grade roundwood" and can establish rules for case-by-case decisions on using roundwood for energy. Derogations are permitted when no other economically viable or environmentally appropriate uses exist, considering national specificities.<br>Germany's approach to forest conservation is comprehensive, integrating legal frameworks, sustainable management practices, and continuous enhancement of conservation efforts. By focusing on key species, habitats, ecosystems, and areas of high conservation value, Germany ensures the preservation and enhancement of its forest biodiversity and ecosystem services. These efforts not only safeguard the ecological integrity of forests but also contribute to global conservation goals, setting a benchmark for sustainable forest management worldwide.<br>Germany's forestry sector exemplifies sustainable resource management through adherence to the cascading use principle. By prioritizing the use of high-quality stem wood for long-lived products, Germany maximizes economic value, enhances carbon sequestration, and ensures resource efficiency. This approach is supported by a robust legal and regulatory framework, industry collaboration, and certification schemes. The successful implementation of these principles in various sectors, from construction to furniture manufacturing and bioenergy, underscores Germany's commitment to sustainable forestry and resource management.<br>Therefore, this indicator is assessed as "Low Risk". |
| **Risk Rating** | Low Risk |

| **Germany Forest and TOF** | **Indicator** |
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| **4.1.1** | Freedom of association and the right to collective bargaining shall be respected in the workplace. |
| **Supply Base Verifiers** | • ILO Fundamental Principles and Rights at work<br>• Observation (CEACR) - adopted 2014, published 104th ILC session (2015) Right to Organize and Collective Bargaining Convention, 1949 (No. 98) - Germany (Ratification: 1956)<br>• Answer from BDF to request of FSC Germany 14.11.2016<br>• Answer from IGBAU (forest workers union) representative on the board of FSC Germany as of 16.11.2016<br>• FSC Controlled Wood Risk Assessment for Germany, assigned code: FSC-NRA-DE V1-1 (approved 03.04.2018, updated 31.07.2020)<br>• Betriebsverfassungsgesetz (BetrVG) vom 11. Oktober 1952 (BGBl I S. 681) - "Works Constitution Act" |

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| **Risk Rating justification** | No information was found that proved that labour rights as well as the ILO Fundamental Principles and Rights at work are at risk in Germany.<br>Applicable legislation for the area under assessment covers the key principles recognized in the ILO Fundamental Principles and Rights at work (which are recognized as: freedom of association and right to collective bargaining; elimination of forced and compulsory labour; elimination of forced and compulsory labour; eliminations of discrimination in respect of employment and occupation; and effective abolition of child labour), and other available evidence does not challenge a "low risk" designation.<br>The observation (CEACR) document contains no information that leads to a "specified risk" designation in Germany regarding the ILO Convention C87.<br>Since 1972 exists the Work Constitution Act (Betriebsverfassungsgesetz) that guarantees the right to form an employee organization in every company. It is by this law prohibited to prevent such forms of organizations and the existing level of enforcement is high in Germany.<br>According to the Government's reports, employees in the public service (Arbeitnehmer des öffentlichen Dienstes), e.g. teachers employed under collective agreements in the education services of the counties, do enjoy the right to bargain collectively, whereas civil servants (Beamte) do not have the right to bargain collectively because the legislative regulation of the civil service is a constitutionally endowed traditional principle of the civil service under article 33(5) of the Basic Law and because civil servants have the duty to exercise their function lawfully, impartially and altruistically. The Government stressed that, even for groups of civil servants, collective bargaining which is aimed at concluding collective agreements is incompatible with the principle of the legislative regulation of the civil service, and that this remains valid regardless of the outcome of wage negotiations by employees in the public service.<br>So, there is a specified risk of exclusion of the right to collective bargaining for foresters who are civil servants.<br>The different status groups "tariff workers" and "civil servants" are not considered by the BDF as a core problem regarding the risk assessment of "controlled wood". The issue is of low relevance for IG BAU.<br>Rights like freedom of association and collective bargaining are upheld, except for foresters who are civil servants. Experts of the Federation of German Foresters don't consider this to be a core problem, but as negligible risk.<br>Other available evidence does not challenge a "low risk" designation.<br>Therefore, the risk designation for this indicator is "Low Risk" |
| **Risk Rating** | Low Risk |

| **Germany<br>Forest and TOF** | **Indicator** |
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| **4.1.2** | Forced or compulsory labour shall not be used. |
| **Supply Base Verifiers** | • ILO Fundamental Principles and Rights at work |

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| | • FSC Controlled Wood Risk Assessment for Germany, assigned code: FSC-NRA-DE V1-1 (approved 03.04.2018, updated 31.07.2020) |
| **Risk Rating justification** | Germany has ratified all the 8 Fundamental ILO Conventions that represent principal rules on labour law and there are no known conflicts relating to forced or compulsory labour in Germany. The labour rights are respected, including rights as specified in ILO Fundamental Principles and Rights at work.<br>No information was found that proved that labour rights as well as the ILO Fundamental Principles and Rights at work are at risk.<br>The applicable legislation for the area under assessment covers the key principles recognized in the ILO Fundamental Principles and Rights at work (which are recognized as: freedom of association and right to collective bargaining; elimination of forced and compulsory labour; eliminations of discrimination in respect of employment and occupation; and effective abolition of child labour), and other available evidence does not challenge a "low risk" designation.<br>In Germany, there is a steadfast commitment to upholding human rights and ensuring fair labour practices. As such, it is unequivocally affirmed that there is no forced labour within the country's borders. Germany strictly adheres to international conventions and domestic laws that prohibit any form of coerced or involuntary labour. The fundamental rights and dignity of all individuals are safeguarded, and robust legal frameworks are in place to prevent and address any instances of forced labour. Through collaborative efforts between government agencies, civil society organizations, and international partners, Germany remains vigilant in upholding these principles.<br>Therefore, the indicator was assessed as "Low Risk" |
| **Risk Rating** | Low Risk |

| **Germany<br>Forest and TOF** | **Indicator** |
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| **4.1.3** | Child labour shall not be used. |
| **Supply Base Verifiers** | • Kinderarbeitsschutzverordnung (KindArbSchV) vom 23. Juni 1998 (BGBI. I S. 1508 - "Child Labour Protection Ordinance"<br>• ILO Fundamental Principles and Rights at work<br>• Jugendarbeitsschutzgesetz (JArbSchG) vom 12. April 1976 (BGBI I S. 965) - "Youth employment protection act"<br>• Convention 182 on Worst Forms of Child Labour<br>• Convention 138 on Minimum Age for Admissions to Employment, 1973<br>• Direct Request (CEACR) - adopted 2012, published 102nd ILC session (2013) Worst Forms of Child Labour Convention, 1999 (No. 182) - Germany (Ratification: 2002) Article 7 (2)<br>• ILO Child Labour Country Dashboard<br>• Office of the United Nations High Commissioner for Human rights |

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| | (OHCHR), Committee on Rights of the child<br>• Global March Against Child Labour<br>• FSC Controlled Wood Risk Assessment for Germany, assigned code: FSC-NRA-DE (approved 03.04.20218, updated 31.07.2020) |
| **Risk Rating justification** | There are no known conflicts relating to compulsory labour or child labour in Germany.<br>Germany signed the eight Fundamental International Labor Organization (ILO) Conventions (29, 87, 98, 105, 100, 111, 138, 182) which represents principal rules on labour law.<br>Further national laws covering minimum age, working hours, and working conditions of children are based on two legal foundations, namely Kinderarbeitsschutzverordnung (KindArbSchV) or Child Labour Protection Ordinance and Jugendarbeitsschutzgesetz (JArbSchG) or Youth Employment Protection Act.<br>No information was found that proved that labour rights as well as the ILO Fundamental Principles and Rights at work are a risk. Germany has ratified all the 8 Fundamental ILO Conventions that represent principal rules on labour law. The status on the ILO website for all 8 Conventions is 'in force'.<br>There are no known conflicts relating to compulsory or child labour in Germany. Germany does not feature in the Child Labour Country Dashboard.<br>There are no references to Germany regarding child trafficking, Germany has ratified the Convention on the rights of the child and scores "low risk" on the Child Labor Index (no data available). "FSC Germany is not aware of any instances of child labour or any violations of fundamental principles and rights of the ILO occurring at workplaces in the forestry sector in Germany" (FSC-STD-40-004 V3-1).<br>Applicable legislation for the area under assessment covers the key principles recognized in the ILO Fundamental Principles and rights at work (which are recognized as: freedom of association and right to collective bargaining; elimination of forced and compulsory labour; eliminations of forced and effective abolition of child labour), and the risk assessment confirms enforcement of applicable legislation.<br>Other available evidence does not challenge a "Low Risk" designation. |
| **Risk Rating** | Low Risk |

| **Germany<br>Forest and TOF** | **Indicator** |
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| **4.1.4** | Workers shall not be discriminated in hiring, remuneration, access to training, promotion, termination or retirement. |
| **Supply Base Verifiers** | • Allgemeines Gleichbehandlungsgesetz (AGG) vom 14. August 2006 (BGBI. I S. 1897, 1910) - "General Equal Treatment Act"<br>• Entgelttransparenzgesetz (EntgTranspG) vom 30. Juni 2017 (BGBI. I S. 2152) - "Pay Transparency Act"<br>• Kündigungsschutzgesetz (KSchG) in der Fassung der |

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| | Bekanntmachung vom 25. August 1969 (BGBl. I S. 1317) -"Dismissal Protection Act"<br>• FSC Controlled Wood Risk Assessment for Germany, assigned code: FSC-NRA-DE (approved 03.04.2018, updated 31.07.2020) |
| **Risk Rating justification** | German law explicitly prohibits discrimination in the hiring process. The General Equal Treatment Act (Allgemeines Gleichbehandlungsgesetz, AGG), which came into force in 2006, is a key piece of legislation that addresses this issue. The AGG ensures that job applicants are not discriminated against based on race, ethnic origin, gender, religion or belief, disability, age, or sexual orientation.<br>For example, if a company posts a job advertisement, it must avoid language that could be perceived as discriminatory. The AGG requires that all job applicants be evaluated solely on their qualifications and suitability for the position. Any violation of this can lead to legal consequences, including compensation claims from the affected individuals.<br>The principle of equal pay for equal work is a fundamental aspect of Germany's commitment to workplace equality. The Pay Transparency Act (Entgelttransparenzgesetz, EntgTranspG), which was enacted in 2017, aims to close the gender pay gap by ensuring transparency in remuneration. Under this law, employees have the right to inquire about the pay structure and the criteria used for determining their salary compared to colleagues of the opposite gender performing similar work. For instance, if an employee suspects that they are being paid less than a colleague of the opposite sex for the same work, they can request information on the pay levels and criteria used within their company. Employers are obliged to provide this information, thereby promoting fair and equal pay practices.<br>Equal access to training and professional development opportunities is crucial for career advancement. The AGG also covers non-discrimination in access to training. Employers are required to provide equal opportunities for training and development to all employees, regardless of their personal characteristics.<br>An example of this in practice would be a company offering a professional development program to its employees. The selection process for participation in this program must be based on objective criteria such as job performance and potential, rather than on discriminatory factors like gender or age.<br>Promotion decisions must be free from discrimination to ensure that all employees have an equal chance to advance in their careers. The AGG mandates that promotions be based on merit and performance rather than on any protected characteristic. For instance, if an employee feels they were overlooked for a promotion due to their race or gender, they can seek legal recourse under the AGG. The law requires employers to provide clear, objective criteria for promotions and to apply these criteria fairly to all employees.<br>The protection against unfair dismissal is another critical area covered by German law. The Dismissal Protection Act (Kündigungsschutzgesetz) |

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| | provides safeguards against unjust terminations. Under this law, terminations must be justified by valid reasons related to the employee's conduct, capability, or operational requirements of the business. Moreover, the AGG prohibits terminations based on discriminatory reasons. If an employee believes they have been dismissed due to discrimination, they can challenge the termination in court.<br>Discrimination in retirement policies is also addressed under German law. The AGG ensures that employees are not forced into retirement based on their age unless it is a justified occupational requirement. This provision ensures that employees can continue to work if they are capable and willing, without being subjected to arbitrary retirement based on age.<br>Germany's commitment to workplace equality is underpinned by comprehensive legislation that covers all aspects of employment, from hiring to retirement. The General Equal Treatment Act, the Pay Transparency Act, and the Dismissal Protection Act form the legal foundation for protecting employees from discrimination. These laws ensure that workers are treated fairly and equally, promoting a diverse and inclusive work environment.<br>Therefore, the risk is considered as "Low Risk". |
| **Risk Rating** | Low Risk |

| **Germany<br>Forest and TOF** | **Indicator** |
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| **4.1.5** | Wages paid to workers shall meet or exceed the legal minimum wage or where there is no statutory minimum wage industry norms shall be met or exceeded |
| **Supply Base Verifiers** | • Mindestlohngesetz (MiLoG) vom 11. August 2014 (BGBI: I S. 1348) - "Minimum Wage Act"<br>• Arbeitnehmer-Entsendegesetz (AEntG) vom 26. Februar 1996 (BGBI. I S. 227) - "Posted Workers Act"<br>• Schwarzarbeitsbekämpfungsgesetz (SchwarzArbG) vom 23. Juli 2004 (BGBI. I S. 1842) - "Act to Combat Illegal Employment"<br>• Arbeitnehmerüberlassungsgesetz (AÜG) vom 07. August 1972 (BGBI. I S. 1393) - "Temporary Employment Act" |
| **Risk Rating justification** | Germany has implemented a minimum wage policy to safeguard the welfare of its workforce. The nation employs a multifaceted approach to ensure that the minimum wage is paid accurately and eligible employees across various industries. Germany's commitment to ensuring fair compensation is fixed in the Minimum Wage Act (Mindestlohngesetz, MiLoG), enacted in 2015.<br>The primary responsibility for enforcing minimum wage compliance lies with the Customs Administration (Zoll), a branch of the Federal Ministry of Finance. This agency conducts regular inspections and investigations to monitor adherence to minimum wage regulations. Employers found violating minimum wage laws face severe penalties, including monetary fines and potential criminal charges.<br>Next to the MiLoG, there are further laws that guarantee the minimum wage, |

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| | like the Posted Workers Act (Arbeitnehmer-Entsendegesetz, AEntG, which governs the posting of workers in sectors covered by universally binding collective agreements, ensuring posted workers receive the same minimum wage and working conditions as local employees), the Act to Combat Illegal Employment (Schwarzarbeitsbekämpfungsgesetz, SchwarzArbG, which aims to combat illegal employment and undeclared work, including ensuring compliance with labour regulations such as minimum wage requirements) or the Temporary Employment Act (Arbeitnehmerüberlassungsgesetz, AÜG, which regulates temporary employment and includes provisions to ensure adequate wages and working conditions for temporary workers, including the minimum wage).<br>These laws form a legal framework aimed at ensuring compliance with the minimum wage and promoting fair working conditions for all employees in Germany.<br>In addition to enforcement measures, Germany prioritizes raising public awareness about minimum wage rights and responsibilities.<br>In general, the approach to enforcing minimum wage is characterized by the explained comprehensive legal framework, rigorous enforcement mechanisms and proactive efforts to educate and empower workers.<br>With the start of 2024, the minimum wage in Germany was raised to 12.41 Euros, making it one of the highest in Europe.<br>Also, the existing associations for subcontractors in the forestry sector are active to set up certifications for subcontractors to guarantee a standard for quality management including wages, e.g. DFSZ or RAL GZ 244.<br>Legislation and control mechanisms are in place and are constantly adapted.<br>Therefore, the risk for this indicator is considered as "Low Risk". |
| **Risk Rating** | Low Risk |

| **Germany<br>Forest and TOF** | **Indicator** |
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| **4.1.6** | Working hours shall comply with legal requirements. |
| **Supply Base Verifiers** | • Arbeitszeitgesetz (ArbZG) vom 06. Juni 1994 (BGBI. I S. 1170, 1171) - "Working Hours Act"<br>• FSC Controlled Wood Risk Assessment for Germany, assigned code: FSC-NRA-DE (approved 03.04.2018, updatd 31.07.2020) |
| **Risk Rating justification** | In Germany, working hours are strictly regulated to comply with legal requirements established to protect the health and well-being of employees. The primary legislation governing working hours is the Working Hours Act (Arbeitszeitgesetz, ArbZG), which sets clear limits and guidelines for both employers and employees.<br>Under the ArbZG, the standard working time for employees is capped at eight hours per day, which translates to a maximum of 48 hours per week over a six-day working week.<br>However, it is permissible for the daily working time to be extended to up to |

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| | ten hours, provided that within a six-month period (or within 24 weeks), the average working time does not exceed eight hours per day.<br>The law also stipulates mandatory rest periods and breaks to ensure employees have sufficient time to rest and recover. For instance, after working for six consecutive hours, employees are entitled to a minimum break of 30 minutes. If the working time exceeds nine hours, the break must be extended to at least 45 minutes. Additionally, there must be an uninterrupted rest period of at least 11 hours between the end of one working day and the beginning of the next.<br>Night work, defined as work performed between 11 PM and 6 AM, is subject to specific regulations. Employees engaged in night work for more than two hours are considered night workers and are entitled to health assessments and potential additional breaks. Employers must ensure that night workers do not exceed an average of eight hours per day over a reference period of one month.These regulations are enforced to prevent overworking and to promote a healthy work-life balance, which is crucial for maintaining the productivity and morale of the workforce. Employers who violate these laws face significant penalties, including fines and other legal sanctions. Compliance with these legal requirements is not only a legal obligation but also a measure to ensure a sustainable and healthy working environment.<br>The enforcement of the ArbZG is overseen by various labour authorities in Germany. These authorities conduct regular inspections and respond to complaints from employees regarding violations of working hour regulations. The Federal Institute for Occupational Safety and Health (Bundesanstalt für Arbeitsschutz und Arbeitsmedizin, BAuA) also plays a key role in researching and promoting compliance with these regulations.<br>Companies that violate the ArbZG can face substantial fines. In severe cases, criminal charges may also be pursued. In recent years, labour authorities have intensified their inspection activities to ensure compliance with the ArbZG. There are heightened inspections in industries that are particularly prone to violations. Also, there have been increased training and awareness programs for employers and employees to raise awareness about the legal regulations and the importance of their compliance.<br>Compliance with the ArbZG in Germany is ensured through a comprehensive approach that includes legal enforcement, employer diligence, regulatory oversight, and active participation from employees. By maintaining strict adherence to these regulations, Germany upholds its commitment to protecting workers' health and promoting fair working conditions.<br>Therefore, this indicator is assessed as "Low Risk". |
| **Risk Rating** | Low Risk |

| Germany<br>Forest and TOF | Indicator |
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| **4.1.7** | Workers shall have access to health care provisions, sickness benefits, retirement benefits, invalidity benefits, death benefits, and workers' compensation |

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| **Supply Base Verifiers** | • Sozialgesetzbuch V (SGB V) vom 20. Dezember 1988 (BGBl. I S. 2477) - "Social Code Book V"<br>• Entgeltfortzahlungsgesetz (EFZG) vom 26. Mai 1994 (BGBl. I S. 1014, 1065) - "Continued Payment of Wages Act"<br>• Sozialgesetzbuch VI (SGB VI) vom 18. Dezember 1989 (BGBl. I S. 2261) - "Social Code Book VI"<br>• Sozialgesetzbuch VII (SGB VII) vom 07. August 1996 (BGBl. I S. 1254) - "Social Code Book VII" |
| **Risk Rating justification** | Germany has a comprehensive social security system designed to provide workers with access to a range of benefits. This system is supported by various laws and regulations that ensure employees are protected and supported throughout their working lives and beyond.<br>In Germany, health care is considered a fundamental right, and all employees have access to comprehensive health care services. The foundation of this system is the Social Code Book V (Sozialgesetzbuch V, SGB V), which mandates health insurance for all employees. Under SGB V, employees are required to be covered by statutory health insurance (Gesetzliche Krankenversicherung, GKV) or a private health insurance scheme if their income exceeds a certain threshold. The GKV provides a wide range of medical services, including doctor visits, hospital care, medical treatments, and prescription medications. Employers and employees share the cost of health insurance premiums, ensuring that health care is accessible and affordable.<br>When employees fall ill and are unable to work, they are entitled to sickness benefits under the Social Code Book V. During the first six weeks of illness, employees receive continued payment of their full salary from their employer, as stipulated by the Continued Payment of Wages Act (Entgeltfortzahlungsgesetz, EFZG). If the illness extends beyond six weeks, the statutory health insurance takes over, providing sickness benefits (Krankengeld) amounting to 70 % of the employee's gross salary, up to a maximum limit. These benefits can be paid for up to 78 weeks within a three-year period for the same illness, ensuring that employees have financial support during extended periods of illness.<br>The German pension system is designed to provide financial security for workers in retirement. The primary legislation governing retirement benefits is the Social Code Book VI (Sozialgesetzbuch VI, SGB VI), which covers statutory pension insurance (Gesetzliche Rentenversicherung, GRV). Employees contribute to the GRV throughout their working lives, with both the employer and employee making contributions. Upon reaching the statutory retirement age, currently 67, employees are entitled to receive a retirement pension based on their earnings and the number of years they contributed to the system. The pension amount is calculated using a formula that considers the employee's lifetime earnings, ensuring that retirees receive adequate financial support.<br>If an employee becomes unable to work due to disability or chronic illness, they are entitled to invalidity benefits under the Social Code Book VI. The |

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| | statutory pension insurance provides disability pensions (Erwerbsminderungsrente) to individuals who are unable to work for health reasons. To qualify for these benefits, employees must have contributed to the pension system for a minimum period and meet medical criteria proving their inability to work. The amount of the disability pension is calculated similarly to the retirement pension but is adjusted based on the individual's remaining earning capacity and years of contribution.<br>In the event of an employee's death, the Social Code Book VI provides death benefits to support surviving dependents. These benefits include survivor's pensions (Hinterbliebenenrente) for spouses, registered partners, and dependent children. The survivor's pension is designed to replace a portion of the deceased employee's income, ensuring that their family members are financially supported. The amount of the survivor's pension depends on the deceased's contributions to the pension system and the number of eligible dependents.<br>Workers' compensation in Germany is governed by the Social Code Book VII (Sozialgesetzbuch VII, SGB VII), which covers statutory accident insurance (Gesetzliche Unfallversicherung, GUV). This insurance provides benefits to employees who suffer work-related injuries or occupational diseases. The GUV covers medical treatment, rehabilitation, and compensation for lost wages. If an employee is unable to return to work due to a work-related injury, they may receive a disability pension. In cases of fatal accidents, the insurance provides death benefits to the employee's dependents. Employers are required to contribute to the accident insurance scheme, ensuring that employees are protected without bearing the financial burden.<br>Therefore, this indicator is assessed as "Low Risk". |
| **Risk Rating** | Low Risk |

| **Germany<br>Forest and TOF** | **Indicator** |
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| **4.1.8** | Training shall be provided for all workers to allow them to implement the conditions set out in all elements of the SBP Standards relevant to their responsibilities. |
| **Supply Base Verifiers** | • Existing legislation<br>• Level of enforcement<br>• Internal audits<br>• Training records<br>• Training plans |
| **Risk Rating justification** | Generally, forest managers and workers in Germany have a high level of education. Basic training for skilled forest workers lasts three years and includes both practical placement and classroom education. The curriculum includes forest mechanization, ergonomics, health and safety, forestry techniques, biology, and economics. The ministry of education approves the curriculum.<br>Shorter and more specific courses are also available and even unskilled |

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| | forest workers and contractors typically attend one or more trainings every year. Foresters in Germany receive mandatory training in accordance with safety procedures and accident prevention. Dalgas is educating forest workers annually in cooperation with different partners.New techniques from forest research or non-governmental institutions like the Kuratorium für Wald- und Forstwirtschaft (KWF) are adapted, and new equipment is tested if it supports work safety. Also, first aid and first response are trained regularly Regular contractors are regularly invited to be educated.<br>Within the scope of existing certifications like PEFC, FSC and SBP annual educational measures are performed. This includes the mentioned safety trainings and education concerning work instructions regarding indicators mentioned in this template. Annual audits are performed by independent surveyors to check if the requirements of the mentioned certification schemes are met.<br>Therefore, this indicator is considered as "Low Risk". |
| **Risk Rating** | Low Risk |

| **Germany Forest and TOF** | **Indicator** |
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| **4.1.9** | Mechanisms shall be in place for resolving grievances and disputes in the workplace. |
| **Supply Base Verifiers** | • General Equal Treatment Act (Allgemeines Gleichbehandlungsgesetz, AGG<br>• Dalgas intranet |
| **Risk Rating justification** | Strong regulations are in place in Germany through Allgemeines Gleichbehandlungsgesetz (AGG) and other implemtations of EU regulation. Dalgas has also implemented a whistle blower policy and scheme. This is available through the company intranet. The aim of the schme is to give employees of Dalgas, Hedeselskabet, partners and other external persons the opportunity to report suspicions and concerns about improper conduct and financial abuse or serious violations of legislation or internal guidelines. The scheme is managed by a third party and any reports to the scheme are annomenus. |
| **Risk Rating** | Low Risk |

| **Germany Forest and TOF** | **Indicator** |
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| **4.1.10** | Safeguards shall be put in place to protect the health and safety of workers by developing, communicating and implementing policies and procedures. |
| **Supply Base Verifiers** | • Arbeitsschutzgesetz (ArbSchG) vom 07. August 1996 (BGBl I S. 1246) - "Occupational Safety and Health Act"<br>• Gesetz über Betriebsärzte, Sicherheitsingenieure und andere Fachkräfte für Arbeitssicherheit (ASiG) vom 12. Dezember 1973 |

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| | (BGBI. I S. 1885) - "Occupational Safety Act"<br>• PSA-Benutzungsverordnung (PSA-BV) vom 04. Dezember 1996 (BGBI. I S. 1841) - "Regulation on the Use of Personal Protective Equipment"<br>• Directive on personal equipment protection<br>• DGUV Regel 114-018 Juni 2009 "Regel Waldarbeiten" - "Rules on Forest Work"<br>• DGUV-Information 214-046 Mai 2014 "Sichere Waldarbeiten" - "Safe forest working"<br>• Unfallverhütungsvorschrift (VSG) - "Accident prevention regulations" 1.VSG 1.1 Allgemeine Vorschriften für Sicherheit und Gesundheitsschutz - General Regulations on Security and Health protection<br>• VSG 4.3 Forst - Forestry<br>• VSG 4.5 Gefahrstoffe, Hazardous substances<br>• Social security for agriculture, forestry, and horticulture<br>• IGBAU (forest workers union)<br>• FSC Controlled Wood Risk Assessment for Germany, assigned code: FSC-NRA-DE (approved 03.04.2018, updated 31.07.2020) |
| **Risk Rating justification** | Legal requirements for health and safety are regulated by the German Occupational Safety and Health Act (Arbeitsschutzgesetz, ArbSchG) and the Occupational Safety Act (Arbeitssicherheitsgesetz, ASiG).<br>The so-called PSA-Benutzungsverordnung is a detailed regulation relating to safety and health protection through use of personal equipment at work, based on European Union directive 89/656/EWG. Binding health and safety regulations - particularly for people who work in forests and/or are employed by forest enterprises - is a matter for the Social Insurance for Agriculture, Forestry and Horticulture program (Sozialversicherung für Landwirtschaft Forst und Gartenbau, SVLFG) or the German Statutory Accident Insurance scheme (Deutsche Gesetzliche Unfallversicherung, DGUV). Every employee signing an employment contract at a private or public forest company automatically agrees to the Accident Prevention Regulations (Unfallverhütungsvorschrift) available through the SVLFG or the so-called Safe Forest Working (Regel Waldarbeiten) distributed by the DGUV. There is no known instance of a private or municipal forest company that is not a member of the SVLFG. If this would be the case, however, SVLFG would still pay in the event of an accident; despite that, the company would be required to pay SVLFG back afterwards. Accident Prevention Regulations and Rules on Forest Work are based on laws and describe duties in terms of safety, health and working appropriately in forests. Employees working in a private or municipal forest and in landscaping maintenance companies are insured by SVLFG, whereas employees in a state forest are insured through DGUV. Both are legally binding due to the Seventh Social Code Book - Statutory Accident Insurance (§15 Siebtes Buch Sozialgesetzbuch, SGB VII - Gesetzliche Unfallversicherung).<br>In addition to these, there are many guidelines for occupational safety published by public and private forest organizations. In some cases, these |

organizations demand additional commitments to safety conditions from their employees. This depends on what work must be done (e.g. harvesting in steep areas). Foresters in Germany receive mandatory training in accordance with safety procedures and accident prevention.
If work-related accidents occur (while employees are either working in stands or on forest roads) and the accidents leads to three or more days of illness, this must be disclosed and documented with the employer's insurance association. State forest enterprises document such accidents themselves. The Social Insurance for Agriculture, Forestry and Horticulture scheme produces statistics for public municipal forests as well as private forests.
The employer's liability insurance coverage (Berufsgenossenschaft) acts as legal authority. Documents or records are the employment contract/agreement or the social security card.
Personal protective equipment for foresters/landscape maintenance, or PPE forestry for short, is intended to help reduce the risk of injury when working in the forest, particularly when using a chain saw.
The following five items of equipment are part of a complete protective equipment:

1. The protective helmet for forestry work must be equipped with face and ear protection and comply with DIN EN 397, 352 and 1731. It should protect against falling branches. The wire mesh visor shows as much as possible, but protects eyes and face from whipping branches, splinters, and sawdust. The helmet also indicates the location of the worker in a warning colour. Hearing protection is essential to prevent permanent damage to hearing due to the noise of the chain saw.
2. A work jacket with sections in signal colours should indicate the location of the forest worker.
3. Protective gloves according to DIN EN 420 and 388. A cut protection insert in the gloves is only mandatory when working in baskets.
4. The cut protection trousers should protect against injuries when working with a chain saw. On contact with the running chain saw, larger bundles of the long plastic fibres incorporated in the trousers (cut protection insert) are pulled out, wrap themselves around the chain saw drive wheel and stop it in a fraction of a second. The trousers must comply with DIN EN 381 Parts 2 and 5.
5. Safety shoes or boots must have an upper length of at least 19,5 cm and be equipped with a non-slip sole, toe cap, ankle protection and cut protection in accordance with DIN EN 345 and 344 Part 2.

The personal safety equipment of forest/landscape maintenance workers is provided by the employer and always kept above the legal requirements. New equipment, technologies and techniques are often tested under real conditions to improve health and safety of employees. Designated and specially educated personal are acting as safety experts (Sicherheitsfachkraft) throughout the whole company. Above mentioned

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| | measures include office staff as well.<br>Identified laws are upheld. Cases where law/regulations are violated are efficiently followed up via preventive actions taken by the authorities and/or by the relevant entities.<br>The indicator is assessed as "Low Risk". |
| **Risk Rating** | Low Risk |

| **Germany<br>Forest and TOF** | **Indicator** |
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| **4.2.1** | Negative social and community impacts shall be identified and avoided. |
| **Supply Base Verifiers** | • Bundeswaldgesetz (BWaldG) vom 2. Mai 1975 (BGBl. I S. 1037) - “National Forest Act”<br>• FSC Controlled Wood Risk Assessment for Germany, assigned code: FSC-NRA-DE (approved 03.04.2018, updated 31.07.2020)<br>• Bundesnaturschutzgesetz (BNatSchG) vom 29. Juli 2009 (BGBl. I S. 2542) - "Federal Nature Conservation Act"<br>• Bundes-Immissionsschutzgesetz (BImSchG) vom 15. März 1974 (BGBl. I S. 721) - "Federal Emission Control Act"<br>• Gesetz über die Umweltverträglichkeitsprüfung (UVPG) vom 12. Februar 1990 (BGBl. I S. 205) - " Environmental Impact Assessments"<br>• Environmental and Social Impact Assessment (ESIA) |
| **Risk Rating justification** | Germany's forestry practices are governed by strict regulations and laws aimed at promoting sustainable forest management. The key legislation includes the Federal Forest Act (Bundeswaldgesetz, BWaldG) and various state forest laws (Landeswaldgesetze, LWaldG), which lay down the principles for sustainable forestry. These laws mandate the protection of ecological balance, biodiversity, and the social functions of forests, including recreational and cultural values.<br>In addition, the BWaldG applies to trees outside forests, setting guidelines for their management. This includes stipulations on the sustainable harvesting of trees, ensuring that removal does not disrupt local wildlife habitats or community resources. These regulations require landowners to adhere to best practices in biomass sourcing, fostering responsible management.<br>In the forestry sector in Germany, ensuring that negative social and community impacts are identified and avoided during harvesting involves a comprehensive approach. Before any significant forestry activity, including harvesting, an Environmental and Social Impact Assessment (ESIA) is often conducted. This assessment evaluates the potential impacts on the environment and local communities. It involves engaging with local communities, (indigenous) groups, and other stakeholders to understand their concerns and expectations, conducting comprehensive studies to establish the current environmental and social conditions, assessing the potential negative impacts on biodiversity, water resources, soil, and local |

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| | communities, and developing strategies to mitigate identified negative impacts, such as adjusting harvesting techniques, timing, and extent.<br>Engaging with local communities is crucial to understanding and addressing their concerns. This can be achieved through organizing meetings and forums where community members can voice their concerns and suggestions, involving community representatives in the planning and decision-making processes, and keeping communities informed about planned activities, potential impacts, and mitigation measures.<br>Adopting sustainable forestry practices helps minimize negative impacts. In Germany, this includes using selective harvesting techniques to preserve the forest structure and biodiversity, allowing longer periods between harvests to ensure forest regeneration and sustainability, and promoting the growth of mixed-species forests to enhance biodiversity and resilience.<br>The Biomass Sustainability Ordinance further complements these laws by setting sustainability criteria specifically for biomass production. It mandates that biomass sourcing activities engage local stakeholders, fostering dialogue and collaboration. This engagement helps address community concerns and promotes benefits such as job creation and energy security.<br>Ongoing monitoring and adaptive management are essential to ensure that forestry activities do not adversely impact local communities and the environment. This includes conducting periodic assessments to monitor the environmental and social impacts of forestry operations, implementing systems for communities to report any concerns or negative impacts they experience, and adjusting practices based on monitoring results and community feedback to minimize negative impacts.<br>Educating and training forestry workers and managers on sustainable practices and the importance of social responsibility is vital. This includes providing training on best practices for sustainable forestry and community engagement and raising awareness about the importance of protecting social and environmental values in forestry.<br>Establishing mechanisms to resolve conflicts between forestry operations and local communities is essential. This can involve offering mediation to address and resolve disputes amicably, and implementing systems where community members can lodge complaints and seek redress for any negative impacts experienced.<br>By integrating these comprehensive strategies, Germany ensures that negative social and community impacts of forestry harvesting is identified and avoided, thereby promoting sustainable and socially responsible forest management.<br>the harvesting of trees outside forests, such as in urban areas, agricultural landscapes, or along roadsides, is subject to stringent regulations and well-established best practices. The potential for negative social and community impacts is minimized through a robust legal framework, comprehensive norms, and professional forestry management approaches. This ensures that such activities pose a low risk to communities and individuals.<br>The German legal system provides a strong foundation for mitigating adverse effects associated with tree harvesting outside forested areas. The Federal Nature Conservation Act (BNatSchG) plays a crucial role in protecting trees in |

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| | urban and rural settings, ensuring that their removal is only permitted under strict conditions. Local tree protection ordinances, enacted by municipalities, further reinforce these safeguards by setting criteria for tree felling, often requiring permits and compensatory measures such as replanting. The Forest Act (Bundeswaldgesetz) also plays a role in ensuring that trees outside forests are managed sustainably, especially in cases where they contribute to ecological stability and biodiversity.<br>The Environmental Impact Assessment Act (UVPG) mandates assessments in cases where tree removal might have significant environmental consequences. The Federal Immission Control Act (BImSchG) also applies in cases where tree felling is related to industrial or infrastructure projects, ensuring that environmental and social impacts are carefully considered. Furthermore, best practices in tree harvesting outside forests emphasize careful planning and minimal disruption to surrounding communities. Arborists and forestry professionals employ techniques that prioritize safety, reducing risks related to falling branches or damage to infrastructure. When trees are removed for infrastructure projects or safety reasons, replanting programs help maintain green spaces, ensuring that the long-term environmental and social benefits of tree coverage are preserved. Additionally, educational initiatives promote awareness among the public about the necessity and benefits of sustainable tree management.<br>The indicator is assessed as "Low Risk". |
| **Risk Rating** | Low Risk |

| **Germany Forest and TOF** | **Indicator** |
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| **4.2.2** | Feedstock sourcing shall positively contribute to the local economy, including employment. |
| **Supply Base Verifiers** | • Bundesministerium für Ernährung und Landwirtschaft (BMEL) (2021): Charta für Holz 2.0<br>• Öko-Institut, Wuppertal-Institut (2020): Klimaneutrales Deutschland. Studie im Auftrag von Agora Energiewende. |
| **Risk Rating justification** | In 2022, the German wood industry employed approximately 1.1 million people. This figure encompasses all sectors within the industry, including forestry, sawmilling, wood product manufacturing, and furniture production etc.<br>The forestry & wood cluster shows a steady decreasing trend of the employment rate. The main reason for this is the decline in in the publishing and printing industry. Throughout other sectors the employment rate is stable. The utilization of forest residues for energy production even had a significant positive impact on employment within the German wood industry. By creating new jobs in biomass energy facilities, increasing demand for skilled labour, enhancing forestry operations, and boosting rural economies, this sustainable energy source supports both environmental and economic goals. As the |

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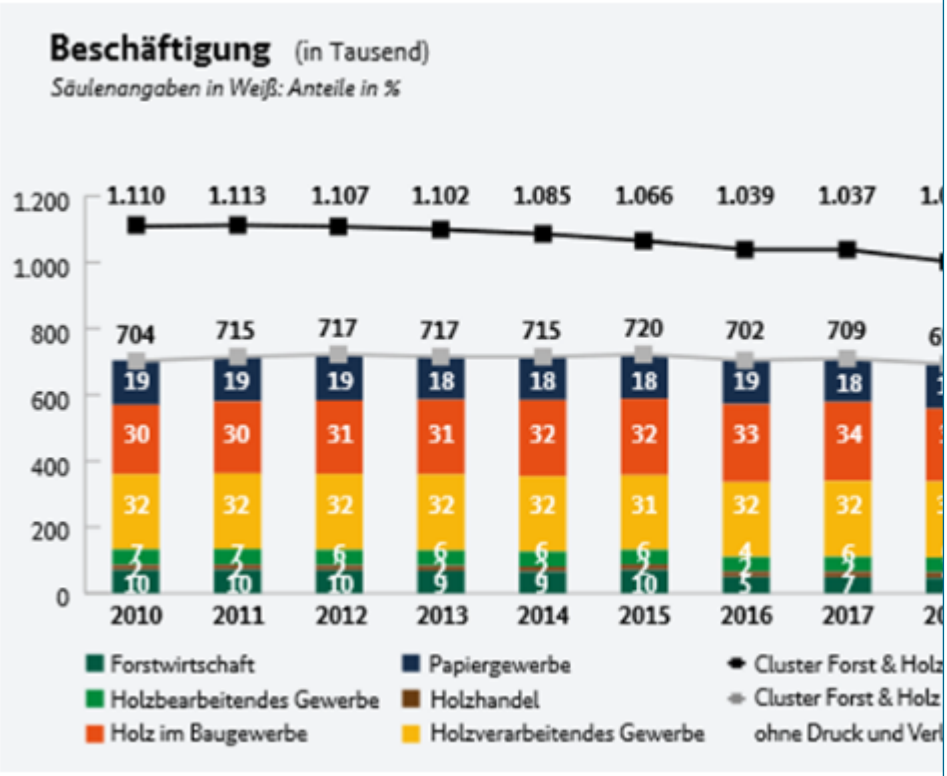
| | sector continues to grow, it is likely to generate even more employment opportunities, contributing to the overall health and sustainability of the German wood industry.<br><br><br><br>Figure 11: Active persons in the German timber and paper cluster (BMEL, 2021)<br><br>The German wood and paper industry plays a crucial role in the country's economy, encompassing a wide range of activities from forestry to the production of furniture, paper products and sawlogs. In recent years, the sector has increasingly focused on the sustainable utilization of forest residues for energy production, aligning with Germany's renewable energy goals and environmental sustainability initiatives.<br>In summary, the German wood industry remains a vital and dynamic part of the economy, characterized by strong performance, sustainability initiatives, and innovative solutions.<br>Therefore, the indicator is considered as "Low Risk". |
| **Risk Rating** | Low Risk |

| Germany<br>Forest and TOF | Indicator |
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| **4.2.3** | Food, water supply or high conservation values (HCV) that are essential for the fulfilment of basic needs of communities shall be maintained or enhanced |

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| **Supply Base Verifiers** | • Bundeswaldgesetz (BWaldG) vom 02. Mai 1975 (BGBl. I S. 1037) - "National Forest Act"<br>• Bundes-Bodenschutzgesetz (BBodSchG) vom 17. März 1998 (BGBl. I S. 502) - "Soil Protection Act"<br>• Bundesnaturschutzgesetz (BNatSchG) vom 29. Juli 2009 (BGBl. I S. 2542) - "Federal Nature Conservation Act"<br>• Wasserhaushaltsgesetz (WHG) vom 31. Juli 2009 (BGBl. I S. 2585) - "Water Resources Act"<br>• Düngeverordnung (DüV) in der Fassung der Bekanntmachung vom 27. Februar 2007 (BGBl. I S. 221) - "Fertilizer legislation"<br>• Düngemittelverordnung (DüMV) vom 05. Dezember 2012 (BGBl. I S. 2482) - "Fertilizer Ordinance"<br>• Chemikaliengesetz (ChemG) in der Fassung der Bekanntmachung vom 28. August 2013 (BGBl. I S. 3498, 3991)<br>• Forest function mapping<br>• FSC Controlled Wood Risk Assessment for Germany, assigned code: FSC-NRA-DE (approved 03.04.2018, updated 31.07.2020) |
| **Risk Rating justification** | Access to forests is generally permitted by law and is respected. Regulations of the silvicultural guidelines are based on the National Forest Act (Bundeswaldgesetz, BWaldG) and the Federal Nature Conservation Act (Bundesnaturschutzgesetz, BNatSchG), which include the stipulations that forests have to be managed properly, advantageously and sustainably, retaining the function of the forest.The natural features of the managed site (soil, water, flora, fauna) must not be impaired beyond the extent required to achieve a sustainable yield. This applies to all federal states in Germany.<br>More precise details for timber harvesting activities, technologies and forest management rules are incorporated in the silviculture guidelines, including minimum age, diameter, felling activities, skidding trails etc. In addition to forest laws various other relevant laws do exist that (e.g.) regulate protection of soils, water bodies and other environmental values. They need to be considered when working in forests (e.g. Soil Protection Act: Bundes-Bodenschutzgesetz, BBodSchG). The Federal Nature Conservation Act defines environmental requirements at a national level in Article 5 (Agriculture, forestry, and fisheries).In addition to these Acts are various laws and regulations that define protection of environmental values (e.g. soils, water resources) and which must be followed when working in forests. These are equally binding for all forest owners (e.g. Soil Protection Act, Bundes-Bodenschutzgesetz, BBodSchG; Fertiliser Act, Düngemittelgesetz, DüV; Fertilizer ordinance, Düngemittelverordnung, DüMV; Water Resources Act, Wasserhaushaltsgesetz, WHG; European Water Framework Directive, Europäische – Wasserrahmenrichtlinie).<br>On sites visits by authorities for water protection and nature conservation are done on a regular basis. It is obligatory to notify/register water and soil damages, e.g. as mentioned in the Soil Protection Act and the Water Resources Act.<br>Mapping of forest functions for the individual forest areas, presents an |

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| | overview and valuation basis concerning utility, protection, and recreation functions. In addition to forest areas with particular importance for individual forest functions, the forest function map also includes topography and protected areas such as natural forest reserves, water protection areas, soil monuments or nature reserves.<br>There is low/negligible threat to special ecosystem services caused by management activities in the area under assessment. Fundamental, endangered ecosystem services including the protection of water catchment areas and protection against the erosion of endangered soils and slopes. In Germany these are forests bearing a legally binding protection status, which fulfil the following functions (in accordance with the federal forest act, §12): protection against damaging environmental influences within the meaning of the Federal Immission Control Act (Bundes-Immissionsschutzgesetz, BImSchG) of 15 March 1974 (Bundesgesetzblatt I, p. 721), erosion by water and wind, desiccation, damaging run-off of precipitation and avalanches. There is no compromising of fundamental needs by forest management activities in Germany. Access to forests is legally regulated and the provision of recreation forest is a part of the multifunction al approach to forest management. Local restrictions may arise in isolated cases, for example, during harvesting operations, but these are provided for legality. In Germany the regular biomass in form of wood chips is produced from stem wood, forest residues, thinnings or from landscaping measures. These production areas are not competing against agricultural areas, as they are clearly separated by law and the land use form is not allowed to be changed without permissions by responsible authorities. Biomass production from short rotation plantation is also regulated by authorities and does not play a significant role in Germany.<br>Based on the above, it is concluded that there is low risk of non-compliance with the requirement.<br>Therefore, the risk designation for this indicator is "Low Risk". |
| **Risk Rating** | Low Risk |

| **Germany<br>Forest and TOF** | **Indicator** |
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| **4.2.4** | Legal, customary, and traditional tenure and use rights of Indigenous Peoples and local communities related to the Supply Base shall be identified, documented, and respected. |
| **Supply Base Verifiers** | • Deutscher FSC-Standard Version 3-0 - "German FSC-Standard"<br>• Grundgesetz für die Bundesrepublik Deutschland vom 23. Mai 1949 (BGBl. I S. 2438) “German Constitution”<br>• Bürgerliches Gesetzbuch (BGB) in der Fassung der Bekanntmachung vom 02.Januar 2002 (BGBl. I S. 42, 2909; 2003 I S. 738) - "German Civil Code“<br>• Grundbuchordnung (GBO) in der Fassung der Bekanntmachung vom 26. Mai 1994 (BGBl. I S. 1114) - "Landbook Rule“<br>• Informationsfreiheitsgesetz (IFG) vom 05. September 2005 (BGBl. I |

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| | S. 2722) - "Law for Freedom of Information"<br>• Gesetz zur Verbesserung der Öffentlichkeitsbeteiligung undVereinheitlichung von Planfeststellungsverfahren (PlVereinhG) - "Law for the Improvement of Public Participation and Standardization of PlanningProcedures"<br>• FSC Controlled Wood Risk Assessment for Germany, assigned code: FSC-NRA-DE (approved 03.04.2018, updated 31.07.2020) |
| **Risk Rating justification** | There are no indigenous populations in the Federal Republic of Germany, as defined by the United Nations (also see German FSC-Standard, Principle 3). Tenure rights are determined through the German Constitution (Grundrecht) and the Civil Code (Bürgerliches Gesetzbuch). Ownership of estates is documented in the Land Charge Register (Grundbuch). Customary rights to forest products do not legally exist; but there are traditions that are respected. These, however, refer to a small scale and small amount of use (e.g. traditional collection of non-merchantable wood by local citizens). In some cases, customary rights are registered via entries in the land register.<br>In 2013, the Federal Cabinet has adopted a draft Law for the Improvement of Public Participation and Standardization of Planning Procedures (Gesetz zur Verbesserung der Öffentlichkeitsbeteiligung und Vereinheitlichung von Planfeststellungsverfahren, PlVereinhG). With this Act, the Federal Government ensures that greater public participation is achieved in large projects. The law also serves to harmonize special regulations from different technical laws. Overall, plan approval procedures are in principle simplified and accelerated.<br>The Law for Freedom of Information (Informationsfreiheitgesetz, IFG) provides a precondition for access to official information of federal authorities. The entitlement to information or access to the files in the authority: Everyone is entitled to claim (Jedermannsrecht); There is no need to be concerned about the matter. The information claim can be restricted by public and private interests of §§ 3 to 6 IFG (exceptions possible). These acts allow citizen to receive information, participate in consultation and make statements.<br>As mentioned in indicators before, the majority of non-forest biomass originates from public orders and therefore underlies dense control mechanisms. Orders from the private sector need more attentiveness from contractor´s side. Interviews revealed that a common practise is, to check new clients. For example, if trees should be felled, one check could be if the client is the legal landowner or tenant. This could be done by tenancy agreements or via land office (Grundbuchamt) or land registry office (Katasteramt).<br>Identified laws are upheld. Cases where laws/regulations are violated are efficiently followed up via preventive actions taken by the authorities and/or by the relevant entities. Recognized and fair processes regulating conflicts surrounding traditional rights, including land use, are anchored in the German legislation. Some conflicts arose in the federal states formerly belonging to East Germany (German Democratic Republic) following German reunification in 1990. The German authorities systematically pursued and processed these |

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| | cases according to legal processes.<br>There is no evidence leading to a conclusion of presence of indigenous and/or traditional peoples in the area under assessment and other available evidence do not challenge a "Low Risk" designation. |
| **Risk Rating** | Low Risk |

| **Germany<br>Forest and TOF** | **Indicator** |
|---|---|
| **4.2.5** | Mechanisms shall be in place for resolving grievances and disputes relating to tenure and use rights of the forest and other land management practices. |
| **Supply Base Verifiers** | • Grundgesetz für die Bundesrepublik Deutschland vom 23. Mai 1949 (BGBI. I S. 2438) - "German Constitution"<br>• Bürgerliches Gesetzbuch (BGB) in der Fassung der Bekanntmachung vom 02. Januar 2002 (BGBI. I S. 42, 2909; 2003 I S. 738) - "German Civil Code"<br>• Grundbuchordnung (GBO) in der Fassung der Bekanntmachung vom 26. Mai 1994 (BGBI. I S. 1114) - "Landbook Rule"<br>• ILO Fundamental Principles and Rights at work |
| **Risk Rating justification** | Legal ownership of land and resource use are respected (see indicator 1.1.2). Legislation and control mechanisms are in place and are constantly adapted. The legal framework conditions were assessed previously as part of the legality assessment of the centralized national risk assessment and were classified as "low risk".<br>There are no known conflicts relating to compulsory or child labour in Germany. No information was found about Germany as being a source of conflict timber and the forest sector is not associated with any violent armed conflict. Germany scores positive on all indicators reviewed in this context section. It is ranked relatively high on all relevant aspects such a stable country, with good governance, absence of conflicts of any magnitude and it is a free country for all its citizens with a good justice system. Human rights issues are around migrants and asylum seekers, mostly, and are, in global context, minor.<br>Recognized and fair processes regulating conflicts surrounding traditional rights, including land use, are anchored in the German legislation. Some of such conflicts arose in the federal states formerly belonging to East Germany (German Democratic Republic) following German reunification in 1990. The German authorities systematically pursued and processed these cases according to legal processes.<br>There are identified core conflicts between nature conservation and various land uses (e.g. agriculture and forestry). However, nature conservation requirements are widely applied within landscape maintenance, forestry concepts and forestry planning (e.g. in the form of mapping of strictly protected species, old and dead wood concepts and environmentally friendly harvesting methods, identification of FFH areas and habitat types in the forest |

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| | as well as development of monitoring concepts by the state governments).<br>Germany also promotes participatory governance through various platforms, such as local forest management councils and public consultation processes. These initiatives encourage dialogue between stakeholders, including private landowners, local communities, and government authorities, fostering a collaborative atmosphere that can mitigate potential disputes before they escalate. The German system emphasizes mediation and alternative dispute resolution mechanisms, reducing reliance on lengthy court proceedings. This is evidenced by the high rate of successful mediations, as approximately 80% of conflicts are resolved without resorting to litigation.<br>Disputes over tenure and use rights can also be resolved through civil law mechanisms. The German Civil Code (Bürgerliches Gesetzbuch, BGB) provides legal tools for addressing conflicts related to property rights, including land and forest tenure. When disagreements arise, parties may bring their cases before civil courts, which can adjudicate issues such as boundary disputes, access rights, and compensation for damages caused by unauthorized logging or biomass harvesting. Mediation is also increasingly used as a method for conflict resolution, particularly in cases involving community interests and environmental protection.<br>Disputes concerning forest management are prevented by the federal forest management plans. Each federal state drafts guidelines for silviculture, which are obligatory for the forest management in municipal and state forests.<br>For private forests, those guidelines are only recommendations, but of course they are also bound to national and federal laws.<br>Regulations of the silvicultural guidelines are based on the National Forest Act and the Federal Nature Conservation Act, which include the stipulations that forests must be managed properly, advantageously, and sustainably, retaining the functions of the forest.<br>Therefore, the risk is considered to be "Low Risk". |
| **Risk Rating** | Low Risk |

| **Germany<br>Forest and TOF** | **Indicator** |
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| **4.2.6** | Where Indigenous Peoples' rights are identified in the Supply Base, and Free Prior and Informed Consent (FPIC) has not been achieved for the proposed and planned activities, a consultation and, if required, accommodation process shall be put in place. |
| **Supply Base Verifiers** | • Deutscher FSC-Standard Version 3-0 - "German FSC-Standard"<br>• Grundgesetz für die Bundesrepublik Deutschland vom 23. Mai 1949 (BGBI. I S. 2438) - "German Constitution"<br>• United Nations Declaration on the Rights of Indigenous Peoples<br>• ILO Fundamental Principles and Rights |
| **Risk Rating justification** | There are no indigenous populations in the Federal Republic of Germany, as defined by the United Nations (also see German FSC-Standard, Principle 3). The German constitution protects the dignity and rights of every person, no |

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| | matter their background. Germany has agreed to follow international rules that protect Indigenous peoples. These include the United Nations Declaration on the Rights of Indigenous Peoples and the International Labour Organization's Convention 169.<br>Any activity that could involve Indigenous peoples must follow strict laws to prevent exploitation. This means getting their consent for any projects that affect their lands or cultures, treating them fairly in the legal system, and providing access to education, healthcare, and job opportunities.<br>Germany also supports international efforts to protect Indigenous peoples' rights by funding projects and raising public awareness about the importance of respecting Indigenous cultures and histories.<br>Since there aren't any indigenous people within the Supply Base the risk can be classified as "Low Risk". |
| **Risk Rating** | Low Risk |

| **Germany Forest and TOF** | **Indicator** |
|---|---|
| **4.2.7** | Designated cultural heritage sites shall be preserved. |
| **Supply Base Verifiers** | • Denkmalschutzgesetz (DSchG) - "Monument Protection Act"<br>• Kulturschutzgesetz (KGSG) vom 31. Juli 2016 (BGBl. I S. 1914) - "Act on the Protection of Cultural Property"<br>• Bundeswaldgesetz (BWaldG) vom 02. Mai 1975 (BGBl. I S. 1037) - "National Forest Act"<br>• Bundesnaturschutzgesetz (BNatSchG) vom 29. Juli 2009 (BGBl. I S. 2542) - “Federal Nature Conversation Act"<br>• Gesetz über die Umweltverträglichkeitsprüfung (UVPG) vom 12. Februar 1990 (BGBl. I S. 205) - " Environmental Impact Assessments"<br>• German National Committee of International Council on Monuments and Sites (ICOMOS)<br>• United Nations Educational, Scientific and Cultural Organization (UNESCO) - World Heritage<br>• German UNESCO Commission<br>• Bundesamt für Naturschutz (BfN) - "Federal Agency for Nature Conservation" - Sustainable Tourism |
| **Risk Rating justification** | In Germany, designated cultural heritage sites are preserved with great care to maintain their historical, cultural, and natural significance. The preservation efforts are guided by strict regulations and a commitment to protecting these unique areas.<br>As mentioned above, cultural heritage sites are protected by national and regional laws, such as the Monument Protection Act (Denkmalschutzgesetz) or the Act on the Protection of Cultural Property (Kulturschutzgesetz, KGSG). The latter addresses specifically the preservation of cultural heritage. The Act provides comprehensive protection for cultural monuments, archaeological |

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| | sites, and historical landscapes. This includes restrictions on any activities that could damage or alter these sites. For example, Section 2 of the KGSG outlines the obligation to protect cultural property from threats such as deterioration or unauthorized alteration, ensuring that any intervention, such as biomass harvesting, is evaluated in terms of its potential impact on the site's historical value.<br>Cultural heritage sites must be registered and documented in official records. This ensures that they are recognized and considered in all land-use planning and forestry operations. Furthermore, each state has heritage laws that provide additional protections for cultural sites within their jurisdictions. These laws often include stricter measures and specific guidelines tailored to local heritage preservation needs. These state-level laws ensure that any biomass harvesting or landscape management around cultural heritage sites must receive approval from relevant state authorities, especially when it involves alterations to the environment that could affect the site's historical or aesthetic value.<br>All of this ensures that activities affecting these sites are strictly controlled to prevent damage. Biomass harvesting near cultural heritage sites is further regulated by environmental impact assessments (Umweltverträglichkeitsprüfungen, UVP), which are mandatory for certain projects under the Environmental Impact Assessment Act (Gesetz über die Umweltverträglichkeitsprüfung, UVPG). The UVPG requires that any project likely to have significant effects on the environment, including those that may affect cultural heritage sites, undergo a thorough assessment. When it comes to biomass harvesting the UVPG ensures that their removal does not harm the landscape or the cultural significance of the area.<br>The Federal Forest Act (Bundeswaldgesetz, BWaldG) requires forest management to consider and protect cultural heritage sites. This includes maintaining historical monuments, ancient paths, and other culturally significant features within forested areas. The Forest management plans must incorporate measures for the identification, documentation, and preservation of cultural heritage sites. These plans are subject to approval by forestry authorities, ensuring compliance with preservation standards.<br>Germany also follows the Federal Nature Conservation Act (Bundesnaturschutzgesetz, BNatSchG), which complements cultural heritage laws by emphasizing the protection of landscapes and biodiversity, particularly in areas that include cultural or historical significance. Section 1 of the BNatSchG highlights the importance of protecting nature and landscapes, ensuring that they are managed in a way that supports both ecological sustainability and cultural preservation. Any removal or harvesting must be conducted with consideration for the site's environmental and historical value. Section 13 of the BNatSchG further regulates the treatment of biotopes and habitats, meaning that trees forming part of a cultural landscape may be protected under both cultural and nature conservation laws.<br>There are specialized teams, including historians, ecologists, and conservationists, working together to maintain and even restore heritage sites. Their goal is to preserve both the natural environment and the historical features of these areas/forests. For instance, conservationists work to |

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| | maintain the biodiversity of forest areas, while historians ensure that historical structures and artifacts are preserved and restored using methods that respect their original construction.<br>This work is possible through the provided financial support of the German government, along with private organizations and international bodies like UNESCO. Significant funding comes from federal and state budgets, which are allocated specifically for the conservation and restoration of cultural heritage sites.<br>Also, efforts are made to raise public awareness about the importance of preserving heritage sites. Educational programs, exhibitions, and guided tours help people understand and appreciate the value of these natural and historical areas. Schools often include visits to heritage sites as part of their curriculum, and public campaigns highlight the cultural and historical significance of these sites.<br>Germany promotes sustainable tourism practices to ensure that visitors can enjoy heritage sites without causing harm. This includes managing visitor numbers, providing clear information on how to respect the sites, and developing infrastructure that minimizes environmental impact. For example, boardwalks and designated pathways are constructed in sensitive areas to prevent soil erosion and protect native vegetation.<br>This multi-faceted approach not only protects the physical sites but also fosters a deeper appreciation and understanding of cultural heritage among the public, ensuring that these treasures are valued and preserved long into the future.<br>The number of designated cultural heritage sites within forests has remained stable, with no significant losses reported. This stability reflects the effectiveness of legal protections and enforcement mechanisms.<br>Therefore, the risk is classified as "Low Risk". |
| **Risk Rating** | Low Risk |

## Annex 2: EU RED Supply Base Evaluation

| Countries where EU RED Supply Base Evaluation is used | |
|---|---|
| **Country** | Germany |
| **Area** | Forest and TOF |
| **Sustainable harvesting criteria 29(6)** | |
| **(i) The legality of harvesting operations** | |
| **Type of Risk Assessment used** | ☒ Level A – proof at national or sub-national level<br>☐ Level B – management system at forest sourcing area level |
| **Level A risk assessment description** | Level A risk assessment for Germany published by Bundesverband Bioenergie (BBE), the Federal Bioenergy Association. |
| **Level B management system at the level of the forest sourcing area** | N/A |
| **(ii) Forest regeneration of harvested areas** | |
| **Type of Risk Assessment used** | ☒ Level A – proof at national or sub-national level<br>☐ Level B – management system at forest sourcing area level |
| **Level A risk assessment description** | Level A risk assessment for Germany published by Bundesverband Bioenergie (BBE), the Federal Bioenergy Association. |
| **Level B management system at the level of the forest sourcing area** | N/A |
| **(iii) That areas designated by international or national law or by the relevant competent authority for nature protection purposes, including in wetlands, grasslands, heathland and peatlands, are protected with the aim of preserving biodiversity and preventing habitat destruction, unless evidence is provided that the harvesting of that raw material does not interfere with those nature protection purposes** | |
| **Type of Risk Assessment used** | ☐ Level A – proof at national or sub-national level<br>☒ Level B – management system at forest sourcing area level |
| **Level A risk assessment description** | N/A |
| **Level B management system at the level of the forest sourcing area** | See mitigation measures in this SBR under Germany indicator 2.1.3 and 3.2.3. |
| **(iv) that harvesting is carried out considering the maintenance of soil quality and biodiversity in accordance with sustainable forest management principles, with the aim of preventing any adverse impact, in a way that avoids harvesting of stumps and roots, degradation of primary forests, and of old growth forests as defined in the country where the forest is located, or their conversion into plantation forests, and harvesting on vulnerable soils, that harvesting is carried out in compliance with maximum thresholds for large clear-cuts as defined in the country where the forest is located, and with locally and ecologically appropriate retention thresholds for deadwood extraction and that harvesting is carried out in compliance with requirements to use logging systems that minimise any adverse impact on soil quality, including soil compaction, and on biodiversity features and habitats** | |

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| **Type of Risk Assessment used** | ☐ Level A – proof at national or sub-national level<br>☒ Level B – management system at forest sourcing area level |
| **Level A risk assessment description** | N/A |
| **Level B management system at the level of the forest sourcing area** | See mitigation measures in this SBR under Germany indicator 2.1.3 and 3.2.3. |
| **(v) That harvesting maintains or improves the long-term production capacity of the forest.** | |
| **Type of Risk Assessment used** | ☒ Level A – proof at national or sub-national level<br>☐ Level B – management system at forest sourcing area level |
| **Level A risk assessment description** | Level A risk assessment for Germany published by Bundesverband Bioenergie (BBE), the Federal Bioenergy Association. |
| **Level B management system at the level of the forest sourcing area** | N/A |
| **(vi)[1] That forests in which the forest biomass is harvested do not stem from the lands that have the statuses referred to in Article 29(3) points (a), (b), (d) and (e); Article 29(4), point (a), and Article 29(5), respectively under the same conditions of determination of the status of land specified in those paragraphs.**<br>*Article 29 (3): biomass fuel produced from agricultural biomass shall not be made from raw material obtained from land with a high biodiversity value, namely land that had one of the following statuses in or after January 2008, whether or not the land continues to have that status:*<br>*(a) **primary forest** and other wooded land and **old growth forest,** namely forest 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; and old growth forests as defined in the country where the forest is located. If there is no definition of **old growth forest** at the national level, then the following definition shall apply: A forest stand or area consisting of native tree species that have developed, predominantly through natural processes, structures and dynamics normally associated with late-seral developmental phases in primary or undisturbed forests of the same type. Signs of former human activities may be visible, but they are gradually disappearing or too limited to significantly disturb natural processes.* | |
| **Type of Risk Assessment used** | ☐Level A – proof at national or sub-national level<br>☒Level B – management system at forest sourcing area level |
| **Level A risk assessment description** | N/A |
| **Level B management system at the level of the forest sourcing area** | Old growth, primary forest and high biodiverse forest. See mitigation measures in SBR under Germany indicator 3.2.3.Heathlands. No sourcing of material from heathlands. See mitigation measures in SBR under Germany 2.1.3. Grasslands, peatlands and wetlands: see mitigation measures in this SBR under Germany indicator 2.1.3 and 3.2.3. |
| **(vi)[2] That forests in which the forest biomass is harvested do not stem from the lands that have the statuses referred to in Article 29(3) points (a), (b), (d) and (e); Article 29(4), point (a), and Article 29(5), respectively under the same conditions of determination of the status of land specified in those paragraphs.**<br>*Article 29 (3): biomass fuel produced from agricultural biomass shall not be made from raw material obtained from land with a high biodiversity value, namely land that had one of the following statuses in or after January 2008, whether or not the land continues to have that status:*<br>*(b) **highly biodiverse forest** and other wooded land which is species-rich and not degraded, and has been identified as being highly biodiverse by the relevant competent authority, unless evidence is provided that the production of that raw material did not interfere with those nature protection purposes.* | |
| **Type of Risk Assessment used** | ☐Level A – proof at national or sub-national level<br>☒Level B – management system at forest sourcing area level |

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| **Level A risk assessment description** | N/A |
| **Level B management system at the level of the forest sourcing area** | Old growth, primary forest and high biodiverse forest. See mitigation measures in SBR under Germany indicators 2.1.3 and 3.2.3. |
| **(vi)[3] That forests in which the forest biomass is harvested do not stem from the lands that have the statuses referred to in Article 29(3) points (a), (b), (d) and (e); Article 29(4), point (a), and Article 29(5), respectively under the same conditions of determination of the status of land specified in those paragraphs.**<br>*Article 29 (3): biomass fuel produced from agricultural biomass shall not be made from raw material obtained from land with a high biodiversity value, namely land that had one of the following statuses in or after January 2008, whether or not the land continues to have that status:*<br>*(d) **highly biodiverse grassland** spanning more than one hectare that is: (i) natural, namely grassland that would remain grassland in the absence of human intervention and that maintains the natural species composition and ecological characteristics and processes; or (ii) non-natural, namely grassland that would cease to be grassland in the absence of human intervention and that is species-rich and not degraded and has been identified as being highly biodiverse by the relevant competent authority, unless evidence is provided that the harvesting of the raw material is necessary to preserve its status as highly biodiverse grassland.* | |
| **Type of Risk Assessment used** | ☐Level A – proof at national or sub-national level<br>☒Level B – management system at forest sourcing area level |
| **Level A risk assessment description** | N/A |
| **Level B management system at the level of the forest sourcing area** | Grasslands: see mitigation measures in this SBR under indicator 2.1.3 and 3.2.3. |
| **(vi)[4] That forests in which the forest biomass is harvested do not stem from the lands that have the statuses referred to in Article 29(3) points (a), (b), (d) and (e); Article 29(4), point (a), and Article 29(5), respectively under the same conditions of determination of the status of land specified in those paragraphs.**<br>*Article 29 (3): biomass fuel produced from agricultural biomass shall not be made from raw material obtained from land with a high biodiversity value, namely land that had one of the following statuses in or after January 2008, whether or not the land continues to have that status:*<br>*(e) **heathland** - Biomass Producer shall use the official definition for Heathland used in the applicable feedstock origin country. In the absence of such a definition, then the following definition shall be applied: Vegetation with low and closed cover, dominated by bushes, shrubs, dwarf shrubs (heather, briars, broom, gorse, laburnum etc.) and herbaceous plants, forming a climax stage of development (Source: EU Copernicus).* | |
| **Type of Risk Assessment used** | ☐Level A – proof at national or sub-national level<br>☒Level B – management system at forest sourcing area level |
| **Level A risk assessment description** | N/A |
| **Level B management system at the level of the forest sourcing area** | Heathlands. No sourcing of material from heathlands. See mitigation measures in this SBR under 2.1.3 and 3.2.3. |
| **(vi)[5] That forests in which the forest biomass is harvested do not stem from the lands that have the statuses referred to in Article 29(3) points (a), (b), (d) and (e); Article 29(4), point (a), and Article 29(5), respectively under the same conditions of determination of the status of land specified in those paragraphs.**<br>*Article 29 (4): biomass fuel produced from agricultural biomass shall not be made from raw material obtained from land with high-carbon stock, namely land that had one of the following statuses in January 2008 and no longer has that status:*<br>*(a) **wetlands,** namely land that is covered with or saturated by water permanently or for a significant part of the year (NOTE: Evidence of verification of wetlands should reflect seasonal changes within a year).* | |

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| **Type of Risk Assessment used** | ☐Level A – proof at national or sub-national level<br>☒Level B – management system at forest sourcing area level |
| **Level A risk assessment description** | N/A |
| **Level B management system at the level of the forest sourcing area** | Wetlands: see mitigation measures in this SBR under indicator 2.1.3 and 3.2.3. |
| **(vi)[6] That forests in which the forest biomass is harvested do not stem from the lands that have the statuses referred to in Article 29(3) points (a), (b), (d) and (e); Article 29(4), point (a), and Article 29(5), respectively under the same conditions of determination of the status of land specified in those paragraphs.**<br>*Article 29 (5): biomass fuel produced from agricultural biomass shall not be made from raw material obtained from land that was **peatland** in January 2008, unless evidence is provided that the cultivation and harvesting of that raw material does not involve drainage of previously undrained soil. For a peatland that was partially drained in January 2008, a subsequent deeper drainage, affecting soil that was not fully drained, would constitute a breach of the criterion.* | |
| **Type of Risk Assessment used** | ☐Level A – proof at national or sub-national level<br>☒Level B – management system at forest sourcing area level |
| **Level A risk assessment description** | N/A |
| **Level B management system at the level of the forest sourcing area** | Peatlands: see mitigation measures in this SBR under indicator 2.1.3 and 3.2.3. |
| **(vii) that installations producing biomass fuels from forest biomass, issue a statement of assurance, underpinned by company-level internal processes, for the purpose of the audits conducted pursuant to Article 30(3), that the forest biomass is not sourced from the lands referred to in point (vi).** | |
| **Type of Risk Assessment used** | ☒Level A – proof at national or sub-national level<br>☐Level B – management system at forest sourcing area level |
| **Level A risk assessment description** | N/A |
| **Level B management system at the level of the forest sourcing area** | *Not applicable, requirement only applies to Level A* |

| **LULUCF criteria 29(7)** | |
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| **Type of Risk Assessment used** | ☒ Level A – proof at national or sub-national level<br>☐ Level B – management system at forest sourcing area level |
| **Level A risk assessment description** | Level A risk assessment for Germany published by Bundesverband Bioenergie (BBE), the Federal Bioenergy Association. |
| **Level B management system at the level of the forest sourcing area** | N/A |

# Annex 2a: EU RED II Supply Base Evaluation

## Annex 3: SBP Processing residues and/or Post-consumer feedstock requirements

☐ Not Applicable (Processing Residues and/or post-consumer feedstock not used)

### Verification and monitoring of suppliers

No postconsumer feedstock is being handled.
Only processing residue material with a SBP compliant claim is purchased.

### Feedstock inspection and classification upon receipt

Only material with an SBP claim is purchased and handled.

### Supplier audit for processing residues and post-consumer feedstock

No special procedures will be followed as all material is purchased as SBP compliant.

## Annex 4: EU RED detailed findings for Trees Outside Forest (TOF) feedstock

*NOTE: For "Trees outside forests (TOF) – Urban and landscape feedstock" no EU RED sustainability requirements apply, only the GHG savings criteria apply (SBP EU RED Bridging ID v2.0 Section 1.1). The land use category in this case is neither forest land nor agricultural land. For "Trees outside forests (TOF) – Agricultural land feedstock" the applicable criteria are Article 29 paragraphs (2)-(5).*

**Country: Germany - Forest and TOF**

Not Applicable - only urban and landscape feedstock is used

## Annex 4a: RED II detailed findings for Trees Outside Forest (TOF) feedstock

*NOTE: For "Trees outside forests (TOF) – Urban and landscape feedstock" no REDII sustainability requirements apply, only the GHG savings criteria apply (SBP REDII Bridging ID Section 4.2). The land use category in this case is neither forest land nor agricultural land. For "Trees outside forests (TOF) – Agricultural land feedstock" the applicable criteria are Article 29 paragraphs (2)-(5).*