

Abbreviations

AFi	Accountability Framework Initiative	LMU	Land management unit
BECCS	Bioenergy with carbon capture and storage	LO	Land occupation
CH₄	Methane	LUC	Land use change
CO₂	Carbon dioxide	N₂O	Nitrous oxide
CO₂e	Carbon dioxide equivalent	NF₃	Nitrogen trifluoride
COC	Carbon opportunity cost	NGO	Non-governmental organization
DACCS	Direct air carbon capture and storage	PFCs	Perfluorocarbons
DCF	Deforestation- and conversion-free	PS	Product carbon storage
dLUC	Direct land use change	SBTi	Science Based Targets initiative
FAO	Food and Agriculture Organization of the United Nations	SF₆	Sulfur hexafluoride
FLAG	Forest, Land, and Agriculture	sLUC	Statistical land use change
GHG	Greenhouse gas	SOC	Soil organic carbon
GS	Geologic storage	TCDR	Technological carbon dioxide removal
GWP	Global warming potential	TFCI	Tropical Forest Credit Integrity
HFCs	Hydrofluorocarbons	UNFCCC	United Nations Framework Convention on Climate Change
ICVCM	Integrity Council for the Voluntary Carbon Market	VCMi	Voluntary Carbon Markets Integrity Initiative
IPCC	Intergovernmental Panel on Climate Change	WBCSD	World Business Council for Sustainable Development
ISO	International Organization for Standardization	WRI	World Resources Institute
LMR	Land management removals		

Annex

Table A.1 Upstream and downstream scope 3 categories

Upstream or downstream	Scope 3 category
Upstream scope 3 emissions	<ol style="list-style-type: none"> 1. Purchased goods and services 2. Capital goods 3. Fuel- and energy-related activities (not included in scope 1 or scope 2) 4. Upstream transportation and distribution 5. Waste generated in operations 6. Business travel 7. Employee commuting 8. Upstream leased assets
Downstream scope 3 emissions	<ol style="list-style-type: none"> 9. Downstream transportation and distribution 10. Processing of sold products 11. Use of sold products 12. End-of-life treatment of sold products 13. Downstream leased assets 14. Franchises 15. Investments

Source: GHG Protocol Scope 3 Standard (WRI and WBCSD 2011a)

Table A.2 Descriptions of scope 3 categories with examples for land sector value chains

Scope 3 Category	Description	Examples
1 Purchased goods and services	<p>All upstream (cradle-to-gate) emissions, removals, land use and leakage, etc., that occur in the life cycle of purchased goods and services purchased or acquired by the reporting company in the reporting year, up to the point of receipt by the reporting company (not otherwise included in scope 3, categories 2–8)</p> <p>Examples of upstream life cycle activities may include: extraction of raw materials; agricultural activities; manufacturing, production, and processing; generation of electricity consumed by upstream activities; disposal/treatment of waste generated by upstream activities; land management and land use change; transportation of materials and products between suppliers; and any other activities prior to acquisition by the reporting company</p>	<ul style="list-style-type: none"> • Cradle-to-gate emissions, removals, and other metrics attributable to the production of purchased food, feed, fertilizer, agrichemicals, etc., including: <ul style="list-style-type: none"> • Recent land use change emissions on land where purchased food, feed, etc., is produced • Land management net biogenic CO₂ emissions and land management production emissions from attributable processes associated with agricultural practices such as crop growth, fertilizer application, cultivation, harvesting, etc. • All other cradle-to-gate emissions • Land use required to produce the purchased food, feed, fertilizer, etc. • Land carbon leakage due to high-leakage-risk activities that displace food or feed production • If applicable, land management CO₂ removals from attributable processes associated with producing agricultural products purchased by the reporting company

Table A.2 Descriptions of scope 3 categories with examples for land sector value chains (cont.)

Scope 3 Category		Description	Examples
2	Capital goods	All upstream (cradle-to-gate) emissions of purchased capital goods from the extraction, production, and transportation of capital goods purchased or acquired by the reporting company in the reporting year	<ul style="list-style-type: none"> • Cradle-to-gate emissions associated with producing farm machinery and equipment
3	Fuel- and energy-related activities (not included in scope 1 or scope 2)	Extraction, production, and transportation of fuels and energy purchased or acquired by the reporting company in the reporting year, not already accounted for in scope 1 or scope 2 (including upstream emissions of purchased fuels, upstream emissions of purchased electricity, transmission and distribution losses [reported by end user only], and generation of purchased electricity sold to end users [reported by utility company or energy retailer only])	<ul style="list-style-type: none"> • Upstream emissions, removals, land use and leakage, and other metrics in the life cycle of purchased biofuels, biogas or other fuels with biogenic feedstocks (i.e., cradle-to-gate emissions, removals, etc., of purchased fuels, from raw material extraction up to the point of, but excluding, combustion) • Upstream emissions, removals, land use and leakage, and other metrics attributable to purchased electricity (and subsequent transmission and distribution losses) generated from biomass or other biogenic feedstocks (i.e., cradle-to-gate emissions of purchased fuels, from raw material extraction up to the point of, but excluding, combustion) • Captured biogenic CO₂ with geologic storage where the reporting company purchases electricity, steam, heating, or cooling from a bioenergy facility that captures biogenic CO₂ and stores the CO₂ in geologic reservoirs (i.e., BECCS)
4	Upstream transportation and distribution	Transportation and distribution of products purchased by the reporting company in the reporting year between a company's tier 1 suppliers and its own operations (in vehicles and facilities not owned or operated by the reporting company); transportation and distribution services purchased by the reporting company, including inbound logistics, outbound logistics (e.g., of sold products), and transportation and distribution between a company's own facilities	<ul style="list-style-type: none"> • Transportation emissions where a landowner contracts for the transportation of harvested crops from their farm to local processing facilities • Transportation emissions where a farm machinery manufacturer pays for the transportation of raw materials and components to their facility • Transportation emissions from the combustion of biofuels associated with upstream logistical services contracted by the reporting company (this category also includes upstream emissions, removals, land use, land carbon leakage, and other metrics in the life cycle of biofuels used for such transportation)
5	Waste generated in operations	Disposal and treatment of waste generated in the reporting company's operations in the reporting year (in facilities not owned or controlled by the reporting company)	<ul style="list-style-type: none"> • Emissions from the disposal and treatment of waste where a food processing company sends agricultural waste to a waste management site operated by a third party for disposal
6	Business travel	Transportation of employees for business-related activities during the reporting year (in vehicles not owned or operated by the reporting company)	<ul style="list-style-type: none"> • Transportation emissions from employee air travel • Transportation emissions from the combustion of biofuels in the transportation of employees for business-related travel (this category also includes upstream emissions, removals, land use, land carbon leakage, and other metrics in the life cycle of biofuels used for such transportation)
7	Employee commuting	Transportation of employees between their homes and their worksites during the reporting year (in vehicles not owned or operated by the reporting company)	<ul style="list-style-type: none"> • Emissions from the combustion of biofuels in employee vehicles when commuting to worksites (this category also includes upstream emissions, removals, land use, land carbon leakage, and other metrics in the life cycle of biofuels used for such transportation)

Table A.2 Descriptions of scope 3 categories with examples for land sector value chains (cont.)

Scope 3 Category		Description	Examples
8	Upstream leased assets	Operation of assets leased by the reporting company (lessee) in the reporting year and not included in scope 1 and scope 2 (reported by lessee)	<ul style="list-style-type: none"> Land emissions where a tenant farmer has an operating lease for lands that they are farming and for which they use an equity share consolidation approach (i.e., the tenant farmer defines their organizational boundary based on their share of equity in the land, which is none, so such emissions would be included in their scope 3)
9	Downstream transportation and distribution	Transportation and distribution of products sold by the reporting company in the reporting year between the reporting company's operations and the end consumer (if not paid for by the reporting company), including retail and storage (in vehicles and facilities not owned or controlled by the reporting company)	<ul style="list-style-type: none"> Fugitive emission or other transportation emissions where a direct air capture company sells captured CO₂ to a third party that transports that CO₂ to a final storage site Transportation emissions from the combustion of biofuels associated with downstream logistical services contracted by the reporting company (this category also includes upstream emissions, removals, land use, land carbon leakage, and other metrics in the life cycle of biofuels used for such transportation)
10	Processing of sold products	Processing of intermediate products sold in the reporting year by downstream companies (e.g., manufacturers)	<ul style="list-style-type: none"> Emissions at downstream facilities where land-based products or TCDR-based products are processed (e.g., for a plantation owner, emissions from processed food manufacturer associated with their sold crops)
11	Use of sold products	End use of goods and services sold by the reporting company in the reporting year	<ul style="list-style-type: none"> N₂O emissions from the use of fertilizer sold by a fertilizer producer Biogenic CO₂ emissions from combustion by end users for a biofuel company's sold products
12	End-of-life treatment of sold products	Waste disposal and treatment of products sold by the reporting company (in the reporting year) at the end of the product's life	<ul style="list-style-type: none"> Methane emissions from the disposal of biogenic products at the end of that product's life
13	Downstream leased assets	Operation of assets owned by the reporting company (lessor) and leased to other entities in the reporting year, not included in scope 1 and scope 2 (reported by lessor)	<ul style="list-style-type: none"> Land emissions or land management CO₂ removals on farmland that a landowner leases to a tenant through an operating lease, and where the landowner uses an operational control consolidation approach (i.e., the landowner defines their organizational boundary based on who operates the land, which the landowner does not, so such emissions would be included in their scope 3)
14	Franchises	Operation of franchises in the reporting year, not included in scope 1 and scope 2 (reported by franchisor)	<ul style="list-style-type: none"> A restaurant chain franchisor reports on emissions associated with a franchisee's operations
15	Investments	Operation of investments (including equity and debt investments and project finance) in the reporting year, not included in scope 1 or scope 2	<ul style="list-style-type: none"> Emissions from agricultural lands that a financial institution invests in that is not included within their scope 1 or scope 2 boundary Technological CO₂ removals with geologic storage where the reporting company invests in technological CO₂ removal and geologic storage facilities (but does not operate the facilities, and applies an operational control consolidation approach)

Glossary

Above-ground biomass carbon pool	Carbon in terrestrial living vegetation above the soil. <i>Note:</i> This includes both woody and herbaceous living vegetation, including stems, stumps, branches, bark, seeds, and foliage. ¹
Accounting	Identifying, quantifying, recording, and classifying GHG emissions, removals, and other related metrics using standardized methods per agreed-upon protocols.
Accounting category	A component of a GHG report that represents a unique impact to the climate resulting from an entity's activities (i.e., emissions, removals, land use, land carbon leakage, gross CO ₂ fluxes, product carbon storage, and reversals) <i>Note:</i> An accounting category may be further disaggregated into accounting subcategories.
Activity data	A quantitative measure of the level of activity related to a source or sink that results in GHG emissions, removals, and/or other impacts.
Additional accounting category	An accounting category that is reported outside of a physical GHG inventory.
Agricultural land	The total of cropland, permanent meadows, and pastures. ²
Allocation	The process of partitioning GHG emissions, removals, or other metrics from a common facility, process, or other system among its various outputs.
Aquaculture	Breeding and rearing aquatic animals (fish and shellfish) or the cultivation of aquatic plants.
Assurance	A process to determine the level of confidence that the inventory and report are complete, accurate, consistent, transparent, relevant, as well as permanent and conservative for removals, and without material misstatements.
Assurer	A competent individual or body, independent of the team preparing the relevant material, who conducts an assurance process, whether internally within a reporting company or externally.
Attributable productive lands	Lands in a sourcing region or jurisdiction that are directly associated with producing a given harvested biogenic material or lands where sold products are used.
Base year	A historic datum (a specific year or an average over multiple years) against which a company's emissions are compared and/or tracked over time.
Base year emissions	GHG emissions in the base year.
Base year recalculation	Recalculation of emissions and removals (if applicable) in the base year to reflect a change in the structure of a company or a change in the GHG accounting methodology used, to ensure data consistency over time.
Below-ground biomass carbon pool	Carbon in the biomass of terrestrial live roots. Fine roots of less than 2 mm in diameter are often excluded because these cannot always be distinguished empirically from soil organic matter or litter. ³
Bioenergy	Any fuel produced by biological processes of living organisms, including organic non-fossil material of biological origin (e.g., plant material), biofuels (e.g., liquid fuels produced from biomass feedstocks), biogenic gas (e.g., landfill gas), and biogenic waste (e.g., municipal solid waste from biogenic sources).

Biogenic carbon	Carbon in, or derived from, living organisms or biological processes, but not from fossil fuels or other fossilized materials
Biogenic carbon cycle	The carbon cycle pathway that includes biogenic land CO ₂ removals, biogenic land CO ₂ emissions, transfers of biogenic carbon between carbon pools, and biogenic CO ₂ emissions.
Biogenic CO₂ emissions	CO ₂ emissions from the combustion or biodegradation of biomass, or other losses from biogenic carbon pools to the atmosphere.
Biogenic product	A good or material that contains biogenic carbon during the use stage of the product life cycle.
Biogenic product carbon pool	Biogenic carbon in products or materials during the use stage of the product life cycle.
Biogenic product carbon storage (accounting subcategory)	Annual or annualized changes in carbon stored in biogenic product carbon pools during the use stage of biogenic products associated with the reporting company's value chain.
Biogenic product CO₂ emissions (accounting subcategory)	Gross CO ₂ emissions from combustion, biodegradation, or other losses from biogenic product carbon pools to the atmosphere <i>Note:</i> Also referred to as gross biogenic product CO ₂ emissions which is an accounting subcategory under gross CO ₂ fluxes.
Biogenic product emissions (accounting subcategory)	Gross CH ₄ , N ₂ O, and, if applicable, CO ₂ emissions from combustion, biodegradation, or other losses from biogenic product carbon pools to the atmosphere <i>Note:</i> Biogenic product emissions is an accounting subcategory under land emissions.
Biological sink	A biological process, primarily photosynthesis, that removes CO ₂ from the atmosphere.
Biomass carbon pool	Carbon in terrestrial living organisms, excluding those in soil organic matter. This includes above-ground biomass carbon pools and below-ground biomass carbon pools.
Capital lease (finance lease)	A lease that transfers substantially all the risks and rewards of ownership to the lessee and is accounted for as an asset on the balance sheet of the lessee <i>Note:</i> Also known as a "financial" or "finance" lease. Leases other than capital leases or finance leases are operating leases. Consult an accountant for further details, as definitions of lease types differ between various accepted accounting principles.
Captured biogenic CO₂ with geologic storage (accounting subcategory)	Net CO ₂ removals resulting from annual net increases to carbon stored in geologic carbon pools from carbon derived from biological sinks.
Carbon stock	The mass of carbon contained in a carbon pool at a given time.
Carbon stock change	The difference in carbon stocks between two points in time.
Carbon storage	The process of maintaining CO ₂ or carbon in a pool for a period of time.
Chain of custody model	The approach taken to control inputs and outputs, and transfer specified characteristics within the chain of custody system. ⁴
CO₂ capture	Collection of CO ₂ from a source for storage within a non-atmospheric pool.

CO₂ removals with geologic storage	Net CO ₂ removals resulting from annual net increases to carbon stored in geologic carbon pools from carbon derived from biological or technological CO ₂ sinks. ⁵
COC (carbon opportunity cost) calculation approach	A calculation approach that is used to estimate the total amount of carbon lost from plants and soils on land occupied by agriculture relative to native vegetation, measured in carbon dioxide equivalent (CO ₂ e).
COC factor	A value that estimates the carbon opportunity cost per unit of activity <i>Note:</i> Such as per tonne of product produced, per hectare, etc., allowing the total COC to be estimated from activity data or land occupation (hectares) data.
COC of land use (accounting subcategory)	The total amount of carbon lost from plants and soils on land occupied by agriculture relative to native vegetation, measured in carbon dioxide equivalent (CO ₂ e).
Compensation target	A target for achieving mitigation external to the target boundary through purchasing and retiring GHG credits (also called offsets or carbon credits) to compensate for annual or cumulative unabated emissions in the target boundary, if allowed under the relevant target-setting program or target-setting policy.
Confidence interval	The range of possible values, for a specified confidence level, that are expected to contain the true value for the estimate.
Contribution or financing target	A target for contributing to financing GHG mitigation outside the company's target boundary, through financing or purchasing and retiring GHG credits <i>Note:</i> GHG credits are applied against contribution targets (i.e., without using GHG credits as offsets or compensation) or other financial support for climate action.
Co-product	One of multiple products produced by a process or system that has a market value.
Cradle-to-gate emissions	All emissions that occur in the life cycle of purchased products, up to the point of receipt by the reporting company (excluding emissions from sources that are owned or controlled by the reporting company).
Cradle-to-grave emissions	All emissions in a product's life cycle, from material acquisition through to end-of-life.
Cropland	A land use category with productive land used for agricultural cultivation systems, including annual and perennial production systems <i>Note:</i> Cropland includes rice cultivation systems, agroforestry systems where the vegetation structure consistently falls below established forest land thresholds, and land temporarily fallow as part of a cultivation system (e.g., a rotation system). ⁶
Dead organic matter (DOM) carbon pool	Carbon in terrestrial non-living organisms or other non-fossil organic compounds, excluding those in soil organic matter <i>Note:</i> Includes dead wood and litter carbon pools.
Dead wood carbon pool	Carbon in non-living woody biomass not contained in litter carbon pools, either standing, lying on the ground, or in the soil <i>Note:</i> Dead wood includes wood lying on the surface, dead roots, and stumps larger than or equal to 10 cm in diameter (or the diameter specified by the company). ¹
dLUC (direct land use change) calculation approach	A calculation approach used to quantify dLUC emissions that uses primary data <i>Note:</i> An "LMU-level" dLUC approach uses primary data specific to a land management unit (LMU). A "jurisdictional" dLUC approach uses regional or national data of known land uses.

dLUC emissions	Emissions (primarily from carbon stock losses) due to land conversion during the LUC assessment period directly on an area of land with a known land use related to the reporting company's operations or value chain.
Direct measurement	Quantification of GHG emissions or removals, or associated carbon stock changes, using physical direct monitoring or measurement of GHG fluxes.
Emission factor	A value that estimates the quantity of emissions per unit of activity <i>Note:</i> Such as per liter of fuel consumed, per tonne of product produced, etc.
Emissions	The release of GHGs into the atmosphere.
Empirical data	Data based on observation or experience from instrumental (usually monitoring equipment) or manual methods (through counts in a survey or census). ⁷
Enteric fermentation	Fermentation that takes place in the digestive systems of animals.
Equal amortization	A method to amortize land use change emissions that occurred in the LUC assessment period across all years in the LUC assessment period, such that the share of land use change emissions assigned to each year is equal.
External compensation	Mitigation external to the target boundary achieved through purchasing and retiring GHG credits (also called offsets or carbon credits) to compensate for annual or cumulative unabated emissions in the target boundary.
Factor-based calculation approach	Methods that multiply activity data by an emission factor or carbon stock change factor to determine emissions, removals, or additional accounting category values for a given process.
Finance lease	<i>see capital lease.</i>
Flow accounting	An accounting approach that estimates the gross fluxes of carbon to and from the atmosphere based on the flows of carbon from the atmosphere to the system (i.e., gross removals) and flows of carbon out of the system to the atmosphere (i.e., gross emissions).
Forest land	A land use category with woody vegetation that meets a threshold of tree canopy cover and height. It also includes land uses with a vegetation structure that currently fall below threshold values, but in situ could potentially reach those values <i>Note:</i> For example, a forest land threshold could be at least 0.5 hectares with a tree canopy cover of over 10 percent of the area, with trees higher than 5 meters. ⁸
Fossil fuel and industrial emissions	The release of GHGs into the atmosphere from sources other than land emissions <i>Note:</i> This includes stationary combustion, mobile combustion, fugitive emissions, and process emissions.
Freshwater carbon pool	Carbon in freshwater rivers, lakes, reservoirs, or other inland freshwater bodies in organic or inorganic carbon pools.
Fugitive emissions	Emissions that are not physically controlled but result from the intentional or unintentional releases of GHGs <i>Note:</i> Fugitive emissions commonly arise from the production, processing transmission storage and use of fuels and other chemicals, often through joints, seals, packing, gaskets, etc.

Gain-Loss method	A method that quantifies the net land carbon stock change based on the difference between carbon gains (i.e., gross CO ₂ removals and other non-atmospheric carbon inputs to land-based carbon pools) and carbon losses (i.e., gross CO ₂ emissions and other carbon transfers from land-based carbon pools) in a given year.
Geologic carbon pool	Carbon in geologic formations or inorganic minerals that are not used as products.
Geologic storage pathway	The consecutive and interlinked stages associated with the acquisition and storage of carbon in geologic reservoirs.
GHG credit	A convertible and transferable instrument usually bestowed by a GHG program, representing the reduction, avoidance, or enhanced removal of a specified amount of GHG emissions or CO ₂ removals (typically equivalent to one tonne of CO ₂), not necessarily used as an offset credit <i>Note:</i> The term “carbon credit” refers to any amount of GHG emissions or unit of carbon; it is used interchangeably with ‘GHG credit’.
GHG flux (flow)	The transfer of GHGs or their constituent elements between pools, expressed as an amount over a given time <i>Note:</i> A GHG flux can be a gross CO ₂ flux or a net CO ₂ flux.
GHG program	A generic term used to refer to any voluntary or mandatory international, national, sub-national, governmental, or nongovernmental authority that registers, certifies, and/or regulates GHG emissions or removals; or that develops and administers such initiatives, systems, or programs.
GHG report	A document disclosing a company’s physical GHG inventory and additional accounting category results, GHG impacts of actions taken by the company, the methods and data used, and any other relevant reporting elements to internal and external stakeholders.
Global Warming Potential (GWP)	A factor describing the time-integrated radiative forcing impact of one unit of a given GHG relative to one unit of CO ₂ over a specified time horizon.
Grassland	A land use category with perennial grasses, other non-grass vegetation, and woody vegetation structures below the forest land threshold <i>Note:</i> This land is commonly used for grazing and includes rangelands, savannahs, shrublands, meadows, and pasturelands that are not considered cropland. ⁶
Gross biogenic land CO₂ emissions (accounting subcategory)	Gross CO ₂ emissions from combustion, biodegradation, or other losses from land-based carbon pools to the atmosphere.
Gross biogenic land CO₂ removals (accounting subcategory)	Gross CO ₂ removals from atmospheric CO ₂ transferred via biological sinks to land-based carbon pools.
Gross CO₂ emissions	The one-directional release of CO ₂ into the atmosphere.
Gross CO₂ emissions from geologic storage (accounting subcategory)	Gross CO ₂ emissions from fugitive CO ₂ emissions or other CO ₂ losses to the atmosphere from a geologic reservoir containing captured and stored CO ₂ .
Gross CO₂ flux	A one-directional transfer of CO ₂ or its constituent carbon from one carbon pool to another <i>Note:</i> A gross CO ₂ flux is a type of GHG flux (flow).
Gross CO₂ flux (accounting category)	Gross CO ₂ fluxes include gross CO ₂ emissions and gross CO ₂ removals associated with the biogenic or TCDR carbon cycle.

Gross CO₂ removals	The one directional transfer of CO ₂ from the atmosphere to storage within a pool.
Gross technological CO₂ removals (accounting subcategory)	Gross CO ₂ removals from atmospheric CO ₂ transferred via technological sinks to technological CO ₂ removal-based product carbon pools or geologic carbon pools.
Harvested area	A spatially explicit area of productive agricultural land that was harvested at a given time to produce the relevant raw material.
Impact traceability	The ability of a company to identify, track, and collect information on the GHG emission or removal impacts of projects or interventions in the value chain of goods and services purchased or sold by the company, including upstream and downstream processes and products. ⁹
Indirect land use change (iLUC) emissions	Emissions (primarily from carbon stock losses) due to land conversion on lands not owned or controlled by the company, or in its value chain, induced by a change in demand for (or supply of) products produced or sourced by the company.
Inset credit	Quantified mitigation outcomes (e.g., emission reductions or removals) of projects or broader interventions that are credited for GHG claims to be transferred between entities, and which are generated from projects or interventions occurring inside the reporting company's value chain <i>Note:</i> Credited GHG reductions or removal enhancements are quantified using project or intervention accounting methods.
Intervention accounting	A GHG accounting method that quantifies systemwide GHG impacts of a specific project, action, or intervention on GHG emissions, removals, and/or additional accounting categories relative to a counterfactual baseline scenario that represents the conditions most likely to occur in the absence of the project, action, or intervention <i>Note:</i> Also referred to as "project accounting."
Inventory accounting	Accounting for GHG emissions, removals, and other metrics over time within a defined inventory boundary relative to a historical base year.
Inventory boundary	A conceptual boundary that encompasses the direct and indirect emissions, removals, and other relevant metrics that are included in the inventory <i>Note:</i> This results from the chosen organizational and operational boundaries applied and relevant accounting categories.
Jurisdiction	A predefined, spatially explicit area based on a political or administrative boundary within which biogenic products or raw materials are sourced <i>Note:</i> This includes political boundaries based on a subnational jurisdiction (e.g., state or province), country, or political region (e.g., the European Union) of origin.
Land-based carbon pool	The carbon in terrestrial biomass (including above-ground and below-ground biomass), dead organic matter (including dead wood and litter), and soil carbon pools (including mineral soil organic carbon, organic soil organic carbon, and soil inorganic carbon).
Land carbon leakage (accounting category)	A specific type of leakage, driven by increased demand for agricultural products and a fixed amount of global land, that occurs when corporate actions displace food or feed production to locations beyond the lands in their operations or value chain, leading to agricultural expansion and land use change.
Land carbon leakage boundary	Determines the specific lands included when quantifying land carbon leakage using the carbon opportunity cost (COC) calculation approach.

Land cover	The observed physical and biological cover of the Earth's land. ¹⁰
Land emissions (accounting category)	The release of GHGs into the atmosphere from the land and biogenic products, including the sum of land use change GHG emissions, land management net biogenic CO ₂ emissions, land management production GHG emissions, and biogenic product emissions.
Land management CO₂ removals (accounting subcategory)	Net biogenic CO ₂ removals resulting from net land carbon stock increases due to ongoing land management practices. ¹¹ All land management CO ₂ removals are from biological sinks.
Land management net biogenic CO₂ emissions (accounting subcategory)	Net biogenic CO ₂ emissions resulting from net land carbon stock losses due to ongoing land management practices. ¹¹
Land management production emissions (accounting subcategory)	CH ₄ , N ₂ O, and non-biogenic CO ₂ emissions due to ongoing land management practices.
Land management unit (LMU)	A predefined, spatially explicit area of a given land use, managed according to a clear set of objectives and according to a single land management plan to produce a given raw material or set of raw materials. An LMU may represent spatially explicit areas such as a farm, field, or plot.
Land occupation (accounting subcategory)	The amount of agricultural land occupied in the reporting year to produce a product, measured in hectares.
Land occupation factor	A value that estimates the quantity of agricultural land occupied per unit of activity (e.g., per tonne of fuel consumed, per tonne of product produced), allowing absolute land occupation to be estimated from activity data.
Land use	The arrangements, activities, and inputs that people undertake on a certain land parcel. ¹²
Land use (accounting category)	An accounting category representing the amount of agricultural land occupied by a company for products it produces or sources <i>Note:</i> Land use can be expressed as land occupation (in hectares) or as the carbon opportunity cost of land use (in CO ₂ e).
Land use change (LUC)	A transition from one land use category to another, such as from forest to grassland or forest to cropland.
Land use change assessment period	The retrospective time period used to evaluate whether or not land use change occurred.
Land use change emissions (accounting subcategory)	Emissions (primarily from carbon stock losses) due to recent land conversion.
Leakage	A phenomenon that occurs when corporate actions lead to increased emissions and/or decreased removals outside of a company's traditional inventory boundary.
Level of assurance	The degree of confidence that an assurance process is designed to provide to intended users regarding the information in the GHG report <i>Note:</i> GHG assurance is typically conducted at one of two levels
Level of traceability	The point and/or tier in the value chain a company has traceability to in the value chain of goods and services purchased or sold by the company.

Linear amortization	A method to amortize land use change emissions that occurred in the LUC assessment period across all years in the LUC assessment period, such that the share of the land use change emissions assigned to each year decreases annually by a constant amount from the first to the last year of the assessment period <i>Note:</i> The largest share of land use change emissions is assigned to the first year when the land use change event occurred.
Litter carbon pool	Carbon in non-living biomass or other non-fossil organic compounds with a diameter greater than the limit for soil organic matter (suggested 2 mm) and less than 10 cm in diameter for dead wood (or other diameter specified by the company), lying dead, in various states of decomposition above or within the mineral and organic soil <i>Note:</i> Live fine roots above the mineral or organic soil (or less than the minimum diameter limit chosen for below-ground biomass) are included in litter where they cannot be distinguished from it empirically. ¹³
Market-mediated effects	The effects of an action, such as substitution or displacement effects, resulting from supply and demand dynamics.
Measurement-based calculation approach	A calculation approach that directly quantifies GHG emissions, removals, or associated carbon stock changes, using direct measurement of GHG pools and fluxes.
Mineral soil organic carbon pool	Carbon in soil organic matter that is less than 2 mm in diameter to a specified depth in soil types that are not classified as organic soils <i>Note:</i> Live and dead fine roots that are less than 2 mm in diameter are included with soil organic matter where they cannot be distinguished from it empirically.
Model-based calculation approach	A calculation approach that uses mathematical or computational modeling techniques to estimate emissions, removals, or carbon stock changes, or related metrics from input variables and fixed model parameters calibrated to the specific model applications.
Net CO₂ flux	The difference between CO ₂ emissions and removals associated with a given carbon pool or set of carbon pools over a defined period of time.
Non-productive land	Lands that are not directly producing or capable of producing a crop, livestock, animal product, or other biogenic product or service, or multiple products as part of a crop rotation, in the reporting year.
Ocean carbon pool	Carbon in marine organic or inorganic carbon pools.
Offset credit	Quantified mitigation outcomes (e.g., emission reductions or removals) of projects or broader interventions that are credited for GHG claims to be transferred between entities, and that are generated from projects or interventions occurring outside the reporting company's value chain <i>Note:</i> Credited GHG reductions or removal enhancements are quantified using project or intervention accounting methods.
Operating lease	A lease that does not transfer the risks and rewards of ownership to the lessee and is not recorded as an asset in the balance sheet of the lessee <i>Note:</i> Leases other than operating leases are capital leases or finance leases (also known as financial leases).

Operational boundary	The boundary that determines the direct and indirect emissions, removals, and other relevant metrics associated with operations, lands, and other assets owned or controlled by a reporting company.
Organic soil organic carbon pool	Carbon in soil organic matter that is less than 2 mm in diameter to a specified depth in organic soils that have an organic horizon greater than or equal to 10 cm in thickness and have greater than 12–20 percent organic carbon by weight, depending on soil texture and water saturation. ¹⁴
Organizational boundary	The boundaries that determine the operations, lands, and other assets owned or controlled by the reporting company, depending on the chosen consolidation approach.
Other land	Land use category with land that does not otherwise fall into the main land use categories (i.e., forest land, grassland, cropland, wetland, and settlements), including bare soil, rock, and ice. ⁶
Physical GHG inventory	An inventory of GHG emissions and removals occurring within the reporting company’s operations and value chain using inventory accounting methods, without double counting by the same entity, and independent of any GHG trades such as purchases or sales of allowances, offset credits, and GHG credits.
Physical traceability	The ability of a company to identify, track, and collect information on activities (e.g., activity data or GHG emission or removals factors) related to material flows of goods and services in its value chain, across its upstream and downstream processes and products.
Pool	A physical reservoir or medium where a GHG or its constituent elements are stored.
Primary data	Data obtained from specific activities within a company’s operations or value chain (e.g., site-specific data) <i>Note:</i> Primary data can be based on direct measurements, models, or other methods and are not necessarily generated by the reporting company.
Product carbon pool	The carbon in products or materials during the use stage of the product life cycle, including recycling and reuse. This includes biogenic and TCDR-based products.
Product carbon stock change	The annual change (occurring in the reporting year) in the total biogenic or TCDR-based carbon stock contained in products sold by the reporting company and that are still in their use stage, including recycling and reuse.
Product carbon storage (accounting category)	Changes in carbon stored in product carbon pools during the use stage of the product life cycle, including recycling and reuse, from carbon derived from biogenic or technological CO ₂ sinks.
Product carbon storage pathway	The consecutive and interlinked stages of carbon storage in products, either through photosynthesis from land or through technological CO ₂ removal processes, from raw materials to intermediary and final products during their use stage, including recycling and reuse.
Product expansion allocation method	A method used to allocate (i.e., assign responsibility) for statistical land use change (sLUC) emissions to land-based products produced in a given area based on the relative expansion of lands used to produce land-based products in that given area <i>Note:</i> This approach is referred to as the “crop-specific approach” in other methodologies.

Productive land	The physical areas of land used to produce a crop, livestock, animal product, or other biogenic product or service, or multiple products as part of a crop rotation, in the reporting year, or the physical areas of land where a sold product was applied in the reporting year.
Project accounting	see <i>intervention accounting</i> .
Proxy data	Data from a similar process or activity that is used as a stand-in for the given process or activity without being customized to be more representative of the given process or activity.
Remote sensing-based calculation approach	A calculation approach that uses satellite or aerial information to collect activity data to estimate emissions, removals, or carbon stock changes.
Removal	The transfer of a GHG from the atmosphere to storage within a non-atmospheric pool <i>Note:</i> Removals can be from biological or technological sinks.
Removals (accounting category)	The net transfer of CO ₂ from the atmosphere to storage within a non-atmospheric pool.
Removals factor	A value that estimates the quantity of removals per unit of activity (e.g., per tonne of product produced), allowing absolute removals to be estimated from activity data.
Reporting	The communication of GHG-related information from or by a reporting company to its intended users <i>Note:</i> Reporting is the act of disclosure. Intended users may include regulators, shareholders, the general public, or specific stakeholder groups, and may be internal or external to the reporting company.
Reversals (accounting category)	An emission from a carbon pool that stores carbon associated with a removal or captured CO ₂ that was previously reported by the reporting company, and that is no longer within the inventory boundary.
Reversals of CO₂ capture with geologic storage (accounting subcategory)	Net carbon losses from geologic reservoirs storing captured CO ₂ associated with previous GHG inventories that are no longer within the inventory boundary.
Reversals of CO₂ removals with geologic storage (accounting subcategory)	Net carbon losses from geologic reservoirs associated with previously reported CO ₂ removals with geologic storage that are no longer within the inventory boundary.
Reversals of land management CO₂ removals (accounting subcategory)	Net carbon stock losses of previously reported land management net CO ₂ removals that are no longer within the inventory boundary.
Scope 1 removals	Removals for which the reporting company owns or controls both the sink (that transfers CO ₂ from the atmosphere) and the pool (that stores the CO ₂ or carbon).
Scope 1 spatial boundary	The lands owned or controlled by the reporting company based on the selected consolidation approach.
Scope 3 removals	Removals that are a consequence of the activities of the reporting company and occur in the reporting company's value chain, but where the reporting company does not own or control both the sink (that transfers CO ₂ from the atmosphere) and the pool (that stores the CO ₂ or carbon).

Scope 3 spatial boundary	The lands relevant to the reporting company's value chain activities (i.e., scope 3 category or categories) based on the company's level of traceability to known lands or regions by activity and/or product type.
Secondary data	Data collected that is not from specific activities within a company's operations or value chain <i>Note:</i> Such as proxy or regional average data.
Settlements	A land use category with land developed for infrastructure or human settlements of any size. ¹⁵
Shared responsibility allocation method	A method used to allocate (i.e., assign responsibility) for statistical land use change (sLUC) emissions to land-based products produced in a given area based on the relative total area of attributable productive land used to produce a specific land-based product compared to other products in a given sourcing area.
Significance threshold	A qualitative or quantitative criterion used to define what constitutes a significant structural, methodological, or other change that triggers a recalculation of base year (or base period) emissions, removals, or other metrics.
Significant	When an estimated emission, removal, or other metric's value has a sufficiently large influence on a company's total inventory to be worthy of attention, considering their business goals and the intended uses of inventory data <i>Note:</i> This can be determined based on its magnitude relative to total emissions, removals, or other metrics in terms of the absolute level, the trend, or the uncertainty. ¹⁶
Sink	A biogenic or technological process, activity, or mechanism that removes greenhouse gases from the atmosphere.
sLUC (statistical land use change) calculation approach	A calculation approach used to calculate sLUC emissions that assigns responsibility for LUC emissions in the relevant boundary to products produced in that region using a statistical proxy.
sLUC emissions	Emissions (primarily from carbon stock losses) due to land conversion during the LUC assessment period within a sourcing region or jurisdiction, calculated using the statistical land use change calculation approach.
Soil carbon pool	Carbon in soil minerals and soil organic matter less than 2 mm in diameter <i>Note:</i> This includes mineral soil organic carbon, organic soil organic carbon, and soil inorganic carbon pools.
Soil inorganic carbon pool	Carbon in soil carbonates and other mineral carbon forms in soil.
Source	A process, activity, or mechanism that releases GHGs into the atmosphere.
Sourcing region	A predefined, spatially explicit land area that supplies a given raw material to the first point of aggregation or first processing facility in the value chain <i>Note:</i> Sourcing region boundaries may be defined relative to the tier of the value chain that is inclusive of multiple first points of aggregation or first processing facilities with overlapping areas that supply harvested raw materials.
Spatial boundary	A boundary that determines the specific lands included when quantifying emissions, removals, land use, or gross CO ₂ fluxes.

Stock-change accounting	An accounting approach that estimates the net flux of carbon to or from the atmosphere during a time period, based on the net change in carbon stocks in the system at the beginning and end of that period.
Stock-Difference method	A method that quantifies net land carbon stock change based on the annual average difference between total carbon stocks across land-based carbon pools at two points in time.
Strata	A set of uniquely defined categories, defined relative to a single or multiple variables, where each category is defined by a characteristic(s) that is distinct from other categories in the set.
Subcategory land use change	A transition where the land use category remains the same, but the land use subcategory changes.
Target base year or period	The base year or period used for defining a GHG target.
Target boundary	A boundary that defines the coverage of a target <i>Note:</i> This includes which GHGs, scopes, accounting categories, sectors, lands, operations, other assets, and activities are covered by a GHG target.
Target commitment year or period	The year or period of time during which emissions, removals, or other metric performance is actually measured against the target level.
Target level	The numerical value of the target, expressed as an absolute value or a percent reduction relative to a value in the target base year or period.
TCDR (technological carbon dioxide removal) carbon cycle	A carbon cycle pathway that includes technological CO ₂ removals, transfers of TCDR-based carbon between carbon pools, and TCDR-based CO ₂ emissions.
TCDR-based carbon	Carbon derived from TCDR processes.
TCDR-based product	A good or material that contains TCDR-based carbon during the use stage of the product life cycle.
TCDR-based product carbon pool	TCDR-based carbon in products or materials during the use stage of the product life cycle.
TCDR-based product carbon storage (accounting subcategory)	Annual or annualized changes in carbon stored in TCDR-based product carbon pools during the use stage of TCDR-based products associated with the reporting company's value chain.
TCDR-based product CO₂ emissions (accounting subcategory)	Gross CO ₂ emissions from the combustion, degradation, or other losses from TCDR-based product carbon pools to the atmosphere <i>Note:</i> Also referred to as gross TCDR-based product CO ₂ emissions.
Technological CO₂ removals with geologic storage (accounting subcategory)	Net CO ₂ removals resulting from annual net increases to carbon stored in geologic carbon pools from carbon derived from technological sinks.
Technological sink	A mechanical or chemical process that removes CO ₂ from the atmosphere or captures biogenic CO ₂ from a source, and stores such CO ₂ or other forms of carbon derived from CO ₂ removals in non-atmospheric carbon pools.
Temporal boundary	A boundary that determines the relevant time period for quantifying emissions, removals, or additional accounting categories.

Third-party assurance (external assurance)	Assurance conducted by a person(s) from an organization independent of the entity preparing the GHG report.
Total emissions (accounting category)	The sum of fossil fuel and industrial emissions, land use change emissions, land management net biogenic CO ₂ emissions, land management production emissions, biogenic product CH ₄ and N ₂ O emissions, land management CO ₂ removals (if relevant), captured biogenic CO ₂ with geologic storage (if relevant), and land carbon leakage.
Traceability	The ability of a company to identify, track, and collect information in the value chain of goods and services purchased or sold by the company, including upstream and downstream processes and products.
Traceability system	A set of procedures that allow an entity to track and record how specific materials or products move across entities and are transformed throughout their value chain, from production to processing to end use.
Uncertainty	<ol style="list-style-type: none"> 1. Quantitative definition: A measurement that characterizes the dispersion of values that could reasonably be attributed to a parameter. 2. Qualitative definition: A general and imprecise term that refers to a lack of certainty in data and methodology choices. <p><i>Note:</i> Examples of qualitative uncertainty include descriptions of the application of non-representative factors or methods, incomplete data on sources and sinks, and a lack of transparency.</p>
Uncertainty range	The range of possible values for a specified confidence level that contains the true value for the estimate.
Waste	An output of a process or system that has no market value.
Waste carbon pool	Carbon contained in landfills or waste materials during their end-of-life stage, excluding recycling and reuse.
Wetlands	<p>A land use category with land that is covered or saturated by water for all or part of the year, and does not otherwise fall into forest land, cropland, grassland, or settlements categories</p> <p><i>Note:</i> This land use category includes areas of peat extraction, aquaculture ponds, and water reservoirs.¹⁷</p>
Yield	The amount of agricultural product harvested per unit area of land over a certain time.

Endnotes

- 1 Adapted from IPCC (2006, vol. 4, chap. 1).
- 2 FAO 2017. The FAO land use classification is used by the United Nations (UN) System of Environmental and Economic Accounting (SEEA), the UN Framework for the Development of Environmental Statistics (FDES), and the World Census of Agriculture. It is furthermore consistent with the land use classes of the IPCC, used for country reporting to the UNFCCC.
- 3 Adapted from IPCC (2006, vol. 4, chap. 1).
- 4 Adapted from ISEAL Alliance (2025).
- 5 This text includes elements that may change to align with the resolution on forest carbon accounting in future versions of this *Standard*. See Box 9.1.
- 6 Adapted from IPCC (2019a, vol. 4, chap. 3).
- 7 Adapted from IPCC (2019a) definition for “observational data.”
- 8 See IPCC (2019a, vol. 4, chap. 3).
- 9 For more details, see Requirement 8.
- 10 Adapted from IPCC (2019a) definition for “land cover.”
- 11 This text includes elements that may change to align with the resolution on forest carbon accounting in future versions of this *Standard*. See Box 9.1.
- 12 Adapted from FAO (2005).
- 13 Adapted from IPCC (2006, vol. 4, chap. 1).
- 14 Adapted from IPCC (2014).
- 15 Adapted from IPCC (2019a, vol. 4, chap. 3).
- 16 Adapted from IPCC (2019a) definition for “key category.”
- 17 Adapted from IPCC (2019a, vol. 4, chap. 3).

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