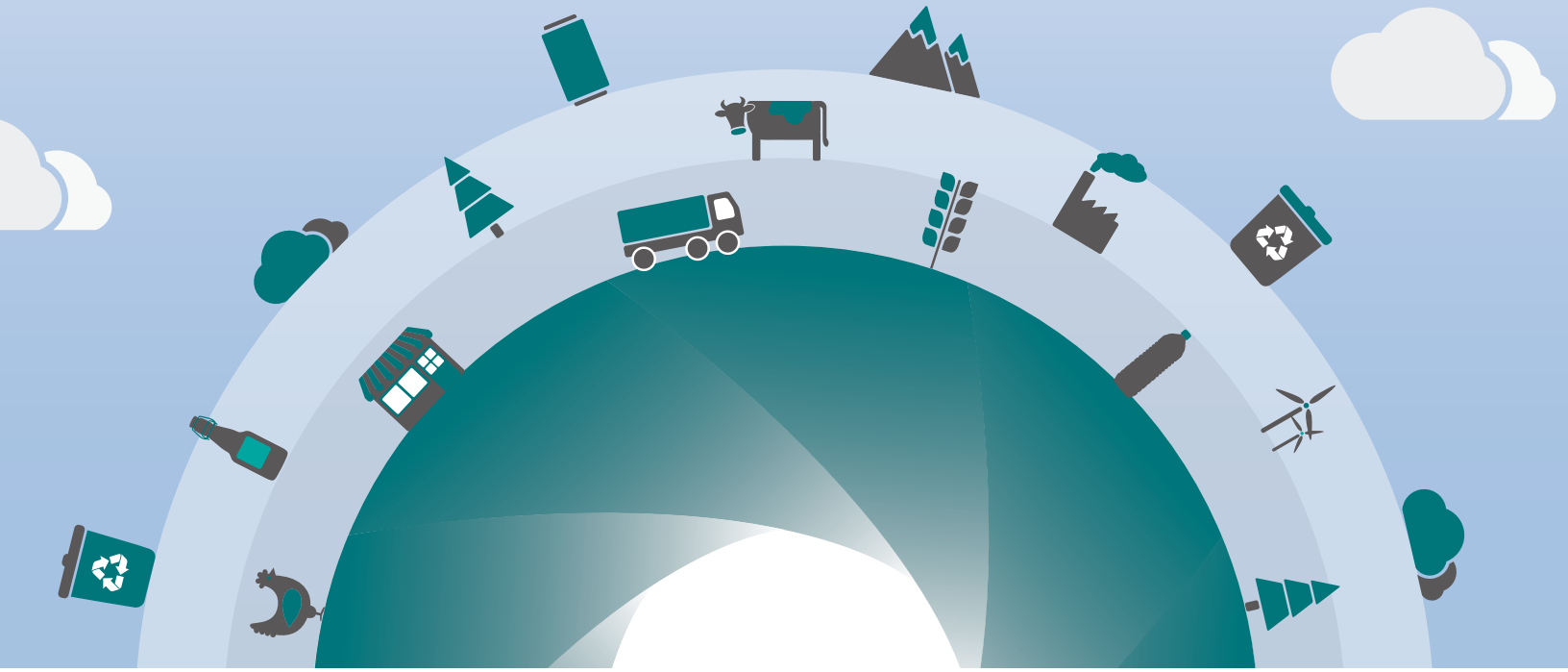
GREENHOUSE GAS PROTOCOL

Land Sector and Removals Standard

Version 1.0: Agriculture and CO_2 removal technologies

Supplement to the GHG Protocol Corporate Standard and Scope 3 Standard

EXECUTIVE SUMMARY



WORLD RESOURCES INSTITUTE

World Business Council for Sustainable Development

Highlights

- The *Land Sector and Removals Standard* (hereinafter the *Standard*) provides greenhouse gas (GHG) accounting requirements and guidance that equip companies in the land sector to quantify, report, and track GHG emissions, CO_2 removals, and other key metrics. This *Standard* also offers companies accounting requirements and guidance to report technological CO_2 removals and CO_2 capture with geologic storage.
- This *Standard* provides land sector-specific requirements and guidance for companies that own or control land, purchase or sell products produced on agricultural lands, or have other relevant land-based activities in their value chain. This *Standard* builds on and is used in combination with the *Corporate Standard* and *Scope 3 Standard*.
- Version 1.0 of the *Standard* and the *Land Sector and Removals Guidance* (hereinafter the *Guidance*) applies to agriculture and CO_2 removal technologies. It does not apply to forestry. Future versions of this *Standard* may include forestry.
- The *Guidance* complements this *Standard* by providing comprehensive guidance, including examples, equations, and case studies, to help users implement the requirements and recommendations in the *Standard* and to compile a corporate GHG inventory.

1. Importance of land sector and removals accounting and reporting

The global scientific consensus is clear that the world needs to rapidly reduce greenhouse gas (GHG) emissions and to remove carbon dioxide (CO_2) from the atmosphere to avoid a 1.5°C (or even 2°C) rise in global average temperature.[1] The Intergovernmental Panel on Climate Change (IPCC) identifies pathways to avoid dangerous levels of climate change that require deep, rapid emission reductions across all sectors.

Globally, the agriculture, forestry, and other land use sector, or the "land sector" for short, is responsible for approximately 22 percent of annual net anthropogenic GHG emissions.[2] Due to a combination of natural and anthropogenic factors, the global land sink currently removes about 30 percent of annual anthropogenic net CO_2 emissions across all sectors. Pathways aligned with limiting global warming to 1.5°C require additional CO_2 removal on the scale of 100 billion to 1 trillion tons over the course of the 21st century.[1] Land sector mitigation approaches, along with new CO_2 removal technologies, will play an important role in reducing, halting, and ultimately reversing the accumulation of GHGs in the atmosphere.[3]

2. How this Standard was developed

The Greenhouse Gas Protocol (GHG Protocol) is a multi-stakeholder partnership of businesses, non-governmental organizations (NGOs), governments, and others convened by the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD). Established in 1998, the mission of the GHG Protocol is to develop internationally accepted GHG accounting and reporting standards, guidance, and tools, and promote their adoption to achieve a net-zero emissions economy worldwide. The GHG Protocol is an accounting and reporting standard that facilitates participation in voluntary and mandatory GHG programs, used at companies' and programs' own risk.

This *Standard* was developed through an international multistakeholder governance process, which took place between 2020 and 2025. Guided by the GHG Protocol's Independent Standards Board (ISB), an Advisory

Committee, a Technical Working Group, pilot testing companies and their supporting partners, and public reviewers, this *Standard* is the result of the voluntary engagement and collaboration of hundreds of companies, NGOs, scientists, and other experts from around the world. These stakeholders were motivated by a common recognition: the need for a clear and standardized framework to account for land emissions, CO_2 removals, and other climate impacts due to human land-based activities, which were previously underreported or excluded from companies' GHG inventories.

3. Purpose and scope of the Land Sector and Removals Standard and Guidance

Table 1 Comparison table of the use case of each document

Executive Summary	Land Sector and Removals Standard	Land Sector and Removals Guidance
Provides a high-level summary of the content and structure of the *Standard* and *Guidance* for non-technical users.	Establishes requirements and recommendations to account for, report, and track GHG emissions, CO_2 removals, and other relevant metrics that reflect anthropogenic activities in the land sector, as well as other CO_2 removal technologies.	Complements the *Standard* by providing comprehensive guidance on implementing the requirements and recommendations in the *Standard*, as well as examples, case studies, and calculation guidance.

The *Standard* establishes requirements, recommendations, and guidance for companies to account for and report GHG emissions, CO_2 removals, and other relevant metrics tracking anthropogenic activities in the land sector previously underreported or excluded from companies' GHG inventories. Such metrics include:

- Land use change emissions associated with land conversion and deforestation
- Impacts associated with land use and leakage due to global land use dynamics
- Emissions and removals from ongoing land management practices
- Biogenic emissions associated with the use of agricultural products
- Life cycle emissions and removals from food, fiber, feed, and bioenergy products across the value chain
- CO_2 removals, including both natural climate solutions and CO_2 removal technologies
- CO_2 capture and storage in geologic reservoirs
- Carbon storage in long-lived products derived from CO_2 removals

This *Standard* is intended to be used by land sector companies and companies seeking to report CO_2 removals, to compile and report an annual GHG inventory, and to track performance over time. It also provides chapters on evaluating the GHG impact of actions, tracking progress toward climate targets, and avoiding double counting with GHG credits when tracking progress towards targets.

The *Guidance* complements the *Standard* by providing users with comprehensive guidance on how to implement the requirements and recommendations in the *Standard*, complete with equations, examples, and case studies. Table 1 explains the scope of the three related documents.

Version 1.0 of the *Standard* and *Guidance* applies to agriculture and CO_2 removal technologies. It does not apply to forestry and non-productive lands (see Box 1). Future versions of this *Standard* may include forestry.

Box 1 Scope of the Land Sector and Removals Standard and Guidance, version 1.0

Version 1.0 of this *Standard* and *Guidance* applies to agriculture and CO_2 removal technologies. Version 1.0 of this *Standard* and *Guidance* does not apply to forestry, as it does not provide comprehensive requirements for companies that own or control forest land or are in forest product value chains. The GHG Protocol's Independent Standards Board did not reach a decision on forest carbon accounting for corporate GHG inventories. Instead, it recognized a need for further methodological development to account for anthropogenic CO_2 emissions and removals attributable to corporate activities in the forest sector. The issue of isolating anthropogenic CO_2 emissions and removals also applies to management activities on non-productive lands, which can include forests or non-forest land uses. Therefore, certain requirements related to carbon accounting for both forest lands and non-productive lands cannot currently be implemented.

While version 1.0 of this *Standard* does not apply to forestry, it does provide requirements to account for and report biomass carbon stock changes on productive agricultural lands (e.g., in agroforestry and silvopasture systems), land use change emissions from the conversion of natural forests to plantation forests, and land management production emissions due to activities on forest lands.

Future versions of this *Standard* and *Guidance* may include comprehensive requirements for forestry and non-productive lands. To inform the future approach on forest carbon accounting and related topics and to motivate methodological advances for corporate GHG accounting in the forest sector, the GHG Protocol will release a request for information on forest carbon accounting in 2026.

4. Relationship to other GHG Protocol standards

This *Standard* builds upon and supplements the GHG Protocol's *Corporate Accounting and Reporting Standard, Revised edition* (the Corporate *Standard*) and *Corporate Value Chain (Scope 3) Accounting and Reporting Standard* (the *Scope 3 Standard*), which provide the foundation for producing a corporate GHG inventory for all sectors. This *Standard* provides land sector-specific and CO_2 removal-specific requirements and guidance to apply in combination with the *Corporate Standard* and *Scope 3 Standard*.

Following the *Corporate Standard* and *Scope 3 Standard*, the primary focus of the *Land Sector and Removals Standard* is annual, entity-level[4] GHG inventory accounting. The requirements and recommendations in this *Standard* are also applicable to product life cycle inventories for agricultural products and products with CO_2 removals in their life cycle that are prepared following the *Product Life Cycle Accounting and Reporting Standard* (the *Product Standard*). This *Standard* supersedes the requirements and guidance in the GHG Protocol's previous *Agricultural Guidance*.

This *Standard* includes elements related to and aligned with *The GHG Protocol for Project Accounting* (the *Project Protocol*). This *Standard* does not provide detailed requirements or guidance on project accounting, GHG credit certification, or GHG credit verification (see the *Project Protocol* for details), but does include chapters on evaluating the impacts of actions to inform decision-making and avoiding double counting with GHG credits when tracking progress towards targets.

5. Who should use this Standard

Companies that have significant land sector activities in their operations or value chain and/or choose to report CO_2 removals or CO_2 capture with geologic storage in their GHG inventory (Table 2) are required to follow this *Standard* to be in conformance with the GHG Protocol.

This *Standard* is relevant for companies of any size, at any point in the value chain (e.g., companies that produce, purchase, or sell agricultural products). While this *Standard* is primarily focused on companies, it can also be used by other types of entities (i.e., organizations and institutions), both public and private (e.g., government agencies, non-profit organizations, assurers and verifiers, certification bodies, GHG programs, and universities). Policymakers, standard setters, and GHG reporting or target-setting programs can use or build on this *Standard* to develop sector- and region-specific standards, policies, and target-setting frameworks. This *Standard* also applies to companies that buy or sell GHG credits from land sector or removal activities; however, this *Standard* is not to be used for GHG credit certification or verification.

Table 2 Intended audience of the Land Sector and Removals Standard, version 1.0

Sector	Relevant chapters	Example companies
Agriculture and other land-based sectors	1–20	• Companies that own or control significant areas of land (e.g., agricultural producers or land developers) • Companies that purchase, consume, process, or sell significant amounts of food, fiber, feed, bioenergy, or other agricultural products (e.g., food and beverage companies, consumer goods companies, bioenergy producers and consumers, biomaterial producers and consumers, retailers, or food service companies) • Companies that supply significant amounts of products to agricultural producers • Companies that manage significant areas of land to increase carbon stored in biomass or soil
Technological CO_2 removal and CO_2 capture with geologic storage	1–6, 11, 12, 14–20	• Companies that own or control technological CO_2 removal operations • Companies that purchase, consume, process, or sell products that store CO_2 that was technologically removed • Companies that store captured fossil CO_2, captured biogenic CO_2, or CO_2 that was technologically removed in geologic reservoirs

6. Why use this Standard

Compiling a GHG inventory enables companies to track, report, and manage their emissions and removals, and understand associated risks and opportunities. Companies and other organizations around the world regularly develop GHG inventories aligned with the GHG Protocol to meet a variety of objectives. These objectives include informing internal decisions to reduce GHG emissions and increase removals, disclosing GHG inventories through mandatory and voluntary reporting programs, setting targets and tracking performance, providing GHG data to value chain partners and investors, and so on. To focus accounting efforts, companies should consider which business goals they intend to achieve, since it may affect how this *Standard* and *Guidance* are used.

7. Structure of this Standard and Guidance

This *Standard* and *Guidance* are organized into four overarching parts that a company must follow when developing a GHG inventory that includes information on land sector activities, removals, and/or CO_2 capture with geologic storage.

These four parts are organized into 20 chapters that each address a unique accounting category or topic (Figure 1). Each chapter provides the relevant requirements for that accounting category or topic, along with recommendations and additional options where applicable. This *Standard* contains a total of 32 accounting requirements. Not all steps, chapters, and requirements may be relevant to a given company, depending on the company's business goals, activities, and decisions on whether to include optional categories.

Figure 1 Structure of the Land Sector and Removals Standard and Guidance

Parts			Chapters
			Chapter 1. Introduction
Part 1. Define business goals and inventory design			**Chapter 2.** Business goals
			Chapter 3. GHG accounting and reporting principles
			Chapter 4. Setting the inventory boundary
			Chapter 5. Spatial boundaries and traceability
			Chapter 6. Data and methods
Part 2. Compile the GHG inventory	**Part 2.1. Requirements for land sector companies**	Land use change–related metrics	**Chapter 7.** Land use change emissions
			Chapter 8. Land use and leakage
		Agricultural land management emissions	**Chapter 9.** Land management net biogenic CO_2 emissions
			Chapter 10. Land management production emissions
		Biogenic and TCDR-based product emissions	**Chapter 11.** Biogenic product and TCDR-based product emissions
	Part 2.2. Requirements for companies choosing to report CO_2 removals		**Chapter 12.** CO_2 removal accounting
			Chapter 13. Land management CO_2 removals
			Chapter 14. CO_2 removals and CO_2 capture with geologic storage
	Part 2.3. Requirements for companies choosing to report product carbon storage		**Chapter 15.** Product carbon storage
Part 3. Act based on the GHG inventory			**Chapter 16.** Evaluating the impact of actions
			Chapter 17. Setting targets and tracking progress
			Chapter 18. Accounting for credited emission reductions and removals
Part 4. Obtain assurance and report the GHG inventory			**Chapter 19.** Assurance
			Chapter 20. Reporting

Applicability

- Required for all applicable companies
- Required for land sector companies
- Optional; contains requirements if companies choose to report the relevant category
- Optional; contains requirements if applicable to business goals

Chapter 1 provides an introduction to this *Standard*.

PART 1. DEFINE BUSINESS GOALS AND INVENTORY DESIGN

Chapters 2–3 set forth goals companies may have for applying this *Standard* (Chapter 2) and the fundamental principles of this *Standard* (Chapter 3).

Chapters 4–6 provide requirements and guidance on cross-cutting accounting topics, including establishing the company's inventory boundary (Chapter 4), determining spatial boundaries based on the company's level of traceability for the products it sources or sells (Chapter 5), allocation, and considerations for selecting data and methods (Chapter 6).

PART 2. COMPILE THE GHG INVENTORY

Chapters 7–15 provide accounting and reporting requirements and recommendations for compiling a GHG inventory, organized by accounting category.

Part 2.1: Requirements for all land sector companies

Chapters 7–11 provide requirements and recommendations to account for and report all GHG emissions and related metrics applicable to land sector companies. These include land use change–related metrics (i.e., land use change emissions, land use, and leakage; Chapters 7–8), agricultural land management emissions (i.e., net biogenic CO_2 emissions and production emissions; Chapters 9–10), and biogenic product emissions (Chapter 11).

Part 2.2: Requirements for companies choosing to report CO_2 removals

Chapters 12–14 provide requirements and recommendations for companies choosing to report CO_2 removals (Chapter 12), including net CO_2 removals from land management (Chapter 13) and removals with geologic storage (Chapter 14). Chapter 14 also provides requirements and recommendations for fossil CO_2 capture with geologic storage, which does not constitute a removal but requires similar accounting considerations. Reporting removals is optional and must be reported separately from emissions. Reporting CO_2 capture with geologic storage is also optional and is reflected in the inventory by not reporting stored CO_2 as an emission.

Part 2.3: Requirements for companies choosing to report product carbon storage

Chapter 15 provides requirements and recommendations for companies choosing to report carbon derived from CO_2 removals that is stored in products. This category is optional and must be reported separately from emissions and removals.

PART 3. ACT BASED ON THE GHG INVENTORY (IF APPLICABLE)

Chapters 16–18 provide requirements and recommendations for companies to evaluate the impact of actions (Chapter 16) and set targets and track progress over time (Chapter 17). In addition, Chapter 18 provides requirements and recommendations for how companies report purchased or sold GHG credits from both within and outside their value chain, and how to avoid double counting between the GHG inventory and GHG credits in relevant circumstances.

PART 4. OBTAIN ASSURANCE AND REPORT THE GHG INVENTORY

Chapters 19–20 provide recommendations for how to obtain third-party assurance (Chapter 19) and requirements and recommendations for how to disclose the GHG inventory and other relevant information within the company's GHG report (Chapter 20).

The remaining sections in this Executive Summary provide a high-level overview of key accounting topics and accounting categories covered in this Standard.

8. Inventory boundary, spatial boundaries, and traceability

The inventory boundary, spatial boundaries, and traceability are three foundational elements of the accounting framework established in this *Standard*. The inventory boundary defines the sources, sinks, and pools associated with operations, land, other assets, and value chain activities that are included in the company's GHG inventory (Chapter 4). These sources, sinks, and pools are accounted for within scope 1 or scope 3, depending on whether they occur within a company's own operations or value chain.

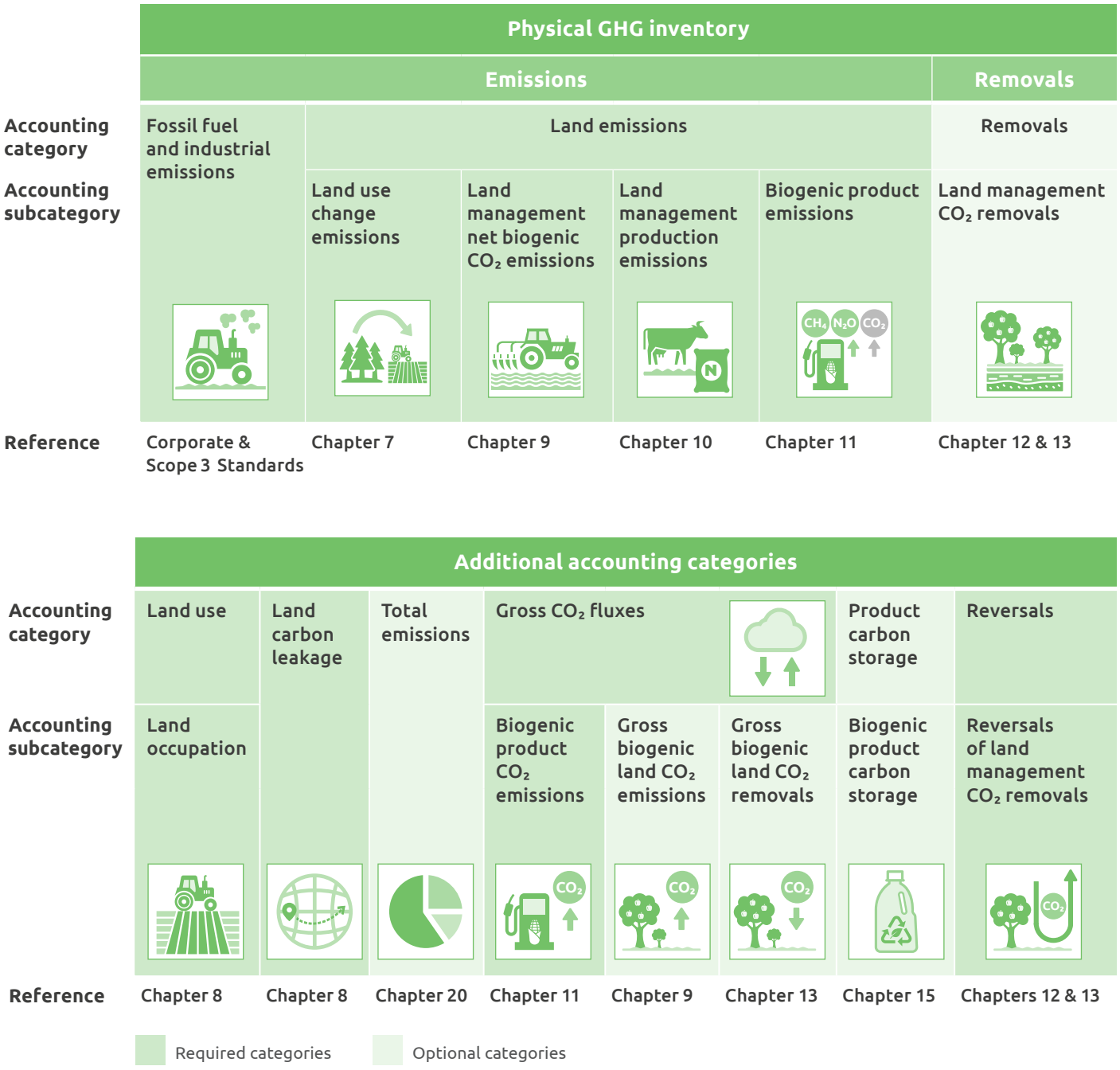
Spatial boundaries and traceability (Chapter 5) are closely linked concepts that are particularly relevant to scope 3 accounting. Traceability refers to the ability of a company to identify and track activities and information about those activities across its value chain, both upstream and downstream of its own operations. The ability to accurately account for emissions, removals, and other metrics depends on a company's traceability to the relevant lands and activities in their operations or value chain. Requirements and guidance on traceability systems in this *Standard* are aligned with leading traceability standards (e.g., ISEAL, ISO).

Spatial boundaries determine the specific lands that are included when accounting for scope 1 or scope 3 emissions, removals, or other metrics. For scope 1 accounting, the spatial boundary is determined by the lands a company owns or controls. For scope 3 accounting, spatial boundaries are set according to the level of traceability a company has to known sourcing areas (e.g., a national or subnational jurisdiction, a sourcing region, an individual farm, etc.). Companies use traceability systems to account at more granular scope 3 spatial boundaries (i.e., a specific sourcing region or set of farms).

9. Overview of accounting categories in this Standard

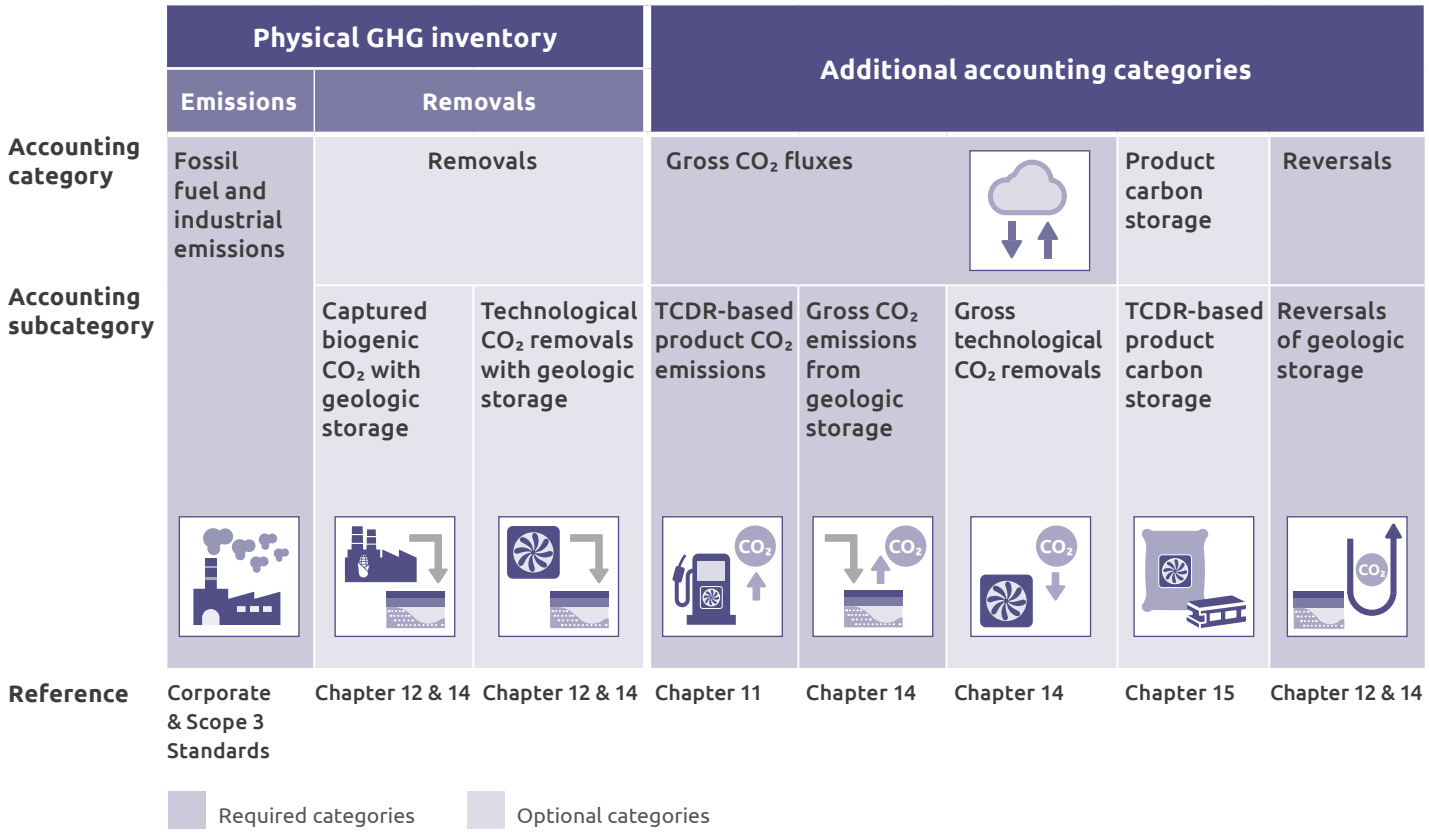
To account for emissions, removals, and other metrics from activities in land sector companies' operations and value chains, this *Standard* introduces new accounting categories for land sector value chains (Figure 2) and for technological CO_2 removal value chains (Figure 3).

Figure 2 Required and optional accounting categories and subcategories for land sector value chains



Note: Descriptions of each accounting category and subcategory are provided in Tables 4.1 and 4.9 in the *Standard* and *Guidance*, respectively.

Figure 3 Required and optional accounting categories and subcategories for technological CO_2 removal (TCDR) value chains



Note: Descriptions of each accounting category and subcategory are provided in Tables 4.1 and 4.9 in the *Standard* and *Guidance*, respectively.

Land use change–related metrics

To account for a company's contribution to emissions from land conversion, this *Standard* requires multiple metrics. The **land use change (LUC) emissions** category in Chapter 7 measures annual emissions from gross expansion of agricultural land and other relevant land conversion on lands in a company's operations or value chain. Emissions from LUC are any release of GHGs due to a change in land use from one land use category or subcategory to another.

In the land sector, where land area is finite and competition for land is increasing, there is a high potential for **land carbon leakage**. Land carbon leakage occurs when a company's operations or value chain activities displace food or feed production, driving agricultural land expansion and leading to LUC beyond the lands in a company's own operations or value chain (Chapter 8). Companies that implement actions with a high risk of leakage (i.e., that reduce or divert food or feed production on agricultural land) are required to account for land carbon leakage.

Land is an input to agricultural production, so a measure of a company's total contribution to global agricultural land use is needed to reflect a company's contribution to global land pressures that lead to LUC. The **land use** category quantifies a company's contribution to global agricultural land use (Chapter 8).

Agricultural land management emissions

Agricultural land management emissions are emissions due to anthropogenic activities on existing agricultural land (i.e., management activities that do not constitute a land use change). Agricultural production and management activities (e.g., tillage, field preparations, thinning and pruning, harvests, and other in-field management practices) can impact above- and below-ground biomass, dead organic matter, and soil carbon pools. Net losses across land carbon pools due to such management activities are accounted for as **land management net biogenic CO_2 emissions** (Chapter 9). Version 1.0 of this *Standard* and *Guidance* covers land management net biogenic CO_2 removals on agricultural land only, and does not cover land management net biogenic CO_2 emissions on forest land or other non-forest, non-productive lands.

Agricultural production and management activities also cause emissions of other GHGs, such as methane, nitrous oxide, and non-biogenic CO_2 emissions. Such emissions sources include enteric fermentation, manure management practices, application of inputs to managed soils (e.g., fertilizer, lime, etc.), rice production, and others. GHG emissions from these sources are accounted for as **land management production emissions** (Chapter 10). Companies must disclose whether fuel and energy emissions in the life cycle of agricultural products (e.g., on-site fuel use or refrigeration) are reported in this category or as fossil fuel and industrial emissions.

Biogenic product CO_2 emissions

Biogenic product CO_2 emissions are CO_2 emissions released to the atmosphere at the point of oxidation when biogenic products (e.g., food, feed, bioenergy feedstocks, fiber, etc.) are oxidized (e.g., from combustion, decomposition, or other processes). Biogenic products cannot be assumed to be carbon neutral. By accounting for the life cycle impacts of biogenic products, companies ascertain the net CO_2 flux (i.e., the net of CO_2 removed through the growth of agricultural products, CO_2 emitted on lands producing the agricultural products, and the use or disposal of the products) associated with a biogenic product's life cycle.

The reporting category under which biogenic product emissions are reported in this *Standard* (Chapter 11) is conditional on whether the reporting company accounts for and reports all life cycle emissions associated with the product, including net land carbon stock changes and land carbon leakage associated with high-leakage-risk activities.

Technological carbon dioxide removal (TCDR)-based product emissions

TCDR-based product CO_2 emissions are CO_2 emissions released to the atmosphere from combustion, degradation, or other losses from TCDR-based products. TCDR-based products contain carbon derived from technological carbon dioxide removal (TCDR) processes (e.g., direct air captured carbon-based fuels). The reporting category under which TCDR-based product emissions are reported in this *Standard* (Chapter 11) is conditional on whether the reporting company accounts for and reports all life cycle GHG emissions and knows the origin of the TCDR-based carbon.

Removals

A removal is the net transfer of a GHG from the atmosphere to storage within a non-atmospheric carbon pool (e.g., a land-based or geologic carbon pool). In this *Standard*, reporting CO_2 removals is optional, and any removals must be reported separately from emissions. Given the unique nature of CO_2 removals, if companies choose to report removals, additional requirements must be met regarding reporting all relevant life cycle emissions, traceability, data quality, scope 3 allocation, and permanence.

Removals are classified according to both the sink and the pool where the carbon is stored. A sink is the process, activity, or mechanism by which the transfer of CO_2 from the atmosphere occurs. Two general types of sinks remove CO_2 from the atmosphere: biological (e.g., photosynthesis) and technological (e.g., direct air capture). Storage refers to the maintenance of CO_2 or the associated carbon in a carbon pool over time. Two general types of storage for CO_2 removals are recognized in this *Standard*: land-based and geologic storage.

Total net increases in the carbon stored in land-based carbon pools (e.g., vegetation or soil carbon pools) may be accounted for as **land management CO_2 removals** (Chapter 13). Version 1.0 of this *Standard* and *Guidance* covers land management CO_2 removals on agricultural land only and does not cover removals on forest land or other non-forest, non-productive lands.

Total net increases in carbon stored in geologic carbon pools, either removed directly from the atmosphere (e.g., direct air carbon capture and storage; DACCS) or via captured biogenic CO_2 (e.g., bioenergy with carbon capture and storage; BECCS), may be accounted for as **removals with geologic storage** (Chapter 14). To report captured biogenic CO_2 with geologic storage as a removal, companies must account for full life cycle land emissions and other relevant impacts. Chapter 14 also provides requirements for other forms of CO_2 capture with geologic storage (e.g., fossil carbon capture and storage), which are not accounted for as removals. Instead, CO_2 capture that meets the relevant requirements does not need to be reported as an emission.

To meet the permanence principle, companies are required to monitor the continued storage of removals over time and account for any emissions if there are losses of stored carbon. When the carbon pool where the removal was stored is no longer within the inventory boundary, any losses of stored carbon are reported as a **reversal**.

Total emissions

Companies are required to report all accounting categories separately, including separate reporting of emissions and removals, and separate reporting of land emissions subcategories. Sometimes, in practice, emissions subcategories are aggregated or netted with removals for certain purposes. To ensure completeness, if a company chooses to report aggregated or net emissions categories in addition to the required disaggregated categories, the company must separately report **total emissions**, which is the sum of all land emissions, land carbon leakage, and fossil fuel and industrial emissions (Chapter 20). Information on total emissions, including leakage, is needed to inform effective decision-making and track progress towards relevant climate targets.

Gross CO_2 fluxes

This *Standard* is based on a stock-change accounting approach that quantifies the net CO_2 flux from the biogenic carbon cycle and technological CO_2 removal (TCDR) carbon cycle. For transparency, reporting of individual **gross CO_2 fluxes** (e.g., gross emissions and removals) is also recommended (Chapters 9 and 12), in addition to emissions and removals calculated based on net carbon stock changes. Information on gross fluxes can be helpful to identify and address the drivers of net carbon stock changes.

Product carbon storage

The product carbon pool is carbon contained in products in their use phase, including recycling and reuse. Carbon derived from CO_2 removals that contributes to annual increases in product carbon pools may be accounted for as **product carbon storage** (Chapter 15). In this *Standard*, reporting product carbon storage is optional. Product carbon storage is reported separately from emissions and removals in relation to scope 3, category 11 (not in scope 1, as no single entity controls the sink and storage). Where relevant, product carbon storage is reported separately for biogenic and TCDR-based products. To report biogenic CO_2 in product storage, companies must account for all life cycle land emissions and other relevant metrics.

10. Act based on the GHG inventory

Evaluate the impacts of actions

Evaluating the impacts of individual corporate actions is important to inform decisions (Chapter 16). All major business decisions and actions have a potential impact on climate change. For companies with operations or value chains in the land sector, potential actions include choosing which land-based products, materials, or energy sources to produce or consume, or which strategies, investments, or practices to implement.

The impacts of actions can occur within a company's scope 1, scope 2, and scope 3 inventory, as well as beyond the inventory boundary. To evaluate the impacts of specific actions, companies should use intervention accounting methods (i.e., project accounting methods), which estimate the systemwide GHG impacts of an action. The information in a corporate GHG inventory informs many important business goals but should be supplemented with additional information in the GHG report beyond that contained in the inventory to fully inform decision-making.

Set targets and track progress

The land sector is critical for global strategies to reach net-zero emissions this century and limit global warming in line with Paris Agreement goals. Companies that produce or source land-based products and/or undertake activities that enhance removals from the atmosphere within their operations or value chain are encouraged to set targets in line with global climate goals and track their performance over time.

The GHG Protocol defines the structure and categories in a corporate GHG inventory, how the categories are accounted for, and which categories are required or optional to report. Companies that participate in a target-setting program that conforms with and builds on GHG Protocol standards (e.g., the Science Based Targets initiative; SBTi) should follow the requirements specified by the target-setting program, including rules for net targets and setting targets that address leakage.

Companies that prepare and report GHG inventories based on GHG Protocol standards but do not participate in a target-setting program should follow the requirements and recommendations in Chapter 17 in this *Standard* when setting targets across relevant accounting categories.

Accounting for credited emission reductions and removals

Credited GHG emission reductions or removals are the quantified mitigation outcomes of projects or broader interventions that are transferable between companies in order for them to make GHG claims. GHG credits are quantified differently and reported separately from the emissions and removals included in the GHG inventory. GHG credits are quantified using project or intervention accounting methods, which measure systemwide GHG

impacts relative to counterfactual baseline scenarios or performance benchmarks that represent the conditions most likely to occur in the absence of the activity.

Companies can use GHG credits to achieve mitigation in addition to the emission reductions and removals reflected in the reporting company's GHG inventory and associated GHG target. GHG credits can be used to meet external compensation or contribution targets as a supplement to meeting scope 1, scope 2, and scope 3 GHG targets. GHG credits cannot be used directly as part of the accounting and reporting of GHG inventories.

Companies that use their GHG inventory to track progress toward targets must avoid double counting with credited emission reductions and removals. This can be addressed by separately reporting emissions and removals adjusted for issued GHG credits.

11. Obtain assurance and report the GHG inventory

Third-party assurance is recommended for all companies and may be required by regulations or GHG programs. The assurance process provides a level of assurance (i.e., confidence) that the GHG inventory is complete, accurate, consistent, transparent, relevant, and without material misstatements. The assurance process also checks that removals reported in the GHG inventory adhere to the principles of conservativeness and permanence.

The outcome of third-party assurance is valuable to the reporting company and its stakeholders, in order that all users of the inventory data can make informed decisions based on the inventory results. The transparency and confidence provided through disclosure and assurance provide the basis for informed action and improving the inventory over time.

Once the inventory is compiled, to be in conformance with this *Standard*, a company is required to publicly report the information specified in the reporting requirements in this *Standard*. Required information includes disaggregated reporting of data for all required accounting categories, including separate reporting of emissions and removals. A GHG report must also include disclosure of additional information related to the methods, data, uncertainty, and assumptions used.

Endnotes

1 IPCC 2023.

2 IPCC 2022.

3 IPCC 2019.

4 Throughout this *Standard* and *Guidance*, the term "company" is used as a shorthand to refer to the entity (i.e., company or other organization) developing a GHG inventory.

Citations:

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