

バイオマス産業社会ネットワーク
第237回研究会
GHGプロトコルにおける
森林とバイオマスの扱い

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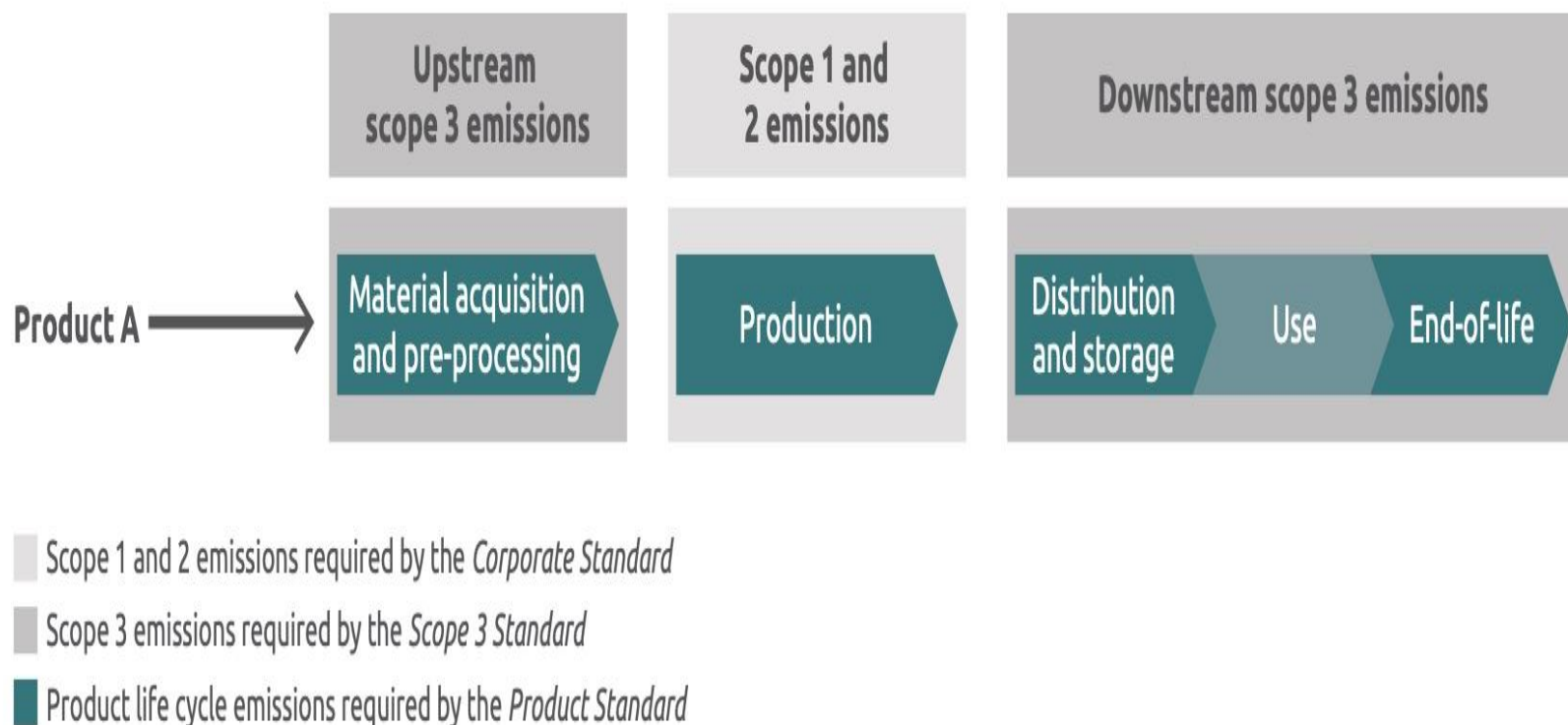
2026年10月2日

人為的排出量をゼロに

- ネットゼロ: 2050年頃に正味人為的排出量をゼロに
正味人為的排出量 = 人為的排出量 - **人為的**吸収量 = 0
- 国別インベントリ: 国全体が算定範囲
→ 算定対象の国での活動による人為的排出と
人為的吸収量と非人為的吸収量が算定範囲
- GHGプロトコル企業基準: 企業組織活動が算定範囲
→ 算定対象の事業活動の結果として
帰属可能な**人為的**排出(必須)と
帰属可能な**人為的**吸収量(オプション)

企業基準、スコープ3基準、製品基準の関係

Figure B6.1-1 Relationship between the Corporate Standard, Scope 3 Standard, and Product Standard for a company manufacturing product A



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

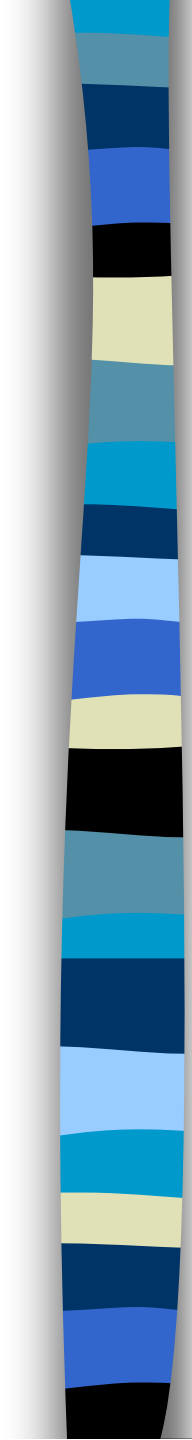
算定範囲と算定期間

- IPCCガイダンス 国別インベントリ
1年間の国全体の排出量
- GHGプロトコル企業基準 (Corporate Standard)
 - スコープ1: 1年間の企業による直接的排出量
 - スコープ2: 1年間の企業によるエネルギー用の間接排出量
 - スコープ3: 1年間の企業によるそれ以外の間接的排出量
 - スコープ外: 1年間の企業による生物由来CO2排出量
- プロダクト基準 (Product Standard)
 - 製品としての排出量
 - 算定期間は製品毎に異なり、特定されない

物理GHGインベントリ

Figure 4.1 Required and optional accounting categories and subcategories for land sector value chains

Physical GHG inventory						
Emissions						Removals
Accounting category	Fossil fuel and industrial emissions ^a	Land emissions				Removals
Accounting subcategory		Land use change emissions ^b	Land management net biogenic CO ₂ emissions	Land management production emissions	Biogenic product emissions ^c	Land management CO ₂ removals
Scope 1						
Scope 2 ^d						
Scope 3						
Reference	Corporate & Scope 3 Standards	Chapter 7	Chapter 9	Chapter 10	Chapter 11	Chapter 12 & 13



土地セクターと除去基準

Land Sector and Removals Standard

- 林業分野を除く基準とガイダンスが発表
- 土地排出 (Land emissions) が追加
 - 土地利用変化 (Land use change)
 - 土地管理正味生物由来CO₂排出
(Land management net biogenic CO₂ emissions)
 - 土地管理生産排出
(Land management production emissions)
 - 生物由来生産物排出
(Biogenic product emissions)

Figure 6.3 Calculating separate scope 3 life cycle GHG emission and removals factors

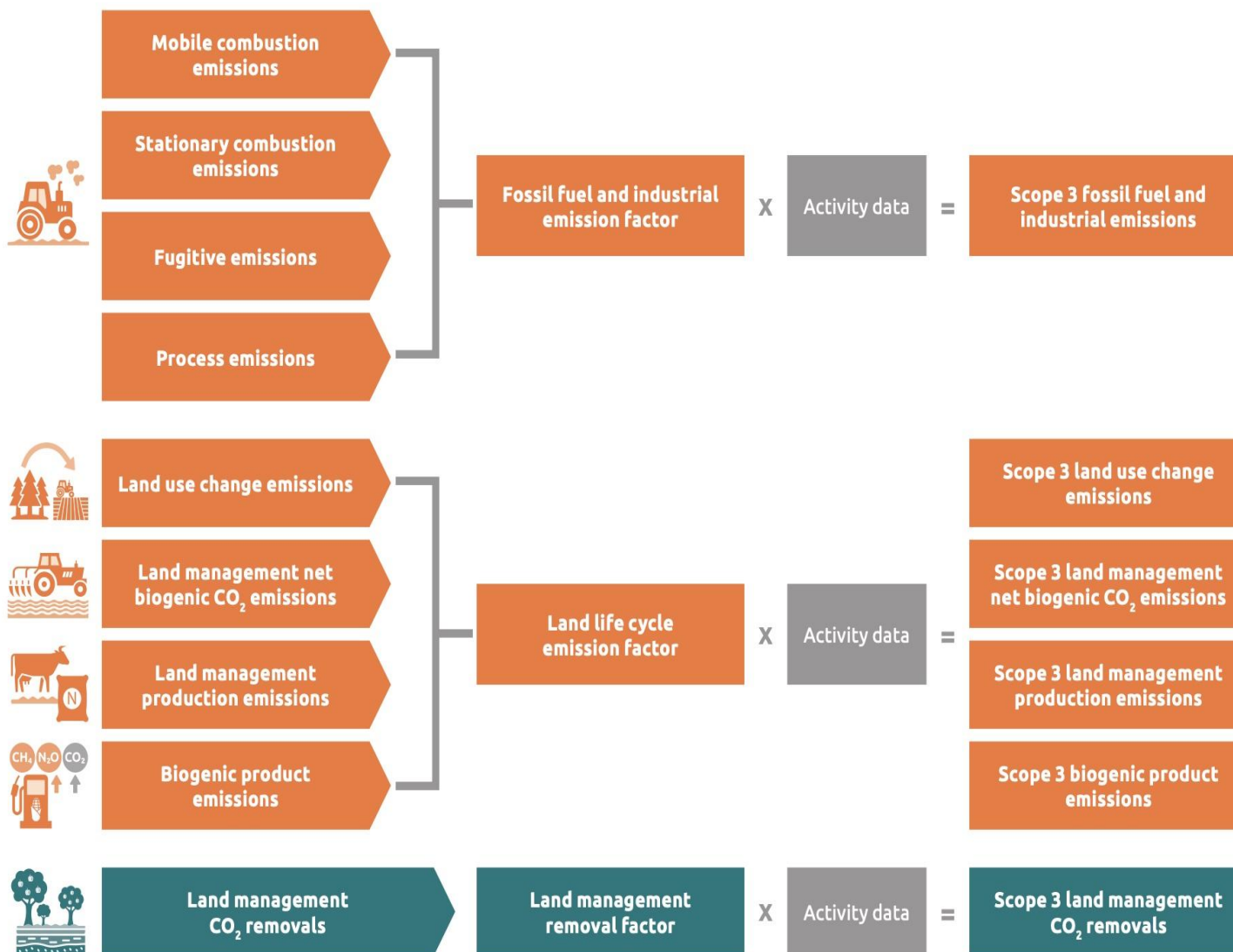


Figure 4.1 Illustration of carbon fluxes between carbon pools

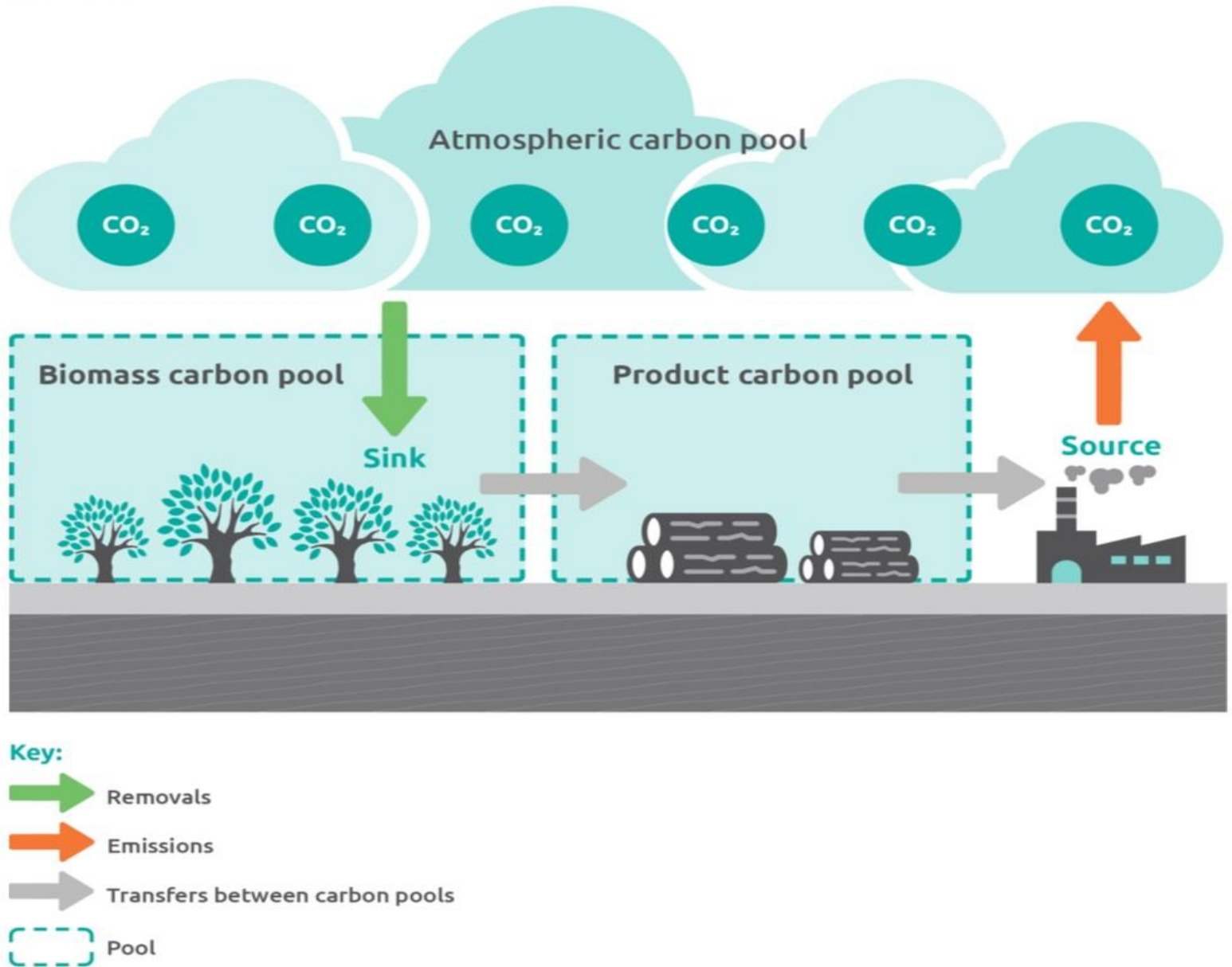
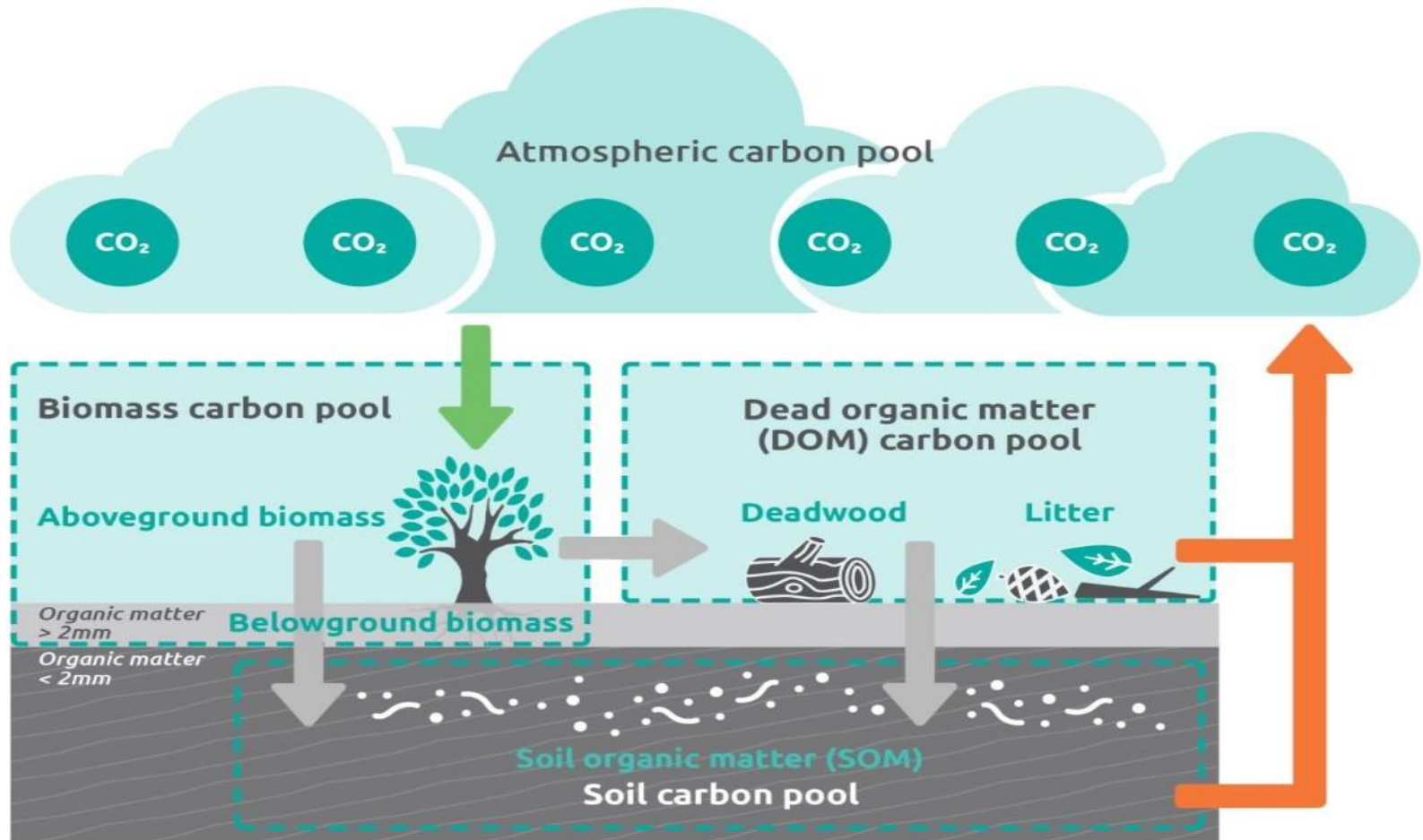


Figure 4.2 Land-based carbon pools and fluxes



Key:

-  Gross CO_2 removals
-  Gross CO_2 emissions
-  Transfers between carbon pools
-  Pool

除去：吸收＋貯留

Table 4.4 Definitions for scope 1, scope 2, and scope 3 land emissions and removals categories, reported in the physical GHG inventory

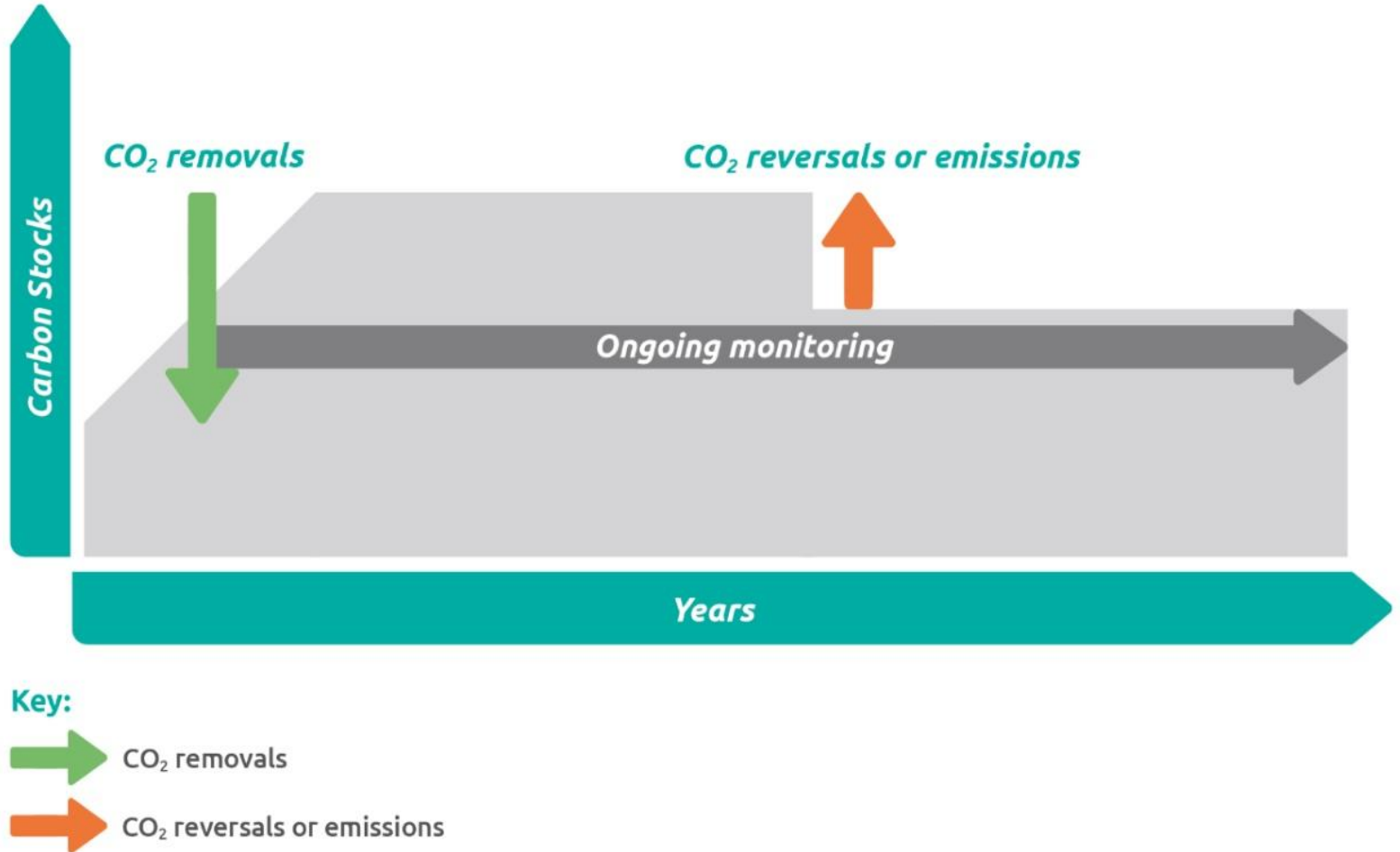
Scope	Land emissions	Removals
Scope 1 (direct)	Land emissions from operations or lands owned or controlled by the reporting company	Removals for which the reporting company owns or controls both the sink (that transfers CO ₂ from the atmosphere) and the pool (that stores the CO ₂ or carbon)
Scope 2 (indirect)	Biogenic product emissions associated with the generation of purchased or acquired electricity, steam, heating, or cooling consumed by the reporting company <i>(see “Operational boundary and scope 2 accounting” in this section and Requirement 17 for details)</i>	Not applicable <i>(see “Operational boundary and scope 2 accounting” in this section for details)</i>
Scope 3 (indirect)	Land emissions that are a consequence of the activities of the reporting company and occur in the reporting company’s value chain, but which occur from operations or lands owned or controlled by another company	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)

スコープ3の除去(吸収)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 CO2 from the atmosphere) and the pool (that stores the CO2 or carbon)
- 報告企業の活動結果であり、報告企業のヴァリュー・チェーンで発生しているが、報告企業が(CO2を大気から移転する)シンクや(CO2や炭素を蓄える)プールの双方を所有／コントロールしていない

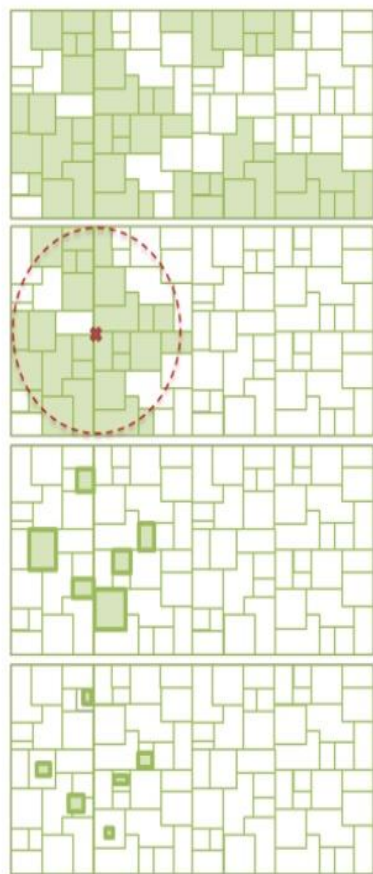
除去算定のためのモニタリング

Figure 6.1 Representation of a storage monitoring framework



スコープ3での場所の境界

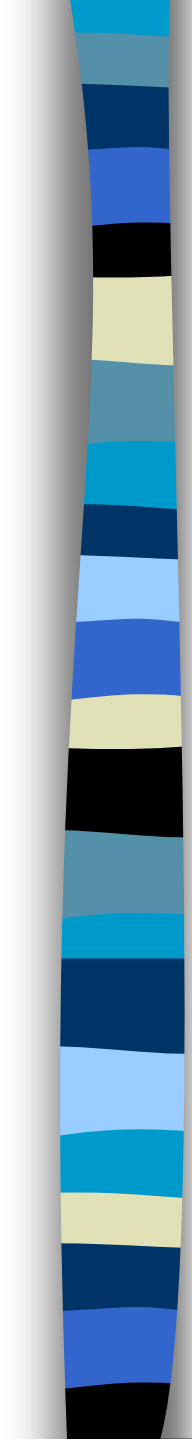
Figure 8.3: Illustration of relevant spatial boundary based on traceability for scope 3 accounting



Spatial Boundary	Traceability	Data Specificity	Emissions Reporting	Removals Reporting
Jurisdiction	Known subnational jurisdiction, country or political region (e.g. EU) of origin	Average national or regional secondary data for attributable managed lands in the jurisdiction	Least precise	No, requires more precise traceability and primary data
Sourcing Region	Known first collection point or processing facility	Primary data on attributable managed lands in the sourcing region(s) or secondary data representative of average management for lands within the sourcing region(s)		Subject to pilot testing question #3
Land Management Unit	Known land management units of origin (e.g. forest management unit, ranch or farm)	Primary data from producers for the specific land management unit(s)		Yes, if the company meets other removals requirements
Harvested area	Known field or forest stand of origin	Primary data from producers for the specific harvested area(s)	Most precise	Yes, if the company meets other removals requirements

現行基準での規定

- 土地利用変化による森林バイオマスの炭素ストック減少は、天然林から植林地に転換では「土地排出」算定で、20年間に配分へ
- 生物由来生産物(農産物由来)排出
→ 土地排出と土地炭素リーケージ確認ないと排出算定へ
- 廃棄物由来でも販売されれば排出算定へ
- 土地利用変化がない伐採事業を行う管理地(Managed Land)の扱いで、論議が紛糾
→ Managed Land Proxy+(MLP+)と
Activity Based Accounting(ABA)



関連資料

Managed Land Proxy+(MLP+)

<https://ghgprotocol.org/sites/default/files/2026-06/FCA-Quantification-Approach-Managed-Land-Proxy-Plus.pdf>

Activity Based Accounting(ABA)

<https://ghgprotocol.org/sites/default/files/2026-06/FCA-Quantification-Approach-Activity-Based-Accounting.pdf>