Agriculture Sector Roadmap to 1.5°C

Reducing Emissions from Land Use Change

Our Global Food System is Key to a Climate-Friendly Future

Today, our global food system feeds 8 billion people, supports the livelihoods of more than 600 million farmers, and employs almost one-third of the global workforce. To meet the demands of a growing population, global agricultural production has expanded significantly in the last two decades, making it possible for more people to have access to affordable, safe, and plentiful food. However, the production models that have underpinned the increase in production have come at the cost of natural ecosystems. The forest, land and agriculture sector is at high risk from the impact of climate change, but it also represents nearly one-quarter of global greenhouse gas (GHG) emissions - the largest emitting sector after energy. Much of this is due to the conversion of forests and other ecosystems to agricultural use. Between 2001 and 2015, just seven agricultural commodities replaced 71.9 million hectares of forest, an area of land more than twice the size of Germany (World Resources Institute). Cattle, palm oil and soy were the top drivers. The science is clear: to keep the 1.5°C target in the Paris Agreement within reach, tackle food crisis risks and enable the transformation to a global net-zero future, cutting emissions from land use change is paramount.

Turning Pledges into Action

Agri-commodity traders and processors play a critical role in implementing the transition to a climate-friendly future. Recognizing their role, at COP26, 13 of the world's largest agri-commodity traders and processors signed a joint statement committing to develop a shared roadmap for enhanced supply chain action consistent with a 1.5°C pathway. These agricultural processors and traders have the farm-gate and ranch-gate relationships with the producers who hold the keys to the transition, which makes these companies some of the most important agricultural supply chain actors for keeping climate goals within reach.

The **Agriculture Sector Roadmap To 1.5°C** is the realization of the sector's commitment to urgently reduce emissions from land use change

Agriculture Sector Roadmap to 1.5°C
Reducing Emissions from Land Use Change

1

Accelerate supply chain action to reduce emissions from land use change

2

Drive transformation of commodity producing landscapes

3

Support forest positive sector transformation

Objective

This pillar focuses on sectoral and individual company action to reduce emissions from land use change

- Companies are accountable for the development and publication of commodity-specific, time-bound implementation plans to provide transparency on actions to remove forest loss and conversion from supply chains, and report annually and publicly on progress

- Companies will measure and publicly disclose emissions from land use change as part of a corporate-level GHG emissions inventory and will set emissions reductions targets based on science

Companies will play a key role in supporting the transition to forest positive land use management and commodity production

- Companies will invest in initiatives that transform land use practices, support producer livelihoods and incentivize sustainable land use

- In collaboration with other stakeholders, companies will scale-up exemplary initiatives and showcase collective action in key commodity producing landscapes
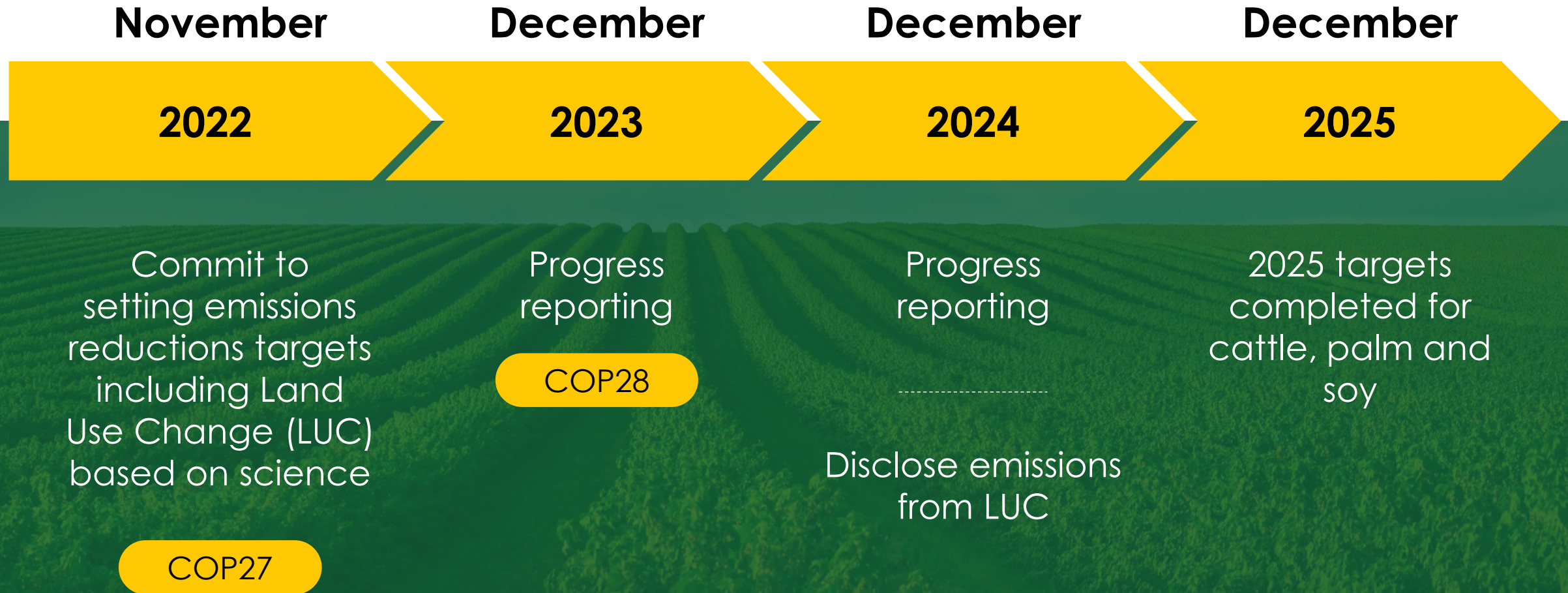
Companies will strive to break down barriers and drive sector transformation through dialogue and collaboration with governments, other value chain actors and the finance sector

- Together with industry peers and other supply chain actors, the agriculture sector will mainstream best practice and align on shared responsibility to deliver forest positive impacts

- The agriculture sector will engage with key governments and the finance sector to strengthen the enabling environment for forest positive production and trade

Roadmap Milestones

November	December	December	December
2022	**2023**	**2024**	**2025**

2022 — Commit to setting emissions reductions targets including Land Use Change (LUC) based on science

COP27

2023 — Progress reporting

COP28

2024 — Progress reporting

Disclose emissions from LUC

2025 — 2025 targets completed for cattle, palm and soy

Accelerate Supply Chain Action to Reduce Emissions from Land Use Change

According to the IPCC, about 22% of global human-caused greenhouse gas emissions come from agriculture, forestry and other land uses. In fact, about half of land-related emissions and 10% of net global GHG emissions are from land use change, including deforestation and conversion of other natural habitats. Land use change, such as clearing forest to make way for farms and pasture, contributes 90% of that. The agriculture sector aims to play a central role in reducing emissions from land use change in order to limit global warming to 1.5°C

Actions

1.1 Commodity Implementation Plans

Develop and publish commodity-specific, time-bound implementation plans to provide transparency on actions to remove forest loss from supply chains

1.2 Progress Reporting

Report annually and publicly on progress against final and interim targets

1.3 Emissions Reductions Targets

Measure and publicly disclose emissions from LUC as part of GHG emissions inventories and set emissions reductions targets based on science

Develop and publish commodity-specific, time-bound implementation plans to provide transparency on actions to remove forest loss from supply chains

The implementation plans must provide detail on how companies will achieve the objective of eliminating deforestation in supply chains in line with target dates

At a minimum, the implementation plans must include the core components defined in this Roadmap. Roadmap elements can be embedded in existing sustainability plans

Implementation plans should be developed for cattle, palm oil and soy if material to company operations for the signatories of this Roadmap

Required Components of the Implementation Plans

Time-bound Targets

- Implementation plans must specify time-bound targets

Scope

- Implementation plans must specify scope in terms of geography, operations, and product types

Supply Chain Mapping & Traceability

- Implementation plans must specify the company's approach to supply chain mapping and traceability, demonstrating a robust approach to know and control the origins of materials in supply chains to a sufficient extent to determine compliance, and the timelines to achieve this

Monitoring & Response

- Implementation plans must provide details about the systems to accurately monitor deforestation, combining geospatial information with supply chain information, along with response mechanisms to cases of non-compliance

Verification

- Implementation plans must describe the details of third-party audits to verify reported traceable, deforestation-free volumes

1.2 Progress Reporting

Reporting publicly and regularly on progress is key to ensuring accountability and monitoring progress towards goals. It also enables key stakeholders, including other supply chain actors and investors, to monitor the progress of their own implementation plans

Guidance for progress reporting

- Companies will define key performance indicators (KPIs) in their implementation plans and report publicly on progress on an annual basis

- For the palm sector, companies will report progress through the NDPE Implementation Reporting Framework (IRF) which is a comprehensive monitoring and reporting tool designed to allow palm oil companies along the supply chain to report on progress on delivering No Deforestation, No Peat and No Exploitation (NDPE) commitments for the volumes they produce and purchase

- For the cattle sector, reporting will be informed by the KPIs recommended in the Guidance for Forest Positive Suppliers of Cattle Derived Products

- Companies are encouraged to report through CDP

- One recommended practical tool for supporting strategic decision making, planning and disclosure is the Taskforce for Climate related Financial Disclosures (TCFD) aligned climate transition scenarios developed by WBCSD for Food, Agriculture and Forest Products

1.3 Emissions Reductions Targets

To meet the goals of the Paris Agreement, a broad set of mitigation strategies are needed. GHG emissions from the food, land use and agriculture sector need to be halved by 2050, and at the same time agricultural production is expected to increase by about 50% from the current levels to meet increased food demand (WRI, 2019). To complement actions targeted at reducing emissions, companies will work to ensure that these GHG emissions reductions are done in line with climate science, using new tools and methodologies that are becoming available to enable science-based target setting and the transparent reporting on progress made to achieve emissions reductions targets

Actions	Milestones
Commit to setting near-term emissions reductions targets based on science, including emissions from land use change	COP27, November 2022
Companies must set a validated target, including emissions from land use change, where company GHG accounting must align with the Greenhouse Gas Protocol standard and the target must cover full value chain emissions at the 95% threshold for Scopes 1 and 2, and 67% threshold for Scope 3	
Disclose emissions from land use change. GHG emissions inventories to be according to GHG Protocol Land Sector and Removals Guidance	July 2024
Submit emissions reduction targets to the Science-Based Targets initiative (SBTi) for validation, including FLAG OR Publish third-party validated LUC emissions reduction targets	In alignment with SBTi requirements OR July 2024
Annual emissions disclosure and progress reporting to be carried out through CDP and/or company website or annual reports	Annual basis

Drive Transformation of Commodity Producing Landscapes

Companies will play a key role in supporting the transition to forest positive land use management and commodity production

Companies will invest in initiatives that transform land use practices, support producer livelihoods and incentivize sustainable land use

In collaboration with other stakeholders, companies will scale-up exemplary initiatives and showcase collective action in key commodity producing landscapes

Support Forest Positive Sector Transformation

Companies will strive to break down barriers and drive sector transformation through dialogue and collaboration with governments, other value chain actors and the finance sector

Together with industry peers and other supply chain actors, the agriculture sector will mainstream best practice and align on shared responsibility to deliver forest positive impacts

The agriculture sector will engage with key governments and the finance sector to strengthen the enabling environment for forest positive production and trade

Palm Oil Sector

The Palm Sector

The production of palm oil underpins global food systems and provides livelihoods for millions of people across Southeast Asia, and parts of Latin America and Africa. Globally, production is dominated by Indonesia and Malaysia, accounting for more than 90% of global output in 2020, produced by about 1500 mills, owned by hundreds of companies in the two countries.

A Decade of Progress

Forest loss linked to palm oil production in Indonesia and Malaysia climbed steadily from 2000–10, peaked between 2012–15, and has fallen markedly since 2015. Indonesia saw four consecutive years of reductions in primary forest loss in 2017–2020, and the Indonesian Ministry of Environment and Forestry expects this trend to continue until at least 2024. This decline can be attributed to several factors, including the efforts of governments, supply chain actors and civil society. The Government of Indonesia has played a critical role in driving change, including the introduction in 2011 of a moratorium on new licenses in primary forests and peatlands. Mandatory regulatory frameworks for sustainable palm production were also introduced, in Indonesia (ISPO) in 2011 and in Malaysia (MSPO) in 2013. The implementation of No Deforestation, No Peat and No Exploitation (NDPE) commitments made by supply chain companies was also an important factor, where close to 80% of refinery companies in Indonesia and Malaysia have NDPE policy implementation.

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The Opportunity

For the signatories of this Roadmap, NDPE implementation has progressed at pace, and for companies directly involved in the cultivation of oil palm, forest loss within their concessions is virtually zero – in fact, the concessions are working as carbon sinks. However, transformation is still needed in the "last-mile", and leaders in the sector have a critical role to play in closing this gap, focusing on smallholders, stand-alone mills, and smaller companies. In Malaysia, for example, as of 2020 over 96% of oil palm plantation estates were already MSPO certified, whereas for independent smallholders in Malaysia this was just under 40%. This clearly shows that last-mile transformation support needs to focus on smaller producers through support of the national mandatory frameworks.

Pillar 1 sets out important supply chain targets that need to be met by the entire sector. Because supply chain action must be underpinned by smallholder inclusion and address the systemic challenges related to livelihoods, productivity and resilience, **Pillar 2** focuses on scaling-up forest positive action for production and forest protection in priority landscapes through proactive interventions. Ultimately, sector transformation depends on working synergistically with producer country governments, and **Pillar 3** provides support to the uptake of the mandatory regulatory frameworks in Indonesia and Malaysia, so that the last-mile transformation can be achieved, and aims to link the sector's no-deforestation commitment to the producer countries' own sustainability and climate policies.

Commodity Implementation Plan

Ambition

Companies that trade or are primary processors of palm aim to achieve no-deforestation and no-peat supply chains by 2025. Building on significant progress already made by the sector, efforts will concentrate on accelerating last-mile transformation

Time-bound Targets

All palm oil volumes are in the "Delivering" category of the NDPE IRF (Implementation Reporting Framework) by 2025

Adherence to NDPE policy commitments for deforestation and peat development cut-off dates as adopted pre-2020, including separate earlier sectoral standards are already in place (e.g. 2005 for High Conservation Value areas for RSPO members). While not explicit within this Roadmap, individual company commitments on No Exploitation as part of NDPE will continue to be adhered to

Scope

Geography

Implementation plans must cover supply from all origins

Operations

All the company's business units including all legal entities under the group's control

Implementation plans apply to all Joint-Ventures (JV) where the company is a majority shareholder. Where the company is a minority shareholder, the company should engage with their JV partners to develop their own implementation plan

Sources

Direct and indirect supply of palm

Product Types

All palm products

Commodity Implementation Plan

Supply Chain Mapping & Traceability

Data requirements may be differentiated based on supplier-type (directly managed or third-party), in line with the IRF

Also informed by the guidance (including risk-based approaches for traceability for third-party supply) being developed by the POCG PPBC working group (POCG = Palm Oil Collaboration Group; PPBC = Production & Protection Beyond Concessions)

Monitoring & Response

Overlaying of traceability data with geospatial monitoring aligned with the IRF

The Consumer Goods Forum's Forest Positive Coalition Monitoring and Response Framework may be used as a guide on credible monitoring information and acceptable responses to deforestation non-compliances

Verification

Use of verification protocol as specified by the IRF to verify volumes from mills and their suppliers considered fully "delivering"

Definitions

Deforestation

- Loss of forest (see below) as a result of: i) conversion to agriculture or other non-forest land use; ii) conversion to a tree plantation; or iii) severe and sustained degradation

Conversion

- For palm, conversion is interpreted as "no new development on peatlands regardless of depth"

Forests

- High Carbon Stock and High Conservation Value

Drive Transformation of Commodity Producing Landscapes

Recognizing that 90% of palm oil production is in Indonesia and Malaysia, companies will work in specific regions in Indonesia and Malaysia, together with local governments, communities and civil society organizations to plan and implement longer-term forest and livelihood positive actions proactively, holistically and inclusively in priority landscapes. This work will be expanded to additional palm producing countries such as in Africa, Latin America, and the Pacific Islands, as relevant

Last-Mile Transformation

- While much effort has been put in place over the last decade in the palm sector, there is a last-mile transformation gap amongst smaller companies, stand-alone mills, and smallholders. To address this, companies will aim to scale-up forest positive action for production and forest protection in priority landscapes through proactive interventions, action protocols and targeted monitoring, with a particular focus on independent smallholders in palm oil supply chains, through platforms such as the PPBC Working Group or government-led jurisdictional approaches

Milestones

- November 2022: Via the PPBC working group, or government-led jurisdictional approaches, there are commitments to specific actions in at least one priority landscape relevant to companies' supply base and defined concrete ways to increase investment and support from other stakeholders. Various landscapes have already been identified through these processes, and each committed company is required to work in landscapes or regions where they can have the best possible leverage and supply chain outcome. Examples of theses landscapes and jurisdictions that have been identified include Northern Sumatra, Riau, and Aceh in Indonesia, and the state of Sabah in Malaysia

- December 2023: implementation is happening in one priority landscape and there are plans to scale to additional landscapes. The Finance sector is engaged on aligning financing objectives to enable achievement of palm oil sustainability targets, with a focus on smallholders, within these landscapes

- December 2025: landscape transformation is underway in a portfolio of priority landscapes with concrete, measurable impacts

Support Forest Positive Sector Transformation

Producing countries around the world are implementing policies to implement sustainable palm oil production. In Indonesia and Malaysia, stakeholder dialogues to support sectoral transformation will initially focus on accelerating the uptake of the Indonesian Sustainable Palm Oil (ISPO) and increasing recognition of the Malaysian Sustainable Palm Oil (MSPO) standards. This work will be expanded to additional palm producing country frameworks as relevant

3.1 Engage with industry peers and other supply chain actors to mainstream ISPO and MSPO to ensure that supply chain targets are met by the entire sector

- Mainstream the NDPE-IRF and work to achieve "delivering" status within the IRF across the sector
- Work with NDPE-IRF to define specific additional requirements for ISPO and MSPO certified entities to meet "delivering" status, including ability to demonstrate and report progress
- Work with consumer goods manufacturers to recognize ISPO and MSPO as entry points to the NDPE-IRF framework

3.2 Engage with key governments to strengthen the enabling environment for forest positive production by accelerating the uptake and recognition of ISPO and MSPO

- Accelerate adoption and uptake of nationally mandated standards MSPO and ISPO
- Encourage recognition of MSPO and ISPO as regulatory frameworks to reduce commodity driven forest loss
- Collaborate in national initiatives related to addressing climate change, including on no-deforestation and emissions reductions efforts relevant to the palm oil sector

Soy Sector

The Soy Sector

Global demand for soy has grown exponentially, driven primarily by its importance as a source of protein for animal feed. Soy established itself as a key agricultural crop for South American economies in the 1970s, and since the mid-2000s the region has been the leading soybean producing area in the world. The production of soy is a pathway to prosperity for people, critical to economic development for many countries in the region and is helping the world feed 10 billion people by 2050.

The Impact of Growth

While the production of soy has played a significant role in the economic development of some countries in South America, it has come at a cost, contributing to deforestation in some of the world's most important ecosystems. In response, local governments and the soy supply chain have advanced key initiatives to address the challenge including the Amazon Soy Moratorium, the development of sophisticated remote monitoring tools, and country-specific legislation focused on reducing deforestation from agricultural expansion. While these efforts have been effective in reducing rates of soy-driven deforestation in the region, further action is needed to protect important forested areas in the Brazilian Cerrado and the Paraguayan and Argentinian Chaco while continuing to protect the livelihoods of farmers.

The Opportunity

The Roadmap represents an unprecedented collective effort by the sector to define shared approaches and take steps forward together, setting out the key role companies will play in eliminating deforestation and the protection of other non-forest ecosystems.

The Roadmap establishes a framework to address deforestation and builds on existing commitments and progress by establishing a 2025 target date for the removal of deforestation for soy production in the Amazon, Cerrado and Chaco, and the protection of non-forest ecosystems in compliance with relevant local legislation. To put this in context, between 2013-2021, based on Agrosatelite data, a total of 114 million tons of CO_2-eq were emitted by the clearance of native vegetation in the Cerrado biome eventually cultivated with soy. The implementation of this Roadmap has the potential to avoid 75% of these emissions if a similar rate of deforestation is maintained for the same timeframe. Furthermore, the Roadmap aims to protect over 14 million hectares of land beyond that already protected by the Brazilian Forest Code. When combined, the 50 million hectares of land represent 74% of the total carbon stock within private properties in the Cerrado biome.

Pillar 1 addresses the methods and approaches the sector will use to address deforestation and conversion in each company's individual supply chains. **Pillar 2** lays out a suite of solutions that need to be scaled and the investments companies will make and mobilize to flow into landscape initiatives that put farmers at the centre of decisions about the way land is managed. The implementation of these efforts requires a strong enabling environment, as set out in **Pillar 3**, with strong collaboration with governments, industry peers, supply chain actors and financial institutions to ensure traceability, support legal compliance, and expand the engagement with producers.

For the Roadmap to succeed and deliver on climate targets while meeting global demand for soy, action by the sector has to be complemented by a concerted and coordinated investment in the social, economic and environmental transformation of production landscapes coupled with incentives to producers.

Commodity Implementation Plan

Ambition

Companies will drive the elimination of deforestation and the protection of native vegetation in soy producing areas in line with 1.5°C pathway

Time-bound Targets

Sector

2025 target date for the removal of deforestation for soy production in the Amazon, Cerrado and Chaco, and the protection of non-forest ecosystems in compliance with relevant local legislation. Compliance with forest protection laws in all soy origins

Scope

Geography

Implementation plans will prioritize the Amazon, Cerrado, Chaco. Biomes are defined by the official boundaries set up by the countries where they are located

By the end of 2023, a soy sector global assessment of the risk of conversion of natural ecosystems to soy production will be completed, with input from governments, producers, and other stakeholders considering environmental, economic and social impact. According to the global risk assessment, companies will develop additional implementation plans and targets as needed

Operations

All the company's business units including all Joint Ventures (JVs) and legal entities under company's responsibility

Implementation plans apply to all JVs and other legal entities with the same concept where the company is a majority shareholder. Where the company is a minority shareholder, the company should engage with their partners to develop their own implementation plan

Sources Direct and indirect supply of soy **Product Types** All soy products

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Commodity Implementation Plan

Supply Chain Mapping & Traceability	Traceability to farm based on property boundary data is required for all origins within high-risk areas. Where not available, a geolocation point with a radius can be deployed with an estimation of soy deforestation free area that is sufficient to determine compliance to the commitment. Companies will work to define "high-risk" by end of 2023
Cut-off Date	Companies undertake best efforts to establish individual cut-off dates for deforestation no later than 2025 and will establish policies, practices, and monitoring protocols to discourage additional land clearing in the period before the relevant target dates, prioritizing production on planted grasslands, degraded pastures, other agricultural land, and other types of open, suitable land
Monitoring	Companies to have systems in place to monitor deforestation and/or conversion to soy of areas larger than 25 hectares. The following sources of land use change monitoring may be used: Global Forest Watch, PRODES, MAPBIOMAS and others
Response	Each participating company will create a response framework for non-compliance by 2025
Remediation	Non-compliant suppliers are expected to develop, implement, and monitor plans that define the specific actions that will be taken to correct and remedy non-compliances
Verification	Implementation plans to describe the details of third-party processes to verify reported traceable, deforestation-free and conversion-free percentages based on volumes. Reporting on non-compliance, against a common set of indicators, will be done by companies on an individual basis, with a standardized procedure for verification and auditing. The AFi Operational Guidance on Monitoring and Verification has elements that can be used to inform the implementation plans
Operating Model	In June 2023, the sector will develop a common framework, from which each company will develop its approach, to remove from each company's supply chain the amount of volume produced in the plot of land not in compliance with the commitment
Regulatory	Companies will continue to ensure that their implementation plans, and the execution of those plans, are compliant with applicable competition law
Definitions	Deforestation loss of natural forest with greater than 10% canopy cover (consistent with UN FAO 'forest' definition) as a result of conversion to soy planting Conversion: By the end of 2023 the sector, with input from other stakeholders, will develop definition(s) that can enable the implementation of no-conversion policies

Drive Transformation of Commodity Producing Landscapes

Different landscape solutions are required for different regions and a suite of solutions are already being successfully implemented and include:

- Producer incentives, including payments for nature, incentivizing expansion over cleared areas, and green finance
- Integrated farming systems involving forest, crop and livestock management, and restoration of degraded land
- Extension services and governance, whereby producer behavior change is inspired by their peers, and supported by sustainable agriculture extension services, and local governance structure

All eight soy traders are currently investing in a range of solutions under the three categories above, in some instances through collective efforts. For these initiatives to scale, they require additional support, including technical, financial and strategic support from other supply chain actors, government and the finance sector

Scale up Landscapes Strategies

- In collaboration with supply chain partners, governments, and other strategic partners, mobilize investments and technical partnerships to scale up initiatives in the strategic biomes

Milestones

- November 2022 (COP27): Launch of common initiatives that address transformational landscape approaches
- November 2022: Begin implementation in priority landscapes
- June 2023: Develop a robust business case for scaling investment
- December 2023: Confirm co-funding commitments from the value chain (other supply chain actors, input providers, retailers, manufacturers, etc.), governments, and finance sectors
- December 2024: Present results of the implemented projects and possibilities to scale-up

Support Forest Positive Sector Transformation

Work with industry peers, other supply chain actors, government and finance to mainstream best practice and strengthen the enabling environment for sector-wide transformation. The work, which will be articulated in a comprehensive engagement plan (published end of 2023), will target specific outcomes that include:

3.1 Traceability

- Reach sector wide recognition regarding definitions, methods and tools that ensure traceability of deforestation free products
- Mobilize all companies in the soy value chain to invest in and implement traceability systems in their operations to guarantee a level playing field across the entire sector

3.2 Producer communication and outreach

- Scale up extension services to producers, that includes disseminating best practice in sustainable production and opportunities for finance, as set out in Pillar 2
- Develop and disseminate a positive narrative around landscape transformation with producers that is based on guaranteed investment to promote sustainable, deforestation free agricultural soy practices

3.3 Investment and sector-wide mobilization

- Mobilize multi-million-dollar investments in high-risk landscapes, aligning interventions across the sector under Pillar 2
- Mobilize companies in the soy value chain to ensure they understand the COP27 Agri-commodities roadmap and its implications for the soy sector
- Work with the soy industry, agriculture input industry and farmers´ associations, as well as government, retailers, manufacturers and the finance sector

The Cattle Sector

South America has been the world's leading producer of cattle for over a century and has contributed significantly to supporting livelihoods and community development in the region. In Brazil, which has the world's largest commercial cattle herd, and leads the global production of beef and leather, the industry is one of the main pillars of the country's agribusiness sector. At the same time, cattle ranching, especially in the critical biomes of the Amazon, Cerrado and the Chaco is characterized by relatively low productivity and is linked to land use change.

A Complex Supply Chain

Between 2011 and 2015, cattle ranching replaced more forests than any other commodity globally. Cattle ranching accounts for up to 80% of all GHG emissions from land-use change in Brazil (National Wildlife Federation). Deforestation is a significant contributor, and crucially, studies show that up to 94% of deforestation in the Brazilian Amazon and Cerrado could be illegal.

The sector has made good progress in the last decade to reduce deforestation linked to cattle production. Major meatpackers undertook public commitments and are implementing purchase control systems to guarantee that the cattle sold does not come from areas with recent deforestation and other environmental irregularities.

Challenges remain, particularly because of the complexity of the supply chain, which is characterized by the movement of cattle throughout the production cycle from ranch-to-ranch, through auctions, traders and middlemen. This breakdown of production phases poses traceability and monitoring challenges in the supply chain.

The Transition to Sustainable Cattle Production

A transition to sustainable cattle production and a reduction in deforestation requires a transformation in both the domestic and export markets, and it can be achieved through strengthened corporate action paired with supportive government policies.

The cattle sector supports the need to move as quickly as possible to end deforestation in all Brazilian biomes. To make the fastest progress, the sector will prioritize efforts to end illegal deforestation because it is the most important driver of forest loss. To accelerate the end of all deforestation from its supply chains, in 2023 the cattle sector will prioritize efforts in partnership with private- and public-sector organizations to develop incentives and technical support for cattle producers and improve monitoring systems.

Pillar 1 demonstrates the cattle sector's commitment to moving as quickly as possible to end deforestation in all Brazilian biomes, prioritizing efforts to end illegal deforestation because it accounts for the vast majority of forest clearing. **Pillar 2** focuses on the inclusive solutions that need to be designed to better capture the numerous actors involved in the indirect supply chain, who are currently falling outside the scope of regulatory and voluntary measures. **Pillar 3** lays out how the sector will engage with federal and state governments to strengthen the enabling environment for landscape development, including sustainable landscape planning and improved livelihoods of smallholders. Work with state governments will include the integration of traceability systems and, with federal government, the necessary command and control mechanisms.

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Commodity Implementation Plan

Ambition

Companies will drive the elimination of deforestation and the protection of native vegetation in the cattle sector in line with 1.5°C pathway

Time-bound Targets

Amazon: 2023 target date for no-deforestation for direct suppliers, and 2025 for indirect suppliers (legal and illegal, PRODES 2008)

Cerrado: 2025 target date for no illegal deforestation (PRODES 2020) for direct and indirect suppliers

Target dates for other biomes in Brazil and the Chaco will be set, depending on the development of the necessary monitoring systems

Scope

Geography

Implementation plans will prioritize the Amazon, Cerrado and Chaco. A collective global risk assessment will identify other areas of risk, and companies will develop additional implementation plans as needed

Operations

All the company's business units including all business units and legal entities under company's responsibility

Implementation plans apply to all business units and other legal entities with the same concept where the company is a majority shareholder. Where the company is a minority shareholder, the company should engage with their partners to develop their own implementation plan

Sources Direct and indirect supply

Product Types All products of bovine origin

Commodity Implementation Plan

Supply Chain Mapping & Traceability

Meatpackers will work towards obtaining information on tiers of suppliers prior to processing plants for entire operations. Until this data is complete, companies must use official geolocation instrument available with property data-set, as long as it is sufficient for compliance with the commitment

Cut-off Date

2020: An earlier cut-off date will be applied where national legislation or sectoral agreements are already in place, including

- In the Amazon biome: August 1st 2008 for illegal deforestation as per the Brazilian Forest Code
- In the Cerrado biome: August 1st 2020 for all habitat conversion as per draft of the Voluntary Monitoring Protocol for Cattle Suppliers

Monitoring & Response

Implementation plan clearly outlines the systems used for monitoring response. For all biomes, meatpackers will use the best available monitoring system(s) and tool(s) provided they have sufficient funding to guarantee their viability, such as

- In the Amazon: implementation of the Beef on Track Monitoring Protocol for Cattle Suppliers in the Amazon; and via the Good Practices guidance developed by the Grupo de Trabalho de Fornecedores Indiretos (GTFI).
- In the Cerrado: The voluntary Monitoring Protocol for Cattle Suppliers in the Cerrado (once finalized), the Green Seal and the Green Radar should inform implementation

Remediation

Non-compliant suppliers are expected to develop, implement, and monitor plans that define the specific actions that will be taken to correct and remedy non-compliances

Verification

Official auditing mechanisms and protocols will be used (i.e. MPF Beef on Track Protocol and Cerrado Voluntary Monitoring Protocol)

Definitions

Deforestation loss of natural forest as a result of: i) conversion to agriculture or other non-forest land use; ii) severe and sustained degradation

Drive Transformation of Commodity Producing Landscapes

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The meatpackers, with support from other stakeholders including peers, other supply chain actors, and financial institutions will assist producers on their decarbonization journey with resources and technical support. The goal is to improve stewardship of pastureland, promote reforestation of degraded areas, and encourage a sustainable intensification, which reduces carbon emissions.

Sector Transformation Strategies

Support cattle ranchers to achieve environmental regularization of their properties and livestock farming activities

- Through support from actions set out in the Roadmap, the aim is to ensure a transition to full legality of the cattle supply chain, which can be achieved through improved monitoring, traceability and environmental regularization. In partnership with state- and non-state actors, support will be provided to cattle farmers to ensure they are compliant with the Cadastro Ambiental Rural (CAR, the Rural Environmental Register) and all other legal obligations. A pathway will be established for those farmers seeking to become legally compliant

Provide extension and technical assistance services to cattle ranchers to increase productivity and re-pasture degraded areas

- Cattle ranching is often characterized by inadequate pasture management (overgrazing, optimal pasture fertilization) which can lead to land degradation and low productivity. Meatpackers, in collaboration with other stakeholders, will scale-up training for cattle producers, focusing on the provision of tools to improve pasture and property management, enabling increased production without the need for expansion into additional land. The provision of these services will be linked to deforestation-free commitments

Milestones

June 2023: Foster partnerships with financial institutions to facilitate access to rural credit for the assisted producers, so they are able to obtain resources to finance environmental regularization actions

December 2023: Replicate the technical consultancy model to ranchers across all Brazilian Biomes

December 2025: Improve the productivity index of Brazilian agriculture through the assistance offered and promote sustainable landscape transformation through recovery of degraded areas by the supported ranchers

Support Forest Positive Sector Transformation

Work with industry peers, other supply chain actors, government and finance to mainstream best practice, strengthen the enabling environment for sector-wide transformation and to develop compensation mechanisms for producers in a way that does not increase the cost to the consumer

3.1 Traceability

The lack of traceability, monitoring and transparency of indirect cattle suppliers is one of the biggest barriers to the implementation of no-deforestation supply chains. The meatpackers will work with industry peers, other supply chain actors, relevant public authorities in Brazil and the donor community to enhance supply chain governance and monitoring capabilities:

- Building on progress in the States of Pará and Minas Gerais, engage other states in Brazil to provide the Brazil Federal Public Prosecutor's Office (Ministério Público Federal – MPF) access to the CAR and the Animal Transit Guide (Guia de Trânsito Animal) to enable the traceability of the full cattle supply chain by the start of 2023. Support will include scaling up the Pará State Green Seal to other states, by working with inter-state forums and mobilizing investment

- Provide financial, technical and strategic support to the Beef on Track Platform, to ensure expansion to cover indirect suppliers, among other activities

- Engage the donor community to ensure ongoing funding is secured for tools led by both non-governmental organizations (NGOs) and the private sector, platforms and processes that unlock progress on traceability of indirect suppliers, including the Grupo de Trabalho de Fornecedores Indiretos (GTFI) and the Voluntary Monitoring Protocol for Cattle Suppliers in the Cerrado

- Align sourcing policies between meatpackers, retailers and food-service, including on cut-off dates, target dates, transition periods, approaches for dealing with non-compliances among indirect suppliers, and mechanisms for re-entry in the supply chain

Support Forest Positive Sector Transformation

3.2 Rancher communication and outreach

- For sector-wide transformation to occur, cattle ranchers must see a genuine opportunity to access technology, improve productivity and commit to deforestation and other legal-compliance commitments. This requires communication with and from leading associations and representative bodies as well as peer-to-peer initiatives
- Develop a comprehensive communications and outreach strategy to ensure that ranchers, especially indirect suppliers, are fully aware of market expectations (July 2023)
- Galvanize the cattle sector via national and sub-national industry associations to amplify messages and signal opportunities for transformation (July 2023)

3.3 Investment and sector-wide mobilization

- Mobilize co-financing for technical assistance to cattle ranchers, with funding and match-funding targets
- Engage banks to increase the scope of action on deforestation beyond financial mechanisms by, for example, including punitive measures on checking and savings account holders associated with deforestation (ranchers, illegal miners, illegal loggers, etc.)
- Support the development of new financial instrument(s) to empower producers to increase productivity and profitability by improving smallholder credit access for the breeding phase of livestock, subject to commitment and implementation of DCF by ranchers

Cocoa Sector

The Cocoa Sector

While cattle, soy, and palm oil are the biggest drivers of deforestation globally, another agricultural commodity – cocoa – has also contributed to the loss of forests. Between 2001 and 2015, 2.3 million hectares of forests were replaced by cocoa, the vast majority of that in West Africa. Deforestation is a major issue in Côte d'Ivoire and Ghana, which together produce nearly two-thirds of the world's supply of cocoa. Côte d'Ivoire and Ghana respectively lost 25% and 8% of their primary forest between 2002-2019, with a significant portion of deforestation due to cocoa farming.

The Cocoa and Forests Initiative (CFI)

In the group of companies that signed the COP26 Joint Statement, only two – Cargill and ofi– are involved in the trade of cocoa. They are both actively engaged in the most significant public-private initiative working to tackle deforestation in the cocoa sector. The Cocoa & Forests Initiative (CFI) is a joint partnership of the governments of Côte d'Ivoire and Ghana and cocoa and chocolate companies facilitated by the World Cocoa Foundation (WCF) and IDH, the Sustainable Trade Initiative. Launched at COP23 in Bonn, Germany in November 2017, the CFI works to end deforestation and promote forest restoration and protection in the cocoa supply chain. Thirty-six companies, accounting for 85% of global cocoa usage, have now signed the Frameworks for Action for Côte d'Ivoire and Ghana. Columbia has also joined the partnership. Signatories are taking action around three critical themes of (i) forest protection and restoration, (ii) sustainable production and farmers' livelihoods, and (iii) community engagement and social inclusion.

Taking Action through Industry Collaboration

The main goal of the CFI is to end deforestation and promote forest restoration and protection in the cocoa supply chain. Key achievements to date have included public-private forest landscape collaboration in alignment with Ghana Cocoa Forest REDD+ Program. This includes increased private sector investment, including 19 companies sharing supply chain data (with over 850,000 farm polygons mapped) to contribute to collective action, monitoring and traceability. Through CFI, 23 million forest trees have been distributed for agroforestry and forest restoration since 2018. The companies recognize the opportunity for the cocoa sector to further ratchet up ambition on climate and are working through CFI to chart a path forward that is aligned with a 1.5°C future.

Moving forward, companies are renewing their CFI commitments to 2025, with a focus on accelerating and scaling impact around the following actions:

- Linking their commitments and investments with the global commitment of 1.5°C , specifically leveraging their zero-emission/SBTi/GHG goals towards greater investment in tackling deforestation and the impact of climate change
- Building public-private collaboration in priority landscapes for the conservation of remaining forests, reforestation and restoration of degraded land
- Scaling up best-practices and innovations that are farmer-focused, benefiting and incentivizing farmers to protect and restore forests and landscapes
- Linking investments with EU (and potentially US and UK) regulations on the import of deforestation-free cocoa and chocolate
- Identifying new geographies to expand CFI

In line with the milestones in this Roadmap, the sector will report back at COP28 on actions it is taking and the progress it is making.

The Agriculture Sector's Asks to Governments

The Agriculture Sector's Asks to Governments

The transition of the agriculture sector to a 1.5°C aligned pathway, while meeting the social and economic needs of farmers, ranchers and other community members, is a shared responsibility of private, public and civil society sectors. There is a unique leadership role to be played by members of the Forest and Climate Leadership Partnership (FCLP), and other states, in facilitating the development of a producer partnership model and supporting a just transition. The transition will require government leadership in the following areas:

Trade
- Strengthened regulatory regime in support of sustainable production and trade

Policy alignment
- Clear national and sub-national policy frameworks that incentivise sustainable production

Diplomatic and political engagement
- Robust and consistent engagement between producer and consumer nations within the context of the G7, G20 and other inter-governmental bodies

Blended finance
- The application of both traditional and innovative finance to drive capital into the sector, incentivising actions that expedite the transition while compensating, as appropriate, farmers and ranchers for forgone opportunities

Glossary of Key Terms – Palm Oil

No Deforestation, No Peat and No Exploitation (NDPE)	Corporate commitments to No Deforestation, No Peat and No Exploitation, commonly abbreviated as NDPE, refer to sustainability commitments made by downstream companies, traders, mills and growers in the palm oil sector.
NDPE Implementation Reporting Framework (NDPE IRF)	The NDPE Implementation Reporting Framework, or NDPE IRF, is a reporting tool that provides a shared and consistent view of progress towards NDPE commitments across the full supply base of companies throughout the supply chain. The IRF offers a universal language that everyone along the supply chain can use and understand, allowing individual companies and the industry collectively to understand what is required to deliver NDPE commitments, monitor progress, identify gaps and drive improvement. The current standards of ISPO, MSPO and ISCC certification have already been reviewed within the NDP-IRF framework, and currently provide "Commitment & Starting Action" status. There is ongoing to work to review the newly released MSPO 2022 standard.
Indonesian Sustainable Palm Oil (ISPO) standard	The Indonesian Sustainable Palm Oil (ISPO) standard, introduced in 2011 by the Government of Indonesia, is designed to ensure that all Indonesian oil palm growers, not just those exporting to foreign markets, conform to higher agricultural standards. Based on existing Indonesian legislation, it aims to improve the sustainability and competitiveness of the Indonesian palm oil industry, whilst contributing to the Indonesian government's commitments to reducing greenhouse gas emissions. It is mandatory for all oil palm growers operating in Indonesia to adhere to the Standard.
Malaysian Sustainable Palm Oil (MSPO) standard	The Malaysian Sustainable Palm Oil (MSPO) standard is a national certification standard created by the Malaysian government and developed with input from stakeholders in the palm oil industry. First launched in November 2013, it officially came into implementation in January 2015. It aligns the management of palm oil production with many existing national laws and regulations and was developed in order to help small and mid-range cultivators operate sustainably. It lays out standards for responsible management of palm oil plantations, smallholdings and palm oil processing facilities. Compliance with MSPO became mandatory for all Malaysian palm producers on 31 December 2019 and is a requirement for MPOB license issuance. MPOB license are legally mandated for any company in the palm oil supply chain sector in Malaysia.
The Palm Oil Collaboration Group	The Palm Oil Collaboration Group (POCG) brings together companies from every stage of the palm oil supply chain to accelerate effective implementation of No Deforestation, No Peat Expansion, No Exploitation (NDPE) commitments. In addition to discussions which help to align thinking on key issues, the group also identifies areas for collaborative action. The POCG's Production and Protection Beyond Concessions (PPBC) working group was formed with the aim to scale up action for production and forest protection beyond concessions through proactive interventions, action protocols and targeted monitoring.

Glossary of Key Terms – Soy

Farmer First Clusters
The <u>Farmer First Clusters</u> is an initiative by the six trading members of the Soft Commodities Forum and partners. It aims to tailor interventions to local realities, applying the mechanisms that will trigger producer behaviour change. Six implementing mechanisms that already exist are used to scale up, including 1) compensate farmers for surplus Legal Reserve, 2) promote integrated farming, 3) promote the expansion over pastureland, 4) restore degraded land, 5) promote sustainable production and forest code compliance, and 6) offer green finance.

Soy Moratorium
The Soy Moratorium in the Amazon is an agreement signed by companies, civil society and the government that sets forth a commitment to not purchase grains or fund crops grown in deforested areas of the Amazon after July 2008.

PRODES
PRODES is the Brazilian government's satellite monitoring program that provides the official national statistics on deforestation, used by the Brazilian government to establish public policy and track progress towards deforestation reduction goals.

Global Forest Watch
<u>Global Forest Watch</u> (GFW) is an online platform that provides data and tools for monitoring forests. By harnessing cutting-edge technology, GFW allows anyone to access near real-time information about where and how forests are changing around the world.

MapBiomas
<u>MapBiomas</u> is a collaborative network formed by NGOs, universities, and technology startups, which reveals the transformations in the Brazilian territory through science, making knowledge about land use accessible to seek conservation and combat changes in climate. It has produced annual land cover and land use mapping and monitors surface water and fire scars monthly with data from 1985. The project also validates and produces reports for each deforestation event detected in Brazil since January 2019.

Methodology used to calculate potential avoided emissions
- Source for remaining native vegetation: MapBiomas (mapbiomas.org) and TreeCover from Global Forest Change (science.org/doi/10.1126/science.1244693), available at Global Forest Watch (GFW) (globalforestwatch.org). A minimum threshold of 25 ha contiguous was applied on the TreeCover data.
- Source for deforestation: Product Forest Loss Year from Global Forest Change.
- Source of soy area: Agrosatelite (agrosatelite.com.br/en), crop year 2021/22
- Remaining vegetation on private properties: private properties boundaries extracted from CAR (Rural Environmental Registry), version [x] of [date]. Gaps in CAR data that may slightly alter the area values of private properties were not accounted for.
- Protected vegetation by law (legal reserve - LR and permanent preservation areas - PPA) was extracted from CAR to calculate the surplus of legal reserve based on MapBiomas native vegetation classes.
- Carbon stocks and carbon emissions were estimated based on the methodology of the Fourth National Communication of Brazil to the United Nations Framework Convention on Climate Change (Ministry of Science, Technology, and Innovations, 2021. 620 p.: iL. ISBN: 978-65-87432-19-9.).

Glossary of Key Terms - Cattle

Animal Transit Guide (Guia de Trânsito Animal - GTA)	Official document for animal transport in Brazil. It includes traceability information about the animal – origin, destination, final goal, species, vaccinations and others. Each animal species features specific regulations for the GTA.
Beef on Track monitoring	The program and platform ensuring the transparency in the beef value chain in the Amazon. Beef on Track is a set of actions aimed at strengthening social and environmental commitments in the beef value chain in the Amazon and boosting its implementation. The platform is developed and maintained by Imaflora.
Green Radar (Radar Verde)	Radar Verde is an indicator aimed at showing consumers which slaughterhouses and supermarkets have better control and transparency over their beef production chain. Through a public index, Radar Verde displays to end-consumers if the beef purchased at a specific establishment contributed or not towards deforestation in the Amazon during its production cycle.
Grupo de Trabalho de Fornecedores Indiretos (GTFI)	The GTFI brings together the various stakeholders of the Brazilian beef production chain to discuss solutions for traceability, monitoring and transparency with a focus on deforestation by indirect suppliers. GTFI aims to identify, develop and support implementation of traceability solutions for indirect suppliers, and strengthen communication of challenges, opportunities and progress for indirect suppliers.
Monitoring Protocol for Cattle Suppliers in the Amazon	This document presents the parameters, criteria and the information base used to harmonize the guidelines necessary for compliance with the Monitoring Protocol, including annual monitoring and checks through an independent audit to incorporate the necessary guidelines to effectively implement or adjust processes in their companies and, therefore, comply with the commitments.
PRODES	PRODES is the Brazilian government's satellite monitoring program that provides the official national statistics on deforestation, used by the Brazilian government to establish public policy and track progress towards deforestation reduction goals.
Rural Environmental Registries (Cadastro Ambiental Rural)	CAR is Brazil's mandatory and self-declaratory registry for rural properties. Owners must provide geo-referenced delimitation of their property's boundaries and legally protected areas, such as Areas of Permanent Preservation and Legal Reserves.
Voluntary Monitoring Protocol for Cattle Suppliers in the Cerrado	Proforest and Imaflora collaborated with supply chain actors to create a voluntary monitoring protocol for cattle suppliers in the Cerrado.