Accountability Framework initiative

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Strengthening synergies between JREDD+ and sustainable supply chains to protect tropical forests

Developed in partnership with: CONSERVATION INTERNATIONAL proforest

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Authors: Leah Samberg (AFi), Jeff Milder (AFi), Ana Lima (AFi), Tim Rayden (Proforest), Aditya Mishra (Proforest), Joy Khara (Proforest), Eduardo Fronza (Proforest), Elijah Innes-Wimsatt (Conservation International), Cauê Carrilho (Conservation International), Britta Johnston (Conservation International).

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Executive summary

Agricultural and forestry commodity production is a major driver of tropical deforestation, forest degradation, and associated greenhouse gas emissions. This paper analyses two distinct approaches to addressing this challenge:

Jurisdictional REDD+ (JREDD+) programmes

Government-led initiatives to protect and enhance forest carbon at scale, grounded in public policy

- Carbon credits monetised through results-based payments or carbon markets
- Standards that establish environmental and social safeguards, monitoring, and verification systems
- A mechanism for proceeds to flow to the jurisdiction and local stakeholders

Corporate supply chain sustainability

Companies manage agricultural and forestry commodities that they purchase to meet sustainability goals and requirements and decrease risk. Key company priorities include:

- Deforestation- or conversion-free (DCF) sourcing to fulfil voluntary or regulatory policies
- Climate targets, including supply chain emissions reductions and net zero goals
- Long-term supply chain resilience

Despite shared goals, these two approaches have developed separately, with different frameworks for achieving and assessing progress. This paper asks:

Could better integration between JREDD+ programmes and supply chain sustainability initiatives drive more effective and durable conservation outcomes than either approach can achieve on its own?

This paper reviews **frameworks and standards** that guide JREDD+ and sustainable supply chain action. It draws insights from **case studies** and **stakeholder interviews** to identify opportunities for increasing corporate engagement and investment in JREDD+, whilst improving the ability of JREDD+ programmes to address commodity-driven deforestation.

Finding #1: JREDD+ programmes and sustainable supply chain initiatives have significant potential to support one another.

JREDD+ programmes can support company sustainability goals:

- Reduced deforestation decreases compliance and regulatory risk and corporate land use change emissions footprints
- Government-led forest protection efforts magnify company efforts and help address underlying drivers
- Improved land use governance and producer capacity building increases resilience of commodity supply
- JREDD+ credits may be used to advance goals for net zero emissions

Supply chain companies can support JREDD+ programmes by:

- Purchasing JREDD+ credits, providing finance to the jurisdiction in return for verified emissions reductions or removals
- Participating in JREDD+ readiness, contributing investment, technical support, or capacity, or participating in programme design
- Conducting supply chain interventions aligned with JREDD+, engaging with suppliers and investing in projects to meet sustainability goals whilst supporting JREDD+ activities and objectives

Finding #2: There are currently several barriers to integrating these approaches, which reduce opportunities and incentives for collaboration and investment.

Barriers limiting integration of JREDD+ and supply chain action

- Many supply chain sustainability frameworks don't incentivise action beyond supply chain boundaries
- JREDD+ programmes may not address needs of commodity buyers in meeting their business goals
- Companies are uncertain about how credits can and can't be used to achieve targets
- JREDD+ and corporate emissions frameworks have different methodologies and outputs for land use change and carbon accounting
- Some stakeholders see potential for unclear or overlapping claims related to carbon projects

Recommendations: These findings point to six key opportunities to strengthen synergies between corporate supply chain action and JREDD+ programmes.

JREDD+ programmes can better support and build on corporate action for greater impact by:

- **Incentivising company participation** in JREDD+ readiness by linking outcomes more directly to business objectives
- **Creating shared monitoring, reporting, and verification (MRV) systems** for jurisdictional and corporate accounting that can increase credibility of data and reduce costs
- Developing a process for ensuring that **supply chain decarbonisation claims** are recognised without risk of double counting, allowing companies to confidently pursue climate targets

Supply chain frameworks can better recognise jurisdictional progress and incentivise engagement by:

- Increasing **recognition of jurisdictional performance in DCF frameworks**, integrating it into indicators of progress or credible due diligence
- Increasing **recognition of jurisdictional performance in climate frameworks**, by strengthening and clarifying requirements and methods for action at the scale of sourcing areas
- Considering the implications of allowing **JREDD+ credit usage in SBTi FLAG** revision to ensure requirements support action to address deforestation in supply chains

JREDD+ programmes better address deforestation associated with agricultural and forestry commodity supply chains

Companies sourcing agricultural and forestry commodities invest in and support JREDD+ programmes

Durable forest conservation at scale

Reduced carbon emissions **Protection of biodiversity**
Respect for land rights **Equitable development**

1 Introduction

The production of agricultural and forestry commodities remains one of the leading drivers of tropical deforestation, forest degradation, and associated greenhouse gas emissions. In recent years, two independent approaches have emerged to address this challenge.

1. **REDD+ and JREDD+:** REDD+ is a framework for mitigating climate change by reducing emissions from deforestation and forest degradation in developing countries. It also supports sustainable forest management that conserves and enhances carbon stocks. REDD+, and Jurisdictional REDD+ (JREDD+), help deliver and finance these results by linking reduced emissions to the generation and sale of carbon payments or credits. Compared to project-level REDD+, JREDD+ programmes are larger scale and centre around the role of governments. They cover entire states, provinces, or countries, and operate through improved finance, governance, incentives, land use planning, and monitoring.
2. **Supply chain sustainability policies:** Driven by regulation, voluntary commitments, and business considerations, companies manage and monitor their supply chains to reduce environmental and social risks and impacts associated with commodity production and sourcing. These goals are implemented through supply chain traceability and monitoring, supplier management, and investment and engagement with producers and other stakeholders in sourcing origins. Claims linked to deforestation - or conversion-free DCF sourcing, reduced emissions, and net zero goals are central to corporate sustainability efforts.

Despite pursuing many of the same objectives, these approaches have developed in parallel and operate according to different incentives, governance arrangements, and accounting systems. An increasing number of JREDD+ programmes are being established in key commodity production landscapes, potentially strengthening the public policy foundations and funding for durable, jurisdiction-wide forest conservation. However, few explicitly address the way in which JREDD+ programmes interact with supply chain companies that are also seeking to address deforestation associated with their sourcing.

At the same time, corporate efforts to address deforestation and land use change emissions remain focused on managing the attributes and risks of products in individual company supply chains. This focus supports supply chain traceability and supplier management and engagement but may provide little incentive for addressing deforestation or its root causes in the broader context.

The limitations of existing approaches prompt an intriguing question: **Could a tighter integration between JREDD+ and supply chain strategies drive more effective and durable conservation outcomes than either approach can achieve on its own?**

This paper explores practical pathways for achieving this integration, including mechanisms for corporate engagement and investment in JREDD+, and ways in which JREDD+ can support and magnify the positive impacts of corporate action. It provides recommendations for structuring both JREDD+ programmes and supply chain sustainability initiatives and frameworks to better integrate these two strategies. This integration holds considerable promise to unlock opportunities to scale investment, effective policy, and forest conservation outcomes.

1.1 Methodology

This paper is based on a review of the existing 'state of play' of JREDD+, supply chain strategies, and where they intersect. It provides a structured analysis of opportunities for improved synergies between these two types of approaches as well as recommendations for how these opportunities could be pursued. The methodology included four main components:

1. Review of relevant standards and methodologies for JREDD+ and sustainable supply chains and their ramifications for interoperability, accounting, and claims.
2. Review of literature and case studies pertaining to sustainable sourcing initiatives in jurisdictions that have established or are pursuing JREDD+ programmes.
3. Interviews and consultations with stakeholders working at the nexus of sustainable supply chains and jurisdictional forest conservation efforts, including commodity sourcing companies, financial institutions, governments, multilateral agencies, NGOs, and other experts. This included interviews with 20 key experts as well as an in-person consultation with approximately 40 stakeholders and topical experts at a working session at London Climate Action Week in June 2026.
4. Consolidation of inputs and evidence from the desk review, interviews, and consultations to provide a structured assessment of the opportunities and limitations of different structures for linking JREDD+ and supply chain strategies, as well as recommendations for further strengthening synergies.

The project was guided by the Working Group on Strengthening synergies between JREDD+ and Deforestation-Free Supply Chains to Protect At-Risk Tropical Forests, which provided input to the paper. This group was convened under the auspices of the Scaling JREDD+ Coalition, which was established to implement the Plan to Accelerate Solutions on REDD+ under the COP30 Global Climate Action Agenda.

2 Introduction to JREDD+

2.1 JREDD+ overview and history

JREDD+ is a framework to deliver, document, and reward emissions reductions associated with reduced deforestation and forest degradation, as well as sustainable forest management and other activities that enhance forest carbon stocks. Implemented at the scale of a jurisdiction (ie, a country, state, province, or legally established Indigenous or community managed territory), JREDD+ generates carbon credits that may be monetised through results-based payment programmes as well as through voluntary or compliance carbon markets. Proceeds flow to the jurisdictional authority and are distributed via benefit-sharing arrangements to local stakeholders, such as farmers, communities, Indigenous Peoples, and private companies. Benefits sharing can come in multiple forms, including infrastructure development, title to carbon credits, programme revenues, or other types of benefits.

JREDD+ programmes are led by governments, grounded in public policy, and implemented through a variety of instruments, such as stakeholder engagement, land use planning, law enforcement, and incentives for forest protection and management. JREDD+ also requires that jurisdictions establish monitoring, reporting, and verification (MRV) systems to quantify forest-related emissions reductions and carbon removals across the entire jurisdiction as compared to historical baselines.

Early JREDD+ programmes were supported by results-based payments from donors to forest-rich nations. Most notably, the World Bank Forest Carbon Partnership Facility (FCPF), launched in 2008, has channelled over $1.3 billion across 47 developing countries, including approximately $300 million in direct payments for verified emissions reductions. The REDD+ Early Movers fund, established by the German government, has also supported several jurisdictions to advance through the readiness stage and establish JREDD+ programmes.

The development of jurisdictional crediting standards has allowed these jurisdictions to begin to issue credits on voluntary and compliance carbon markets. To issue tradeable carbon credits, jurisdictions must adhere to one of the available JREDD+ standards (see Box 1). These standards include methodologies for issuing two distinct types of credits:

- **Reduction credits**, generated by a verified decrease in emissions below the historical baseline.
- **Removal credits**, generated by verified increases in carbon sequestration and storage, particularly through reforestation and forest restoration.

The vast majority of JREDD+ credits issued thus far are reduction credits. It is possible for jurisdictions to generate both types of credits if forest restoration or reforestation efforts are underway and effectively monitored over time.

Requirements and verification processes for these standards are rigorous, requiring significant time and resources to ensure compliance. Once verified, credits are issued to the relevant governmental authority, which can retire them for use towards the jurisdiction's Nationally Determined Contribution (NDC), sell them, or distribute them to stakeholders as defined by the benefit-sharing arrangement.

Box 1: JREDD+ standards and crediting methodologies

JREDD+ standards specify how emissions reductions and/or carbon removals should be quantified, monitored, and verified across a jurisdiction. These assessments are conducted relative to a historical baseline, typically covering at least the 4 previous years. JREDD+ standards allow for the generation of carbon credits when emissions are demonstrated to be reduced below the historical baseline, or carbon removals are demonstrated to be increased above that baseline. Standards include requirements for environmental, social, and governance safeguards such as free, prior, and informed consent (FPIC) of Indigenous Peoples and local communities, benefit sharing mechanisms, and grievance mechanisms. They also include accounting, registry, and monitoring requirements designed to reduce the risk of double counting across projects, jurisdictions, and national greenhouse gas accounting systems. Currently, there are two JREDD+ standards designed to issue credits for voluntary or compliance carbon markets:

TREES: The REDD+ Environmental Excellence Standard (TREES) is administered by Architecture for REDD+ Transactions (ART), an independent non-profit carbon crediting programme. First released in 2020, TREES is used to issue credits based on large-scale emissions reductions and removals at the jurisdictional scale.

Verra Jurisdictional and Nested REDD+ (JNR): Verra's Jurisdictional and Nested REDD+ (JNR) Framework is a standard for accounting and crediting for jurisdictional REDD+ programmes that supports the nesting of individual carbon projects within jurisdictional programs. JNR is designed to be interoperable within Verra's Verified Carbon Standard (VCS), the largest voluntary carbon crediting standard for project-level REDD+.

In addition, **the World Bank Forest Carbon Partnership Facility (FPCF) Standard,** initially designed to generate emissions reduction credits that form the basis for payments by the World Bank's Carbon Fund, has begun to make excess credits available to third party buyers via issuance on the ART registry.

2.2 Current state of JREDD+

In 2022, Guyana became the first jurisdiction to be issued jurisdictional-scale carbon credits under ART's TREES standard. This JREDD+ programme has since completed multiple transactions in both voluntary and compliance markets. In 2025, FCPF credits from Costa Rica were sold to a private buyer, expanding the programme beyond payments from the World Bank. In 2026, Costa Rica also became the first jurisdiction to successfully verify and generate credits for jurisdictional-scale forest removals under TREES. The Argentine province of Misiones became the first jurisdiction to register under Verra's JNR framework and is expected to receive issuance soon.

To date, 27 jurisdictional programmes are publicly listed within the ART TREES pipeline and six within Verra's JNR framework. Nearly 25% of the world's tropical forests are now represented in JREDD+ programmes listed on the ART Registry. However, registry listing does not necessarily guarantee future credit issuance. Some jurisdictions pursue registration under multiple standards before selecting a preferred pathway, while others face implementation delays due to political, institutional, financial, or technical constraints. In addition, credits may face challenges related to quality or permanence, as has been the case for many project-level REDD+ programs.

Despite these challenges, a growing number of jurisdictions are progressing towards validation, verification, and credit issuance. Bhutan, Ghana, Vietnam, and several Brazilian states are among the jurisdictions advancing through the later stages of programme development.

Many JREDD+ programmes have been or are being established in regions where commodity agriculture is a significant driver of deforestation, such as in Brazil, Ghana, and Indonesia. Others are in heavily forested regions without high levels of agricultural expansion, but with other deforestation drivers such as mining, fires, and degradation due to logging or firewood harvest. Finally, some JREDD+ jurisdictions are considered 'High Forest Low Deforestation' landscapes. These areas have not experienced high levels of deforestation in

the past but may be threatened by agricultural expansion or other deforestation drivers in the future. In these jurisdictions, alternative crediting methods are available that consider both historical deforestation as well as comparison with a counterfactual that considers potential future forest loss.

To date, ART has issued more than 60 million JREDD+ credits, nearly all for Guyana, with each credit corresponding to one tonne of CO_2-equivalent. Jurisdictional carbon credits currently account for ~5-7% of annual carbon credit sales on the voluntary market. The Environmental Defense Fund's 2024 market assessment projected the ART pipeline supply could reach up to 300 million credits per year by 2030.

Significant demand and early purchases have come from compliance markets, especially the airline industry's Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA). CORSIA requires airlines to purchase large volumes of carbon credits. TREES and FCPF credits are eligible to meet CORSIA requirements, and at least a dozen airlines have already purchased JREDD+ credits or are in discussions to purchase them in the future. Another driver of future demand for JREDD+ credits may be Article 6 carbon market mechanisms under the Paris Agreement, as countries begin to implement trades to meet their Nationally Determined Contributions (NDCs).

2.3 Emerging finance pathways for JREDD+

Early investment in JREDD+ emphasised readiness investments as well as results-based payments, with dominant contributions by governments and international donors. More recently, there have been concerted efforts to scale JREDD+ beyond these funding sources by expanding private sector investment. Doing so requires increasing the rate and volume of verification and issuance of tradeable carbon credits. It also requires building market demand and addressing early-stage capacity and finance gaps. This includes the challenge of funding JREDD+ programme establishment and MRV systems, which are needed well before programmes generate revenues from credit sales.

This has driven the development of new finance pathways, with greater emphasis on the role of scaling private sector investment through credit purchases and purchase agreements. In the voluntary carbon market, the Lowering Emissions by Accelerating Forest Finance (LEAF) Coalition is a primary actor in this effort. Launched in 2021, LEAF aims to attract private investment in JREDD+ under the ART TREES standard. New financing and commercialisation models are also emerging. For example, Mercuria (an energy and commodity trading company), provides governments with funding through its investment platform Silvania. The company also offers technical support to develop JREDD+ programmes and generate credits, which it purchases and then retires or resells.

JREDD+ jurisdictions and programme developers are seeking other pathways for private sector finance, including from companies that produce or source agricultural or forestry commodities from these areas. In jurisdictions in which commodity agriculture is a major driver of deforestation, these companies have significant influence in shaping land use decisions of producers and other landowners. These companies may also benefit from improvements in agricultural development, capacity building, governance, and forest protection associated with JREDD+ programmes. There is significant interest in how to best incentivise and channel investment and engagement from these companies.

3 Company priorities for sustainable sourcing

For companies that produce or source agricultural or forestry commodities (called 'supply chain companies' here), the level of interest in JREDD+ will depend on whether and how it can help them achieve their own goals. Informed by consultations with companies in the agriculture and forestry sectors from across the supply chain, this paper explores the extent to which JREDD+ does, or could, help deliver key business priorities that most commonly drive supply chain-related investment.

While companies differ in their specific objectives, three consistently emerged from the consultations:

1. deforestation- and/or conversion-free (DCF) sourcing to fulfil voluntary commitments or regulatory requirements
2. climate targets, including supply chain emissions reductions and net zero goals
3. long-term supply chain resilience

These priorities already shape substantial corporate investment in traceability systems, supplier engagement, landscape initiatives, and climate-related programmes. They also influence how companies evaluate new sustainability investments and determine whether they can be justified as core business activities.

Although these three priorities are often pursued separately, they are linked by the common challenge of curtailing deforestation and ecosystem degradation, and by the reality that this is often best achieved at landscape and jurisdictional scales and in collaboration with government and policy-makers. This creates a strong rationale for exploring how JREDD+ can support company supply chain goals and how companies that produce or source agricultural or forestry commodities can, in turn, support JREDD+ programme success.

This section provides detail on these three company priorities, considering both the outcomes that companies are looking to achieve and the evidence and claims that may be required to secure recognition for progress toward these outcomes. It also gives an overview of ways in which sourcing agricultural or forestry commodities from jurisdictions with JREDD+ programmes may support companies in pursuing these priorities. Companies stand to gain these benefits of sourcing from JREDD+ jurisdictions regardless of whether they engage or invest in these jurisdictions' JREDD+ programmes.

Section 4 then analyses the extent to which additional engagement with or investment in JREDD+ programme activities by supply chain companies can further advance sustainable sourcing priorities.

3.1 Deforestation- and conversion-free (DCF) sourcing

For many companies – including commodity traders, consumer goods brands, and retailers – achieving DCF supply chains is a central sustainability priority. This focus was initially driven by voluntary commitments to eliminate deforestation or conversion from supply chains, such as those guided by the Accountability Framework initiative (AFi) (see Box 2). Regulatory requirements, notably the EU Deforestation Regulation (EUDR), have increased the urgency of corporate action to eliminate deforestation associated with forest-risk commodities. In addition, companies setting an emissions reduction target through the Science Based Targets initiative (SBTi) Forest, Land, and Agriculture (FLAG) Guidance must set a no-deforestation commitment as well.

Historically, DCF supply chain approaches have relied heavily on demonstrating compliance of sourced materials, particularly using certification, traceability, and supply chain monitoring. The advent of EUDR has increased the emphasis on plot-level traceability and monitoring due to its specific requirements.

There is also growing recognition of the importance of collaborative efforts and government leadership to address root causes of deforestation and conversion at scale within commodity producing landscapes and jurisdictions. However, there is a lack of standardisation and consensus regarding expectations, impact, credibility, and claims associated with these activities.

Box 2: Frameworks for deforestation- and conversion-free (DCF) supply chains

Corporate action to address deforestation and other natural ecosystem conversion associated with soft commodity supply chains is guided by both voluntary and regulatory frameworks. Two frameworks that drive DCF action in voluntary and regulatory spaces, respectively, are:

Accountability Framework: The Accountability Framework is published by the AFi, a global coalition of environmental and human rights NGOs. It provides guidelines for companies to set goals, take action, and report progress towards addressing deforestation, ecosystem conversion, and human rights abuses associated with the production, sourcing, and finance of agricultural and forestry commodities. The Framework supports companies in addressing these impacts company-wide, including through sourcing DCF commodity volumes as well as managing performance and improvement at the level of suppliers and sourcing areas. The Framework forms the basis for a wide range of other policies, guidance, and indicators by companies, industry groups, civil society, disclosure standards, and other instruments.

European Union Deforestation Regulation (EUDR): The EUDR requires companies placing certain commodities (including cattle, soy, palm oil, cocoa, coffee, rubber, and wood) on the EU market to demonstrate that they are deforestation-free, produced in accordance with applicable laws, and covered by due diligence. It specifies that compliant commodity volumes must be traceable to plots of land that were not deforested after December 31, 2020, and companies must submit georeferenced location data for product origins.

How sourcing from JREDD+ jurisdictions can support DCF goals

JREDD+ programmes that successfully curtail commodity-driven deforestation can make it easier for companies sourcing from those jurisdictions to meet their DCF supply chain goals. When fewer farms in a jurisdiction are associated with new deforestation, buyers subject to DCF policies and regulations face lower risk of non-compliance. Companies may also enjoy commercial and logistical benefits, as there are likely to be more compliant suppliers and local aggregators from whom they can purchase. If JREDD+ succeeds in reducing commodity-linked deforestation to very low levels, companies sourcing from these jurisdictions may be able to monitor and manage supply chains at broader geographic scales, such as landscapes, or supply sheds surrounding aggregation points within the jurisdictions. This can significantly reduce monitoring and traceability costs while improving supply chain logistics.

In addition, the governance systems associated with JREDD+ programmes may reduce other risks such as those associated with legality and human rights violations, which are also covered by voluntary commitments and regulatory obligations. JREDD+ governance structures may also provide a basis for collaboration among supply chain companies sourcing from the same jurisdiction, while also facilitating access to land cover and land use change data, producer capacity building, and information sharing. Together, these functions can help companies meet DCF goals and requirements.

Box 3: Frameworks for corporate emissions target setting and accounting

Private sector climate action is heavily guided by standards for corporate emissions accounting (from the Greenhouse Gas [GHG] Protocol) and climate target setting (from the Science Based Targets initiative [SBTi]). The GHG Protocol defines how companies calculate the emissions footprint associated with their business, using inventory accounting methods that calculate emissions based on organisational and operational boundaries. This includes emissions linked to a company's operations (Scope 1) and the materials in its supply chains (Scope 3). The SBTi specifies how, and how much, companies should reduce emissions and support carbon removals to contribute proportionately to global climate goals aligned with the Paris Agreement. The three standards most relevant to forest conservation and land sector climate mitigation are:

GHG Protocol Land Sector and Removals Standard (LSRS): The LSRS sets out the rules for accounting for land management and land use change emissions, as well as carbon removals, within a company's operations and supply chain. It provides the accounting framework to support the setting, validation, and monitoring of SBTi FLAG targets.

SBTi Corporate Net-Zero Standard (CNZS): Version 2 of the CNZS, which is the basis for analysis in this paper, was released in June 2026, can be used by companies beginning in February 2027 and will become mandatory in February 2028. This standard guides companies to set and implement emissions-reduction targets across their value chains that are consistent with achieving net zero emissions by 2050 or sooner. Net zero pathways under CNZS require a primary focus on reducing Scope 1, 2, and 3 emissions by at least 90%, complemented by permanent removal of residual emissions. The standard provides criteria for setting corporate net zero targets as well as implementing, tracking, and reporting progress against those targets.

SBTi Forest, Land, and Agriculture (FLAG) Guidance: The SBTi FLAG Guidance provides requirements for companies in land-intensive sectors or with significant land-related emissions to set near-term (5-10 years) and net zero targets for land use change and land management emissions. For companies to which it applies, FLAG requires setting a separate target for land sector emissions reductions in addition to the company's targets covering energy and industry emissions.

3.2 Climate targets

Science-based targets for emissions reduction and net zero emissions are a central pillar of many company sustainability programmes (see Box 3). For agricultural and forestry supply chain companies, emissions from deforestation and other land use change associated with commodity production often account for a substantial share of total emissions, including up to 80% of Scope 3 emissions and 90% of FLAG emissions for some commodities.

Anchored in the frameworks described in Box 3, supply chain companies have two related objectives within their decarbonisation strategies:

Reducing Scope 1 and Scope 3 emissions in line with SBTi FLAG. Meeting FLAG targets requires reducing land sector emissions within company operations and supply chains. This includes land management emissions, such as those associated with fertiliser use, soil management, or methane from livestock or rice production. It also requires eliminating, or strictly curtailing, new land use change in the company's operations and on farms or areas from which it sources. See Box 4 for further information on accounting methods for land use change emissions in companies' Scope 1 and Scope 3 inventories. Finally, companies may undertake carbon removals within their operations or supply chains to meet FLAG targets.

Meeting net zero targets in line with the SBTi Corporate Net Zero Standard. To meet net zero targets under SBTi, companies must neutralise the small amount of residual emissions left after they have achieved long-term decarbonisation targets (including FLAG) across their operations and supply chains. Companies can neutralise these emissions through supporting the removal of CO_2 from the atmosphere. This can include purchasing credits associated with carbon removals. Under CNZS v2, achieving net zero will also require that companies take responsibility for a portion of their ongoing unabated emissions leading up to achievement of net zero, through purchase of certain types of credits or investing in eligible activities.

Box 4: Land use change emissions accounting methods

The GHG Protocol's Land Sector and Removals Standard (LSRS) provides three approaches by which companies can calculate land use change (LUC) emissions in their supply chains:

1. **Direct Land Use Change (dLUC)** quantifies emissions resulting from a change in land use directly associated with known farms in a company's supply chain.
2. **Jurisdictional Direct Land Use Change (jdLUC)** quantifies emissions from direct land use change calculated at level of a jurisdiction or other sourcing area, including all relevant production units in that area, allocated to an individual company based on its sourcing volume.
3. **Statistical Land Use Change (sLUC)** quantifies emissions from land use change assessed across an entire sourcing area or jurisdiction and statistically allocates these emissions to different products in the company's supply chain.

Companies are instructed to use the most precise method available given their traceability and data availability. All three metrics are calculated using a 20-year lookback period (potentially longer for crops with long rotation times) using linear discounting so that emissions from more recent LUC events are weighted more heavily than those from earlier events.

How sourcing from JREDD+ jurisdictions can support corporate climate targets

JREDD+ programmes that successfully curtail commodity-linked deforestation will directly reduce Scope 3 LUC emissions for companies sourcing from the jurisdiction that calculate land use change emissions using jdLUC or sLUC at the scale of the jurisdiction (see Box 4). Verified decreases in deforestation will lead to reduced LUC emissions for all companies sourcing from the jurisdiction using these methods, regardless of their engagement or investment in JREDD+ or other interventions.

For companies using dLUC to calculate LUC emissions at the farm level, reduced deforestation at the level of the jurisdiction will not automatically lead to reduced emissions in the company's inventory. However, as discussed above in relation to DCF sourcing, it could decrease the risk of new land use change entering the company's supply chain via deforestation by new or existing suppliers.

Other components of JREDD+ may also support companies' efforts to meet climate goals. This includes producer engagement and capacity-building activities that help producers to implement low emissions agricultural practices or engage in on-farm conservation or restoration. It may also include jurisdictional MRV systems, which can provide data that companies can use to calculate and monitor their own carbon footprints.

3.3 Supply chain resilience

Securing reliable raw material supplies is a priority for every company. Increasingly, companies are recognising that this depends on the long-term climatic, economic, ecological, and political stability of sourcing regions. Supply chain resilience is based on many factors that operate at scales far larger than individual farms or suppliers. These include:

- biodiversity conservation and associated ecosystem functions, including pollination, pest control watershed protection, rainfall regulation, and flood control
- equitable land use planning and effective territorial governance
- fire prevention and management
- social and economic stability

Effectively managing these attributes often requires coordinated action across sourcing regions with stakeholders including governments, communities, and commodity-buying companies.

How sourcing from JREDD+ jurisdictions can support supply chain resilience

Landscape- or jurisdictional-level conditions that support resilient production are difficult or impossible for individual companies to establish independently. However, they are often central objectives of JREDD+ programmes, which therefore have the potential to help companies address systemic risks that affect entire sourcing areas. Ecosystem functions and services that support resilience of production systems can be protected via several functions of JREDD+ programmes, including multi-stakeholder governance structures, land use planning processes, enforcement capacity, and jurisdictional monitoring systems. These functions can also create a more stable operating environment for commodity production by reducing companies' exposure to regulatory uncertainty, illegal deforestation, land tenure disputes, social conflict, and environmental degradation that threatens the reliability, affordability, and quality of commodity supplies.

4 Three ways supply chain companies can invest or engage in JREDD+

While involvement of supply chain companies in JREDD+ is currently nascent, our research revealed three significant ways that these companies are beginning to, or could, invest and engage in JREDD+:

1. purchasing JREDD+ credits
2. investing or participating in JREDD+ programme readiness
3. conducting supply chain interventions aligned with JREDD+

In this section, we analyse each of these approaches, describing how it works and how it has been implemented in practice. While Section 3 presented the ways in which sourcing from a JREDD+ jurisdiction can support companies in achieving their sustainability priorities, this section assesses additional benefits that companies could gain by investing or engaging with JREDD+ programmes beyond simply sourcing products.

The analysis reveals considerable opportunity for both companies and JREDD+ jurisdictions to benefit from all three approaches. It also highlights key challenges to scaling that may require deliberate attention to overcome.

4.1 Purchasing JREDD+ credits

How it works: Companies purchase JREDD+ credits generated under the ART TREES, FCPF, or Verra JNR, standards (see Box 1). These credit purchases provide finance to the jurisdiction in return for verified emissions reductions or removals generated at jurisdictional scale. This finance is deployed in the jurisdiction according to its JREDD+ benefit sharing mechanism.

Purchased credits may be retired or resold, depending on the buyer's objectives and the jurisdiction's specifications. Retired credits may be used to help meet net zero targets under SBTi (see Box 5). Specifically, retired removal credits may be used to neutralise residual emissions, including through addressing a company's ongoing emissions responsibility (OER) prior to net zero. Retired reduction credits may be used only towards OER in the near term. Companies may purchase credits after issuance (spot transactions) or through advance purchase agreements linked to future issuance (forward transactions).[1] In spot transactions, buyers acquire credits that have already been verified, issued, and transferred to the jurisdiction's account.

In forward transactions, buyers commit to purchase credits that are expected to be issued, providing a guarantee of future revenue for the jurisdiction. For instance, Emissions Reductions Purchase Agreements (ERPAs) enable buyers commit in advance to purchase a specified volume of future credits at an agreed price. Forward transactions can also entail providing upfront finance to support JREDD+ programme establishment before credits are generated. This upfront finance may be structured as a prepayment for anticipated future credits or may be provided in exchange for preferential access to credits when they become available.

[1] Subject to applicable law; some jurisdictions may disallow forward transactions.

Companies may purchase JREDD+ credits originating from anywhere in the world. However, credits generated in jurisdictions from which the company sources materials may have additional benefits and a stronger business case, as discussed below.

State of play: Several companies with agricultural and forestry supply chains, such as Walmart, Nestle, and Unilever, participate in the LEAF Coalition and have signed forward purchase agreements for JREDD+ credits. In 2026, Costa Rica's JREDD+ programme delivered 1.1 million credits against a LEAF contract, which were purchased by Bayer and other LEAF members. These credits, issued under ART TREES, were the first to be delivered to LEAF buyers.

While these companies may narratively relate their participation in the LEAF Coalition to their overall climate or nature goals, there are as yet no clear examples of supply chain companies linking JREDD+ credit purchasing to specific supply chain or sustainable sourcing goals, or to specific products in their supply chain.

Potential contributions of purchasing JREDD credits to company priorities for sustainable sourcing

DCF sourcing	Credit purchases from jurisdictions in the company's supply chain will help finance forest conservation in those jurisdictions, along with the long-term success of the JREDD+ programme. As discussed in Section 3.1, where JREDD+ is successful at curtailing deforestation linked to the sourced commodities, this may reduce the risk of non-compliance with DCF commitments and regulations while also helping to establish a more favourable commercial environment for DCF sourcing. Separate from product- or supply chain-level outcomes or claims, companies may report and communicate about JREDD+ credit purchases as supporting broader commitments related to forests or nature protection. Such claims or communications do not depend on a geographic connection to the company's supply chains and so could be based on credit purchases from any jurisdiction.
Climate targets	As explained above, under CNZS companies may apply JREDD+ credits toward their net zero goals, either to neutralise residual emissions (removal credits only) or to address their Ongoing Emissions Responsibility (removal and reduction credits in the near term). These benefits are available for all companies, not just those that source forest-risk commodities. They apply equally whether credits are purchased from a jurisdiction where a company does business, or from elsewhere. In addition, credits purchased from jurisdictions in the company's supply chain help finance forest conservation in those jurisdictions. Over time, this may lead to lower emissions factors for commodities produced in the jurisdiction, and a decrease in Scope 3 emissions for companies, as described in Section 3.2.
Supply chain resilience	Credit purchases from jurisdictions in the company's supply chain may contribute to supply chain resilience by supporting the protection of natural ecosystems and ecosystem services upon which agricultural production depends. Many JREDD+ programmes also include activities such as producer capacity building or support for land tenure stability, so purchases of credits may support sustainable agricultural production in these areas.

Box 5: Potential uses of JREDD+ credits under the SBTi Corporate Net Zero Standard

Carbon credits, such as those generated by JREDD+ programmes, can be purchased and retired by companies to address the emissions that remain in their supply chains following supply chain decarbonisation, in order to achieve net zero emissions goals. This can be done by companies in all sectors, not just those associated with deforestation, as these purchases are not linked to company supply chains. There are two pathways by which this can be done within the SBTi CNZS.

1. **Neutralisation:** Companies can purchase and retire JREDD+ removal credits to neutralise residual emissions to reach net zero targets.

   Explanation: When companies have reduced their Scope 1,2, and 3 emissions in line with SBTi targets, what is left over is known as residual emissions. By the year their net zero target comes due, companies are expected to neutralise their residual emissions through investments in high-integrity carbon removals.

2. **Ongoing Emissions Responsibility:** Companies can purchase and retire JREDD+ credits to contribute to their Ongoing Emissions Responsibility (OER) under CNZS v2. Companies can use removal credits for this purpose at any time leading up to the achievement of net zero. Companies can use reduction credits for this purpose initially, but those will need to be phased out beginning in 2035 in favour of removals, until 100% of residual emissions are neutralised by high-integrity removals in the net zero year, as explained above.

   Explanation: Under the OER, companies are first recognised (through 2035) and then required (after 2035) to take responsibility for their ongoing, unabated emissions prior to the year their net zero target comes due. Companies can do this by contributing to verified climate mitigation or other climate action, including contributions beyond their supply chain, such as by purchasing high-quality carbon credits.

In addition, CNZS v2 introduces a hierarchy of implementation pathways that companies may employ in the absence of traceability or leverage over their upstream supply chain. While reductions and removals in companies' physical GHG inventories (activity level) remain the primary basis for targets, this hierarchy complements those with a range of mitigation efforts that companies may engage in outside of their physical inventory to achieve their targets, including the use of market instruments such as commodity certificates. These activities are accounted for and reported separately from physical inventory reductions. This hierarchy identifies two types of mitigation beyond the physical supply chain, defined per CNZS:

- **Activity pool level:** Action taken with a shared system of activities that serves the reporting entity, defined at the smallest system boundary within which the specific activity serving the company cannot feasibly be identified. Examples include supply sheds for agricultural products.
- **Sector level:** Where options at the activity or activity-pool level are constrained, companies may take sector-level actions. These actions relate to the same type of activity and occur in a relevant geographic or system context, so that they meaningfully contribute to reducing the emissions the company is responsible for.

For companies with FLAG targets, purchase of JREDD+ credits may qualify in the future for activity pool and/or sector-level action, as the reductions and removals represented in these credits may be associated with or mirror necessary reductions or removals in their supply chains. This may be clarified in the forthcoming revision of the FLAG guidance. See Section 5.6 for more discussion on this topic.

Opportunities and limitations of purchasing JREDD+ credits to support company priorities

OPPORTUNITIES	LIMITATIONS
• Provides a direct and well-structured mechanism for contributing to forest conservation at scale. • Supports interventions that extend beyond the boundaries of individual company supply chains and suppliers. • When purchased from jurisdictions from which a company sources, may finance activities that contribute to its supply chain goals. • Does not require traceability beyond the scale of the jurisdiction to link credit purchases to potential supply chain benefits.	• JREDD+ credit purchases cannot be counted toward in-scope emissions reductions or removals, or help companies meet FLAG targets • Most JREDD+ credits are reduction credits, limiting their use in net zero claims. • Purchasing credits does not improve traceability, provide DCF verification, or demonstrate EUDR compliance within a company's supply chain.

4.2 Investing or participating in JREDD+ readiness

How it works: Companies that operate in or source from a jurisdiction contribute financial support, provide technical assistance or other in-kind support, or participate as stakeholders in the design and establishment of a JREDD+ programme. This support and participation can take a variety of forms, including:

- engagement in the programme, typically in collaboration with the jurisdictional authority, technical partners supporting JREDD+ programme establishment, and other stakeholders
- readiness activities with specific actors in the jurisdiction, such as smallholders or forest communities
- support for establishing or strengthening specific programme components, such as MRV systems or data sharing mechanisms

These types of investments and activities are not necessarily distinct from ways in which supply chain companies participate in multi-stakeholder landscape and jurisdictional initiatives that do not take place in the context of JREDD+. Companies typically pursue such engagement to help address supply chain risks and impacts that are beyond their full control, or that benefit from taking a collaborative approach. However, investing in readiness and enabling conditions in a JREDD+ jurisdiction may differ from such investment in non-JREDD+ landscapes in a few ways:

- The structure of JREDD+ may provide a greater level of formality and clarity regarding the policy mandate from government, roles of different stakeholders, decision-making processes, investment modalities, and outcomes. This clarity could improve the business case for company investment.
- In addition to the potential benefits of investment in landscapes and jurisdictions in general, actions to support JREDD+ readiness help ensure or accelerate future credit issuance and associated revenue to support forest conservation and benefit sharing.

State of play: There are several known examples of supply chain companies contributing to JREDD+ readiness.

The Cocoa and Forests Initiative mobilised companies in support of Ghana's national JREDD+ programme at an early stage in development. This included the designation of Hotspot Intervention Area (HIAs) that companies have adopted as implementation areas for their own programmes. This approach has supported company engagement by enabling companies to link their contributions (both spatially and thematically) to their supply chain goals. Companies including Mondelez, Touton, ECOM, and Hershey have all contributed to Ghana's JREDD+ programme in this way.

In Mato Grosso, Brazil, the state explicitly links its JREDD+ strategy to corporate sourcing commitments from major traders, producers, and buyers. Readiness support for JREDD+ has come from a mix of public, philanthropic, and private funders, including from companies that operate in or source from the region. This funding is channelled, in part, through the state's PCI (Produce, Conserve, Include) Institute, alongside earlier support from the REDD+ Early Movers programme. Commodity trading companies also participate directly in the PCI governance structure, which they link to their own supply chain sustainability strategies.

In addition, the LEAF Coalition (in partnership with donor governments) has developed an Advance Payment Facility to channel upfront finance to jurisdictions once an ERPA has been signed but in advance of credit issuance. This allows companies to provide support to accelerate issuance of credits, in addition to their commitments to purchase credits once they become available.

Potential contributions of supporting JREDD+ readiness to company priorities for sustainable sourcing

DCF sourcing	By investing or participating in the design and development of JREDD+ programmes, companies may be able to help ensure that the programme effectively addresses deforestation and other impacts associated with commodities in their supply chains. This may include capacity-building or benefit sharing that reaches producers from who they source or may source. It could also include enforcement, deforestation monitoring and response systems, grievance mechanisms, or other initiatives that support companies own risk mitigation and compliance efforts.
Climate targets	Similar to DCF sourcing, readiness investments can help ensure that JREDD+ programmes are designed in ways that reduce emissions associated with materials in the company's supply chains. These investments may also accelerate timelines for credit issuance, thereby allowing jurisdictions to access additional resources for forest protection and climate mitigation, while also making credits available companies to purchase and apply towards their net zero goals.
Resilience	Readiness and enabling condition investments have the potential to increase the resilience of agricultural supply chains in sourcing area. This may occur through a variety of policies and actions that are typical components of JREDD+ programmes, such as land tenure regularisation, law enforcement, producer capacity-building, establishment or re-orientation of subsidies or financial incentives to support sustainable agriculture, and initiatives to curtail wildfire or other natural disasters.

Opportunities and limitations of JREDD+ readiness investments to support company priorities

OPPORTUNITIES	LIMITATIONS
• Certain types of readiness investments may help curtail commodity-driven deforestation and support other company priorities in the near term, regardless of whether they ultimately lead to JREDD+ credit issuance. • Investing in readiness helps unlock additional benefits of JREDD+ by addressing one of the largest constraints facing JREDD+: the lack of upfront finance for programme development. • Company participation in JREDD+ readiness can help shape programme design so that it better addresses commodity-driven deforestation and other key supply chain risks. • Investment by supply chain companies in JREDD+ readiness has the potential to leverage larger investments by governments, philanthropic donors, and private buyers and investors outside of the soft commodities sectors.	• Extended timelines typically needed to build a successful JREDD+ programme (3-10 years) can weaken the business case by creating a long gap between expenditures and results. • Project complexity: JREDD+ programmes are large and complex initiatives with multiple partners, requiring sustained engagement and coordination to link implementation and financing, which may make it difficult for companies to easily identify intended near-term outcomes or make claims. • Supporting the development of a JREDD+ programme does not guarantee that the programme will come to fruition, be effective in conserving forests and reducing emissions, or generate credits.

4.3 Conducting supply chain interventions aligned with JREDD+

How it works: Companies implement or invest in activities within their supply chains to meet supply chain goals including DCF sourcing, supply chain emissions reduction, and sourcing resilience. This includes projects on farms known to produce commodities purchased by the company. It can also include projects and interventions in supply sheds and landscapes from which the company sources commodities when DCF risk, DCF compliance, or Scope 3 emissions are assessed at that scale.

Company action to achieve individual supply chain goals to reduce deforestation for DCF compliance or emissions reductions may be magnified, leveraged, or strengthened by JREDD+ programmes when carried out in JREDD+ jurisdictions. Supply chain interventions that have strong synergy with JREDD+ programmes can provide complementarity with jurisdictional action, and leverage or build on jurisdictional projects or interventions, or can be incorporated into JREDD+ programme design.

These interventions can include:

- producer training, capacity building, or incentives to support forest protection and sustainable or low-carbon production
- activities to support DCF compliance, including EUDR compliance, such as producer mapping, geospatial data development, and monitoring
- projects intended to reduce emissions or increase carbon removals within company operations (Scope 1) or supply chains (Scope 3); see below for further discussion

For companies working to reduce Scope 3 emissions to meet FLAG targets, supply chain interventions include projects to:

- **Reduce land management emissions on working land:** This goal may be pursued through strategies such as reducing fertiliser and agrochemical usage, improving farm residue management, or increasing yields through nutrient management and other similar interventions. These activities do not contribute directly to forest protection but may align with other JREDD+ programme goals and may support or use the same or complementary producer engagement or support mechanisms.
- **Reduce land use change emissions within supply chains:** Following the LSRS accounting methods (see Box 4), emissions from deforestation or other forms of land use change may be allocated to company inventories at the level of specific farms or at the level of sourcing areas or jurisdictions. Company interventions to reduce LUC emissions within their inventory may be the same as those intended to achieve DCF supply chains. These include requirements or incentives for suppliers to halt new ecosystem clearance, as well as direct support for forest conservation in sourcing areas. These efforts are directly complementary to JREDD+ programme goals and may contribute to JREDD+ outcomes. Because LUC emissions accrue to a company's inventory based on attribution to products, these reductions do not pose a double counting risk with JREDD+ credit generation.
- **Increase carbon removals within supply chains:** Companies that produce or source agricultural or forestry products may include carbon removals in their Scope 1 and 3 decarbonisation targets under SBTi FLAG. These companies may therefore invest in projects aimed at increasing carbon sequestration and storage in the soil and biomass of farms from which they source. This can include enhancement of agroforestry systems or soil carbon, as well as ecosystem restoration in the non-productive areas of the farm (subject to additional guidance regarding forest carbon accounting methodologies). These projects can occur on production land as well as on land proximate and adjacent to that land (see Box 6).

Box 6: Proximate and adjacent land

Following the GHG Protocol Land Sector and Removals Standard (LSRS), companies may define their Scope 1 or Scope 3 spatial boundary to include 'non-productive land' that does not produce commodities but is proximate or adjacent to 'productive land' that does produce commodities in companies' operations or supply chain. Requirement 7 of the LSRS states that, to be considered within a company's supply chain boundary, proximate and adjacent land must be under the same ownership or management as the productive land that it is associated with and managed under a single land management plan. It must also be biophysically and socioeconomically connected to the productive land, as well as being physically connected (adjacent) or near (proximate) to it. However, the GHG Protocol does not currently provide operational guidance on accounting for emissions and removals on this land.

Carbon removals associated with forest restoration or regeneration occurring within company supply chains may be assessed as part of jurisdictional accounting for JREDD+ programmes that consider carbon removals. If these removals are credited to the overall JREDD+ inventory and issued as credits to corporate buyers, this may pose a double counting risk that could impact the credibility of generated removals. This risk may lead to unwillingness by companies to invest in these projects in JREDD+ jurisdictions for fear of not being able to claim the carbon removals that they generate.

To reduce this risk, ensure integrity of in-scope removals, and be able to sell credits on the carbon market, companies may choose to have carbon projects certified by crediting standards. In turn, this may allow these projects to be more clearly nested within JREDD+ programmes to avoid double counting and let companies leverage jurisdictional MRV and accounting infrastructure. See Box 7 for more information on nesting. However, this process may be expensive or cumbersome, and many companies may continue to account for reductions and removals primarily via inventory accounting in line with the LSRS.

Box 7: Nesting carbon projects within JREDD+

Nesting is an accounting and governance approach that links project level activities to a higher level (jurisdictional) REDD+ programme so that all carbon accounting and safeguards align under a single jurisdictional carbon budget and MRV system. Generally, the jurisdiction sets the rules for emissions baselines, monitoring, and credit issuance. Individual projects are then 'nested' within this jurisdictional framework. This may entail adjusting project-level accounting to align with jurisdictional accounting so that reductions and removals add up without gaps or overlaps. Nesting avoids double-counting and supports alignment across carbon projects occurring within the same territory.

There are two primary approaches to nesting:

- **Full nesting accounting and issuance (centralised nesting):** The jurisdictional programme accounts for all reductions or removals against the jurisdictional baseline, and projects are allocated an appropriate portion of this total. Projects can issue and sell credits, but the system ensures that there is a consistent baseline across the jurisdiction.
- **Issuance deductions (decentralised nesting):** Project-level accounting methodologies and standards are used to quantify and issue credits for projects within the JREDD+ programme area. These credits are deducted from the issuance of JREDD+ programme credits.

If companies choose to have carbon projects with their supply chains verified and formally nested within JREDD+, this may increase credibility of these outcomes and may allow the company to outsource some of the monitoring requirements to jurisdictional systems.

State of play: In some cases, supply chain interventions, especially those related to DCF supply chains and resilient production systems, have been effectively leveraged and magnified by jurisdictional efforts associated with JREDD+. For example, in the Brazilian state Mato Grosso, the Produce, Conserve and Include (PCI) Institute engages supply chain companies to provide financial support for landscape initiatives aligned with the state's sustainability objectives and JREDD+ programme. The PCI strategy explicitly links the JREDD+ and forest conservation targets to corporate sourcing commitments and interventions from major traders, producers, and buyers. In coordination with PCI, supply chain companies have made investments in the inclusion of small-scale producers in supply chains through support for environmental and land tenure regularisation, technical assistance, and market access. The Soft Commodities Forum, made up of large soy traders, works through its Farmers First Clusters project to support producers to target soy expansion onto already-cleared lands and incentivise forest protection beyond the legally required set-asides.

Similarly, Ghana's JREDD+ programme has focused on leveraging corporate action within or associated with their own supply chains. For example, food ingredient company Touton's climate smart cocoa programme was explicitly structured to support and complement the national agricultural development programme and JREDD+ architecture. In collaboration with Ghana's Forestry Commission, the company provides training for cocoa farmers on good agricultural practices, agricultural intensification, income diversification, business skills, forest rehabilitation, and climate change education, including agroforestry planning and shade tree integration. These interventions support the company's supply chain goals while also advancing JREDD+ programme objectives.

However, there are few clear examples of companies collaborating with JREDD+ programmes in the process of conducting carbon reductions or removals projects within their supply chains As a result, many companies express concern or scepticism that there is a benefit to Scope 3 interventions in JREDD+ jurisdictions.

Potential contributions of conducting supply chain interventions in JREDD+ jurisdictions to company priorities for sustainable sourcing

DCF sourcing	Supply chain interventions to reduce deforestation and deforestation risk in supply chains have the potential to be more successful or have greater impact in JREDD+ jurisdictions where public policy and benefit sharing mechanisms are contributing to the same goals.
Climate targets	As with DCF goals, interventions to reduce LUC emissions on farms and in sourcing areas to meet FLAG targets may be more likely to have desired outcomes in JREDD+ jurisdictions. There are no double counting risks associated with such interventions in JREDD+ landscapes. Supply chain interventions that deliver carbon removals may benefit from similar synergies with JREDD+, for instance due to mutually reinforcing contributions to capacity building, revegetation, and associated land use policies and incentives. However, outcomes are less likely to be additive or win-win with JREDD+ programmes, and claims associated with company investment in carbon removals may conflict with JREDD+ crediting unless double-counting issues are addressed through nesting or other policies.
Resilience	Supply chain interventions to improve productivity, ecosystem health, farmer livelihoods, and climate resilience have the potential to be more successful or have greater impact in JREDD+ jurisdictions where public policy and benefit sharing mechanisms are contributing to the same goals.

Opportunities and limitations of conducting supply chain interventions in JREDD+ jurisdictions to support company priorities

OPPORTUNITIES	LIMITATIONS
• Supply chain interventions to engage producers, build producer capacity, and support reduced deforestation on and around farms can be aligned with jurisdictional objectives, gaining support and buy-in from relevant government agencies. • Improved governance and aligned policies associated with JREDD+ programmes may increase effectiveness or success of supply chain interventions. • JREDD+ does not affect or impede the ability of companies to claim emissions reductions associated with supply chain interventions.	• JREDD+ programmes on their own are unlikely to enable companies to demonstrate compliance with DCF commitments or regulations. • Carbon removals within company operations or supply chains may lead to conflicting claims or double counting with JREDD+ credit generation.

5 Recommendations: improving synergies between sustainable supply chains and JREDD+

The previous sections identify numerous potential synergies between sustainable supply chain initiatives and JREDD+. However, the research and stakeholder consultations conducted for this paper identified several structural barriers that limit the extent to which JREDD+ programmes can support company efforts and therefore limit corporate engagement and investment in JREDD+.

These barriers do not reflect disagreement about the importance of jurisdictional action. Rather, they arise because frameworks for deforestation-free supply chains and corporate climate action were developed using different logic, methods, and objectives than those for JREDD+. The result is that each type of framework does not recognise or reward the types of outcomes that the other delivers. This leads to misaligned incentives, lack of clarity on appropriate ways to invest or engage, and the potential for overlapping or competing claims. These barriers create hesitation and missed opportunities for collaboration and synergy, even when there is a strong strategic rationale for integrating supply chain initiatives and JREDD+.

Improving interoperability between JREDD+ and responsible sourcing frameworks, and improving clarity regarding claims associated with this integration, can increase the extent to which corporate and jurisdictional action are mutually reinforcing. This can pave the way for more effective collective efforts to finance and manage forest protection.

The interviews, consultation, and analysis presented in this paper point to six key opportunities to improve synergies between corporate supply chain action and JREDD+ programmes in order to better protect forests in commodity production landscapes:

1. increase recognition of jurisdictional performance in DCF frameworks
2. increase recognition of landscape actions and performance in climate frameworks
3. reconcile carbon claims to support supply chain decarbonisation
4. create shared MRV systems for jurisdictional and corporate accounting
5. incentivise participation in JREDD+ readiness by supply chain companies
6. consider implications of allowances for JREDD+ credit usage in FLAG revision

5.1 Increase recognition of jurisdictional performance in DCF frameworks

Action for regulators, developers of supply chain frameworks and guidelines, and reporting and assessment initiatives

As explained previously, JREDD+ can help companies implement and fulfil DCF policies by reducing deforestation in sourcing areas while strengthening governance systems, improving monitoring, and addressing underlying drivers of forest loss that individual companies cannot tackle alone. However, these improvements currently receive little recognition in DCF policy or assessment frameworks, which focus primarily on traceability and compliance of the specific materials that a company sources.

Refinement of DCF frameworks to improve the recognition of jurisdictional performance and progress could increase incentives for companies to support JREDD+ and other collaborative solutions. However, any such refinement must be done with care to maintain a strong linkage with companies' core interest in (and obligations to manage) their own supply base and to avoid unintended consequences, including opportunities for greenwashing. Two possible routes that reflect these considerations include:

1. **Incorporate improvements in jurisdictional performance into company progress pathways and metrics for addressing supply chain-linked deforestation.** Verified reductions in commodity-linked deforestation at the level of a jurisdiction – along with suitable measures to sustain such progress – could be used to designate commodity volumes from such areas as progressing towards DCF or as having a lower risk of supply chain-linked deforestation. This would formalise the connection between jurisdiction-level progress and supply chain assessment and reporting conventions. Further details would need to be developed to specify aspects such as the degree and durability of jurisdictional improvements required to attain such recognition and the relationship to a company's supply base.
2. **Recognise JREDD+ programme activities and outcomes as contributions to implementing supply chain due diligence.** Supply chain due diligence is core expectation for companies, requiring them to identify and address current and future risks, including those that may lie beyond their existing raw material sourcing.[2] Due diligence provisions are also included in demand-side legislation on deforestation-free supply chains, namely the EUDR and the incipient UK Forest Risk Commodities Regulation. JREDD+ programmes can provide or support many of the functions required for supply chain due diligence, such as environmental and social safeguards, monitoring systems, and grievance mechanisms. These functions (and evidence of their effectiveness) could be formally and systematically recognised as components of supply chain due diligence. This would require identification of specific features of JREDD+ programmes and outcomes that could serve as credible indicators of effective supply chain due diligence.

These two directions could incentivise and increase recognition for jurisdictional progress within the context of existing voluntary and regulatory frameworks for responsible supply chains.

In markets or contexts where DCF frameworks are not yet established or mainstreamed, there may be additional opportunities to build jurisdictional performance into approaches for responsible and resilient sourcing, without undermining existing policy and accountability instruments.

Regardless of how jurisdictional performance is recognised in responsible sourcing frameworks, credible approaches require that recognition be based on substantiated evidence, including sustained reductions in commodity-linked deforestation documented through JREDD+ MRV. Readiness actions, company participation in or support for a JREDD+ programme, or temporary decreases in jurisdictional deforestation that do not reflect an alleviation of commodity-driven deforestation pressures, should not by themselves be considered results that demonstrate DCF progress, lower-risk status of sourced materials, or effective due diligence.

[2] This expectation is codified in longstanding international guidelines including the UN Guiding Principles on Business and Human Rights and the OECD Guidelines for Multinational Enterprises on Responsible Business Conduct. More recently, supply chain due diligence has been formalised in the EU regulatory regime as the EU Corporate Sustainability Due Diligence Directive.

5.2 Increase recognition of landscape action and performance in climate frameworks

Action for carbon accounting and climate target-setting frameworks

Given their importance for addressing supply chain risk and impact on a lasting basis, sourcing areas (such as landscapes, jurisdictions, and supply sheds) are under-considered in frameworks for corporate carbon accounting and climate target setting. Within these frameworks, the boundary of a company's supply chain has been limited to the farm plots or forest management units from which a company sources. Action on all other land has been considered 'beyond supply chain'. This created a situation in which the only lands on which companies sourcing agricultural products were significantly incentivised to pursue decarbonisation efforts were those that had already been deforested.

To better incentivise measures to prevent deforestation, these frameworks could expand the supply chain boundary to include natural ecosystems in company sourcing areas. SBTi and the GHG Protocol are already considering this direction via several new concepts or approaches. However, further analysis, development, and user guidance are needed to bring such changes to fruition in a way that drives effective action without undermining responsibility for company-level impacts. There are at least three approaches to do so:

1. **Improve effectiveness of jdLUC and sLUC accounting methods in capturing deforestation reductions in sourcing areas.** Companies using these methods of assessing land use change (LUC) emissions may be able to reflect jurisdiction-level reductions in deforestation within their own Scope 3 inventories. Improved guidance on how these approaches can be used to demonstrate Scope 3 emissions reduction may provide companies with greater confidence and incentive to invest in forest protection at the jurisdictional scale. In addition, the availability of credible, precise, and regularly updated land use change data may allow these methods to more effectively reflect real changes in deforestation on the ground. JREDD+ programmes may be able to support data availability; for example, data on forest cover change generated by JREDD+ MRV systems could be regularly published to provide companies with an independently validated data set from which to calculate year-on-year decreases in LUC emissions via both jdLUC and sLUC methodologies. This would allow companies currently using sLUC factors generated at larger scales (eg, national or global) to publish more accurate emissions estimates. It would also allow companies already using these methods to more credibly report decreases in LUC emissions associated with decreased deforestation in their sourcing areas.
2. **Clarify spatial requirements and accounting methods for proximate and adjacent lands.** Guidance to allow companies to operationalise inclusion of these lands in supply chains should ensure that standing or recovering natural ecosystems owned or managed by producers from whom companies purchase can generate reductions or removals within the supply chain boundary. This would allow producer and company investments in ecosystem conservation and restoration on these lands to count as reductions or removals within a company's emissions inventory.
3. **Incorporate the concept of activity pool-level sction appropriately into the FLAG target-setting framework.** Activity pool mitigation was introduced in CNZS v2, but the applicability of this concept to the land sector has not yet been fully specified. Incorporation of this concept within SBTi FLAG could enable companies to consider their participation or investment in JREDD+ programmes in jurisdictions from which they source as an action within an activity pool linked to their supply chain. Further analysis and development are required to ensure that new pathways for impactful investment do not displace more direct actions to curtail deforestation and LUC emissions. See Section 5.6 for further recommendations related to FLAG guidance.

In combination, these three approaches could improve synergies between supply chain action and JREDD+ in two ways: i) incentivise companies to invest and engage in actions at the sourcing area level, which can contribute to successful JREDD+ programmes; and ii) strengthen the recognition of jurisdictional progress in corporate climate frameworks, which can create a cycle of positive reinforcement in fulfilling company goals in tandem with jurisdictional priorities.

5.3 Reconcile carbon claims to support supply chain decarbonisation

Action for JREDD+ programmes, supply chain companies, and technical partners

As noted earlier, some companies are concerned that decarbonisation investments made within JREDD+ jurisdictions may not count towards their SBTi FLAG targets. If not addressed, these concerns are likely to impede investment and engagement. JREDD+ programmes should therefore include safeguards or processes to ensure that corporate efforts to decarbonise supply chains are not reduced or hampered due to the generation of JREDD+ credits.

Reductions in LUC emissions in operations (Scope 1) and supply chains (Scope 3) do not pose a double counting risk with JREDD+ programmes. There is value in continuing to communicate this point to build confidence for prospective company investments and to avoid misunderstandings, especially as companies that are less familiar with JREDD+ become interested in such opportunities.

However, activities intended to increase carbon removals within supply chains may indeed pose risks of double counting if removal credits are sold by JREDD+ jurisdictions to corporate buyers. This could lead to ineligibility of such removals to be counted towards company targets or could decrease the perceived integrity of JREDD+ credits. Three complementary innovations may help ensure that companies can make appropriate claims about decarbonisation associated with in-scope removals:

1. **A process for nesting or otherwise reconciling removals occurring within supply chains in JREDD+ jurisdictions:** If companies are to invest in forest conservation and restoration in order to meet climate goals, they need to feel confident that carbon benefits will accrue to their supply chain inventory and will count towards their FLAG targets. For that to occur, those carbon removals must not also be issued and sold as JREDD+ removal credits. Emerging solutions, such as Verra's newly released Scope 3 Standard, or the optional 'Right to Report' proposed in the LSRS may serve this purpose. To align incentives for corporate investment, these mechanisms should include removals on proximate and adjacent lands that are claimed as in-scope for companies.
2. **A process to coordinate data and accounting:** This requires that companies disclose data on in-scope removals to the jurisdictional programme and that the jurisdictional MRV system incorporate this information into any jurisdictional removals calculations. Transparency and accuracy of this information will ensure integrity of both supply chain project accounting and JREDD+ credits.
3. **Collaborative guidance and clarification related to claims:** The issue of allocation of removals (and avoidance of double counting) is mediated by multiple frameworks and sources of authority, including SBTi, the GHG Protocol, JREDD+ standards such as ART TREES, and individual jurisdictional programmes. No single entity is clearly responsible for this matter, which has led to the current situation of ambiguity and perceived risk of invalid or overlapping claims. Guidelines jointly developed between several of these entities could address this challenge and thereby greatly improve clarity and confidence for supply chain companies. This guidance could specify parameters for recognising within-supply chain removals in JREDD+ removals accounting while also clarifying the applicability of nesting rules to such scenarios.

5.4 Create shared MRV systems for jurisdictional and corporate accounting

Action for JREDD+ programmes, supply chain companies, technical partners

JREDD+ programmes, corporate emissions accounting, and DCF goals all require monitoring of forest cover and change. However, this information is translated into different accounting outputs, including JREDD+ credits, corporate GHG inventories, and DCF compliance or assessments, respectively. Due to these differences, potentially important synergies in monitoring changes in forest cover and carbon stocks remain underdeveloped.

Some aspects of methodological integration may be straightforward. For example, assessments of forest carbon change under JREDD+ crediting standards are based on calculation of gross annual emissions from forest conversion. Jurisdictions could publish such information as a distinct, verified result that could serve as a single data source for all companies sourcing from the jurisdiction. Companies could use these data to assess deforestation incidence and risk, as well as emissions from deforestation at the level of the jurisdiction or specific landscapes or supply sheds within it. This would improve data quality and credibility, reduce cost, and avoid inconsistencies among company monitoring data and accounting methods.

Building on this approach, JREDD+ programmes could also provide other jurisdiction-level data, such as jurisdiction-specific emissions factors for commodities produced in the jurisdiction, informed by crop extent maps. This would reduce cost and improve credibility by providing a single set of emissions factors applicable to all producers and consumers of those commodities.

Translating jurisdiction-level data collected and produced by the JREDD+ programme into data required by companies for their own supply chain monitoring, accounting, and reporting would provide a clear benefit to companies sourcing from JREDD+ jurisdictions. This added value could help justify greater company investment or participation in support of JREDD+ programme success.

5.5 Incentivise participation in JREDD+ readiness by supply chain companies

Action for JREDD+ programmes and organisations that support them

As identified in this analysis, there are several cases where supply chain companies operating in JREDD+ jurisdictions have contributed significantly to JREDD+ readiness and programme development. In jurisdictions where expansion of commodity agriculture is a primary driver of forest loss, there is potential for companies that operate in or source from those jurisdictions to play a larger role in programme design and function. This can serve to complement and support government activities and accelerate progress of JREDD+ programme establishment and maturation. Company support for JREDD+ readiness can help overcome up-front resourcing gaps to establish new programmes and bring credits to market. Companies may also be well positioned to lead portions of JREDD+ programme activities, such as those related to producer engagement and training.

Jurisdictions may be able to incentivise supply chain companies to engage more directly in JREDD+ programme readiness through at least three possible mechanisms:

- As described in section 4.1, supply chain companies may be interested to purchase JREDD+ credits to meet net zero targets or other climate objectives. To incentivise direct investment and participation by companies operating in or sourcing from the jurisdiction, JREDD+ programmes could recognise this support via preferential access to credits. This could operate similarly to other forward transaction arrangements that have already been applied, for example by the LEAF Coalition.
- As described in section 4.2, there is already considerable interest from supply chain companies to invest in landscape or jurisdictional initiatives that support coordinated action to address supply chain risks and impacts beyond the company's full control. JREDD+ programmes can be designed and promoted as effective ways for companies to channel investment and engagement at the level of landscapes, jurisdictions, and sourcing areas. This may be particularly synergistic in jurisdictions

where companies are already engaging at the landscape level but not explicitly in relation to the existing or in-development JREDD+ programme in the jurisdiction.

- As described in section 4.3, company investments in their own supply chains often include activities that are highly aligned with the goals and needs of JREDD+ programmes. Jurisdictions may therefore design producer engagement activities associated with JREDD+ to leverage or magnify efforts being conducted by these companies. This may make company investments in sustainability or producer engagement more efficient, effective, or scalable, which may provide additional incentive for companies to invest in interventions in these jurisdictions.

5.6 Consider implications of allowances for JREDD+ credit usage in FLAG revision

Action for SBTi and technical advisors to FLAG

The five recommendations above primarily relate to frameworks and standards in their present form. However, this paper comes at the start of a major revision process for SBTi FLAG. As that standard is reconsidered in light of the newly revised CNZS, discussion will inevitably arise regarding whether and how purchase of forest-based carbon credits, including JREDD+ credits, should be treated.

Consistent with its goal of decarbonising the global economy in line with the Paris Agreement, the primary focus of the SBTi is on reducing emissions in companies' physical inventory. Credit purchases do not demonstrate that emissions have been reduced or that removals have occurred within a company's operations or supply chains. Therefore, JREDD+ credits, like all credits and certificates, are not appropriate to contribute to reducing Scope 1 or 3 emissions inventories, including FLAG emissions.

While it does not change SBTi's focus on prioritising in-scope emissions reductions, the CNZS v2 opens the door to additional options for downstream companies to take responsibility for mitigation beyond activity-level interventions within supply chains. In this context, it may be reasonable for the purchase of JREDD+ credits from jurisdictions in which a company sources commodities to be considered as a form of action at the activity-pool level. Similarly, purchase of JREDD+ credits from jurisdictions that produce the same commodities that the company purchases may have the potential to contribute to sector-level action under CNZS v2.

Table 1 provides an overview of the ways in which JREDD+ credit usage may (and may not) be considered in FLAG revisions, based on provisions in CNZS (see Box 5 for more detail on these requirements). The table categorises potential applications of JREDD+ credit purchase into three categories:

- **Clearly permitted (✓):** Some potential uses of credits, such as the use of removal credits to neutralise residual emissions, are clearly permitted based on CNZS v2.
- **Clearly not permitted (X):** Some potential uses of credits, such as use in reducing in-scope emissions at the activity level are not, and likely will continue not to be, permitted based on the key principles of physical supply chain inventories.
- **Potential future use cases (?):** Both reduction and removal credits could potentially be considered for use in activity pool (jurisdictions from which company purchases) or sector (for other jurisdictions) mitigation in FLAG while following the intent of the standard. If pursued, these approaches would require development of novel methodological approaches for translating carbon associated with credit purchase to carbon accounted for within supply chain frameworks.

Table 1: Possible use of JREDD+ credits toward SBTi targets.

COMPANY ACTION	SCOPE 3 FLAG TARGET			NET ZERO TARGET		
	Activity-level	Activity pool level	Sector-level	OER Optional recognition program	OER post-2035 removals responsibility	Neutralisation (net-zero target year eg, 2050)
Purchase JREDD+ **removal** credits from a jurisdiction it **sources from**	X	?	?	✓	✓	✓
Purchase JREDD+ **reduction** credits from a jurisdiction it **sources from**	X	?	?	✓	X	X
Purchase JREDD+ **removal** credits from a jurisdiction it **does not source from**	X	X	?	✓	✓	✓
Purchase JREDD+ **reduction** credits from a jurisdiction it **does not source from**	X	X	?	✓	X	X

Decisions on whether these approaches will be allowed within SBTi FLAG or other supply chain frameworks should be based on analysis to determine how credit usage can align and support existing action to address deforestation in supply chains. Any guidance that allows for further usage of JREDD+ credits should ensure that the provisions further incentivise and resource efforts to eliminate land use change associated with commodity expansion, rather than weakening them.

Requirements and guidance should ensure that credit usage does not implicitly sanction a 'no net deforestation' approach that would allow companies to claim progress towards sustainability goals while deforestation frontiers continue to expand. This may include potential safeguards such as:

- differentiating options for credit usage based on the nature of a company's business – for instance, the company's stage in the supply chain and its amount of leverage to influence producers and land use decisions;
- conditioning the use of credits on the effective implementation and achievement of no-deforestation commitments; or
- requiring appropriate levels of supply chain traceability to link JREDD+ investments to company sourcing in accordance with the concepts of activity pool or sector level action.

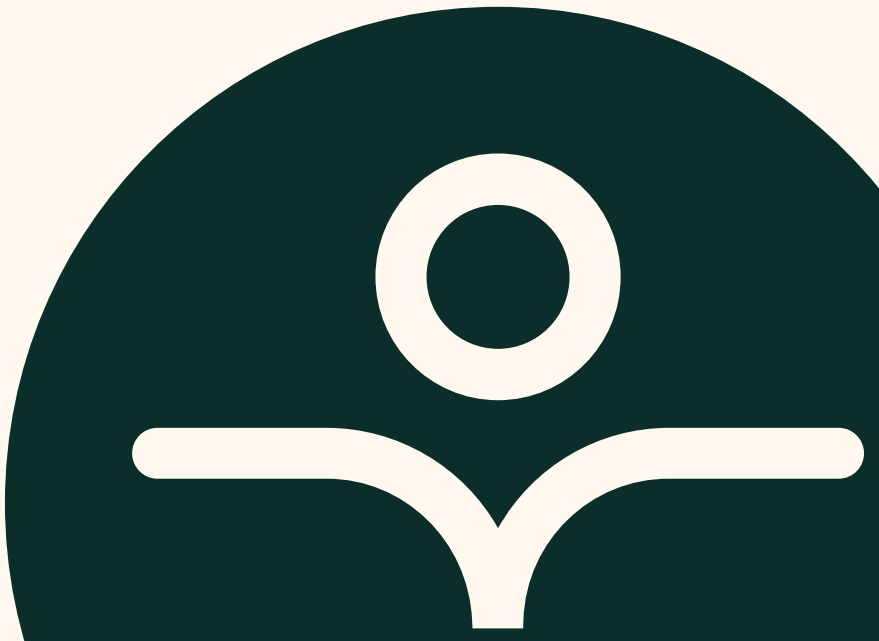
6 Conclusions

JREDD+ and supply chain sustainability policies have evolved in parallel, pursuing many of the same objectives through different mechanisms. Despite differences in scale, governance, and accounting approaches, there are significant opportunities to strengthen synergies between the two. Jurisdictional approaches can help address many of the systemic drivers of deforestation and supply chain risk that individual companies cannot tackle through farm- or supplier-level interventions alone. At the same time, supply chain investments can increase financial flows and in-kind support to JREDD+ programmes, whilst helping to ensure that they effectively address commodity-driven deforestation.

The research carried out for this paper confirms that supply chain companies can benefit from participation in JREDD+ programmes to deliver on key business priorities, namely: achieving DCF supply chain commitments and regulatory compliance; meeting climate targets; and increasing supply chain resilience.

However, a variety of barriers currently limit the business case for supply chain companies to invest or participate in JREDD+. These barriers lead to missed opportunities for these programmes to more effectively address commodity drivers of deforestation. Strengthening interoperability between JREDD+ and corporate sustainability frameworks can unlock greater private sector investment and lead to more successful efforts to address deforestation at jurisdictional scales. Many different stakeholders have roles to play in this process:

- **Supply chain companies** can invest and engage in JREDD+ to improve the ability of these programmes to curtail commodity-driven deforestation and to strengthen their own supplier and landscape engagement activities. They can also collaborate in shared MRV processes, including data sharing with jurisdictional programmes.
- **Bodies establishing standards, regulations, and guidelines** for curtailing deforestation linked to commodity supply chains can pursue ways to better incentivise and recognise improved jurisdictional performance.
- **Corporate GHG accounting and target-setting standards** can strengthen and clarify recognition of company action to reduce land use change and increase carbon removals within sourcing areas as part of their Scope 3 decarbonisation efforts.
- **JREDD+ programmes and standards** can support and complement company MRV systems, recognise claims associated within-supply-chain interventions, and provide clearer incentives for upfront investments in enabling conditions and programme readiness.

As sustainable supply chain initiatives and JREDD+ both continue to advance, strategic co-development of these two approaches – informed by the analysis in this paper – can yield large dividends for durable forest conservation, equitable and sustainable development, and the resilience of global supply chains.

Accountability Framework initiative