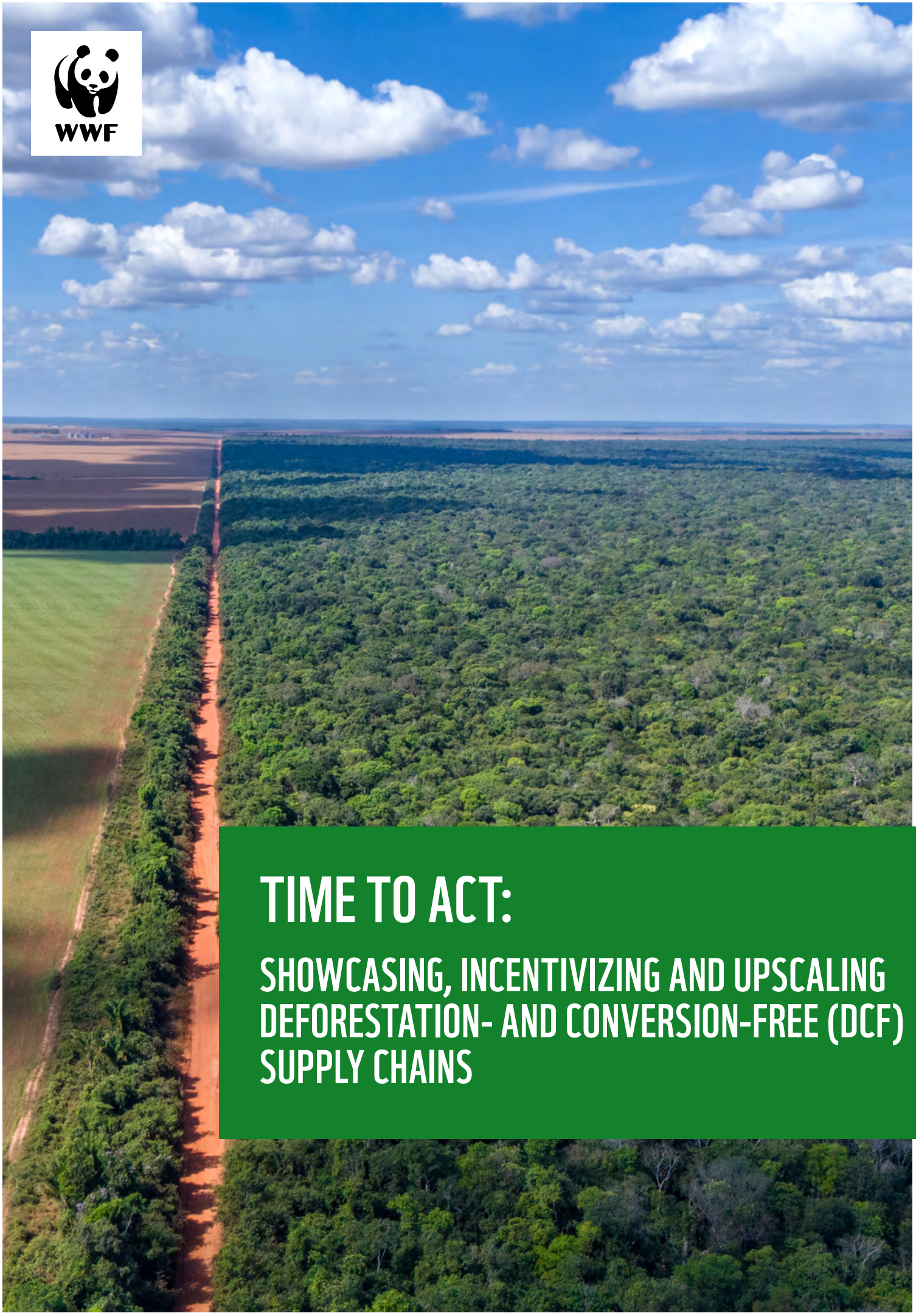

TIME TO ACT:

SHOWCASING, INCENTIVIZING AND UPSCALING DEFORESTATION- AND CONVERSION-FREE (DCF) SUPPLY CHAINS

Citation

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Lead Authors:
Luiza Velloso (WWF International) Jean Timmers (WWF Brazil)

Case study Authors:
Per Larsson (WWF-Sweden), Ahmad Furqon (WWF-Indonesia), Kaori Wong (WWF Perú), Karina Salas (WWF Perú), Melanie Sanchez (Fundación Vida Silvestre Argentina), Catalina Portela (Fundación Vida Silvestre Argentina), Pablo Majer (WWF Brazil), Daniel Silva (WWF Brazil), Paola Despretz (Olam International), Fabricio de Campos (WWF Brazil)

Contact:
Jean Timmers (WWF International), jeantimmers@wwf.org.br

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Editor:
Barney Jeffries (swim2birds.co.uk)

Design:
Silke Roßbach (mail@silke-rossbach.de)

WWF, 28 rue Mauverney, 1196 Gland, Switzerland.
Tel. +41 22 364 9111
CH-550.0.128.920-7

For contact details and further information, please visit our international website at wwf.panda.org

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Despite numerous commitments and declarations in recent years to advance deforestation- and conversion-free (DCF) supply chains, large-scale ecosystem loss continues. Today, DCF markets are facing a decisive phase: while many companies are retreating from their previous commitments to eliminate deforestation and conversion from their operations, key consumer markets are moving in the opposite direction, driving increasing demand for DCF commodities.

The opportunity to change the current trends is clear. Companies that embrace the shift toward DCF supply chains early will be better positioned to manage risks (supply disruption, reputation and legal), gain efficiency, meet regulatory requirements and capture market opportunities. Acting now means turning sustainability into a competitive advantage, ensuring long-term growth while contributing to climate and biodiversity goals and protecting human rights.

This document presents proven solutions from across the globe and explores how they can be scaled up by companies, sectors and governments to establish ethical, transparent DCF supply chains as the new norm of global and local trade.

INTRODUCTION

1. DEFORESTATION- AND CONVERSION-FREE (DCF) SUPPLY CHAINS: ESSENTIAL FOR CLIMATE, BIODIVERSITY, HUMAN RIGHTS AND BUSINESS COMPETITIVE ADVANTAGE

DCF supply chains, especially in the agro-commodities trade, are essential to biodiversity, climate and human rights.

Deforestation and land conversion are eroding biodiversity at an alarming pace. Agricultural expansion alone drives 70–86% of projected biodiversity loss on land[1,2]. In less than two decades, from 2000 to 2018, more than 152 million hectares of forest and other natural ecosystems were cleared – mostly to produce beef, soy, palm oil, and pulp and paper, commodities that together account for nearly three-quarters of tropical deforestation worldwide.[3,4]

These globally traded commodities, and the deforestation and conversion of ecosystems connected to them, also influence global climate change. A WWF report estimated that 40-50% of agricultural land-conversion emissions are caused by three commodities: cattle (17-34%), soy (5-14%) and palm oil (8%). It is predicted that if companies do not cut out deforestation and conversion from these supply chains it would lead to an excess of 6GT CO2 emissions released by 2030 and 50 gigatonnes by 2050.[5]

The impacts also extend beyond the environment. Deforestation is frequently linked to land conflicts and human rights violations, including forced evictions of Indigenous peoples and local communities[6]. By eliminating deforestation and conversion from supply chains, companies can help secure biodiversity, advance climate goals and respect fundamental human rights.

DCF supply chains can be a competitive advantage for businesses, as they increase resilience to climate risk on agricultural productivity, and enable better management of production, mitigating reputational and legal risks.

Large-scale agriculture underpins global commodity supply chains, but lack of sustainability can result in significant costs for companies and populations. Any short-term economic benefit can be quickly outweighed by long-term harm, as deforestation and land conversion damage the supply chains companies rely on. Scientific evidence confirms these risks: in the southern Brazilian Amazon, research shows that when forest loss passes 25–30% across a large area (112 km²), rainfall drops sharply – cutting agricultural productivity and threatening farmers' livelihoods.[7]

Companies can no longer claim ignorance. Public data and new laws are raising accountability and making

it harder for inaction to go unnoticed. By putting in place traceability and transparency systems for DCF supply chains, companies can see and manage their true impacts, while also creating fairer opportunities for smallholders and producers. This is both a responsibility and an opportunity to secure future production.

2. FROM STALLED COMMITMENTS TO MARKET-DRIVEN ACTION: THE TURNING POINT FOR DCF SUPPLY CHAINS

Despite many pledges, declarations and commitments toward ending deforestation, we have not yet curbed forest and ecosystem losses at scale.

In the last decade, several non-binding pledges and commitments have been made to end deforestation and conversion, including due to commodity production and trade. Key initiatives include the 2030 Agenda for Sustainable Development (2015), the Amsterdam Declarations Partnership (2016), the UN Strategic Plan for Forests 2017–2030 (2017; renewed 2024), the Consumer Goods Forum's Forest Positive Coalition of Action (2020), the Glasgow Leaders' Declaration on Forests and Land Use (2021), the Agriculture Sector Roadmap to 1.5°C (2022) and the Global Biodiversity Framework (2022). Despite these cross-sectorial declarations and commitments, humanity has not yet curbed forest and ecosystem losses at scale. In fact, primary forest loss increased 14% between 2023 and 2024, largely due to conversion for agriculture (WRI, Global Forest Review, 2024[8]. This comes with heavy environmental and human costs[6]. Yet this global disaster is avoidable, as there is sufficient land available globally to meet rising demand for agro-commodities for decades.[9]

Most high-impact agro-commodity companies still lag in both commitments and action, and corporate progress on DCF commitments has stalled.

Among the 500 most influential companies trading forest-risk commodities, a majority either don't have commitments for all commodities or don't implement (or at least don't report on) their commitments effectively.[10] Only 66 companies globally report having a single supply chain free of deforestation or conversion.

If we consider a commitment as the first step toward progress, the trend is alarming: corporate progress on DCF commitments has effectively reached a plateau. The number of companies expanding the scope of their commitments is no longer growing: instead, the number of firms failing to act is increasing, signalling stagnation and even regression in corporate ambition on sustainable production and trade.[10]

When questioned, companies often argue that making supply chains fully traceable, verifying suppliers, auditing, monitoring, and bringing in smallholders to compliance is complex and/or technically difficult (Bager & Lambin, 2022). However, numerous **monitoring and traceability tools and systems** have been developed and are already available for companies to assess compliance across their operations.

There is a big opportunity as key consumer markets are moving toward greater adoption of DCF commodities.

China, the leading importer of agricultural commodities globally, is demonstrating a fast-growing interest and commitment toward ensuring sustainable, resilient and transparent supplies, especially of soy and meat. For example, the China Meat Association's "China Sustainable Meat Declaration" (2017) committed to zero deforestation and conversion and supply chain transparency; this was followed by the "Specification for Meat Industry Green Trade" (2021), providing related guidelines for Chinese companies, and the "China Sustainable Meat Supply Chain Promotion Plan" (2023), aiming at concrete actions for sustainable meat production and trade to China.

Similarly, Europe is advancing measures to eliminate deforestation and conversion from global supply chains. The EU Deforestation Regulation (EUDR) – which was passed in June 2023 – requires companies placing commodities such as soy, beef, palm oil, cocoa and timber on the EU market to prove they are not associated with deforestation, and they respect legality and human rights. This legislation, even before being fully implemented, has already prompted significant changes in supply chains, with companies working to enhance traceability and monitoring systems to ensure compliance. In doing so, the EUDR has accelerated the transition toward DCF supply chains, setting a clear precedent for how regulation can drive large-scale market transformation.

3. TIME TO ACT: SHOWCASING, INCENTIVIZING AND UPSCALING DCF SUPPLY CHAINS

Concrete tools and solutions are at hand, already in use and developing rapidly. To increase momentum, it is essential to map success cases, synthesize key learnings and identify opportunities to adapt, spread and scale up these solutions across sectors, markets and geographies.

Mere commitments won't suffice. It is time for companies, financiers and governments to act decisively and implement DCF supply chains at scale.

This report presents and analyses some of the most promising cases of DCF production and trade. These include concrete verified DCF (v-DCF) or deforestation-free trade and shipments, as well as powerful transparency tools already in use for the highest-risk commodities.

These cases allow us to better understand fundamental conditions of success, as well as critical challenges and gaps. This can help facilitate the adaptation, replication and multiplication of promising solutions along supply chains and across commodities, production landscapes and markets.

4. SUMMARY OF PROOFS OF CONCEPT

This report gathers ten cases that together represent the most important forest-risk commodities – soy, cattle, palm oil, cocoa, coffee and timber. They cover 10 producing and importing countries from Asia, Latin America, Africa and Europe. **Each case meets the following criteria:**

- **Concrete, already implemented solutions**
- **Verified, ensuring credibility and avoiding greenwashing**
- **Replicable and scalable.**

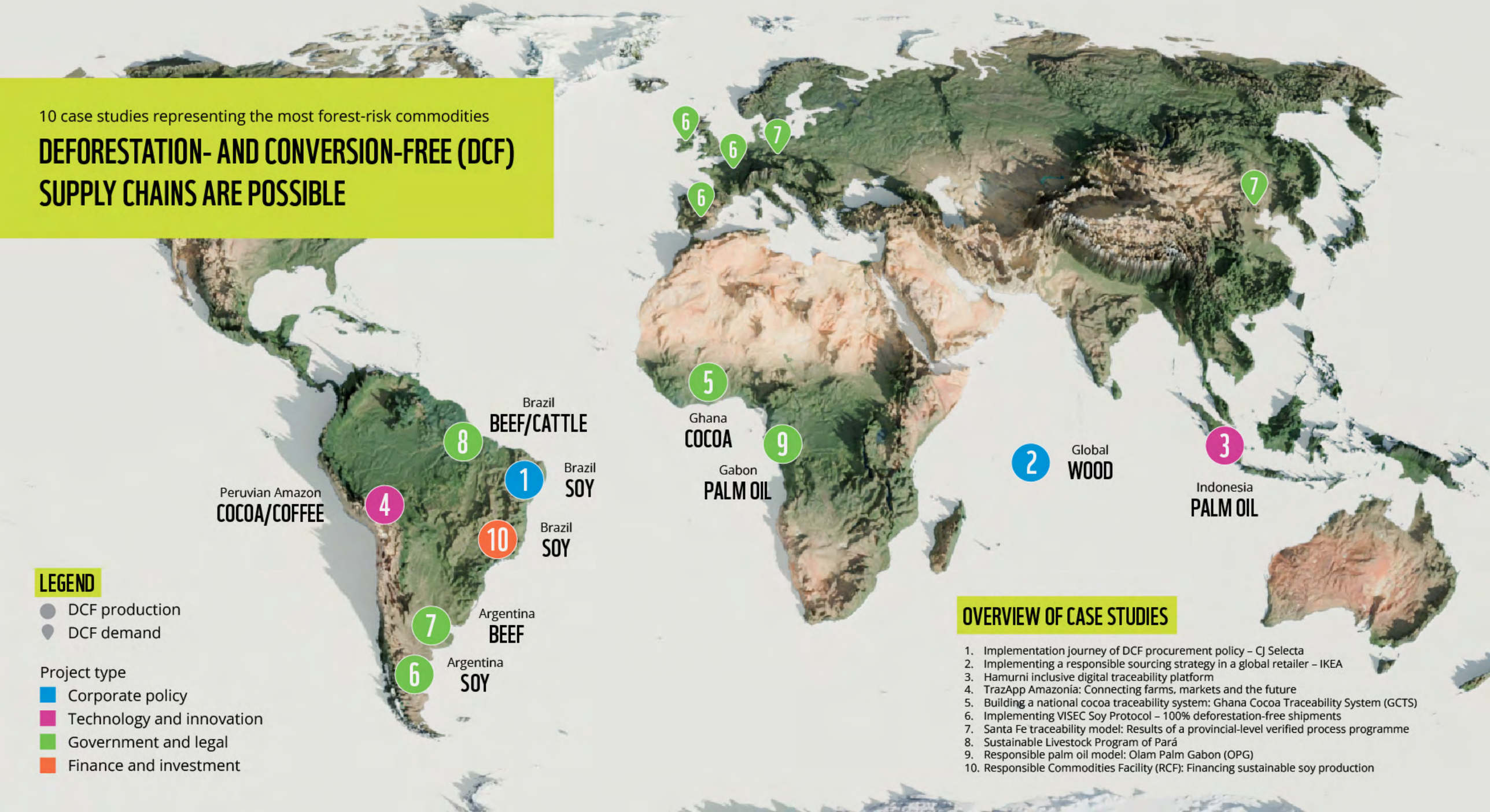
These selected cases form concrete building blocks of a systemic transition, demonstrating that DCF supply chains are both technically and economically viable.

	NAME	LOCATION	COMMODITY	KEY WORDS
Corporate traceability systems policies				
1	Implementation journey of DCF procurement policy – CJ Selecta	Brazil	Soy 	• Traceability system • DCF company procurement policy • EUDR implementation
2	Implementing a responsible sourcing strategy in a global retailer – IKEA	Global	Timber 	• Traceability system • Corporate strategy
Traceability technology & innovation				
3	Hamurni inclusive digital traceability platform	Production: Indonesia	Palm oil 	• Inclusive traceability • Digital traceability platform • Smallholder empowerment
4	TrazApp Amazonía: Connecting farms, markets and the future	Peruvian Amazon	Cocoa/coffee 	• Traceability system • Smallholders • EUDR implementation

Private and Public jurisdictional monitoring and traceability systems				
5	Building a national cocoa traceability system: Ghana Cocoa Traceability System (GCTS)	Ghana	Cocoa 	• Jurisdictional traceability system • EUDR implementation
6	Implementing VISEC Soy Protocol – 100% deforestation-free shipments	Production: Argentina Demand: Ireland, Spain, France	Soy 	• Pilot shipments • Traceability from field to port • EUDR implementation
7	Santa Fe traceability model: Results of a provincial-level verified process programme	Production: Santa Fe (Argentina) Demand: Germany, China	Beef 	• Jurisdictional traceability system • EUDR implementation • Deforestation only
8	Sustainable Livestock Program of Pará	Belém do Pará, Brazil	Beef/cattle 	• Public and private sectors initiative • Traceability system as enabler • Individual tracking of cattle
9	Responsible palm oil model: Olam Palm Gabon (OPG)	Gabon	Palm oil 	• DCF + palm oil production • RSPO certification • Landscape approach
Financial mechanisms				
10	Responsible Commodities Facility (RCF): Financing sustainable soy production	Cerrado, Brazil	Soy 	• Financial incentives mechanism

10 case studies representing the most forest-risk commodities

DEFORESTATION- AND CONVERSION-FREE (DCF) SUPPLY CHAINS ARE POSSIBLE



LEGEND

- DCF production
- DCF demand

Project type

- Corporate policy
- Technology and innovation
- Government and legal
- Finance and investment

OVERVIEW OF CASE STUDIES

1. Implementation journey of DCF procurement policy – CJ Selecta
2. Implementing a responsible sourcing strategy in a global retailer – IKEA
3. Hamurni inclusive digital traceability platform
4. TrazApp Amazonía: Connecting farms, markets and the future
5. Building a national cocoa traceability system: Ghana Cocoa Traceability System (GCTS)
6. Implementing VISEC Soy Protocol – 100% deforestation-free shipments
7. Santa Fe traceability model: Results of a provincial-level verified process programme
8. Sustainable Livestock Program of Pará
9. Responsible palm oil model: Olam Palm Gabon (OPG)
10. Responsible Commodities Facility (RCF): Financing sustainable soy production

1 IMPLEMENTATION JOURNEY OF DCF PROCUREMENT POLICY (CJ SELECTA)

1. General information

Geography: Production: Brazil (Minas Gerais, Goiania, Tocantins); Demand: Brazil and global

Commodity: Soy

Stakeholders involved: CJ Selecta, Unilever (Green Refinery programme), soy producers, auditors; indirectly: data from projects and platforms including CAR, INCRA, FUNAI, IBAMA, PRODES, SimFaz

2. Context

CJ Selecta is a company headquartered in Uberlândia, Minas Gerais, Brazil, which supplies soy-derived products to various industries as well as organo-mineral fertilizers. Its products are sold in 39 countries across the Americas, Europe, Asia and Oceania. The domestic market accounts for 35% of the company's revenue.

In 2021, the company publicly announced its "Sustainability Policy" in response to pressure from the European market, especially buyers of soy protein concentrate, with the goal of "formalizing the guiding principles and procedures to contribute to a sustainable soy value chain." The policy is based on the Accountability Framework Initiative (AFi) responsibility structure and applies to all regions where the company operates, all biomes and all operations within the soy supply chain, including direct suppliers (soy producers) and indirect suppliers (soy producers selling through intermediaries such as resellers, cooperatives and warehouses).

Its goals are to reduce carbon emissions in the company's operations, ensure respect for local and traditional communities, secure supplier compliance with legislation, and establish a series of social indicators. In addition, the policy sets out a number of targets to eliminate deforestation and conversion from the company's supply chain.

3. Details and results

To implement the policy, achieve its DCF commitments, and measure and evaluate progress toward its goals, the company invested in a traceability system as well as a monitoring, reporting and verification system. These enable the company to assess socio-environmental risks and legal compliance across the entire supply chain, and track and verify the origin of each purchase. Its main tool is the Sustainability Monitor, which is a geomonitoring platform using SAP business management software.

The process involves several steps. To establish commercial relationships, suppliers must present their personal or business tax numbers (CPF/CNPJ) and Rural Environmental Registry (CAR) registration, which are analysed through SimFaz (Agrosatélite/Serasa) and by the company's sustainability team. The process evaluates:

- Brazilian Institute of the Environment and Renewable Natural Resources (IBAMA) and state-level embargoes
- Convictions for slave labour
- Overlap with Indigenous lands
- Quilombola territories or conservation units
- Compliance with the DCF cut-off dates (using PRODES data).

Any irregularities in a producer's properties result in an immediate block, preventing any commercial transaction.

All suppliers – both direct and indirect – are evaluated under the same criteria through third-party audits. The results are published in annual sustainability reports following the Global Reporting Initiative (GRI) standard.

In 2023, the company launched a traceability app that consolidates data on origin (biome, state, city), carbon footprint and logistics, initially serving soy protein concentrate clients in Europe. The system strengthens producer engagement, ensures data confidentiality, and uses the CAR as a central element for integration with public policies, contributing to the effectiveness of the Brazilian Forest Code.

4. Key challenges and learnings

Among the main learnings from the process, CJ Selecta highlights:

1. **Producers:** The confidentiality of information is essential for engagement; without it, producers would not participate in traceability. The company also terminated partnerships with suppliers who refused to implement the system.
2. **Clients:** Guaranteeing the high quality of soy generates credibility and supports commercial relationships with demanding clients, reducing potential resistance from clients.
3. **Cultural change:** The sustainability policy must go hand in hand with building an organizational culture that values DCF products.
4. **Partnerships that drive change:** In partnership with Unilever, the company launched the Green Refinery programme to achieve 100% traceability of indirect soy sourcing. Participating suppliers pledge to adhere to the programme's rules, gain access to an award to enable investments and are prepared for a more demanding market, fostering transformation across the value chain.

Among the main challenges:

1. **Ensuring traceability of indirect suppliers:** Traceability of resellers, warehouses and cooperatives is a major challenge due to the high number of producers involved, the costs of implementation, and limited engagement in short- or medium-term relationships. Between 2022 and 2024, CJ Selecta went from 49 to 8 indirect suppliers, as many stopped supplying soy in the face of traceability requirements.
2. **Engaging new suppliers:** Another obstacle is the difficulty of engaging new partners or influencing other actors in the soy chain, since resistant suppliers find alternative buyers willing to purchase soy without such requirements.

   These challenges highlight the need for coordinated action among downstream companies, such as CJ Selecta, to block routes to market for non-DCF soy. As long as the demand for DCF supply chains remains limited to a few actors, their development will remain confined to niche markets.

5. Suggestions for replication and upscaling

CJ Selecta is close to achieving a 100% DCF soy supply chain, including in the Cerrado, and is now seeking to expand its impact.

1. Promote joint action by actors and traders: The greatest challenge is operating in isolation, without coordinated market action. A collective requirement for DCF criteria would incentivize all producers to adopt deforestation-free practices and would signal to speculators and land grabbers that these lands will have no commercial value for soy in the future. For this, the DCF agenda needs to become pre-competitive.

2. Not giving up on high-risk deforestation areas: By resuming activities in the Amazon, following the Soy Moratorium protocols, the company could bring the DCF standard to high-risk deforestation areas. More effective than avoiding these regions is sourcing while guaranteeing zero deforestation and conversion, expanding the positive impact in biomes under greater pressure.

6. Additional information/useful links

Full report on CJ Selecta and the journey of implementing its policy for purchasing deforestation- and conversion-free products (in Portuguese)

2 IMPLEMENTING A RESPONSIBLE SOURCING STRATEGY IN A GLOBAL RETAILER (IKEA)

1. General information

Geography: Global

Commodity: Wood and wood-based products

Stakeholders involved: IKEA, IKEA suppliers, FSC, WWF

2. Context

IKEA is a retailer of home furnishing products and wood is by far the most important raw material for IKEA products. During the financial year 2024, IKEA sourced wood and wood-based materials equivalent to 14.9 million cubic metres of roundwood, from around 50 countries globally. IKEA is committed to supporting improved forest management and protection globally and has implemented and refined responsible sourcing strategies as part of its forest and sustainability agenda for many years.

For IKEA, given the extent to which its business model depends on natural resources, responsible, inclusive and transparent sourcing is not just the right thing to do, but the smart thing to do. Transparency is fundamental for sustainable development. As a big user of wood, IKEA sees both its responsibility and opportunities to use its global reach and volume to drive responsible management at scale.

IKEA's commitment to DCF sourcing covers a range of commodities: this case study focuses on wood and wood-based products only. Today, as a result of its comprehensive control system which includes using Forest Stewardship Council (FSC) certified wood, IKEA considers that the wood it sources is already deforestation-free. Going beyond DCF, IKEA is committed to no forest degradation. This reflects its dependence on timber, for which forest degradation is a more relevant issue than for agricultural commodities.

3. Details and results

In FY24, more than two decades since embarking on its responsible sourcing strategy, all of IKEA's volumes meet their IWAY requirements, which include DCF criteria. Of these, IKEA reported that 97% of wood used is FSC certified or recycled. The combination of FSC and additional traceability measures applied (see below) represents an enormous achievement in terms of progress against IKEAs DCF commitments.

Since 2000, IKEA has implemented a range of requirements for the forest materials it sources. The IWAY Forest Materials Section, currently in its sixth version, includes requirements that the material should not be linked to deforestation, conversion of other natural ecosystems and forest degradation. IKEA does not accept wood that fails to meet these requirements. IKEA has developed a comprehensive wood control system to ensure all its wood comes from responsibly managed forests.

The scale and complexity of IKEA's supply chain inevitably opens the door for imperfections in wood control – it is a working system, not a perfect system. One way of

countering this is IKEA's sector-leader transparency, such as its publicly available Wood Supply Map, a welcome measure to invite ongoing scrutiny and dialogue and enable continuous improvement.

IKEA's comprehensive due diligence system consists of:

I. Traceability
All suppliers must be able to track the origin of the wood used in IKEA products. Virgin wood are mapped and registered up to the forest management organization. Information about materials, their origin and species is registered in IKEA IT systems before those materials are included in products. IKEA requires suppliers to annually submit their wood procurement plans, which helps to identify and proactively mitigate any potential risks.

II. Risk assessment and mitigation
All sources of wood are covered by a risk assessment before they are used in the production of IKEA products. Risk criteria defined by IKEA cover aspects of illegal logging, deforestation and forest degradation, operations in high conservation value forests, and social and human rights aspects. All identified high-risk sources are covered by risk mitigation actions, focused on eliminating high-risk materials from use in IKEA products.

III. Compliance verification by first, second and third party audits
IKEA suppliers are required to maintain their own due diligence and conduct their own compliance verification of the origin of materials for IKEA. IKEA-approved auditors conduct IWAY audits and supply chain verification at IKEA suppliers and sub-suppliers to verify the strength of their due diligence. Additionally, IKEA organizes third-party supply chain audits, announced and unannounced, across selected high-risk supply chains.

IV. Credible certification
IKEA requires that its suppliers comply with the strictest standards developed by credible, global third-party certification systems, like FSC. In 2024, 97% of the wood that IKEA used was either FSC-certified or recycled. FSC certification includes a number of provisions to control against deforestation, conversion and forest degradation. Among these are the need to maintain and/or enhance high conservation values, and lands converted to plantations or other land use after 1994 being ineligible for certification

V. New forensic methods
IKEA has integrated new forensic methods such as anatomic, isotope and DNA analysis to verify wood species and origins as an additional part of its due diligence, applied using a risk-based approach. The forensic methods help identify and eliminate the use of wood that might come from sanctioned or incorrectly identified countries.

VI. Transparency
In 2023, IKEA published a comprehensive map of its wood supply locations as an additional transparency measure that invites public scrutiny to support continual improvement.

4. Key challenges and learnings

Level of granularity to have meaningful insights

The level of information that is needed versus the available resolution of the information can be a challenge. For instance, country and species level information is often sufficient to determine legality risks requiring further assessment and mitigation, while the identifying risks related to high conservation values requires finer granularity, such as subnational or forest operation level as well as species composition.

Dealing with identified errors

All systems face some errors, often because of human failures and negligence. Based on the experience with forensic testing, IKEA has developed a strict internal way of working. If errors do occur, IKEA requires that all shipments are put on hold, and that further information is provided to identify the cause of the error. IKEA has strict rules that non-compliant products do not reach the shelves or end up in consumer hands. IKEA's traceability system is adapted and improved in response to the identified causes of non-compliances.

5. Suggestions for replication and upscaling

IKEA's experience in designing, implementing and continually improving its approach to responsible, inclusive and deforestation-free sourcing across a complex, dynamic global supply chain provides useful insights for other businesses. These include:

- Articulating, and where possible quantifying, the business case for responsible sourcing, to secure senior management buy-in.
- Engaging in multi-stakeholder dialogue and consultation.
- Investing in long-term relationships with suppliers.
- Providing clear guidance on, and support for, what is required from suppliers.
- Understanding the roles and limitations of third-party certification.
- Striving for continuous improvement.

6. Additional information/useful links

IKEA: Wood and forestry

How does IKEA make sure its wood is responsibly sourced?

IKEA forest requirements (IWAY)

IKEA wood sourcing information

IWAY Forest Materials Specification

3 HAMURNI – INCLUSIVE TRACEABILITY FOR SUSTAINABLE PALM OIL

1. General information

Geography: Production : Indonesia

Commodity: Palm oil

Stakeholders involved:

- WWF-Indonesia
- Smallholders, intermediaries and companies

2. Context

Indonesia is the world's largest producer of palm oil, covering a total plantation area of 16.83 million hectares and producing 46.82 million tonnes in 2022. Of this, approximately 37% (equivalent to 6.23 million hectares) is managed by independent smallholders. The palm oil sector plays a pivotal role in Indonesia's national economy, serving as a key livelihood source for millions of rural households and a major contributor to national export revenues. However, smallholders continue to face persistent challenges, including limited access to markets and finance, weak institutional capacity, and inadequate adoption of sustainable agricultural technologies.

Despite its economic importance, the industry continues to face legal and governance challenges. Many smallholders operate without formal land ownership documentation or valid cultivation registration certificates (STDBs), while some smallholder plantations are located within forest areas. In response, the government of Indonesia has reinforced its commitment to sustainable palm oil development through the accelerated issuance of STDBs for independent smallholders and the implementation of the Indonesian Sustainable Palm Oil (ISPO) certification system – a national standard designed to ensure legal, sustainable and deforestation-free production.

These national initiatives are well aligned with global sustainability frameworks such as the Roundtable on Sustainable Palm Oil (RSPO) and EUDR, which emphasize legality, traceability and environmental responsibility across supply chains. Within this context, there is a growing need for a transparent, data-driven and inclusive traceability system to strengthen spatial verification, enhance compliance with both national and international standards, and empower smallholders to actively participate in building a fair, responsible and sustainable palm oil supply chain.

3. Details and results

Hamurni is an inclusive and scalable digital platform/app designed for mapping and tracing commodity supply chains, particularly palm oil. The tool aims to empower independent smallholders by improving transparency, inclusivity and sustainability in the palm oil industry.

Hamurni enables palm oil mills to map and monitor their suppliers, visualize sourcing areas, and identify potential risks related to legality, deforestation or spatial overlaps. This functionality strengthens traceability, risk assessment and targeted field verification, supporting mills in meeting due diligence and sustainability requirements.

Through the platform, smallholders can self-report plantation boundaries and production data, enhancing transparency and accountability across the supply chain. This data-driven approach supports companies in fulfilling DCF and no deforestation, no peat, no exploitation

(NDPE) commitments, as well as emerging international due diligence regulations.

To date, WWF-Indonesia has collected data from 3,524 oil palm farmers across five key regions in Indonesia: Pelalawan (Riau), Kuantan Singingi (Riau), Katingan (Central Kalimantan), Kapuas Hulu (West Kalimantan), and Sintang (West Kalimantan).

A total of 3,540 plantations have been identified and mapped within the system, and 4,501 transactions have been recorded, representing over 20,000 tonnes of fresh fruit bunches.

Strategic alignment and opportunities

Policy alignment: Supports the implementation of STDB and the government's National Dashboard for sustainability commodities data, while aligning with RSPO and EUDR frameworks on legality, traceability and deforestation-free production.

Extensive smallholder base: The 6.2 million hectares of smallholder-managed plantations represent a vast potential that remains underutilized for integration into verified and sustainable supply chains.

Multi-commodity potential: The system's modular architecture is designed to enable expansion beyond palm oil into sectors such as rubber, coffee and cocoa.

4. Key challenges and learnings

Despite its achievements, the implementation of Hamurni has encountered several challenges:

- Low adoption rates among farmers, with relatively few actively recording their data in the system.
- Limited availability of field assistants to support and train users.
- Restricted internet connectivity in rural and remote plantation areas, which constrains the full utilization of the app.
- Continuous mentoring and on-the-ground facilitation are needed to ensure users, especially smallholders, can operate the system effectively.
- The absence of direct benefits, such as financial inclusion or price incentives, reduces motivation for consistent app usage.
- Data privacy concerns and restrictive data-sharing policies limit the willingness of mills and companies to participate fully.
- Nevertheless, there is a significant potential for expansion and a huge untapped user base that could benefit from the digital traceability platform.

In Harapan Jaya, a group of smallholders supported by WWF achieved RSPO certification in 2023 and has actively used Hamurni since 2024. The group transitioned from manual, paper-based records to a digital system, improving data accuracy and access to historical information. Although economic benefits may take time to emerge, the platform has already enhanced accountability, transparency and confidence among farmers.

5. Suggestions for replication and upscaling

There are plans to integrate Hamurni with the Indonesian government's National Dashboard of Indonesian Sustainable Commodity Data and Information, enhancing coordination and data sharing at the national level.

In the longer term, the Hamurni platform can be adapted to support traceability systems for other plantation commodities such as rubber and coffee, reinforcing broader sustainability efforts across Indonesia's agricultural sector. These commodities also fall within the scope of the EUDR. All commodities will operate within a single, integrated platform, ensuring interoperability and data consistency across sectors.

Each stakeholder has different information needs and priorities. To support replication or further development, the application is designed to be flexible and adjustable to meet diverse user requirements without altering the core standards and system structure.

Compared to corporate actors, smallholders often face limitations in access to information, resources and technological capacity. For this reason, the Hamurni approach places smallholders at the centre, providing direct field assistance at the individual level and ensuring an accessible and user-friendly interface.

6. Additional information/useful links

Hamurni website: www.hamurni.com

Article: WWF-Indonesia encourages digitalization of traceability of sustainable palm oil industry through Hamurni application

4 TRAZAPP AMAZONÍA: CONNECTING FARMS, MARKETS AND THE FUTURE

1. General information

Geography: Peruvian Amazon with emphasis on San Martín and Madre de Dios

Commodity: Cacao and coffee

Stakeholders involved: Producer cooperatives (ACOPAGRO, Valle Grande, Coopssur, Agrobosque), WWF-Peru, authorities (local municipalities, MIDAGRI), international buyers, civil society organizations (Solidaridad as a key partner)

2. Context

Peru is one of the main producers of cacao and coffee in the Amazon, with the European Union as the destination for nearly 50% of its exports. These crops represent more than 15% of national agro-exports and the livelihood of more than 220,000 farming families, mostly smallholders. New requirements on traceability and environmental compliance, such as the EUDR, can present a barrier to accessing international markets for smallholders, since most lack digital tools and training to demonstrate the sustainable origin of their products.

WWF-Peru is working to strengthen traceability systems, promoting coordination and interoperability between tools already available. TrazApp, an open-source platform with a user-friendly interface designed to meet producers' needs, helps fill the gaps. TrazApp has already been successfully used in artisanal fisheries value chains in the Peruvian Pacific, and that experience is now being transferred to the Amazon.

3. Details and results

TrazApp offers a free, open-source digital platform adapted to the conditions of small Amazonian producers. It's designed to:

- Improve traceability processes in cacao and coffee value chains.
- Ensure transparency, regulatory compliance, and access to international markets.
- Allow producers to document their production, georeference plots, and generate verifiable reports in real time.

The platform provides documentation and traceability from farm to export. Verification that products are deforestation-free is integrated into the traceability system through the georeferenced registration of plots. Each property is cross-referenced with official forest monitoring platforms, such as Geobosques and Global Forest Watch. This makes it possible to verify changes in land use and confirm the absence of deforestation. Optional modules (e.g. to record certifications) can also be added.

The system reduces administrative burdens and costs associated with external audits, and helps demonstrate the sustainable origin of products. It strengthens the competitiveness and credibility of cooperatives in international markets, and contributes to reducing

deforestation and conserving Amazon forests by linking digital traceability with sustainable production practices.

The beta version of TrazApp was tested in the field with two cooperatives in San Martín: ACOPAGRO (for cacao) and Valle Grande (for coffee). Inputs and feedback were gathered from 28 organizations, including producers, cooperatives, technical roundtables and civil society.

Producers and technicians confirmed the value of having a single system that consolidates certifications and generates reports ready for international buyers under deforestation-free standards. Feedback included suggestions to simplify the interface to avoid data overload, define responsibilities for data governance within cooperatives, and integrate the system with public sources such as the Agricultural Register (Padrón Agrario) and Geobosques.

4. Key challenges and learnings

Traceability in cacao and coffee value chains faces structural challenges:

- Fragmented and paper-based records
- Low connectivity in rural areas
- Limited digital skills among producers
- High costs due to duplicate certifications and audits.
- Progress in georeferenced plot registration requires greater coordination between institutions.

Key learnings include:

- Early participation of producers and cooperatives in the design ensures relevance and acceptance.
- Field validation with ACOPAGRO and Valle Grande made it possible to identify gaps and improve the tool.
- The open and free nature of TrazApp builds trust compared to private and costly alternatives.
- Integrating digital traceability with technical assistance and regulatory frameworks strengthens the competitiveness of value chains and directly contributes to Amazon forest conservation.

5. Suggestions for replication and upscaling

Traceability processes are replicable and scalable as long as they are integrated into a solid institutional framework and with active participation of producers. The consolidation of a single, standardized traceability system, interoperable for example with MIDAGRI, Geobosques and Global Forest Watch, will reduce duplications, ensure official recognition and build confidence in international markets.

As an open, free and participatory design model, TrazApp can be easily adopted by cooperatives and adapted to different crops (such as Brazil nuts, palm, etc.) and regulatory frameworks. Interoperability with national registers and international certifications ensures its relevance beyond a single sector.

As a priority, there is a need to scale the pilot to other Amazon regions, such as Madre de Dios, a process that will begin in October 2025. This will allow the tool to be validated in diverse productive contexts and strengthen its role as a national solution in response to the EUDR.

6. Additional information/useful links

WWF-Perú

Piloting process note

Amazonia TrazApp Prototype

5 BUILDING A NATIONAL COCOA TRACEABILITY SYSTEM: GHANA COCOA TRACEABILITY SYSTEM (GCTS)

1. General information

Geography: Ghana, West Africa

Commodity: Cocoa

Stakeholders involved:

- Ghana Cocoa Board (COCOBOD)
- Cocoa farmers
- German Federal Ministry for Economic Cooperation and Development (BMZ)
- Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

2. Context

COCOBOD launched the Cocoa Management System (CMS) – an integrated platform covering traceability, purchasing, farmer data, input distribution, quality control, pensions and information on licensed buying companies (LBCs).

A core component, the Ghana Cocoa Traceability System (GCTS), provides end-to-end traceability from farm to export using QR-coded tagging and real-time digital recording.

3. Details and results

The GCTS has three stages:

- Farm to community: Farmers sell to LBC purchasing clerks, who tag and bulk beans – establishing traceability from farm plots.
- Community to district: Beans are graded and sealed by the quality control company (QCC), ensuring certified quality and legality.
- District to export port: Final verification by QCC and LBCs ensures export-ready, traceable, deforestation-free cocoa.

In the pilot project in Assin Fosu, 40,000 farms and 20,000 farmers (40% women) were registered. During 2023/24, 77.3 tonnes of traceable, sustainable cocoa were purchased, graded and shipped through the system.

Key progress highlights:

- 793,000 farmers and 1.2 million farms (1.37 million hectares) mapped and registered with GPS coordinates.
- District CMS offices established for ongoing updates and farmer ID card distribution.

- GCTS fully developed, with systems, training, and procedures in place for COCOBOD and LBCs.
- Pilots completed in three districts and extended to two more; dry-run integration with the Dutch authority testing EUDR compliance.
- Collaboration with eight LBCs; 1,400+ staff trained; nationwide rollout by end of 2025.

4. Key challenges and learnings

Learnings:

- **Harmonizing central traceability system with private sector ones:** Most trading companies have developed their own traceability systems, often only focused on direct sourcing, creating gaps when cocoa enters the supply chain from COCOBOD's centralized system. To address this, COCOBOD is now working on interoperability between company systems and the GCTS, as well as defining data access arrangements and protocols for private operators and stakeholders.
- **Building trust and credibility:** It is critical to build trust and credibility with supply chain actors. Important factors include transparency in system development and operations, independent verification and auditing (including by third parties), and clear governance covering responsibilities, data protocols, training and cost-sharing.
- **Ensuring financial sustainability:** To ensure financial sustainability in the long term it is essential to have a transparent financial model, with clarity on which actors contribute to which costs, particularly if supply chain actors are expected to provide financial support.

Challenges to overcome:

- The segregation of sustainable (traceable from farm to port, deforestation-free and legally produced) vs. conventional cocoa presents logistical difficulties. While intended to ensure only EUDR-compliant cocoa reaches the EU market, segregation is challenging at both the farm and first point of purchase levels.
- To support risk mitigation, the system must be able to identify and address risks such as leakage, fraud and illegal border trafficking.
- A share of Ghana's cocoa is produced from farms illegally expanded into forest reserves and protected areas. Weak plot-level verification allows this cocoa to enter the supply chain, undermining deforestation-free commitments and market credibility. Strengthening farm mapping and verification is essential to ensure all cocoa is legally sourced and deforestation-free.

5. Suggestions for replication and upscaling

This is a model worth emulating since Ghana's cocoa traceability combines simplicity with effectiveness, and institutional collaboration with community-level linkages. The system is short, simple and highly structured with its three phases.

It is essential to have trust between stakeholders and work closely with them. Being transparent about the opportunities for all actors can increase everyone's willingness to work together. For upscaling, a digital tool that allows data transactions in real time is highly recommended.

6. Additional information/useful links

Cocoa insight publication - Preparedness check of Ghana for the EU Deforestation Regulation – March 2025

Ghana Cocoa Traceability System: A new era for sustainable cocoa sourcing

Ghana's Cocoa Traceability System: A Foundation for EUDR low-risk benchmarking

GCCP Statement in response to COCOBOD CEO's remarks in Switzerland about cocoa-driven deforestation

Video from the Institute of Cacao and Chocolate Research (ICCR) on the EUDR

6 IMPLEMENTING THE VISEC SOY PROTOCOL – 100% DEFORESTATION-FREE SHIPMENTS

1. General information

Geography: Production - Argentina; Demand countries: France, Ireland, Spain

Commodity: Soy

Stakeholders involved:

- Private sector: Argentine Oilseed Industry Chamber (all soy trades and crushers), farmers' associations.
- Technical advice from Fundación Vida Silvestre Argentina

2. Context

VISEC is multistakeholder sustainability platform originally established to develop a sectoral vision for the Argentine Gran Chaco. The VISEC soy protocol was an initiative between local NGOs and the Argentine soybean value chain, represented by CIARA (the Argentine Oil-seed Industry Chamber) and CEC (the Cereal Exporters Center). It was developed during 2022-2023 in line with the requirements of the EUDR.

The objective of these pilots was to test the protocol ahead of the implementation of the EUDR in December 2024 (though it has since been postponed). The protocol assures traceability of soy products from fields that have not been deforested since December 2020, where the soy has been traced and segregated throughout the entire commercial chain, from field to port.

3. Solution details and results

Three pilot tests were carried out for shipments of soybean meal to the European Union during 2024, totalling 56,243 tonnes from 321 registered production units. The destinations were:

- France: 30,250 tonnes from 181 production units
- Ireland: 17,410 tonnes from 112 production units
- Spain: 8,583 tonnes from 28 production units.
- More details can be found in the Implementation Protocol using the link in section 6 (Additional information/useful links).

4. Key challenges and learnings

All costs of implementing the system are borne by exporters and their logistics chain. Producers who meet the requirement do not incur any additional costs. Al Invest Verde and Land Innovation Fund provided funds to support the operations of VISEC and IT development.

Regarding the EUDR requirements, the VISEC system focuses on the deforestation-free criterion, but the requirements of Article 2.40 on legal compliance (rights of local communities and labour; free, prior and informed consent; other environmental laws) are only checked by a sworn statement from the producer at the time of registration. This procedure is validated by the national enforcement authorities; however, various local NGOs warn that this method is insufficient. There are currently no effective means available to verify these requirements in Argentina, such as public access to databases. This is an important point to consider in the due diligence process by European operators, who will need to request additional information to properly assess and mitigate risks.

5. Suggestions for replication and scaling up

The VISEC soy protocol is one of the most advanced systems in place to comply with EUDR requirements, thanks to its national scope and the involvement of the entire Argentine business value chain for soy. VISEC has developed information campaigns and training across the country and has already started the registration of suppliers and operations. It already has the scale to provide Argentine deforestation-free soy to the EU (approximately 30 million tonnes).

6. Additional information/useful links

VISEC official website

Implementation Protocol

7 SANTA FE TRACEABILITY MODEL: RESULTS OF A PROVINCIAL-LEVEL VERIFIED PROCESS PROGRAMME

1. General information

Geography: Producer: Santa Fe province, Argentina; Demand: Germany, China

Commodity: Beef and leather

Stakeholders involved:

- Private sector: livestock farmers, beef and leather processors in Santa Fe province
- Public sector: Ministry of Production, Science and Technology and Ministry of Environment and Climate Change of Santa Fe province, the Cadastral Unit of the province and the Santa Fe Regional Office of SENASA.
- Technical advice from Fundación Vida Silvestre Argentina and private consulting firm Genesis.

2. Context

The project was initially part of the province's "Carnes Santafesinas 2030" programme. In the pilot stage, the province established the Santa Fe Process Verified Programme to verify compliance, cross-referencing digital and satellite information.

The province of Santa Fe carried out the pilot to verify and confirm compliance with current legislation, as well as zero deforestation criteria (with a December 2020 cut-off date). The aim was to test traceability in real cases to provide assurance of deforestation-free beef and leather, from the birth of the animal to the end user, and support compliance with current and future legislation. While the pilot programme sought to comply with the EUDR's deforestation-free requirement, it also aimed to promote the environmental criteria of Santa Fe production in both international and domestic markets.

3. Details and results

The Santa Fe provincial ministries of production and environment issued a certificate that accompanied beef and leather product lots from the farm where the calf was born to the slaughterhouse, after verifying compliance using official information available at the national and provincial levels.

Based on the cut-off date proposed by the EU, technicians from both provincial ministries, together with Fundación Vida Silvestre, carried out preliminary verification work on 313 farms that sent animals to slaughterhouses in the province.

Traceability of products (animals) from farms to industries was also verified by official documents such as farm registries (RENSPA) and electronic transport document attributes based on official registries and systems. A farm is considered eligible when the entire area meets the following criteria:

- Free of illegal deforestation (according to the provincial forest land use plan)
- Compliance with provincial fire regulations (2021)
- Zero deforestation as of December 2020.

As part of the pilot test:

- 30 beef and 22 leather certificates were issued verifying compliance.
- Three meatpacking plants and two tanneries were involved.
- Two shipments were made: beef to Germany and leather to China, both EUDR deforestation-free compliant.

As a result of this experience, the Santa Fe Verified Process programme was created and institutionalized in July 2023 in Resolutions No. 755 of the Ministry of Production and No. 340 of the Ministry of the Environment and Climate Change.

4. Key challenges and learnings

- This case does not consider land conversion, because efforts to comply with deforestation requirements already face some resistance and rejection, and there are no laws prohibiting conversion of natural ecosystems in Argentina.
- Weaknesses remain in compliance with labour and community rights – there is a need to incorporate other criteria of legality and human rights.
- Compliance with the criteria and certificates was carried out by the provincial government, with no cost to the industry or producers.

5. Suggestions for replication and upscaling

After the pilot programme in 2023, the system was put on standby due to a change in the provincial government, but strongly resumed in 2025 by the new provincial government with the intention of consolidating it. The provincial resolutions (the institutional agreement with the provincial verified process certificates) of the ministries of production and environment and climate change, which institutionalized the programme, remain in force.

6. Additional information/useful links

Business case - Beef traceability in Argentina

Traceability system in Santa Fe province

8 SUSTAINABLE LIVESTOCK PROGRAM OF PARÁ

1. General information

Geography: Belém do Pará, Brazil

Commodity: Beef

Stakeholders involved: Pará Government, Producers, NGOs, Industries, Services and Researcher Institutes

2. Context

The state of Pará is one of Brazil's main beef-producing regions but faces longstanding challenges such as low productivity, deforestation and informal slaughter practices. The Sustainable Livestock Program is collective effort involving both the public and private sectors with the goal of promoting a new model of livestock farming in the state – one characterized by high productivity, transparency, and social and environmental responsibility at every stage of the production chain.

The programme was formally established by a state decree in November 2023. It is part of Pará's broader commitment to achieving a deforestation-free, high-integrity and low-carbon cattle industry, integrated with state and federal policies on sustainable agriculture and climate resilience.

3. Details and results

The core of the programme is the Individual Bovine Traceability System of Pará (SRBIPA), which enables full tracking of each animal from birth to slaughter. By using chips and ear tags with unique IDs, the system verifies whether cattle come from farms with environmental or labour irregularities. This traceability is key to guaranteeing that livestock is raised on deforestation-free land.

Key components of the programme include:

- Technical assistance and capacity building: training farmers in sustainable pasture management, animal welfare, innovative production technologies and community engagement.
- Tax, legal and financial incentives for sustainable transition: mechanisms for participating producers, including quality-based premiums for meat and leather, offering new income streams.
- Socio-environmental integrity: Support for the commercial reintegration of producers while promoting land tenure,ensuring that cattle production complies with legal and sustainability criteria and contributes to restoring trust and market access.
- Value chain strengthening: promotion of productivity and efficiency, targeting 80% of males slaughtered under 30 months.

The programme also enhances animal health monitoring, combats illegal slaughter, and improves market access for producers committed to sustainability and transparency.

As a first result of this programme, one company – Friboi – is carrying out the first individually tracked cattle processing operation in the state. It distributed 123,765 free ear tags for livestock tracking. By September 2025, 65,902 tags were already in use on 89 farms.

4. Key challenges and learnings

Key challenges include:

- Sustaining producer engagement and local technical capacity building.
- Integrating environmental, land tenure and productivity data across public institutions to ensure reliable traceability.
- Designing accessible financial incentives for small and medium producers transitioning to sustainable practices.

Combining economic incentives with environmental compliance significantly increases adherence and long-term success.

5. Suggestions for replication and upscaling

The individual traceability system could be extended to other Amazon states, adapting it to regional contexts. The model could also be expanded to other agricultural supply chains (e.g., dairy, grains), under a broader Amazon sustainable production framework. Public-private partnerships should be strengthened to ensure ongoing innovation, financing and technical assistance.

6. Additional information/useful links

Decree no. 3.533 of 27 November 2023, which created the programme

Sustainable Cattle Program leaflet

Para Sustainable Cattle Program: Video

9 RESPONSIBLE PALM OIL MODEL – OLAM PALM GABON

1. General information

Geography: Gabon, Central Africa

Commodity: Palm oil

Stakeholders involved: Republic of Gabon (joint venture partner), Olam Group, RSPO, International Finance Corporation (IFC), local communities, NGOs (e.g. WWF, Earthworm Foundation), national agencies

2. Context

Olam Palm Gabon has worked hard to develop large-scale palm that is more compatible with biodiversity conservation, climate and carbon as well as social development goals. Since 2012, Olam Palm Gabon (OPG) has followed a model of palm oil development that seeks to:

- Protect Gabon's globally significant biodiversity and ecosystems
- Respect community land rights and aspirations
- Contribute to climate-positive growth and rural employment
- Comply fully with certification schemes (RSPO and ISCC)
- Contribute to national and international scientific knowledge through research and development programmes.

3. Details and results

Olam Palm Gabon (OPG) has developed an approach based on three pillars which provides an example of how a company can work together with landscape stakeholders to responsibly develop their operations. These are:

1. **Rigorous pre-selection of sites with national stakeholders.** OPG worked with the government of Gabon to identify priority agricultural areas at national scale where development would minimize negative impacts, focusing on degraded secondary forests and savannahs.

2. **Landscape approach that seeks to understand and protect the environment.** OPG commissioned high conservation value (HCV) and high carbon stock (HCS) studies, conducted with expert committees to guide land-use planning. To improve its conservation plans, OPG also set aside corridors to maximize connectivity and minimize landscape fragmentation. The combination of these studies led to environmental and social management plans that are reviewed annually.

3. **Community involvement.** OPG established early dialogue with all communities within and around concessions before any development through participatory mapping and free, prior and informed consent (FPIC) processes. The co-creation of OPG sites ensured respect of traditional land uses and customary rights.

Today Olam operates across six sites, covering 202,561 hectares, with more than half (111,243 hectares) designated as HCV/HCS areas. OPG's ambition is to shift from merely protecting natural habitats to enhancing their conservation values. This involves:

- **Use of technologies to facilitate monitoring and management of natural resources.** OPG carries out monthly monitoring of deforestation through remote-sensing tools and ground-truthing verification, as well as bi-annual analysis of surface and underground water, which shows that water quality remains unchanged as it crosses sites.
- **Strong deployment of resources on the ground.** A team of 30 rangers patrols more than 12,000km per year in the set-asides to prevent illegal activities and ensure respect of customary rights as well as carrying our biomonitoring of fauna and flora.
- **Relying on science to optimize management.** Since 2022, OPG has worked with the National Park Agency to study elephant density and movement habits throughout the HCV/plantation mosaic. The findings have informed the company's biodiversity action plan and concession-specific management of species.
- **Involvement of communities in the day-to-day management.** Local knowledge is continuously improved through hiring HCV agents from neighbouring communities.

As a result of its practical commitments, Olam Palm Gabon complies with:

- RSPO certification (identity preserved) for 100% of its oil palm concessions
- ISCC for plantations in savannahs
- High level of alignment with EUDR principles and expectations.

In parallel, OPG is aligned with the World Bank's Performance Standards, which has resulted in a loan approval in September 2024.

4. Key challenges and learnings

Challenges:

- OPG carried out limited deforestation in highly degraded areas between 2012 and 2017. While this is compliant with RSPO and EUDR requirements, compliance with DCF criteria depends on the specific definitions and cut-off dates applied by different stakeholders.
- Balancing large-scale plantation operations with wildlife coexistence, particularly elephants, requires significant investments in site adaptation.
- Continuous and transparent engagement with stakeholders is needed to build and sustain trust over time.
- Managing community expectations is challenging in rural areas where economic development opportunities are rare.
- Extensive environmental and social safeguards are resource-intensive and require careful prioritization and rationalization to remain viable at scale.

Learnings:

- Building genuine partnerships and dialogue with government, communities and technical experts (including WWF) helps ensure sound land-use planning and long-term social acceptance.
- Independent verification through standards such as RSPO and IFC Performance Standards has provided a strong operational framework, reinforced credibility, and supported continuous improvement.

5. Suggestions for replication and upscaling

Replication:

- Integrate a landscape approach, which includes HCV/HCS assessments into land-use planning as a prerequisite for any agricultural development.
- Apply FPIC processes and participatory mapping in all community interactions to secure social licence and reduce grievances.

Upscaling:

- Expand biodiversity monitoring tools and methodologies to further strengthen the management of HCV areas.
- Co-develop sustainable livelihood initiatives with communities to contribute to rural economic development and reduce dependency on natural resources.
- Share lessons and methodologies with regional producers, regulators and policymakers to foster wider adoption of best practices

6. Additional information/useful links

Olam Palm Oil Gabon Website

10 RESPONSIBLE COMMODITIES FACILITY (RCF): FINANCING SUSTAINABLE SOY PRODUCTION

1. General information

Geography: Brazil (with initial focus on the Cerrado biome)

Commodity: Soy

Stakeholders involved:

- Responsible Commodities Facility (RCF) Secretariat
- Sustainable Investment Management Ltd. (SIM)
- Rabobank and other local financial institutions
- Corporate offtakers and investors (including international retail companies)
- Independent monitoring and verification entities (e.g., Earth Innovation Institute, Proforest, Agrosatélite)
- Farmers/producers in the Cerrado biome
- Civil society partners (including WWF and other NGOs)

2. Context

Soy expansion in Brazil's Cerrado is a major driver of native vegetation loss, threatening biodiversity, water systems and carbon stocks. Traditional rural credit systems rarely integrate robust environmental safeguards, creating a need for innovative financial mechanisms that align agricultural production with DCF supply chains. The Responsible Commodities Facility was created to channel large-scale, low-interest financing to Brazilian soy farmers committed to producing without deforestation or conversion of native vegetation. This can accelerate compliance with global sustainability requirements and provide potential to scale DCF volumes in high-risk regions. Additionally, SIM is working with 15 supply chain companies to improve transparency and traceability from RCF farms.

3. Details and results

The RCF issues green bonds in international capital markets, with proceeds used to finance low-interest loans to Brazilian soy farmers who meet strict environmental and social criteria.

Farmers must demonstrate compliance with:

- No deforestation or conversion of native vegetation post-2020
- Legal land use under Brazil's Forest Code
- Independent monitoring of compliance using satellite data and geospatial verification.

The full eligibility criteria can be found here.

The RCF operates in areas of high risk of deforestation to maximize its impact.

The proportion of areas of protection in relation to total areas of the farms financed by the RCF must be at least:

- 40% in Cerrado areas inside the Legal Amazon[11]
- 25% in Cerrado areas outside the Legal Amazon.
- The areas of native vegetation must be conserved for the duration of the finance period

Key results so far:

- First pilot programme launched in 2022 mobilized US$11 million for producers cultivating soy on already-cleared land.
- The second programme (2023–2024) scaled up to US$45 million, financing more than 70 farms and protecting over 80,000 hectares of native vegetation.
- Innovative blended environmental finance structure.
- The financial instruments issued to capitalize the RCF, known as green CRAs (Cédula de Produto Rural, or Rural Product Note) obtained a second party opinion from environmental advisory firm ERM-NINT, which concluded that the RCF Cerrado Programme is in alignment with both the Green Bond Principles of the International Capital Market Association and the Green Loan Principles. The senior tranche of the RCF 2025-2026 investment cycle received a 'brAA (sf)' Brazilian scale credit rating from S&P Global, equivalent to a rating of B+ global scale.
- Verification is conducted by independent organizations through satellite monitoring and geospatial analysis.
- Low interest loans to 280 soy farms in the Cerrado who agree to grow 250,000 tonnes of soy without deforestation or conversion – targeting farms in high-risk areas
- For this 2025/26 soy growing season, new investors include IDB Invest and the Mobilising Finance for Forests programme, funded by the UK and Dutch governments.
- The Brazilian government selected RCF as a priority to receive Green Climate Fund investment next year, and is working through its EcoInvest facility to match the GCF investment.
- RCF's fourth round closed at US$60 million, including US$10 million from the UK government.
- Investors in the RCF are UK supermarkets Tesco, Sainsbury's and Waitrose, alongside Rabobank and AGRI3 Fund.

4. Key challenges and learnings

- Verification costs: Independent monitoring and certification increase transaction costs. Balancing credibility with affordability is critical.
- Farmer engagement: Producers are more likely to participate when financial incentives (lower interest rates) are significant and when the facility offers technical support.
- Regulatory alignment: Rapidly evolving international frameworks (e.g., EUDR) require continuous updates to eligibility criteria and monitoring processes.
- Learning: Early engagement with local financial institutions and farmer associations was essential to build trust and ensure adoption.

5. Suggestions for replication and upscaling

- Replication: The RCF model can be replicated for other commodities (e.g., beef, maize, palm oil) and in other geographies with high deforestation risks, provided robust land-use monitoring systems exist.
- Upscaling:
  - » Future rounds of bond issuance are expected to grow the facility to over US$1 billion by 2030, potentially covering millions of hectares of soy cultivation. Expansion will focus on attracting a broader investor base, integrating blended finance mechanisms, and increasing alignment with global deforestation-free commitments.
  - » By 2027, RCF is set to exceed $US0.5 billion, financing around 70% of the UK soy footprint, driven by new investor inflows.
  - » It's estimated that each $1 invested today will equal a $20–50 impact by 2027 through impact investments.

6. Additional information/useful links

SIM Finance Responsible Commodities Facility

Independent monitoring partners: Proforest and Earth Innovation Institute

CONCLUSIONS

Together, these cases demonstrate that fully verified, transparent deforestation- and conversion-free supply chains at scale are not only feasible but already a reality.

Concrete verified deforestation-free shipments of different forest-risk commodities have been completed, such as v-DCF soy shipments between Argentina and Europe through the VISEC system. Robust and comprehensive jurisdictional and sectoral monitoring, reporting and verification systems are already fully operational on all continents, such as VISEC for soy and beef from Argentina and traceability and transparency systems for cocoa in Ghana and Peru, among several others. Frontrunner companies further illustrate clear market willingness to provide and source verified DCF products, showing that these initiatives are gaining real market traction.

As this report was written many other pilots and proofs of concept have been identified, these will be collated and shared in 2026. All these cases reveal the clear opportunities and broader benefits of implementing verified DCF supply chains. Reliable traceability and transparency systems at different scales – global in transnational corporate systems, national in Ghana, subnational in Santa Fe and Pará – demonstrate that fully traceable and transparent DCF supply chains are achievable. These concrete solutions also show how DCF implementation can drive structural improvements across value chains: enhancing transparency, strengthening inclusion and relationships with producers, improving management, costs, quality and risk management, and addressing significant social and human rights issues together with environmental impacts.

Finally, these examples give evidence that transparent DCF supply chains are not just isolated cases, but concrete building blocks of a broad systemic transition. By connecting and multiplying proven practical solutions across commodities and geographies, they demonstrate that the structural transformation toward more ethical and sustainable global trade is not a distant aspiration – it is already underway, boosted by accessible, fast-evolving technologies and pragmatic, down-to-earth approaches. The challenge now lies in replicating and scaling up these solutions, engaging and aligning both private and public sectors to implement them without further delay.

KEY LEARNINGS AND RECOMMENDATIONS FOR SCALABILITY

- **Cultivating strong relationships and trust among stakeholders, through early engagement and partnership:**
  Traceability processes are replicable and scalable when they are embedded in a solid institutional framework and supported by the active participation of producers and other key actors. This requires early engagement and, in some cases, capacity building. Cases such as RCF, CJ Selecta and Hamurni demonstrate the value of engaging farmers and producers early. These cases also highlight the importance of communication and upskilling for effective adoption of DCF structures and systems.

- **Fostering coordinated action and multistakeholder dialogue:**
  The cases analysed show the effectiveness of joint efforts among first-tier operators, traders, and other key actors, emphasizing that success is harder to achieve through isolated action. The CJ Selecta

case, for instance, illustrates how collaboration across the supply chain strengthens outcomes. Similarly, the IKEA case underscores the importance of multistakeholder dialogue and consultation as prerequisites for replicability and scalability.

- **Ensuring market demand and financial incentives:**
  Clear market demand – combined with coordinated stakeholder action, and financial and technical support – is essential to encourage participation and sustain long-term transformation. This is evidenced by the experiences of Ghana's traceability system, Pará, RCF and Hamurni. Private sector investment plays a crucial role, reinforced by governmental support and consistent policy signals that stimulate the widespread adoption of verified DCF trade. Innovative financial mechanisms – such as the Responsible Commodities Facility – are particularly effective in overcoming key barriers, including access to affordable technology and finance to unlock large-scale transformation. Coordinated demand-side signals and aligned incentives are also needed across major markets (e.g., the EU, UK, China and others) to ensure consistent corporate and market policies that promote sustainable production and trade.

- **Addressing systemic challenges:**
  Key challenges such as data quality, systemic errors and access to public information canbe mitigated by adapting lessons from different cases. The Hamurni case, for example, illustrates how tools from one region can be tailored to address local challenges, while the Individual Bovine Traceability System of Pará demonstrates the value of having robust public data systems in place.

Compliance with specific requirements does not automatically ensure respect for human rights, as shown in the Santa Fe case. Scaling up DCF supply chains therefore requires incorporating broader legality and human rights criteria alongside environmental compliance.

NEXT STEPS

What is needed now is coordinated action at scale. Companies, governments, financial institutions and producers must work together to implement and expand proven solutions. By coupling available robust traceability systems with financial incentive mechanisms like the Responsible Commodities Facility, transparent, ethical DCF supply chains can rapidly become a baseline trade requirement and the new business as usual.

Next steps include:

- Systematic mapping of pilots, proofs of concept and concrete examples of transparent, verified DCF supply chains, and related solutions including private, sectoral and public/jurisdictional platforms and policies.
- Extensive exchanges of experience and cross-learning between solutions – including within different geographies and markets for the same commodities, and within the same geographies and markets for different commodities.
- Upscaling, adaptation and adoption by 2028 of these solutions, mainstreaming v-DCF supply chains.
- Developing consensus-based guidelines for effective DCF verification and implementation for all risk commodities and production landscapes, including area-level governance, economic incentives and broad engagement of actors at every level of the value chain.

If you are developing or know of solutions that could help demonstrate, promote and scale verified DCF supply chains, please share them with us via the QR code below or contact WWF to arrange a conversation.

ENDNOTES

1 IPBES (2019): Global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. E. S. Brondizio, J. Settele, S. Díaz, and H. T. Ngo (editors). IPBES secretariat, Bonn, Germany. https://www.ipbes.net/global-assessment

2 Newbold, T., Hudson, L., Hill, S. et al. (2015). Global effects of land use on local terrestrial biodiversity. Nature 520, 45–50. https://doi.org/10.1038/nature14324

3 FAO (2020) The State of Food and Agriculture. https://doi.org/10.4060/cb1447en

4 Curtis, P., Slay, C.M., Harris, N. et al. (2018). Classifying drivers of global forest loss. https://www.science.org/doi/10.1126/science.aau3445

5 WWF (2022) Deforestation and Conversion Free Commodities are Critical for 1.5C Pathway. https://wwfint.awsassets.panda.org/downloads/dcf_critical_for_1_5_pathway___summary_and_techincal_methods.pdf Summary slides: https://wwfint.awsassets.panda.org/downloads/dcf_commodities_are_critical_for_a_1_5_pathway___overview.pdf

6 Global Witness (2020) https://gw.cdn.ngo/media/documents/2020_Annual_report_layout_forweb.pdf

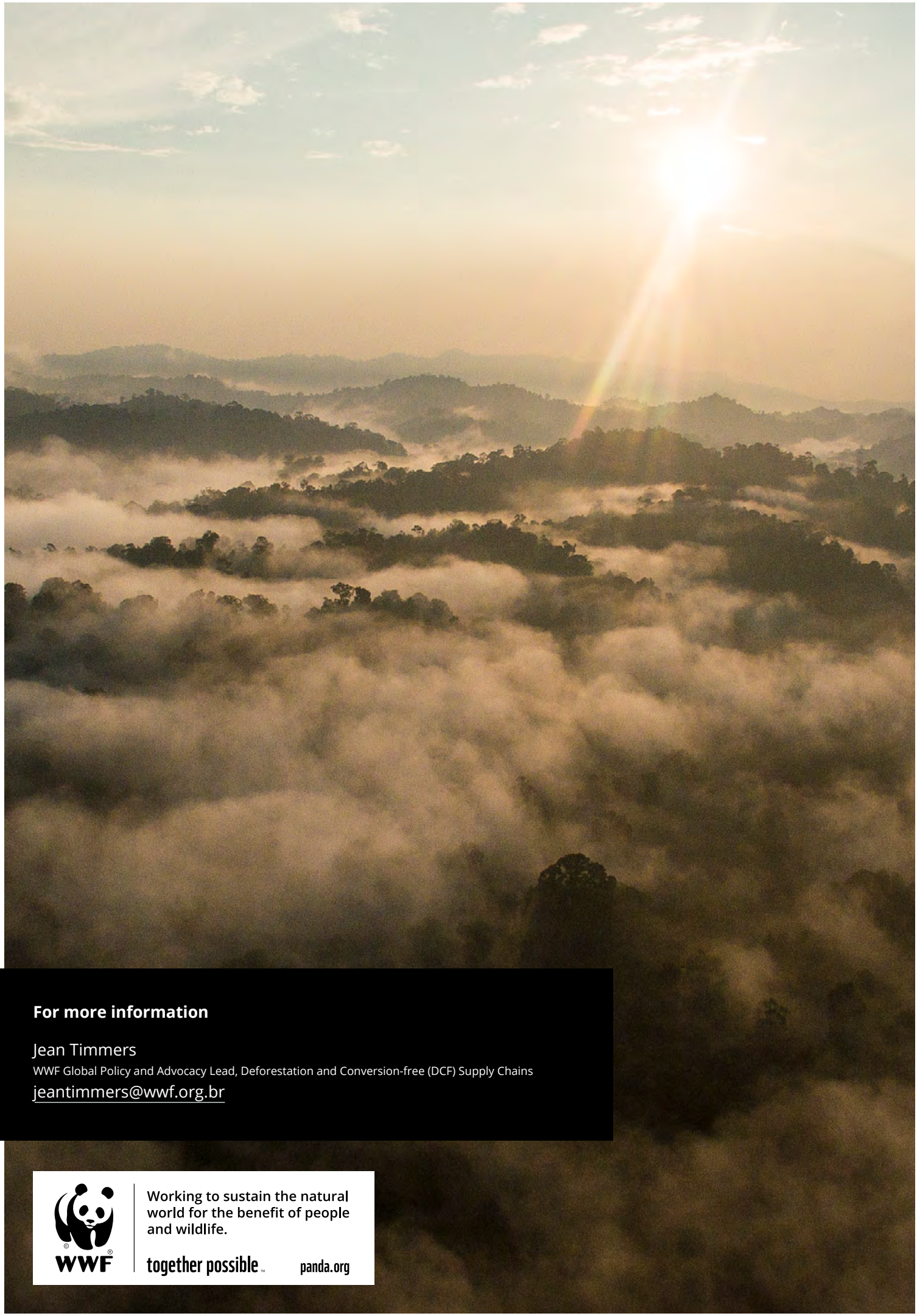
7 Leite-Filho, A.T., Soares-Filho, B.S., Davis, J.L. (2021). Deforestation reduces rainfall and agricultural revenues in the Brazilian Amazon. Nat Commun 12, 2591. Available from: https://www.nature.com/articles/s41467-021-22840-7

8 Global Forest Review, WRI (2024) https://gfr.wri.org/

9 Erb, KH., Lauk, C., Kastner, T. et al. Exploring the biophysical option space for feeding the world without deforestation. Nat Commun 7, 11382 (2016). https://doi.org/10.1038/ncomms11382

10 Global Canopy, Forest 500 (2025) https://forest500.org/wp-content/uploads/2025/07/F500_Editorial_2025.pdf

11 The Legal Amazon, as defined by the 1988 Constitution, covers 61% of Brazil, including the entire Brazilian Amazon biome, 20% of the Cerrado and part of the Pantanal.



For more information

Jean Timmers
WWF Global Policy and Advocacy Lead, Deforestation and Conversion-free (DCF) Supply Chains
jeantimmers@wwf.org.br

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