Agri-Food Deforestation and Conversion Free (DCF) Sourcing Criteria - Background Paper

The Climate Bonds Standards and Certification Scheme "Agri-food Deforestation and Conversion Free Sourcing" Eligibility Criteria

Final

NOTE: These Criteria can be used to certify Agri-Food Entities under the Climate Bonds Standard

Revision	Date	Summary of Changes
Rev. 2	12.04.2024	Final for publication
Rev. 1	27.02.2024	Adjusting for feedback from Public Consultation and TWG members
Rev. 0	22.12.2023	Draft for Public Consultation

Acknowledgements

Climate Bonds gratefully acknowledges the Technical and Industry Working Group members who provided their time and expertise during the development of these Criteria. Members are listed at the end of this document in *Appendix 2: TWG and IWG members*.

Special thanks are given to ***Dr Reyes Tirado,*** Agri-Food Lead at Climate Bonds and Technical Lead in the Criteria, ***Dr Priyanka Agarwal,*** for coordinating the development of the Criteria through the Technical Working Group, and ***Mario Rautner,*** Supply Chain Expert Consultant, for supporting the development of the Criteria.

The Industry Working Group provided critical and useability-focused consultation and feedback on the Criteria, but this does not automatically reflect agreement by all members.

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1 Introduction

1.1 Overview

This document serves as a reference document to the 'Agri-Food Deforestation and Conversion Free Sourcing' (Agri-Food DCF Sourcing) Criteria document. Its purpose is to give an overview of the key considerations and issues that were raised during development of the Agri-Food DCF Sourcing Criteria and provide the rationale for why the specific Criteria elements were chosen and set.

The Criteria were developed through a consultative process with a Technical Working Group (TWG) and an Industry Working Group (IWG), and through public consultation. The TWG comprises academic and research institutions, civil society organizations, multilateral banks, and specialist consultancies whereas the IWG is made up of industry experts including potential bond issuers and investors. A period of public consultation from December 2023 to February 2024 offered the opportunity to any member of the public to comment on the Criteria. TWG and IWG members are listed in Appendix 2.

Supplementary information to support Applicants and Verifiers is available at Agri-Food Deforestation and Conversion Free Sourcing as follows:

- Criteria document: Complete Criteria requirements
- Criteria Brochure: Summary of the Criteria
- Background paper: Rationale behind the Criteria
- Frequently Asked Questions
- Public consultation feedback and responses summary

In addition, the following cross cutting information to support Applicants and Verifiers is available as follows:

- The Climate Bonds Standards: contains the requirements of the overarching Climate Bonds Standards
- The Climate Bonds Standard v4 Entity and Sustainability-Linked Debt Checklist documents: provides further information on the cross-sectoral requirements for Entity and Sustainability-Linked Debt Certification respectively.

For more information on Climate Bonds and the Climate Bonds Standard and Certification Scheme, see www.climatebonds.net.

1.2 Funding the goals of Paris Agreement

As of December 2023, current policies and actions are expected to lead to a global warming of 2.7 °C by 2100,[1] posing a huge threat to human societies and natural ecosystems. As part of the Paris Agreement, the international community committed to limit the global average temperature increase to well below 2°C above pre-industrial levels, and to pursue efforts to limit it to 1.5°C. The effects of climate change and the risks associated even with a 1.5°C rise are significant: rising sea levels, increased frequency and severity of hurricanes, droughts, wildfires and typhoons, and changes in agricultural patterns and yields. Meeting the 1.5°C goal requires a dramatic reduction in global greenhouse gas (GHG) emissions.

Global food systems are responsible for around 34% of global anthropogenic GHG emissions.[2] To meet the ambition of limiting warming to 1.5°C by 2050, it is imperative to transform the global food system, and this will require very significant private financing capacity. According to Planet Tracker, as of 2023, USD 8.6 trillion of private finance (from banks and lending institutions) is invested in the global food system, with a potential to provide funding to food system companies of USD 630 billion annually.[3]

[1] According to Climate Tracker, under current policies 2.7 - 3.1°C could be expected (Temperatures | Climate Action Tracker)

[2] Food systems are responsible for a third of global anthropogenic GHG emissions. (Crippa et al., 2021)

[3] Planet Tracker, 2023, planet-tracker.org/wp-content/uploads/2023/03/Financial-Markets-Roadmap-for-transforming-the-Global-Food-System.pdf

1.3 The role of the Financial Sector

The need to invest in climate action is widely recognised. Various agencies have estimated the amount of investment needed by different sectors and technologies and released them as investment roadmaps.[4] Market analysis shows that capital spending on physical assets for energy and land-use systems in net-zero transition would amount to about USD9.2 trillion per year until 2050, which is around 61% higher than the amount required in 2020 (i.e. USD5.7 trillion per year).[5] Today, the capacity of government to directly fund the transition to a low-carbon economy is limited, and the world economy needs the support of private capital. For emerging markets and developing economies, the private sector will need to supply about 80 to 90 percent of the required investment for climate change mitigation.[6]

In this context, the financial markets and those stakeholders involved have a pivotal role to play in financing the net-zero transition and supporting transitioning companies on each step of their decarbonisation journey. Equities, bonds, loans, grants and all related financial instruments are extremely powerful tools to catalyse the capital needed and bridge this financial gap.

Yet, in addition the lack of political frameworks and incentives for finance, there are other barriers in redirecting capital towards climate action including inadequate assessment of climate-related risks and investment opportunities, lack of standardisation, aggregation, scalability, and replicability of investment opportunities.[7]

This emphasises the importance of developing and building capacity for investment, and financing transition roadmaps and frameworks, with clear and standardised guidance to support the financial sector to assess and identify credible investment opportunities aligned with Paris Agreement targets.

1.4 Introduction to the Climate Bonds Standard

Activating the mainstream debt capital markets to finance and refinance climate-friendly projects and assets is critical to achieving international climate goals, and robust labelling of green bonds is a key requirement for that mainstream participation. Confidence in the climate objectives and the use of funds intended to address climate change is fundamental to the credibility of the role that green bonds play in a low-carbon and climate-resilient economy. Trust in the green label and transparency of the underlying assets are essential for this market to reach scale but currently, investor capacity to assess green credentials is limited. Therefore, Climate Bonds created the Climate Bonds Standard and Certification Scheme, which aims to provide the assurance in the green bond market to achieve the required scale.

Investor demand for green bonds and climate bonds is strong and will increase in line with the delivery of quality products into the market. Standards, assurance and certification are essential to improved confidence and transparency, to enable strong market growth. The Climate Bonds Standard and Certification Scheme is an easy-to-use screening tool that provides a clear signal to investors, asset owners, portfolio managers, and intermediaries on the climate integrity of Certified climate bonds.

A key part of the Climate Bond Standard and Certification Scheme is the overarching 'Climate Bonds Standard' (CBS) available at www.climatebonds. It documents the common fund management and reporting requirements that all Certified climate bonds must meet. Also important is the complementary suite of sector-specific eligibility Criteria, each of which establishes climate change benchmarks for that sector. They are used to screen assets and capital projects so that only those that have climate integrity, either through their contribution to climate mitigation, and/or to adaptation and resilience to climate change, will be Certified.

Existing Sector Criteria cover Solar Energy, Wind Energy, Marine Renewable Energy, Geothermal Power, Buildings, Transport (land and sea), Bioenergy, Forestry, Agriculture, Waste Management and Water Infrastructure, Hydropower, Electricity Grids and Storage, Cement, Steel, Hydrogen Production, and Electrical Utilities.

[4] Advancing the Green Development of the Belt and Road Initiative (2022) (WEForum.org)

[5] McKinsey, 2022, The net-zero transition: What it would cost, what it could bring report: https://www.mckinsey.com/capabilities/sustainability/our-insights/the-net-zero-transition-what-it-would-cost-what-it-could-bring

[6] International Monetary Fund. 2023. Global Financial Stability Report: Financial and Climate Policies for a High-Interest-Rate Era. Washington, DC, October.

[7] IPCC 2023, Synthesis Report, https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_LongerReport.pdf

1.5 Process for Sector Criteria development

The CBS has been developed based on public consultation, road testing, and review by the Assurance Roundtable (a group of verifiers) and expert support from experienced green bond market participants. The Standard is revisited and amended on an annual basis in response to the growing climate-aligned finance market. Sector-specific Criteria are developed by the TWG made up of scientists, engineers, and technical specialists. Draft Criteria are presented to the IWG before being released for public comment. Finally, Criteria are presented to the Climate Bonds Standard Board (CBSB) for approval (Figure 1).

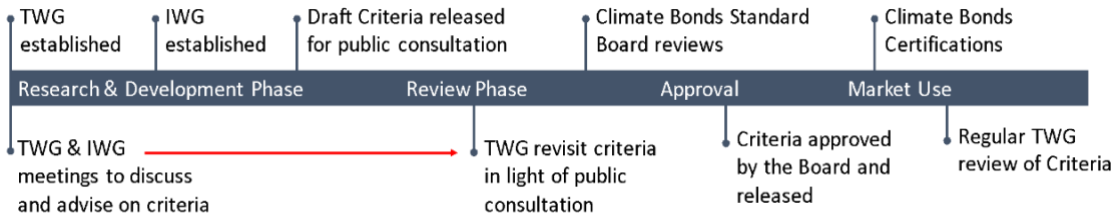

Figure 1: Criteria development process

2 Sector overview

2.1 Agricultural land: A source and sink for GHG emissions

Agriculture contributes to GHG emissions primarily through the release of carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O). GHG emissions from agriculture, forestry, and other land use (AFLOU) sectors are increasing globally. From 2010-2019 the sector contributed around 13 to 21% of the global anthropogenic GHG emissions. Land-use change is the main driver and accounts for half of the total net emissions from the sector.[8] The sector greatly influences the quality of soil, water and air, as well as biological and social diversity and ecosystem functioning thereby directly and indirectly impacting many SDGs.

While AFOLU is a source of GHGs that needs to be mitigated, it also has the potential to sequester carbon to become a net sink. Efforts to address the impact of agriculture on GHG emissions can focus both on mitigating emissions and enhancing carbon sequestration. Managed and natural terrestrial ecosystems absorbed around one-third of anthropogenic CO_2 emissions from 2010–2019 and have the potential to provide 20-30% of the global mitigation that is required for 1.5°C or 2°C pathways towards 2050.[8] However, recent studies have indicated that due to deforestation and forest degradation, emissions from ecosystems such as tropical forests now outweigh the carbon they capture.[9] Therefore, limiting deforestation and forest degradation is imperative to ensure that ecosystems act as a net-carbon sink rather than a source of GHG emissions.

2.1.1 Agriculture as a driver of deforestation and ecosystem conversion

The impact of agriculture on deforestation and ecosystem conversion varies across regions and is influenced by factors including land-use policies, economic incentives, and societal demands for agricultural products. Higher agricultural price is one of the key drivers of deforestation,[10] that incentivise deforestation by expanding the area under agriculture. Rapidly growing economies, urbanization, growing health awareness, changing lifestyles, and use of certain crops as biofuels also create pressure on land use by increasing the demand for selected agricultural and livestock products, leading to the expansion of areas dedicated to those agricultural products. The expansion of agricultural activities often involves clearing forests, grasslands, or other natural habitats to make way for crops, livestock, and other agricultural purposes.

[8] IPCC, 2022 (IPCC_AR6_WGIII_FullReport.pdf)
[9] Tropical forests are a net carbon source based on aboveground measurements of gain and loss. (Baccini et al., 2017)
[10] What Drives Deforestation and What Stops It? A Meta-Analysis. (Busch & Ferretti-Gallon, 2017)

Agriculture has been identified as an important driver of land-use change, deforestation, and wetland drainage,[11] and is responsible for around 90% of the global deforestation.[12]

2.1.2 Deforestation in supply chains

While deforestation happens at the site of production, the driver is demand from local and global markets for agri-food commodities; primarily livestock, soy, palm oil and six other crops: rubber, cocoa, coffee, rice, maize, and cassava. As such, the actors along the supply chain must engage in responsible sourcing to limit deforestation and conversion. It is positive to note that companies such as Nestle, Danone, Mars, and Unilever have started to publish deforestation commitments, although the level of ambition varies among actors.

Yet, tracing deforestation from the production unit through to processing and refining along the supply chain is very challenging. Once commodities have been produced on deforested or converted land, they often enter global supply chains where they are processed, refined and ultimately manufactured into consumer and industrial products. These supply chains are often not only highly complex, with commodities passing through numerous hands, but also one product can also contain multiple commodities that have been associated with deforestation risks in multiple countries.

However, in recent years a combination of increased availability of satellite imaging and production unit boundaries has improved the ability to detect deforestation at production level remotely. In addition, significant investments in traceability and systems to detect and remove deforestation within downstream supply chains, in conjunction with legislative measures and sector-wide agreements, has led to a reduction in deforestation of some agricultural commodities such as palm oil and soy. However, this is much harder for smallholder-produced commodities and those where deforestation detection from space is less advanced, such as coffee and cocoa. Additional complications also exist for livestock since cattle for beef production (the largest driver of tropical deforestation) are frequently moved between properties.

There is a pressing need for commodity supply chains that can link commodities back to their unit of production and demonstrate clearly that they are not associated with deforestation or conversion of natural ecosystems. This is also becoming an important concern for the financial sector. Firstly, it helps to mitigate risks associated with regulatory non-compliance, reputational damage, and ultimately financial losses that could be associated to the financing of unsustainable practices. Secondly, it encourages and supports the development of transparent and sustainable supply chains. Financial players enhance their reputation and credibility by aligning with evolving consumer preferences and regulatory requirements. Moreover, investment in sustainable supply chains have potential long-term financial benefits, as it prepares these companies (and their investors) to anticipate market trends and capture business opportunities and so outperform their peers.

2.2 Importance of tackling deforestation and degradation

Deforestation, forest degradation, and conversion of natural ecosystems to produce agricultural commodities remains a major barrier in efforts to keep global warming below 1.5°C. In 2022, gross emissions from deforestation increased by 6%, totalling 4 billion metric tons of carbon dioxide equivalent.[13] A recent study by World Resource Institute (WRI) estimated that in 2022, there had been a loss of 4.1 million ha in tropical primary forest, leading to emissions of around 2.7Gt CO_2.[14]

Forests play a crucial role in sustaining life on the planet by providing shelter to around 70 million people worldwide; also fulfilling the needs of over 1.6 billion people for food or fuel. They provide habitat to numerous plants and animals and are home to over 80% of the terrestrial biodiversity.[15] After the oceans, they are the largest storehouse of carbon. Different land-use models have shown an additional 350 million ha of forest are required by 2100 to limit warming to 1.5°C and to align with the IPCC's emission pathways.[16]

Tackling deforestation is essential not only to address climate change mitigation but also to support biodiversity conservation, preserve ecosystem services, and support indigenous and local communities. Avoiding tree cover loss and disturbance through

[11] The greenhouse gas impacts of converting food production in England and Wales to organic methods. (Smith et al., 2019)
[12] FAO, COP26: Agricultural expansion drives almost 90 percent of global deforestation (fao.org)
[13] FDA, 2023 (Press Release: New Forest Analysis: Global Deforestation Veering Off Track, Threatening People, Climate and Biodiversity - Forest Declaration)
[14] WRI, 2023 (The Latest Analysis on Global Forests & Tree Cover Loss | Global Forest Review (wri.org))
[15] Importance of Forests | WWF (panda.org)
[16] WWF, 2023 (*The Forest Pathways Report WWF 2023 (panda.org))

decreased deforestation and forest degradation will conserve existing carbon pools and soil. Reducing deforestation and forest degradation has a potential to reduce global emissions by 0.4 to 5.8 Gt CO_2 equivalent per year.[17]

3 Scope and boundaries of the Criteria

Climate Bonds has built on and adapted existing deforestation free guidelines and certification systems including the Accountability Framework Initiative (AFi). These Criteria focused on preventing deforestation and conversion of other natural ecosystems in agri-food supply chains. The European Union Regulation on Deforestation-Free Products (EUDR) regulation which restricts the trading of seven commodities i.e. cattle, cocoa, coffee, palm oil, soy, rubber and wood to/from EU if linked with deforestation is also referenced throughout to develop a set of requirements for the Criteria. This section discusses the scope of these Criteria by describing the activities that are prohibited and the entities covered under these Criteria.

The Criteria state *'Agri-Food Deforestation and Conversion Free Sourcing' (Agri-Food DCF Sourcing) Criteria exclude any of these activities:*
Purchasing, processing, trading, distributing or selling any agri-food commodities, products, and derived ingredients whose production, after 31st December 2020, has been linked to:

- *Conversion of any natural ecosystem to another land use. Including, among others (see definitions):*
  - *Deforestation, including severe degradation.*
  - *Peatland drainage, development or peat burning.'*

The Criteria cover deforestation and conversion of other natural ecosystem independent of the geographical location. This means both temperate and tropical forests and natural ecosystems are included here.

These Criteria aims to be in line with (and exceed on certain aspects) the EUDR framework, so that any entity certifying under these Criteria has in place the necessary systems to potentially comply with the EUDR trading requirements. But this certification expands EUDR requirements mainly in that: 1) it includes not only deforestation, but also the conversion of any other natural ecosystems, and; 2) it includes all agri-food commodities being sourced by a company, including those from high-risk origin as well as those from low-risk origin. Therefore, to cover both 'deforestation' and 'conversion', for deforestation requirements, Climate Bonds have followed requirements set out by EUDR (2023) to ensure global entities will be in line with those and to facilitate harmonisation and cross-compliance of global entities. Hence, definitions and rules for the deforestation element of Climate Bonds "Agri-Food Deforestation and Conversion Free" Certification, always follow EUDR and for conversion requirements, which are not currently part of EUDR, Climate Bonds have followed guidelines set out by AFi (2020), a global initiative aiming to reach wide consensus in the sector. This is reflected in the definitions and all throughout the Criteria.

The term 'deforestation' as defined in these Criteria, includes forest degradation for wood products (i.e. pulp and papers), as defined in the EUDR (see definitions). Figure 2 outlines the degradation and deforestation related to wood production under EUDR. The 'degradation' definition used in EUDR focuses on changes from one forest type to another.

[17] IPCC, SRCCL, 2019 (SRCCL_SPM.pdf (ipcc.ch))

FOREST TYPE 2020	FOREST TYPE POST-2020	WOOD REMOVAL AND RESULTING LAND COVER OBSERVED AT POINT OF DUE DILIGENCE	EUDR DEGRADATION OR DEFORESTATION STATUS
PRIMARY FOREST	PRIMARY FOREST	E.G. CLEARCUT OR SELECTIVE LOGGING	CONVERSION FREE
	NATURALLY REGENERATING FOREST	E.G. CLEARCUT OR SELECTIVE LOGGING	CONVERSION FREE
	PLANTED FOREST	E.G. CLEARCUT OR SELECTIVE LOGGING	DEGRADATION
	PLANTATION FOREST	E.G. CLEARCUT	DEGRADATION
	OTHER WOODED LAND	E.G. CLEARCUT OR SELECTIVE LOGGING	DEGRADATION
	AGRICULTURE E.G. SILVOPASTORAL LAND	E.G. CLEARCUT OR SELECTIVE LOGGING	DEFORESTATION
NATURALLY REGENERATING FOREST	NATURALLY REGENERATING FOREST	E.G. CLEARCUT OR SELECTIVE LOGGING	CONVERSION FREE
	PLANTED FOREST	E.G. CLEARCUT OR SELECTIVE LOGGING	CONVERSION FREE
	PLANTATION FOREST	E.G. CLEARCUT	DEGRADATION
	OTHER WOODED LAND	E.G. CLEARCUT OR SELECTIVE LOGGING	DEGRADATION
	AGRICULTURE E.G. SILVOPASTORAL LAND	E.G. CLEARCUT OR SELECTIVE LOGGING	DEFORESTATION

Figure 2: Degradation and deforestation related to wood production under EUDR (Source: GFW, 2023)

3.1 Entities, commodities and products in scope

The Agri-Food Transitions Programme is a key pillar of Climate Bonds' flagship Transitions Programme. The overarching goal of the Transitions Programme is to mobilise global capital for financing the transition of key sectors of the economy to align with a net-zero, resilient, and sustainable future and ensure deforestation and conversion free agri-food production. One of the objectives of this programme is to develop screening tools to tackle emissions within the food supply chains.

Emissions in the food sector can be broken down into three main sources, listed here in order of relative contribution to the total emissions from the food sector: emissions from food production (39%), emissions from land use and land use change (32%), and emissions from the food supply chain (29%).[18] The food supply chain includes food processing, packaging, transport, and retail that directly contributes to total food sector emissions. Globalisation adds increased complexity to the food supply chain making it difficult to tackle emissions in the entire supply chain. Considering the role of the food supply chain in deforestation and the need to address the emissions from it, these Criteria target the first and most critical step: sourcing, to ensure agri-food commodities are deforestation free.

Whilst most existing certification schemes are focused on production only, the target of these Criteria are entities that operate post-farm gate along the supply chain through to and including retailers that are able to demonstrate they have the processes and systems in place to exclude deforestation linked commodities from their supply chains (Figure 3). Any entity within the agri-food sector that is generating 50% of its revenue from agri-food commodity supply chains is eligible to certify under these Criteria.

Climate Bonds Standard (CBS) provides the overarching rule set for Certification and requires the Parent Company or Parent Group of the entity seeking Certification to have commitment to being deforestation and conversion free across their activities.

The Agri-Food DCF Sourcing Criteria state '***Entities can be certified under these Criteria if more than 50 percent of their revenue is linked to agri-food commodity supply chains. This includes but is not limited to traders, processors, manufacturers, distributors and retailers.***

Agri-food commodities that are in scope include any commodity that is produced on land or that is dependent on land-based production. This includes but is not limited to commodities commonly associated with deforestation and conversion risks, such as oil palm, soy, cattle, dairy, cocoa, coffee, and pulp and paper (when used in the production of paper and packaging materials or as a food ingredient). However, the scope of these Criteria is not limited to any specific commodities associated with deforestation risks, and hence entities sourcing low-risk commodities can also be certified.

If entities source animal products such as beef, dairy, chicken, or farmed fish that were produced using feed containing high-risk commodities, Certification of those companies will include assessment of those embedded commodities as well.

The Criteria apply to all agri-food products derived from agri-food commodities independently from their processing level. Highly processed food products, pulp and paper, and livestock-based food products (and their feed inputs) are also within the scope of these Criteria.'

Figure 3: Scope of the Agri-Food DCF Sourcing Criteria

[18] Food systems are responsible for a third of global anthropogenic GHG emissions. (Crippa et al., 2021)

Throughout the development of these Criteria, Climate Bonds referenced AFi, who provide broader supply chain guidance for human rights and environmental protection.[19] All land-based produced agri-food commodities and products are covered under these Criteria so any entity post-farm gate in the food supply chain of agri-food commodities and products is eligible to certify.

3.2 Entities out of scope

These Criteria are developed under the Agri-Food Transitions Programme to tackle emissions within the food supply chain through ensuring sourcing of deforestation free agri-food commodities, and therefore exclude:

- Entities at the producer (farmer or grower) level of agri-food commodities (these are covered by the Agriculture Criteria, updated in 2024).
- Entities that use agri-food commodities for non-food purposes such as (but not limited to) personal care, leather, clothing, cleaning, or industrial products including paints, glues, biofuel feedstocks etc.

Note: Assets and use of proceeds instruments that enable or service the goal of deforestation and natural ecosystem conversion-free sourcing (e.g., entities operating in the land-use change monitoring or traceability system space) can be Certified under Climate Bonds *Standard v. for eligible activities under Climate Bonds Agriculture Criteria.*

The development of screening tools for assets, use of proceeds, entities and sustainability-linked debt instruments that enable deforestation-free sourcing can be Certified under Climate Bonds Standard v.4 as '1.5°C aligned' for eligible activities (Figure 4).

Examples of such activities include, but are not limited to:

- Traceability software or hardware systems.
- Satellite monitoring systems.

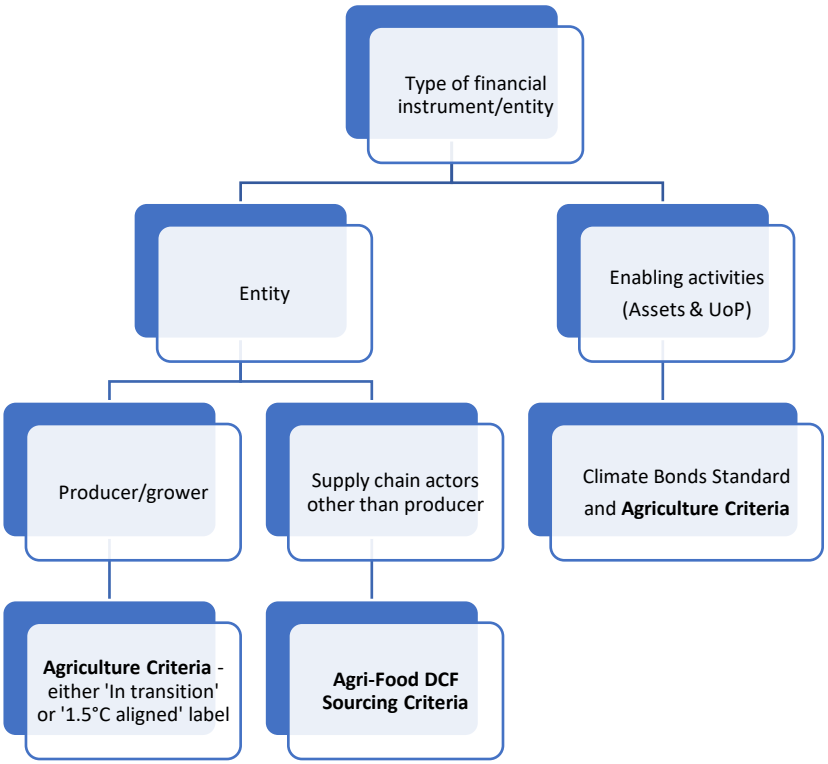

Figure 4: Flowchart indicating eligibility of financial instruments and entities under Agri-Food DCF Sourcing Criteria

[19] Who we are - Accountability Framework (accountability-framework.org)

3.3 Materiality: Certification threshold

Currently Climate Bonds Standard 4.0 states that 'The proportion of the Certified Entity's economic activities that are counted as complying with the Climate Performance, Delivery Strategy, Governance and Disclosure requirements …exceeds 90% of the Certified Entity's total economic activities'. Regarding deforestation and conversion, 10% of economic activities can cause significant damage to ecosystems. Therefore, a two-tier approach has been considered where:

'Any agri-food commodity (including each commodity derivates and fractions) within the supply chain of the entity that accounts for 1% or more of the entity's total procurement spend on agri-food commodities, food products and food product ingredients is within scope of these Criteria.

In addition, the 'Certification Threshold' where compliant activities represent at least 90% of agri-food net procurement spend of an entity, also applies.

In practice this means that very small (<1% of procurement spend) purchases of agri-food commodities fall outside the scope of these Criteria as long as 90% of the entity's total economic activity is included.

Note: The Criteria on materiality also apply to products or ingredients manufactured by third parties that are sold or distributed by Certified entities (such as retailers for instance).'

The basic steps for the Agri-Food DCF Sourcing Criteria are presented in Figure 5.

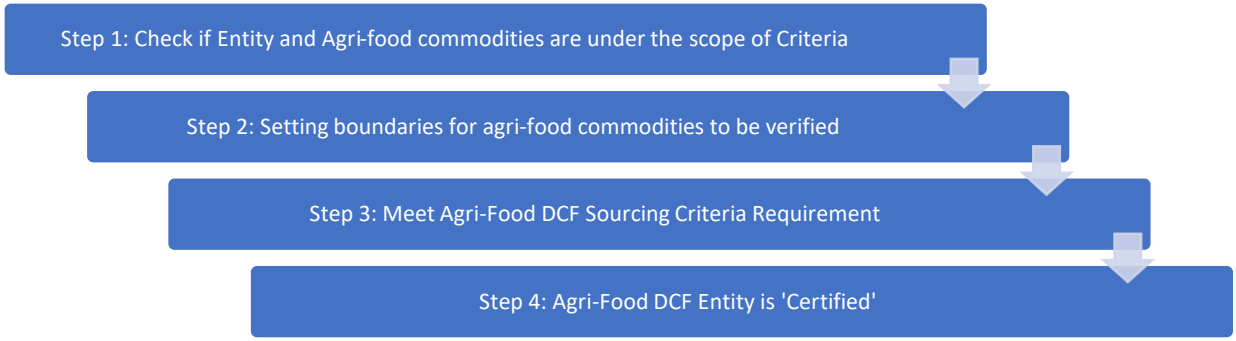

Figure 5: Flowchart of Basic steps for issuing Agri-Food DCF Sourcing Certificate

4 Criteria requirements

The following sections lay out the rationale behind the requirements set out in the Deforestation and Conversion Free Sourcing Criteria.

4.1 Cut-off date

The cut-off date indicates the date after which deforestation or conversion renders a given area or production unit non-compliant with no-deforestation or no-conversion commitments, respectively.

The Criteria states '*No deforestation or conversion of other natural ecosystems[20] has taken place on farms or production units where the agri-food commodities within the supply chains of certified entities were produced from 31 December 2020.'*

[20] Forests: use EUDR, Other Natural Ecosystems: use AFi definitions.

31st December 2020 was agreed as the cut-off date for Agri-Food DCF Sourcing Criteria as it adheres to current requirements arising from 1.5°C pathways for the land and agriculture sector[21] in addition to aligning with recent European regulations as well as other global initiatives aiming to stop deforestation (i.e., AFi).

Selection of a cut-off date is a critical step in setting Criteria because a date too far in the past poses a challenge for transparent and reliable verification of the land-use, together with the limitation of compliant sourcing in regions with high agriculture expansion in recent times. Conversely, a date into the future might incentivise further deforestation by ensuring a deforestation-free status at a later stage, which might be misleading and prone to greenwashing claims.[22]

Cut-off dates for deforestation and the implementation deadlines (i.e., target dates) vary widely across various sustainability initiatives.[23] A harmonized cut-off date will simplify the monitoring, verification, and management of the suppliers and will reinforce the consistency of global efforts for climate mitigation and ecosystems protection.[24]

Current cut-off dates for deforestation and conversion are strongly dependent on the mechanisms in place and often region- and commodity-specific, while in some instances, ecosystem-specific. For instance, amongst legislative initiatives, the Amazon Soy Moratorium uses a cut-off date of July 2008, while the deforestation cut-off date adopted by the Argentinian Forest Law is 2008–2016 depending on the province. Colombia's Zero Deforestation Agreements apply 1 January 2010 as the cut-off date, while the Indonesia Forest Moratorium was adopted in 2011.

The Roundtable for Sustainable Palm Oil (RSPO) differentiates between 2005 as the cut-off date for primary forests and 2018 for High Conservation Value (HCV) areas and High Carbon Stock (HCS) forests. The Round Table on Responsible Soy Association (RTRS) uses the dates of May 2009 for natural forests and June 2016 for all other natural ecosystems. The Certification by the Rainforest Alliance requires all natural ecosystems across all commodities the organisation certifies to be proven to be deforestation and natural conversion free by January 2014.

Climate Bonds has adopted a cut-off date of 2010 for food production entities under the '1.5°C Aligned' label and 2020 for entities under the 'In Transition' label for the Agriculture Criteria for Certification for crop and livestock producers, following the Climate Bonds Standard v.4 methodology.[25]

The EUDR uses a deforestation cut-off date of 31st December 2020, which will be enforced for commodities entering the EU market from 30 December 2024 onwards.[26] The 31 December 2020 date was agreed to bring consistency with international commitments set out in the Sustainable Development Goals (SDGs), New York Declaration on Forest, and the European Commissions' announcement on Stepping up EU Action to Protect and Restore the World's Forests, the European Green Deal, the EU Biodiversity Strategy for 2030 as well as the Farm to Fork strategy.[27]

Target dates, in contrast to cut-off dates, signal the date after which the requirements for deforestation-free land use (i.e., cut-off dates) will be enforced.

In previous decades, the target date set for 2020 Zero Deforestation Commitments that was pledged by many traders, manufacturers, and retailers for removing deforestation and conversion along the supply chain, was not achieved by the vast majority of these companies. More recently the AFi adopted a target date of no later than 2025. The EUDR has no target date, but the requirements will start to be enforced from 30th December 2024 for large enterprises, and six months later for small and medium-sized enterprises.

In summary, recently established cut-off dates for land use change are set mainly at 2020, while the target date for supply-chain compliance are generally set at 2025 or earlier. Since Climate Bonds Agri-Food DCF Sourcing Criteria will be available for Certification from early 2024 onwards, in practice, the target date will be the time of Certification chosen by the applicant.

[21] IPCC AR6 SYR: Figure 4.1: Sectoral emissions in pathways that limit warming to 1.5°C. https://www.ipcc.ch/report/ar6/syr/figures/figure-4-1
[22] The outcomes of deforestation-free commodity value chain approaches. (Verina Ingram et al., 2020)
[23] Criteria for effective zero-deforestation commitments. (Garrett et al., 2019) and The state of sustainability initiatives review 2014: Sustainability and transparency. (Potts et al., 2014)
[24] AFi, 2020 (https://accountability-framework.org/fileadmin/uploads/afi/Documents/OG_Cutoff_Dates-2020-5.pdf)
[25] The Standard | Climate Bonds Initiative
[26] The EUDR currently applies only to deforestation (including degradation). However, the EUDR specifies that 'no later than two years after that date of entry into force, the Commission should evaluate and, where appropriate, present a legislative proposal on, extending the scope of this Regulation to other natural ecosystems, including other land with high carbon stocks and with a high biodiversity value such as grasslands, peatlands and wetlands' (Article 29).
[27] Paragraph 46, (Regulation - 2023/1115 - EN - EUR-Lex (europa.eu))

4.2 Risk classification of origin

Climate Bonds Criteria classify countries as high- or low-risk based on recent rates of natural forest loss in relation to natural forest cover. No such deforestation risk classification for countries has been provided previously under any certification scheme or guidelines. However, the EUDR has established a three-tiered benchmarking system of classifying countries as low-, standard-, or high-risk. On 29 June 2023, all countries were classified as standard-risk (which refers to countries or parts thereof which do not fall in either the high-risk or low-risk categories). The EU Commission will classify the countries and parts thereof into low- and high-risk categories and will publish the list no later than 30 December 2024, which will be reviewed and updated whenever necessary.

Those seeking Certification against Climate Bonds Agri-Food DCF Criteria will be allowed to exercise a simplified due-diligence for the products originating from low-risk regions. Conversely, enhanced scrutiny is required for products from high-risk regions. The due diligence requirements are detailed in section 4.4.

The methodology for identifying high- and low-risk countries developed by Climate Bonds is based on data from Global Forest Watch. For each country, the deforestation risk is assessed based on the ratio of total natural forest land lost over the last five years (2018–2022) relative to the total natural forest cover in 2000. If this ratio is higher than 1%, then the risk is considered to be high with the risk considered low for values below 1%. Further information and the methodology used for generating the list is discussed in Appendix 1.

The Climate Bonds Agri-Food DCF Criteria state *'Entities that source or use commodities, products or ingredients originating from countries with high-risks of deforestation or natural ecosystem conversion are required to carry out additional due diligence and monitoring activities.*

For cattle, cocoa, coffee, palm oil, pulp and paper, and soy, the risk classification provided by the European Union for deforestation risk will be used (once published) to differentiate between high and low-risk countries.

Until the publication of the risk classifications by the EUDR and for commodities not included by the EUDR, Appendix 1 contains a list developed by Climate Bonds for classification of countries into high and low-risk of deforestation and the methodology used to compile it. Based on data availability for natural forest and natural forest loss, this list is completed for 58 countries. For the countries that are not covered in the list, the categorisation will have to be carried out by the Climate Bonds approved verifier using the same methodology. This list will be reviewed, consulted on, and updated at least on an annual basis and the methodology will evolve as more data becomes available.

For conversion of natural ecosystems, a risk classification could not be carried out due to data unavailability at the global scale. Entities are expected to carry out their own risk classification of origin in line with these Criteria´s methodology, which will be evaluated by approved verifiers during the Certification process.'

The risk classification by EUDR for cattle, cocoa, coffee, palm oil, pulp and paper and soy is followed because:

1. These commodities are strongly associated with deforestation and conversion, and are not fully covered under existing certification schemes.
2. The entities that comply with Climate Bonds Criteria for these high-risk commodities will meet EUDR requirements, streamlining the financing and regulatory needs, and avoiding duplication of effort.

Until the EUDR publishes its list of risk categories, the list created by Climate Bonds can be used for all agri-food commodities within scope.

4.3 Traceability

The Agri-Food DCF Sourcing Criteria state *'Full traceability of sourcing is required for all agri-food commodities representing at least 1% of net procurement spend by the entity on agri-food commodities (and at least 90% of their agri-food net procurement spend), with two levels:*

- High-Risk Origin and for cattle, cocoa, coffee, palm oil, pulp and paper, and soy (of any origin): geolocation to the original production land plot (polygon for > 4ha or single point for < 4 ha1)8.

- Low-Risk Origin (except cattle, cocoa, coffee, palm oil, pulp and paper, and soy): traced to country of origin or primary processing facility.

Agri-food commodities and their derivatives (including feed embedded in animal products) from high-risk origin (see list in Appendix 1) are required to be traceable to the geolocation of the original production land plot. This applies to any agri-food commodities and products from high-risk origin, irrespective if currently not included in the EUDR. Likewise, the traceability requirement of geolocation applies to cattle, cocoa, coffee, palm oil, pulp and paper, and soy from both high-risk and low-risk origins, as per EU legislation requirement (EUDR, 2023).

Agri-food commodities from low-risk origin (except for cattle, cocoa, coffee, palm oil, pulp and paper, and soy) are required to be traced to a level that ensures the country of origin of the production of commodities can be determined. In many cases this may be the primary processing facility. From January 1st, 2030, all commodities are required to be traceable to the geolocation of the original production land plot independent of the risk classification of their country of origin.

Commodities and products that are demonstrably in compliance with- and included- under the EUDR are considered traceable and in compliance with these Criteria for the deforestation part. To be certified with these Climate Bonds Criteria they would need to comply also for the Conversion element, i.e., free of natural ecosystem conversion, beyond forests.

To be compliant with these Criteria, all traceable DCF agri-food commodities need to be segregated from commodities of unknown origin or from non-DCF commodities at every step of the supply chain. Mass-balanced supply chain models that allow for the mixing of DCF with non-DCF commodities are non-compliant with these Criteria.'

To ensure supply chains are free from deforestation and conversion it is necessary to be able to trace commodities back to the point of production (for high-risk countries) or country of origin (for low-risk countries). There are several studies that point out the importance of traceability to the point of production, which has been identified as an explicit challenge under the umbrella of general monitoring systems.[28]

Traceability is easiest to achieve with clear property boundaries in combination with the ability to observe land-use change through remote sensing. Tracing livestock products to their origin is more difficult than a crop product as they are often born, reared, and processed at different locations.[29] It is also difficult to trace some crops from point of production to sale due to loss of information and mixing of crops from different origins during processing.[30] All traceability barriers can be overcome, although some commodities are better suited for cheaper, remote monitoring systems than others.

Reflecting the importance and need for traceability, the Agri-Food DCF Sourcing Criteria set requirements for all agri-food commodities to be traceable according to their risk and size of production unit, as well as the need to align with global efforts for palm oil, soy, cattle, cocoa, and coffee.

All commodities originating from high-risk regions as well as palm oil, soy, cattle, cocoa, coffee, and pulp paper for food product packaging (covered in EUDR) need to be traceable to the original production land plot, while commodities originating from low-risk are required to be traced to a level to ensure the country of origin of the production of commodities can be determined. Production land plots that are more than 4 hectares are required to use polygon[31] area of plots to be geolocated, whereas for less than 4 hectares, GPS coordinates (single point location) are required. For cattle, single point geolocation of coordinates of all establishments associated with raising the cattle is to be used.

Geolocation allows for:

1. Transparency and cross-verification of data,

[28] Criteria for effective zero-deforestation commitments. (Garrett et al., 2019); Similarities and Differences between International REDD+ and Transnational Deforestation-Free Supply Chain Initiatives—A Review.(Hargita et al., 2020) and Corporate commitments to zero deforestation: An evaluation of externality problems and implementation gaps. (Jopke & Schoneveld, 2018).

[29] Criteria for effective zero-deforestation commitments. (Garrett et al., 2019)

[30] Zero deforestation: A commitment to change. (Pasiecznik et al., 2017)

[31] Polygon describes the perimeter of the plots of land where the commodity has been produced. Each polygon should indicate one single plot of land, whether contiguous or not. (Traceability - European Commission (europa.eu)). Polygon also means latitude and longitude points of six decimal digits to describe the perimeter of each plot of land (Frequently Asked Questions - Deforestation Regulation - European Commission (europa.eu)).

2. Use of the increasing number of tools available for traceability including near real-time monitoring of deforestation with increasing analytical skills and satellite technologies.[32]

The rationale behind the decision to seek harmonisation with EU requirements under EUDR in these Agri-Food DCF Sourcing Criteria relates to the need to minimise additional requirements for international companies that might be trading with EU and to contribute to more consistency across different certification schemes or policy requirements. Geolocation is rapidly becoming the norm in terms of traceability with the aid of widely available satellite tracking tools.

Entities that source from low-risk countries (and which are not trading in the EU) could fulfil the requirements of full traceability disclosures of production units from 1 January 2030. This differentiation with sourcing from high-risk regions is introduced to allow:

1. Enhanced action directed to regions with high-risk of deforestation.
2. Setting a 2030 target date for low-risk regions to ensure future harmonisation of compliance across all regions.
3. Those entities already sourcing from low-risk regions have the incentive to prepare for compliance requirements (i.e., full traceability and disclosure).

A mass-balance approach to certifying DCF products is not allowed under these Criteria because it allows mixing of DCF compliant and non-compliant products, making it impossible to warranty point of origin, physical traceability, and geolocation of the sourced products.[33]

4.4 Due Diligence

Due diligence is a comprehensive and continuous risk management process that limits and prevents negative impacts.

The Criteria state '***For agri-food commodities originating from high-risk origin and for any cattle, cocoa, coffee, palm oil, pulp and paper and soy, supply chain actors are required to have due diligence systems in place to obtain sufficient evidence that demonstrate that commodities are traceable to their production units and have been free from deforestation and conversion as of 31 December 2020.***

Conversely, for any other agri-food commodities originating from low-risk countries, supply chain actors would need to provide sufficient evidence that sourced agri-food commodities are traceable to country of origin or production facility.

Entities can decide which due diligence systems to use depending on their context and needs. Companies can put in place their own due diligence systems as long as full and verifiable traceability to production geolocation is ensured. Due diligence systems can follow the requirements of the EUDR (to avoid replication of procedures), and similar systems can be used for commodities and products that are not currently included in the EUDR or for commodities and products that are not placed on the EU market.

Due diligence should include sufficient information, risk assessment and risk mitigation, where needed.'

The Agri-Food DCF Sourcing Criteria due diligence approach is based on the EUDR requirements as these are the most relevant international legislation currently shaping the sector and Climate Bonds aims to build on what exists to increase market harmonisation. However, Climate Bonds Criteria go beyond Deforestation (and the EUDR) in that they include conversion of natural ecosystems as equally relevant. Hence, entities wanting to certify as DCF will need to provide additional disclosure on Natural Ecosystem Conversion.

Three main steps for due diligence under EUDR are:

1. **Information Gathering:** Gather information such as supplier names quantities and, importantly, geolocations of the land boundaries or production plots.
2. **Risk Assessment:** feed the information gathered in their due diligence system risk assessment and demonstrate that the information was checked against risk assessment criteria.
3. **Risk Mitigation:** to ensure compliance, take documented mitigation measures if ***any*** risks were found.

[32] Food industry calls for more time to implement EU deforestation rules (ft.com) and High-Resolution Global Maps of 21st-Century Forest Cover Change. (Hansen et al., 2013)
[33] Fripp, et al, (2023), Traceability and transparency in supply chains for agricultural and forest commodities (fao.org)

Information Gathering:

The information required to map supply chains to access deforestation risk and to carry out risk assessment, according to EUDR, OECD/FAO[34] and WRI[35] includes:

1. Details of the agri-food commodity (for each consignment that is sourced) including the quantity,
2. Country of production,
3. Required traceability information (i.e., geolocation for high-risk countries, point of origin for low-risk countries),
4. Adequate and verifiable information indicating the product is free from deforestation and conversion, and is produced in accordance with the relevant legislation of the country of production.

Risks Assessment:

According to current sector guidelines (i.e., EUDR), risk assessments should take into account:

1. Risk categorisation of the country of production;
2. Presence of forest and indigenous peoples in the country of production;
3. Prevalence of deforestation, conversion of natural ecosystem, and forest degradation;
4. Complexity of the supply chain;
5. Any other relevant information.

Risks Mitigation:

If the Risk Assessment results in ***any*** risk for the sourced agri-food commodities, then the applicant entity should carry out Risk Mitigation, which includes measures and procedures such as policies, controls, collection of additional information, data or documents, and carrying out independent surveys or audits to achieve no or only negligible risk. This can be achieved by modelling risk management practices, reporting, record-keeping, internal controls and compliance management, including the appointment of a compliance officer at management level if required or by an independent audit function to check the internal policies, controls and procedures.[36]

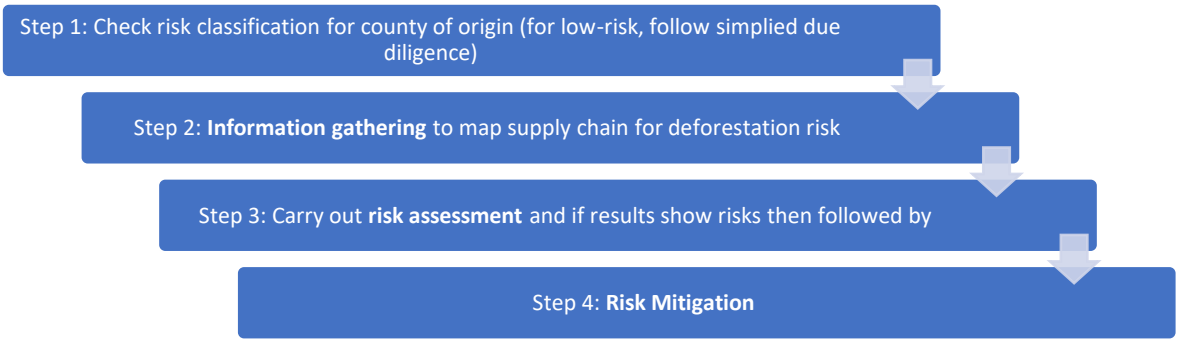

Figure 6: Flowchart of Basic steps for Due Diligence

4.5 Monitoring

The Criteria state ***'For agri-food commodities originating from high-risk origin, entities are required to demonstrate that systems are in place that monitor the geolocated production land plots for deforestation and the conversion of other natural ecosystems.***

Entities can put in place their own monitoring systems to ensure full and verifiable traceability to production geolocation.'

Monitoring is a crucial component of no-deforestation and conversion policies and becomes more challenging the further removed a company is from the place of production for a given commodity. The Agri-Food DCF Sourcing Criteria require the entities that are

[34] OECD-FAO, (2023) OECD-FAO Business Handbook on Deforestation and Due Diligence in Agricultural Supply Chains
[35] Fripp, et al, (2023), Traceability and transparency in supply chains for agricultural and forest commodities (fao.org)
[36] Article 11, EUDR Regulation - 2023/1115 - EN - EUR-Lex (europa.eu)

sourcing agri-food commodities from high-risk regions to have a monitoring system in place that can ensure the full and verifiable traceability of the sourced commodity to production unit.

AFi (principle 11) calls for monitoring by all entities engaged in trading (producers, primary processors, etc.,) and for sharing monitoring information across the supply chain so that all entities can either monitor or rely on the systems implemented by other trading partners. It proposes three primary approaches for monitoring:[37]

1. **Monitoring of production units and primary processing sites** (for companies that own/control/manage the production unit or primary processing sites),
2. **Monitoring of sourcing areas and jurisdictions** (This area-level approach is for the upstream companies that don't maintain long-term relationship with their suppliers, downstream companies lacking traceability information and companies that are sourcing from low-risk jurisdiction),
3. **Monitoring of suppliers' management and control systems** (for downstream companies that do not have traceability information to monitor the outcome directly).

Agri-Food DCF Sourcing Criteria ask for full traceability and monitoring for all agri-food commodities originating from high-risk regions, therefore entities can adopt the first approach for monitoring (mentioned above). For the entities that lack capacity or required systems to carry out monitoring, buyers further down the supply chain can conduct or support the monitoring process. However, the applicant entity needs to produce the evidence of the existence of such a system.

Remote sensing and satellite-based products form an essential and effective component of the monitoring systems for land-use change. These tools have different requirements, coverage, analytical capabilities, and vary in their availabilities. Therefore, selection of methods and tools should be based on the commodity to be monitored, scale and type of production, and availability and suitability of the tool in the given context.[38]

The EUDR regulation does not include any clause for the traders or operators for monitoring the production plots for deforestation. Conversely, building on the existing monitoring tools, the EU observatory will be established for monitoring the change in the world's forest cover and related drivers. It will support the implementation of the EUDR by developing an early warning system to assist and provide continuous monitoring and prior information of possible deforestation or forest degradation.[39] This platform is yet to be operational and currently lacks clarity around the model that will be used.

Building on the existing guidelines, AFi is followed as a broader guidance to bring harmonization and symmetry in global efforts and to avoid complication in setting up different requirements for the same system.

4.6 Reporting

The Criteria state that ***'Entities are required to publicly disclose on an annual basis:***

- ***Annual verification reports under these Criteria.***
- ***Tier 1 supplier lists for each agri-food commodity originating from high-risk origin.'***

AFi's Core Principles and its Operational Guidance on Reporting, Disclosure, and Claims suggests companies publicly report progress and outcomes related to the implementation of their commitments at least annually. They are also expected to publicly disclose information on their suppliers, supply origins, and the nature and status of any associated non-compliance and grievances. The AFi also encourages Business to Business (B2B) disclosure for companies to share information with their buyers and financiers regarding their commitments, progress towards them, and performance of the company's operations relative to the buyer's or financier's commitments.

[37] *OG_Monitoring_Verification-2020-5.pdf (accountability-framework.org)
[38] There are various tools and platforms including Global Forest Watch Pro, MapBiomas, Prodes, Stalligence, EarthDaily Agro, Carbonspace, Ucropit, BanQu etc.
[39] Paragraph 31, Regulation - 2023/1115 - EN - EUR-Lex (europa.eu)

Under the EUDR, an information system will be developed that contains the due diligence statements submitted by operators. In line with the EU's Open Data Policy, the Commission plans to provide access to the wider public of the complete anonymised datasets of the information system in an open format.

The operators are also required to publicly report the following information on an annual basis:

- Information of product, quantity, and country of production;
- Conclusion of risk assessment, measures undertaken for risk mitigation, and a description of the information and evidence obtained and used to assess the risk;
- Where applicable, a description of the process of consultation of indigenous peoples, local communities, and other customary tenure rights holders or of the civil society organisations that are present in the area of production of the relevant commodities and products.

Similar information can be covered in the annual verification report.

4.7 Verification

The Criteria state: '*The verification of entities is carried out annually by Climate Bonds approved verifiers.*

Verifiers will carry out verification of traceability data through randomly selected sampling:

A. *For agri-food commodities from high-risk origin:*

Verification of geolocation of production units free of deforestation and no conversion since 31 December 2020, of at least 10% of the procured volume and at least 10% of the total number of suppliers of the combined high-risk agri-food commodities (including for any processed products).

For entities that have livestock products in their supply chains, it is a requirement that in addition to the geolocation of where the animals were raised, the agri-food commodities used in the feed are also geolocation-verified to originate from deforestation and conversion free land plots. At least 25% of the samples selected for such companies are required to consist of livestock supply chains (in both sampled procured volume and total number of suppliers).

B. *For agri-food commodities from low-risk origin:*

Verification of low-risk country of origin of at least 10% of the procured volume and at least 10% of the total number of suppliers of the combined non-high-risk agri-food commodities (including for any processed products).

For entities that have livestock products in their supply chains, it is a requirement that the animals were raised in low-risk countries and that agri-food commodities used in the feed were grown in low-risk countries. Any feed that includes agri-food commodities from high-risk countries has to be verified at geolocation of land plots. At least 25% of the samples selected for such companies are required to consist of livestock supply chains.

To enable the verification process, certified entities are required to give Climate Bonds verifiers access to:

i. Supplier lists and associated purchasing volumes per commodity per country of origin.

ii. Due diligence statements from their suppliers consistent with the requirements under the EUDR.

iii. Geolocation data for all agri-food commodities and their derivatives as per the requirements set under these Criteria.

iv. Calculations and source data for companies claiming that individual agri-food commodities fall below the 1% commodity procurement spend.

v. If a third-party certification proxy is used, access to all communication with the certification body, including but not limited to chain of custody certificates as well as evidence that all eligibility Criteria are met.

vi. Any deforestation monitoring reports carried out by the entity or provided to the entity by a supplier including any deforestation alerts and actions taken.

VII. Evidence of programmes that contains producer-level human rights and IPLC safeguards.'

Verification of data reported by applicants (i.e., entities) to approved verifiers are needed to ensure compliance and internal quality control and quality assurance of reported data. Verification of required disclosed data will be carried out in a sample of the given certified volumes: 10% of sourced commodity volumes and 10% of suppliers was chosen as a balance between feasibility and assurance, to ensure confidence in monitoring, reporting, and verification.

The EUDR approach is different, in that the EU regulation includes a percentage sampling (from 1% and 9% depending on risk assessment) of volumes and suppliers entering the EU, while for the Criteria, the verification needs to happen at the level of the entity applying for Certification.

4.8 Using existing third-party certification

The Criteria state: '***Existing schemes certifying no deforestation or conversion of natural ecosystems since 31 December 2020 or earlier can be used as 'proxy' to support compliance, in relation to due diligence and risk assessments with the Agri-Food DCF Sourcing Criteria only for fully segregated or identity persevered supply chains and if they meet all other eligibility Criteria in this document, including traceability requirements to the level set here***.'

As discussed, there are several certification systems with cut-off dates of 2020 or earlier that may be used as a proxy for investors to determine whether a company complies with the Climate Bonds Agri-Food DCF Sourcing Criteria.

While most certification schemes include deforestation of natural forests or HCS forests in their excluded activities, not all of them explicitly exclude the conversion of natural ecosystems in their Criteria. Furthermore, most certification systems are production focused and do not certify the supply chains. In addition, some certification systems not only certify identify-preserved and segregated supply chains but also those that are mass balanced or mixed source. There are also mechanisms such as book and claim, and credits, which also have no ability to trace products back to the plots of land where production took place.

The current Criteria do not allow the mass-balance approach as it prevents commodities being reliably traced back to source, only identity-preserved or segregated certified products from schemes that exclude deforestation, forest degradation, and the conversion of natural ecosystems and have cut off dates of 31 December 2020 could qualify under these Criteria, if they also meet all other requirements.

4.9 Human rights requirements

The Criteria state: '*Only Agri-food Entities with existing programmes that contain producer-level human rights and IPLC safeguards can qualify for certification.*

At a minimum this will need to include the recognition of several principles and conventions including:

- *Free, Prior and Informed Consent (FPIC)*
- *International Bill of Human Rights*
- *ILO Declaration on the Fundamental Principles and Rights at Work and Social Policy*
- *UN Guiding Principles on Business and Human Rights and the OECD Guidelines for Multinational Enterprises*
- *ILO Declaration on the Fundamental Principles and Rights at Work and the ILO Tripartite*
- *Declaration of Principles concerning Multinational Enterprises and Social Policy.*

In the context of suppliers operating with vulnerable groups[40] and smallholders, these provisions shall include investments and capacity building. It is recommended that investments in support and capacity building aim at re-investing 2% of profits (as currently done by some entities in the sector).'

Human rights are an integral part of No-deforestation, No-peat and No-exploitation (NDPE) policies and violations of human rights and the rights of indigenous peoples, local communities, and workers are frequently uncovered in agricultural supply chains. Some types of violations are more frequent in certain supply chains than others. For instance, coffee and cocoa production is often linked to child labour issues[41,42] while violations of the principle of free, prior and informed consent can often be found in palm oil supply chains.[43]

The EUDR does not address human rights directly and neither does SBTi FLAG. The AFi's Core Principles 2 describes the company obligations to ensure the respect, and protection of human rights, the rights of indigenous peoples and local communities including free, prior and informed consent, and worker's rights, and has also developed operational guidance on respecting the rights of indigenous peoples and local communities.

The Climate Bonds Criteria include the key international conventions, agreements, concepts, and guidelines that should be recognised by any entity applying for Certification.

[40] According to IFC GN48 https://www.ifc.org/content/dam/ifc/doc/2021/20210614-ifc-ps-guidance-note-1-en.pdf
[41] Opinion: Child labor is on the rise; here's how to prevent it – Stop Child Labor – The Child Labor Coalition
[42] Coffee and cocoa stored in EU warehouses at risk of destruction under new rules (ft.com)
[43] FPP-Palm-Oil-Report-FINAL52.pdf (globalcanopy.org)

Definitions

Agri-food Entity

Entities with at least 50% of revenue generated from agri-food supply chains.

Agri-food Commodities

Agricultural commodities, including those consumed directly (such as beef or cocoa), those used in processing or embedded in meat, farmed seafood, and dairy products (such as oil palm and soy in livestock feed), and those used in the packaging of food products (such as pulp and paper).

Buyer[44]

A company that purchases raw materials, processed materials, or finished products from a supplier.

- Buyers can include processors (e.g., mills or slaughterhouses), traders, manufacturers, and retailers. Traders buy raw or processed materials from farms or processing mills, while retailers buy consumer products from manufacturers.
- A given company can be both a supplier and a buyer.

Certified Entity[45]

The entity which is certified under the Climate Bonds Standard and Agri-Food Deforestation and Conversion Free Sourcing Criteria.

Climate Bonds Certification

Certification is awarded by Climate Bonds if all the requirements under the Climate Bonds Standard that apply at the time of Certification are met. Certification allows the applicant to use the Climate Bond Certification Mark. Climate Bond Certification is provided once the independent CBSB is satisfied that the Entity conforms with the CBS.

Climate Bonds Initiative (Climate Bonds)

An investor focused not-for-profit UK based organisation, promoting large-scale investments that will deliver a global low-carbon and climate-resilient economy. Climate Bonds seeks to develop mechanisms to better align the interests of investors, industry, and governments to catalyse investments at a speed and scale sufficient to avoid dangerous climate change.

Climate Bonds Standard (CBS)

A robust framework based on international best practice in green finance which defines the processes to be followed and Sector Criteria that must be met to achieve certification under the Climate Bonds Standard. The current version of the Climate Bonds Standard is published on the Climate Bonds website.

[44] AFi, 2020 *Accountability Framework: Terms and Definitions*
[45] Climate Bonds Standards v.4, 2023

Climate Bonds Standard Board (CBSB)

An advisory committee set up to review the Standard, Sector Criteria, applications for certification under the Standard and applications by prospective verifiers and to make recommendations to the Trustees and the executive management of the Climate Bonds Initiative.

Conversion[44]

Note: The Criteria follow the definition from AFi (2020), with regards to requirements and verification for ecosystem conversion different from deforestation (i.e. deforestation-free requirements follow EUDR definitions).

Change of a natural ecosystem to another land use or profound change in a natural ecosystem's species composition, structure, or function.

- Deforestation is one form of conversion (*in these Criteria, following the EUDR definitions*).
- Conversion includes severe degradation or the introduction of management practices that result in a substantial and sustained change in the ecosystem's former species composition, structure, or function.
- Change to natural ecosystems that meets this definition is considered to be conversion regardless of whether or not it is legal.

Cut-off date[44]

The date after which deforestation or conversion renders a given area or production unit non-compliant with no-deforestation or no-conversion commitments, respectively.

Deforestation[46]

The conversion of forest to agricultural use, whether human-induced or not.

Note: For the purpose of these Criteria, this includes forest degradation for wood products (ie. pulp and paper), as in EUDR. See definition of 'Forest Degradation'.

Deforestation Free

The relevant products contain, have been fed with or have been made using, relevant commodities that were produced on land that has not been subject to deforestation or the conversion of other natural ecosystems after 31 December 2020.

Due diligence[44]

A risk management process implemented by a company to identify, prevent, mitigate, and account for how it addresses environmental and social risks and impacts in its operations, supply chains, and investments.

[46] EUDR, 2023: *European Union Deforestation Regulation*

Note: This definition of due diligence pertains to environmental and social issues in commodity supply chains, consistent with the scope of the Accountability Framework. Other forms of business due diligence — such as financial and legal due diligence — are not included in this definition.

Forest[46]

Land spanning more than 0.5 hectares with trees higher than 5 metres and a canopy cover of more than 10%, or trees able to reach those thresholds in situ, excluding land that is predominantly under agricultural or urban land use.

Forest Degradation[46]

Structural changes to forest cover, taking the form of the conversion of: (a) primary forests or naturally regenerating forests[47] [*including secondary forests, coppice, and those with non-native species*]* into plantation forests or into other wooded land; or (b) primary forests [*including native or natural forests*]* into planted forests.[48]

*This definition applies to degradation in wood production (ie. pulp and paper). For other non-forest ecosystems, the AFi definition of Natural Ecosystem Degradation applies. *Clarifications introduced for the Agri-Food DCF Sourcing Criteria verification procedures. Verifiers are required to annually check the HCV status and area under management in plantation, planted, native, natural forest cover and* other natural ecosystems, *including peatland subsidence, erosion and compaction.*

Geolocation[46]

The geographical location of a plot of land described by means of latitude and longitude coordinates corresponding to at least one latitude and one longitude point and using at least six decimal digits; for plots of land of more than four hectares used for the production of the relevant commodities other than cattle[49], this shall be provided using polygons with sufficient latitude and longitude points to describe the perimeter of each plot of land.

Industry Working Group (IWG)

A group of key organisations that are potential applicants, verifiers, investors and other stakeholders convened by Climate Bonds. The IWG provides feedback on the draft Sector Criteria developed by the TWG before they are released for public consultation.

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[47] As per EUDR (2023), Article 2: "*'naturally regenerating forest' means forest predominantly composed of trees established through natural regeneration; it includes any of the following: a) forests for which it is not possible to distinguish whether planted or naturally regenerated; b) forests with a mix of naturally regenerated native tree species and planted or seeded trees, and where the naturally regenerated trees are expected to constitute the major part of the growing stock at stand maturity; c) coppice from trees originally established through natural regeneration; d) naturally regenerated trees of introduced species.*"

[48] As defined in EUDR, 2023, Article 2: *'planted forest' means forest predominantly composed of trees established through planting and/or deliberate seeding, provided that the planted or seeded trees are expected to constitute more than 50 % of the growing stock at maturity; it includes coppice from trees that were originally planted or seeded; 'plantation forest' means a planted forest that is intensively managed and meets, at planting and stand maturity, all the following criteria: one or two species, even age class, and regular spacing; it includes short rotation plantations for wood, fibre and energy, and excludes forests planted for protection or ecosystem restoration, as well as forests established through planting or seeding, which at stand maturity resemble or will resemble naturally regenerating forests.*

[49] *Establishments where cattle are kept can be described with a single point of geolocation coordinate. Operators (or traders that are not SMEs) who place on the market cattle products must geolocate all establishments associated with raising the cattle, encompassing the birthplace, farms where they were fed, grazing lands, and slaughterhouses.* [Frequently Asked Questions - Deforestation Regulation - European Commission (europa.eu)]

Natural ecosystem[44]

An ecosystem that substantially resembles — in terms of species composition, structure, and ecological function — one that is or would be found in a given area in the absence of major human impacts. This includes human-managed ecosystems where much of the natural species' composition, structure, and ecological function are present.

For these Criteria, this definition of natural ecosystems includes:

- Largely 'pristine' natural ecosystems that have not been subject to major human impacts in recent history.
- Regenerated natural ecosystems that were subject to major impacts in the past (for instance by agriculture, livestock raising, tree plantations, or intensive logging) but where the main causes of impact have ceased or greatly diminished and the ecosystem has attained species composition, structure, and ecological function similar to prior or other contemporary natural ecosystems
- Managed natural ecosystems (including many ecosystems that could be referred to as 'semi-natural') where much of the ecosystem's composition, structure, and ecological function are present.
- Native grasslands or rangelands that are, or have historically been, grazed by livestock.
- Natural ecosystems that have been partially degraded by anthropogenic or natural causes (e.g., harvesting, fire, climate change, invasive species, or others) but where the land has not been converted to another use and where much of the ecosystem's composition, structure, and ecological function remain present or are expected to regenerate naturally or by management for ecological restoration.

Natural Ecosystem Degradation[44]

Changes within a natural ecosystem that significantly and negatively affect its species composition, structure, and/or function and reduce the ecosystem's capacity to supply products, support biodiversity, and/or deliver ecosystem services.

Degradation may be considered conversion if it:

- is large-scale and progressive or enduring.
- alters ecosystem composition, structure, and function to the extent that regeneration to a previous state is unlikely; or
- leads to a change in land use (e.g., to agriculture or other use that is not a natural forest or other natural ecosystem).

Note: This definition applies to all natural ecosystems, except for forest degradation in pulp and paper production (which follows EUDR).

Parent Company/Group

A company is considered a parent company of another entity (a subsidiary) if it exercises control over the subsidiary. The terms 'control' and 'subsidiary' have the meaning assigned to them under International Financial Reporting Standard 10 (IFRS 10). A Parent

Group consists of the Parent Company and all the companies that the Parent Company exercises control over. Where the Applicant does not belong to a group of companies, the term Parent Company in this Standard applies to the Applicant.

Risk assessment[44]

A systematic process of evaluating potential risk in a company's current or future operations, supply chains, and investments.

- In this context, this term refers to the assessment of risk of non-compliance with the company commitments or applicable law related to Climate Bonds Standard scope, as well as adverse impacts to internationally recognised human rights. This is different from the use of the term in a general business context, where it refers to the assessment of financial risks and the drivers of such risk (e.g., legal risk, credit risk, reputation risk, and others). The risk of adverse social and environmental impacts, including non-compliance with company commitments, can be an important element of broader business risk.

Supplier[44]

A producer or company that supplies raw materials, processed materials, or finished products to a buyer.

- Suppliers can include producers, processors, traders, and manufacturers. For instance, farms or processing mills supply raw or processed materials to traders, while manufacturers supply consumer products to retailers.
- A given company can be both a supplier and a buyer.
- A supplier may either be a direct (tier 1) supplier (selling directly to the buyer) or an indirect (tier 2 or beyond) supplier (selling to an intermediary that is one or more steps removed from the buyer).

Technical Working Group (TWG)

A group of key experts from academia, international agencies, industry, and NGOs convened by Climate Bonds. The TWG develops the Sector Criteria - detailed technical Criteria for the eligibility of projects and assets as well as guidance on the tracking of eligibility status during the term of the bond. Their draft recommendations are refined through engagement with finance and other industry experts in convened Industry Working Groups and through public consultation. Final approval of Sector Criteria is given by the CBSB.

Tier 1 Supplier

Immediate upstream business partner from which products or commodities are purchased directly.

Verification

Assessment and validation of compliance, performance, and/or actions relative to a stated commitment, standard, or target. Verification processes typically utilise monitoring data but may also include other sources of information and analysis. The verification process is overseen by Climate Bonds. And the resulting report is used in awarding the Climate Bonds Certification mark.

List of acronyms

AFi	Accountability Framework Initiative
AFOLU	Agriculture, Forestry and Other Land Uses
B2B	Business to Business
CBSB	Climate Bonds Standard Board
CGF	Consumer Good Forum
CO_2	Carbon dioxide
DCF	Deforestation and Conversion free
EU	European Union
EUDR	European Union Deforestation Free Regulation
FAO	Food and Agriculture Organization
FPIC	Free, Prior and Informed Consent
GDP	Gross Domestic Product
GFW	Global Forest Watch
GHG	Green House Gas
HCS	High Carbon Stock
HCV	High Conservation Value
ILO	International Labour Organization
IPCC	Intergovernmental Panel on Climate Change
IPLC	Indigenous peoples and local communities
IWG	Industry Working Group
NDPE	No-deforestation, No-peat and No-exploitation
OECD	Organisation for Economic Cooperation and Development
SBTi	Science-Based Targets initiative
SBTi FLAG	SBTi Forest, Land and Agriculture
SLD	Sustainability-Linked Debt
SRCCL	Special Report on Climate Change and Land
TWG	Technical Working Group
UN	United Nations
UoP	Use of Proceeds
WRI	World Resources Institute

Appendix 1: High-risk countries

Methodology

The methodology used to identify high- and low-risk countries/jurisdictions relies on Global Forest Watch. For each jurisdiction, the Deforestation risk is assessed based on the ratio of total natural forest land lost for the last five years (2018–2022) relative to the total natural forest cover in 2000.
If this ratio is higher than 1%, then the risk is considered to be high. The risk is low for values below 1%.

It is limited by several factors, namely:

1. **Data availability:** Data for natural forest and natural forest loss on the Global Forest Watch database is currently available for only 58 Countries. Other sources of information will need to be used by the verifier for other countries of origin.
2. **All commodities are treated equally:** The current approach treats agri-food commodities equally despite possible differences in their contribution to deforestation and conversion. This is due to a lack of data and models regarding the actual replacement of forest cover with specific commodities.[50]
3. **Natural forest loss as proxy:** Due to lack of data on ecosystem conversion, loss of natural forest is considered as a proxy for both deforestation and ecosystem conversion.

Data used:

To indicate jurisdictions of high-risk, Global Forest Watch (GWF) data is used for jurisdictions where the GFW platform provides data for both natural forest cover and loss of natural forest (not including plantations). This data is predominantly available for tropical countries. The data used in this calculation is for canopy density of 30% and 10%. Currently, the data is available only for 58 jurisdictions.

Formula:

$$Total\ natural\ forest\ loss\ between\ 2018\ to\ 2022 Natural\ forest\ cover\ in\ 2000 \times 100$$

If, > 1% = High-risk, if < 1% = Low -risk

Table Appendix 1: List of countries/jurisdictions and their deforestation risk classification based on 10% and 30% canopy cover based on data from Global Forest Watch *(Source:* Global Deforestation Rates & Statistics by Country | GFW (globalforestwatch.org)*).*

Based on data for	Categories	Number of Jurisdictions	Jurisdictions
10% Canopy density	**High-Risk**	41	Australia, Åland, Argentina, Bangladesh, Belize, Brazil, Cambodia, Chile, China, Colombia, Côte d'Ivoire, Democratic Republic of the Congo, Ecuador, Ghana, Guatemala, Honduras, India, Indonesia, Laos, Liberia, Malawi, Malaysia, Mexico, Mozambique, Myanmar, Nicaragua, Nigeria, Panama, Paraguay, Peru, Philippines, Solomon Islands, South Africa, South Korea, Sri Lanka, Swaziland, Syria, Tanzania, Thailand, Turkey and Vietnam
	Low-Risk	17	Akrotiri and Dhekelia, Azerbaijan, Bhutan, Cameroon, Cyprus, Gabon, Georgia, Japan, Kenya, Kosovo, Nepal, New Zealand, Papua New Guinea, Rwanda, United states, Uruguay and Venezuela

[50] Risk Benchmarking for the EU Deforestation Regulation: Key Principles and Recommendations - JA Hub (jaresourcehub.org) and Deforestation risk embodied in production and consumption of agricultural and forestry commodities 2005-2017 (1.0) [dataset]. (Pendrill et al., 2020)

Appendix 2: TWG and IWG members

Climate Bonds Technical Lead:			
Reyes Tirado	Agri-Food Lead Climate Bonds Initiative		
Climate Bonds Coordinator:		**Supply Chain Expert Consultant:**	
Priyanka Agarwal	Agri-Food Analyst Climate Bonds Initiative	**Mario Rautner**	
TWG Members The TWG develops the Criteria by consensus. Each TWG member contributes to the Criteria development in their personal capacity and as a content expert in the field. This contribution does not imply endorsement either from Climate Bonds Initiative to the organisation the member is currently employed with, nor of the organisation to this work.			
Mark Day	South Pole	**Alan Kroeger**	Satelligence
Lifeng Fang	RSPO	**Grant Rosoman**	Greenpeace International
Xiaotian Fu	WRI China	**Leah Samberg and Niall Robb**	Rainforest Alliance (Accountability Framework Initiative)
Aida Greenbury	4F Foundation	**Yu Xin**	WWF China
Frank Hicks	Nature for Justice	**Chunquan Zhu**	World Economic Forum China
Lisandro Inakake	Imaflora	**Mario Zenteno**	WWF Bolivia
IWG Members Members of the following organizations have participated in the Criteria process, providing critical and useability focused feedback on the Criteria, but this does not automatically reflect agreement of the Criteria by all members.			
Caroline Busse	Nadar	**Flavia Pacheco**	Earthdaily
Julia Bolton	IFC	**Steven Ripley**	SIM (Sustainable Investment Management)
Ingrid C Graziano	Cargill	**Hernan Rodriguez Arias**	Ucropit
Martina Favale	Unilever	**Simi Thambi**	FAIRR
Jingjuan Fan	Muyuan Foods	**Ingrid van Beuzekom**	BanQu
Emma Fourdan	CarbonSpace Tech	**Matthew Watkins**	Lombard Odier
Monica Pedo	John Deere		

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