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ANALYSIS

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DEFORESTATION-FREE SUPPLY CHAINS

Concepts and implications

Disclaimer

This technical report compiled by WWF Germany provides an overview of the different deforestation concepts and approaches currently being discussed in the global debate on deforestation-free supply chains and used in national, international and corporate commitments. The report also outlines the challenges involved in implementing these concepts. For a better understanding of the topic, a brief summary of the global context and political background on deforestation-free supply chains is also included. The report further presents several cut-off dates used by certification schemes, governments and companies and an overview of a number of zero deforestation commitments. The report concludes with a discussion of the concepts and how the WWF envisages their implementation.

An overview about different commitments and an analysis of monitoring and verification tools are provided as annexes.

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CONTENTS

Introduction.....	4
1. Global context / International momentum.....	5
2. Definitions and concepts of zero deforestation.....	9
3. Baseline dates / cut-off dates	20
4. Commitments	27
5. Conclusion.....	30
6. List of abbreviations	34
7. Literature.....	35
Annex 1: Overview Commitments.....	41
Annex 2: Commodity Tracking Initiatives Analysis.....	53
Annex 3: Forest Monitoring Tools.....	65

INTRODUCTION

Deforestation is one of the major ongoing impacts on the ecosystem of the 20th and 21st century. Over the last 50 years, more than 50% of the world's tropical rainforest has been lost.¹ The loss of rainforest brings with it many environmental and social problems. The influence of forests on the future of our global climate is enormous. Tropical forest loss is responsible for 16–19% of total annual global greenhouse gas emissions, while forest growth offsets about 8–11% of total anthropogenic emissions². Furthermore forests are not only important carbon sinks but also provide other major ecosystem services including high biodiversity, water reservoir, climate regulation, pollination, seed dispersal, natural pest control, cultural values and tourism.³ The loss of forest results in the loss of these important services to the environment and to society. It also greatly reduces biodiversity and is detrimental to forest-dependent communities.⁴

Half of all tropical deforestation since 2000 has been the result of forest conversion for commercial agriculture in contravention either of the land rights of forest dwellers or of national environmental laws.⁵ The FAO estimates that around 7.6 million hectares of the world's forests are cut down and converted to other land uses every year.⁶ Today, 80% of global deforestation is caused by agriculture⁷ to produce agricultural commodities such as palm oil, soy, beef, timber, pulp, paper and rubber. These “forest risk commodities”, which account for over 70% of all deforestation in tropical forests⁸, play an increasing role in the supply chains of numerous companies and form the basis of many globally traded products.⁹ By importing these commodities, the EU is part of this problem.

¹ Global Canopy Programme (2015): Achieving Zero (Net) Deforestation: What it means and how to get there, p. 5

² WWF (2015): Zero Net Deforestation: Status Report

³ Nasi/Wunder/Campos (2002): “Forest Ecosystem Services: Can they pay our way out of deforestation?”, p. 6

⁴ Global Canopy Programme (2013): The Little Book of Big Deforestation Drivers, p. 6

⁵ Forest Trends (2014): Consumer Goods and Deforestation

⁶ FAO (2015): Global Forest Resources Assessment 2015

⁷ Definitions and quantification of agricultural drivers remain contested, in particular in relation to subsistence agriculture. A significant number of scientific studies show that rotational systems of farming in forests are sustainable, enable forest regeneration and can enhance the diversity and richness of ecosystems (see for example Cairns, M F (Ed)(2015) *Shifting Cultivation and Environmental Change: indigenous peoples, agriculture and environmental change*, Routledge London; Balee, W (1989), “The Culture of Amazonian Forests” pp. 1-21 in D.A. Posey and W. Balee, (Eds) (1989), *Resource Management in Amazonia: indigenous and folk strategies* (Advances in Economic Botany Volume 7), New York Botanical Garden, New York; Leach, M and Mearns, R (1996), “Environmental change and policy: challenging received wisdom in Africa”, pp.1-33 in Leach, M and Mearns, R (Eds)(1996), *The lie of the land: challenging received wisdom on the African environment*, James Curry, Oxford; AIPP and IWGIA (2012), *Drivers of Deforestation? Facts to be considered regarding the impact of shifting cultivation in Asia: Submission to the SBSTA on Drivers of Deforestation by Asia Indigenous Peoples Pact*

⁸ Kissinger/Herold/De Sy (2012): *Drivers of Deforestation and Forest Degradation*

⁹ CDP (2016): CDP's 2016 forest information request, p. 1

The global environmental impact of the forestry sector remains significant, especially in terms of forest degradation, which is a precursor of deforestation.

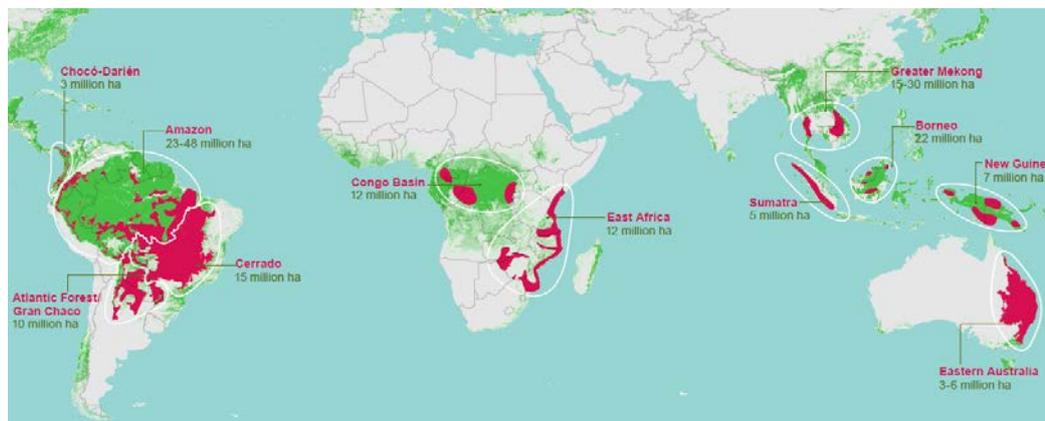


Fig. 1: Map of deforestation fronts¹⁰

Under the pressure of civil society, companies, consumers and governments are increasingly recognizing the problem of deforestation and trying to identify solutions to tackle this urgent issue. In some markets, consumer awareness of deforestation is rising and companies are responding by providing more ecologically friendly products. Examples of corporate commitments are The Consumer Goods Forum, which is a global industry network that pledges to help achieve zero net deforestation by 2020, and the New York Declaration on Forests,¹¹ which is a major voluntary and non-legally binding political declaration, signed by 37 governments in 2014 calling for the end of deforestation by 2030. In addition to these collective initiatives, companies are also making individual pledges to eliminate deforestation from their supply chains. However, the impact these commitments will actually have on halting deforestation is questionable and difficult to measure. Furthermore, the companies have used terms in their commitments like “no deforestation”, “deforestation-free” and “zero deforestation” without defined criteria or verification mechanisms. The concept of deforestation-free supply chains is not easy to define, as there is no clear consensus either on what qualifies as deforestation-free production, or if this should be applied on a landscape, company or management unit level.

1. GLOBAL CONTEXT / INTERNATIONAL MOMENTUM

Political background

This section provides an overview of the political background to both summarize and better understand the kind of public initiatives seen so far regarding deforestation-free supply chains.

The halt of deforestation has been addressed with a number of multilateral industry initiatives, international conventions and national legislation. This technical report only presents those which are the most recent and most relevant to the ongoing debate.

¹⁰ WWF (2015): Living Forest Report: Chapter 5 – Saving forests at risk

¹¹ UN (2014): New York Declaration on Forests

At the **2015 UN Climate Change Conference in Paris (COP 21)** the role of the world's forests in combating climate change was officially recognized and addressed in the final draft of the agreement, Article 5 sections 1 and 2:

- “Parties should take action to conserve and enhance, as appropriate, sinks and reservoirs of greenhouse gases [...] including forests.”
- “Parties are encouraged to take action to implement and support, including through results-based payments [...] [and] policy approaches and positive incentives for activities relating to reducing emissions from deforestation and forest degradation [REDD+], and the role of conservation, sustainable management of forests and the enhancement of forest carbon sinks in developing countries.”¹²

The UN announced new **Sustainable Development Goals** in 2015. SDG 8, 12, 13, 17 and in particular SDG 15 are relevant regarding deforestation. In SDG 15, member states pledge to “Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss”.¹³

In December 2015, the **Amsterdam Declarations** were signed by the UK, France, Germany, Denmark and the Netherlands with the objectives of eliminating deforestation from agricultural commodity chains and supporting a fully sustainable palm oil supply chain by 2020.¹⁴ In the meanwhile, also Norway has endorsed the Amsterdam Declarations.

The **New York Declaration on Forests** was signed by 37 governments, 53 companies, 16 groups representing indigenous communities as well as 63 non-government organisations in 2014 and calls for the end of deforestation by 2030.¹⁵ In this declaration private engagement was supported by national governments for the first time.

Germany, UK and Norway made a joint declaration at the UN Climate Summit in New York 2014, committing to “promote national commitments that encourage deforestation-free supply chains, including through public procurement policies to sustainably source commodities such as palm oil, soy, beef and timber”.¹⁶

The **United Nations Forum on Forests (UNFF)** was set up in 2000 to work on reducing the loss of forest cover worldwide through reforestation and achieving the following four Global Objectives on Forests:

1. Reverse the loss of forest cover worldwide through sustainable forest management
2. Enhance forest-based economic, social and environmental benefits
3. Increase significantly the area of sustainably managed forests
4. Reverse the decline in official development assistance for sustainable forest management and mobilize significantly increased new and additional financial resources from all sources for the implementation of SFM¹⁷ (Sustainable Forest Management).

¹² UN (2015): Paris Agreement

¹³ UNDP (2015): Goal 15: Life on land

¹⁴ Ministry of Foreign Affairs (2015): Amsterdam Declaration “Towards Eliminating Deforestation from Agricultural Commodity Chains with European Countries”; Ministry of Foreign Affairs (2015): The Amsterdam Declaration in Support of a Fully Sustainable Palm Oil Supply Chain by 2020

¹⁵ UN (2014): New York Declaration on Forests

¹⁶ United Nations Climate summit (2014): Joint Statement on REDD+ by Germany, Norway and the United Kingdom of Great Britain and Northern Ireland

¹⁷ UNFF (2016): Global Objectives on Forests

The **UN Convention on Biological Diversity (CBD)** has a Programme of Work on Forests, which supports governments striving to minimize forest loss and degradation, as this is a main driver for the loss of forest biodiversity.¹⁸

The **United Nations Convention to Combat Desertification (UNCCD)** was established in 1994 and has implemented a 10-year strategic plan (2008–2018), which aims to maintain tree cover through sustainable forest management to avoid desertification and land degradation.¹⁹

The **UN Framework Convention on Climate Change (UNFCCC)** recognizes that forests play a central role in climate change mitigation and adaptation. UNFCCC aims to reduce anthropogenic deforestation and degradation.²⁰ At the 13th meeting of the Conference of the Parties (COP13) in December 2007, the concept of REDD+ was adopted to reduce emissions from deforestation and forest degradation.²¹

In the EU the first united policy to stop illegal deforestation and degradation was developed and implemented in 2003 with the **EU FLEGT Action Plan**. The FLEGT Action Plan was an innovative first attempt by the EU to curb illegal logging and related trade, promote sustainable forest management, and address some of the underlying causes of deforestation and forest degradation. The central pillars of the FLEGT Action Plan are the EU Timber Regulation (EUTR), the Voluntary Partnership Agreements (VPAs) and Green Public Procurement (GPP). The evaluation of the European Union Forest Law Enforcement, Governance and Trade (FLEGT) Action Plan, the review of the EU Timber Regulation (EUTR), and the EU's commitment to halt deforestation and restore degraded forests by 2020 is currently the subject of intensive debate at EU level.²²

In 2009 the Parliament of the European Union passed a resolution to provide significant financial support to developing countries to stop gross tropical deforestation by 2020.²³

Based on the EU EUTR other countries like **Australia** have implemented their own timber acts in 2012. Australia's illegal logging laws, like those in the European Union and the United States, are designed to support the trade of legal timber into the Australian market.²⁴

The experiences from the FLEGT process should be transferred to policy processes regarding other agricultural commodities.

There are also a number of national commitments to reduce deforestation:

In May 2016 the **Norwegian parliament's Standing Committee on Energy and the Environment** addressed deforestation in a recommendation on the government's Action Plan on Nature Diversity. In its recommendation, the Committee requested that the government "impose requirements to ensure that public procurements do not contribute to deforestation of the

¹⁸ CBD (2002): Forest Biodiversity Programme of Work

¹⁹ UNCCD (2008): URL: The 10-year strategic plan and framework to enhance the implementation of the Convention

²⁰ Global Canopy Programme (2013): The Little Book of Big Deforestation Drivers, p. 32

²¹ UNFCCC (2016): Reducing emissions from deforestation and forest degradation and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries (REDD-plus)

²² Briefing Note: Tackling illegal logging, deforestation and forest degradation: an agenda for EU action; March 2016

²³ "European Parliament resolution of 23 April 2009 on addressing the challenges of deforestation and forest degradation to tackle climate change and biodiversity loss." Official Journal of the European Union. (2010/C 184 E/08)

²⁴ Forest Legality Alliance (2016): Australia Illegal Logging Prohibition Act

rainforest.²⁵ Further details on what those requirements will actually entail still need to be elaborated upon by the government following the decision of the Norwegian parliament.

With the **Brazilian Forest Code**, Brazil has pledged to cut gross deforestation in the Legal Amazon (around 59% of Brazil's territory) by 80% below average levels 1996–2005 by 2020.²⁶

In 2004, **Paraguay** implemented the **Atlantic Forest Zero Deforestation Law** that prohibits forest conversion in the eastern part of the country.²⁷ This stringent national legislation has succeeded in slowing down the massive rate of deforestation. Forest reduction has been monitored via satellite. Deforestation in the Upper Parana Atlantic Forest has decreased by more than 85%, dropping from between 88,000–170,000 hectares annually before the implementation of the law to a current level of around 16,700 hectares annually.²⁸

At the Copenhagen Climate Change Conference in 2009, **Columbia** announced its target of reaching zero net deforestation in the Colombian Amazon by 2020²⁹ and **Peru** pledged to reach zero net deforestation of primary and natural forests by 2021.³⁰

In 2010 **British Columbia** passed the **Zero Net Deforestation Act**, committing to achieve zero net deforestation by the end of 2015. However, the Zero Net Deforestation Act permits timber plantations to compensate for converted natural forests.³¹

The **Governors' Climate and Forests Task Force (GCF)** was conceived in 2008 and is a subnational collaboration between 29 states and provinces from Brazil, Indonesia, Ivory Coast, Mexico, Nigeria, Peru, Spain, and the United States. It aims to advance jurisdictional programs designed to promote low emissions rural development and reduced emissions from deforestation and land use (REDD+). Additionally it aims to link these activities with emerging greenhouse gas (GHG) compliance regimes and other pay-for-performance opportunities.³²

Private Sector Background

This section provides an overview on the private sector engagement to both summarize and better understand the kind of private sector initiatives seen so far regarding deforestation-free supply chains.

The **Consumer Goods Forum (CGF)** was established in 2009 and is a coalition of businesses and organisations with the mission of improving the consumer goods industry. In 2010, the CGF approved a resolution to achieve zero net deforestation by 2020 through responsible sourcing of the key commodities soy, palm oil, paper and pulp and beef.³³

The **Tropical Forest Alliance 2020 (TFA 2020)** was co-founded by the US government and the Consumer Goods Forum in 2012 and is a global public-private partnership in which partners

²⁵ Mongabay (2016): Norway commits to zero deforestation

²⁶ Brown, Sandra (2014): What Does Zero Deforestation Mean?, p. 806

²⁷ WWF (2011): Making a pact to tackle deforestation in Paraguay, p. 1

²⁸ WWF (2006): Deforestation rates slashed in Paraguay

²⁹ Earth Innovation Institute (n.d.): Proposals for the Amazon Vision Program

³⁰ UNFCCC (2010): Zero Net Deforestation Peru

³¹ British Columbia (2010): Zero Net Deforestation

³² Governors' Climate & Forest Task Force (2016): GCF Overview

³³ The Consumer Goods Forum (n. d.): Deforestation

take voluntary actions, individually and in combination, to reduce the tropical deforestation associated with the sourcing of commodities such as palm oil, soy, beef, and paper and pulp.³⁴

The **Banking Environment Initiative (BEI)** was initiated in 2010 to identify new ways in which banks can collectively stimulate the direction of capital towards sustainable economic growth. In April 2014, the BEI and CGF signed the **Soft Commodities Compact**, to mobilise the banking industry to transform commodity supply chains and achieve zero net deforestation by 2020.³⁵

In addition to these collective initiatives, companies are also making individual pledges to eliminate deforestation from their supply chains. More information about company commitments is given in chapter 4. An overview of individual commitments is provided in Annex 1.

Summary

All these different public statements, commitments and regulations use slightly different terms and/or a slightly different understanding of the concept of deforestation-free, making them extremely difficult to compare. Columbia's zero net deforestation commitment, for example, cannot be compared with the British Columbia Zero Net Deforestation Act, among other things, because the British Columbia Act allows for timber plantations to substitute for converted natural forests while Columbia does not. One of the problems of this much debated topic is therefore the lack of clear definitions, of universally agreed understandings of the terms used, such as "deforestation-free supply chains" and the difference between net and gross deforestation rates.

2. DEFINITIONS AND CONCEPTS OF ZERO DEFORESTATION

What are we talking about? What is the difference between zero, zero net and gross deforestation approaches?

This chapter provides an overview of the different concepts of deforestation-free and the methodologies used to measure deforestation.

2.1 Basic forest definitions

Definition of forest

Before defining "deforestation-free production" it is important to have a clear definition of the term "forest". Forests exist in various forms, differing in composition, latitude, biophysical characteristics and diversity of flora and fauna. The United Nations Environmental Programme recognizes more than 800 definitions of forests worldwide. The Food and Agriculture Organization developed common criteria for forests for the Global Forest Resources Assessment (FRA), defining a minimum area for a forest, a minimum potential tree cover and a minimum tree height:

A **forest** is "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 these thresholds in situ. It does not include land that is predominantly under agricultural or urban land use."³⁶

³⁴ Tropical Forest Alliance 2020 (2016): Objectives

³⁵ The BEI Forum (2014): About The BEI

³⁶ FAO (2010): Global Forest Resources Assessment 2010, Terms and Definitions

More or less all international deforestation concepts and European-based company statements are based on the FAO definitions of forest and deforestation. This report and all WWF statements on forests apply the FAO definition of a tree (can grow at least 5 m high).

Definition of deforestation

Deforestation is the conversion of forest to another land use or the long-term reduction of tree canopy cover below the 10 % threshold.³⁷

Reforestation is the reestablishment of forest cover on land that was covered by trees recently.

Afforestation is the “planting of new forests on lands which have not contained forests.”³⁸

WWF defines deforestation as the conversion of natural forested areas (e.g. primary or secondary natural forests) into agricultural production areas, tree plantations or other land use forms. Managed selective logging (including replanting or biological regrowth) of forests is not classified as deforestation.³⁹

2.2 Methods for measuring deforestation

Two main methods are used to measure deforestation or forest loss:

Net deforestation

The most commonly used source of data on global deforestation is the United Nations Food and Agriculture Organization’s Forest Resource Assessments (FAO-FRA) that are produced at five-year intervals. A key metric in the FAO-FRA reports is the annualized net change in forest area. This “net deforestation” is the estimated difference in forest area between two points in time, taking into account both losses from deforestation and gains from forest regeneration, afforestation and/or tree plantations, and divided by the number of years between the two time periods.⁴⁰

For most tropical countries, this metric is usually estimated from tabular data, which is provided to the FAO-FRA by the countries themselves. This data is generally based on periodic forest inventories, land-use surveys, and/or forest area maps but rarely on the interpretation of multi-year remote sensing imagery due to the lack of capabilities and resources to acquire and process this imagery. Because losses in forest area generally exceed gains due to secondary forest regeneration and tree plantings in tropical countries, the FAO-FRA “net deforestation” metric for those countries is often reported simply as “tropical deforestation”.

According to the FAO land-use definitions, a cleared forest is not classified as deforestation until that area is converted to agriculture, developed or used in another way, because natural regeneration and regrowth or reforestation could re-establish forest cover.⁴¹ The FAO net deforestation measurement is used, for example, in the national inventory for LULUCF reporting (Land Use, Land-Use Change and Forestry (LULUCF) Emission Accounting).⁴² It is problematic to apply

³⁷ FAO (2000): Definitions of forest change processes

³⁸ IPCC (n. d.): Afforestation, Reforestation, and Deforestation

³⁹ Rainforest Alliance (2015): Halting Deforestation and Achieving Sustainability, p. 2

⁴⁰ FAO (2010): Global Forest Resources Assessment 2010

⁴¹ UNEP (n.d.): Forest definition and extent

⁴² UNFCCC (2016): Land Use, Land-Use Change and Forestry (LULUCF)

this method at a management unit, because it is difficult to say when exactly the deforestation took place and if the specific unit is deforestation-free.

Concepts based on the term net deforestation therefore include:

- 1) cover bigger areas, at a landscape, regional or national level
- 2) show gains and losses of forest cover
- 3) are often not based on real-time data but a process over time
- 4) can include the classification of tree plantations as reforestation or afforestation

Gross deforestation

In contrast to net deforestation, gross deforestation is the loss in forest area over a given period of time caused by the conversion of forest to non-forested land⁴³. An estimate of gross deforestation first requires an agreed-upon definition of forest (commonly based on forest cover, i.e., the proportion of ground surface covered by tree canopies) and the production of a map from satellite imagery at the beginning of the time period (year 1) that classifies pixels into either forest or non-forested land. A second map produced for the same area at the end of the time period (year 2), using the identical methodology, provides the basis for identifying which forest pixels from year 1 changed to non-forested pixels in year 2. The sum of the area of pixels converted to non-forested land within the time period is the amount of gross deforestation. Although this methodology does not distinguish between loss of forest cover caused by intentional clearing and loss of forest due to natural disturbances, additional analysis can be used to separate the two. Tree plantations can also be identified by the imagery and mapped separately from native forests, and any harvesting of them can be factored out of the estimates of gross deforestation.

Concepts that use the term gross deforestation therefore include:

- cover smaller clearly defined areas, management units
- use satellite images / real-time data within a specified time frame
- can distinguish between technical clearing and natural disturbance
- can differentiate between natural forest and plantations

For a deforestation-free claim, this means that particular parameters, on which the claim relies, should be set (baseline date, definition of forest etc.).

Defining deforestation is even more complicated because of the different methods used.

Deforestation is monitored by the loss of tree cover, but what, for example, classifies as a tree? The University of Maryland's definitions of trees, for instance, are trees that are more than 5 metres tall, while Brazil's definition of deforestation is based on trees that are over 10 metres.

Consequently there are discrepancies about exactly where tree cover exists and where loss occurs.⁴⁴

⁴³ GOF-C-GOLD, "A sourcebook of methods and procedures for monitoring and reporting anthropogenic greenhouse gas emissions and removals associated with deforestation, gains and losses of carbon stocks in forests remaining forests, and reforestation" (GOF-C-GOLD Report version COP18-1, GOF-C-GOLD Land Cover Project Office, Wageningen University, Netherlands, 2012).

⁴⁴ World Resource Institute (2015): What Does it Really Mean When a Company Commits to "Zero Deforestation"?

2.3 Zero Deforestation concepts

Zero Deforestation (ZD)

Zero deforestation (also: *deforestation-free or no-deforestation*) is the broadest and most widely used concept. ZD is when no natural forests of ecological importance are cleared or converted into other land uses at a management unit or company level.

ZD is based on the measurement of gross deforestation and does not include any compensation or offsetting. The concept does not make any further specifications about forest type apart from ecological importance.⁴⁵ Furthermore, the concept does not specify aspects regarding implementation.⁴⁶ Normally the concepts are used on a management unit scale.

Zero Illegal Deforestation (ZID)

The least demanding and newest concept is **zero illegal deforestation** and is mainly used as a governmental concept, because ZID commitments do not go beyond meeting legal requirements. The concept means no deforestation that violates legal instruments and requirements.⁴⁷ Zero illegal deforestation is applied at the management unit level.

A prominent example of a modified ZID concept is the EU's FLEGT Action Plan, which is a regulatory initiative seeking to ensure that only legally harvested timber is imported into the EU from countries agreeing to take part in this initiative.⁴⁸ ZID concepts have also been implemented, for example, in the Brazil Soy Moratorium, the Australian Illegal Logging Prohibition Act 2012 and the Australian Illegal Logging Prohibition Regulation 2012.

In some countries (e.g. Indonesia) achieving ZID could prove difficult, among other things, because of conflicting national legislation (mostly environmental protection regulations versus economic development regulations). The implementation and enforcement of national legislation is also a huge challenge in some states. Reliably documenting the legality of forestry operations is also a difficult task.⁴⁹ A way of increasing transparency in timber trade and making sure that timber is legally sourced is the use of forest certification schemes such as FSC and PEFC (FSC and PEFC actually go beyond legal requirements, but would nonetheless be a suitable tool to verify legality). An alternative method is marking legal wood with electronic badges.

A number of traceability tools (forensic methods) have been developed to trace the source of timber and thus help prevent manipulation and verify the legality of wood⁵⁰. The WWF conducts sample tests of wood and paper products in Germany to uncover violations that are counter to the interests of consumers and the environment.⁵¹

It is not enough for companies in value chains to only commit to ZID, as it does not sufficiently cover sustainability requirements.

⁴⁵ World Resource Institute (2015): What Does it Really Mean When a Company Commits to "Zero Deforestation"?

⁴⁶ CIFOR (2015): Deforestation-free commitments, p. 5

⁴⁷ The Forest Dialog (2014): Understanding 'Deforestation-Free', p. 3

⁴⁸ European Commission (2015): FLEGT Voluntary Partnership Agreements (VPAs)

⁴⁹ CIFOR (2015): Deforestation-free commitments, p. 5

⁵⁰ Eleanor Dormontt; Markus Boner; Gerhard Breulmann; Bernd Degen; Edgard Espinoza; Shelley Gardner; Phil Guillery; Gerald Koch; Soon Leong Lee; Anto Rimbawanto; Darren Thomas; Alex Wiedenhoeft; Yafang Yin; Johannes Zahnen; Andrew Lowe. 2015. Forensic timber identification: it's time to integrate disciplines to combat illegal logging. Biological Conservation. August 2015.

⁵¹ WWF (2014): Forensische Methoden zur Verifizierung der deklarierten Holzart und Holzherkunft

Excuse: Methods to verify timber sources

Species protection tracker dogs: This is a very new method. In a pilot study by WWF, tracker dogs were trained to detect big-leaf mahogany wood. Tracker dogs could be used to make a preliminary identification of illegal wood before it is sent to a laboratory for further analysis.

Microscopic wood species identification: This established analysis method is routinely used to identify the wood type based on its anatomical structure. WWF has often used this method to uncover falsely declared timber products in the past.

Stable isotopes (origin of wood): This method was originally used to verify the declared origin of products in the food sector. Initiated by WWF, the method was tested to identify wood and is now used routinely for wood identification.

DNA analysis (species, origin of wood): DNA analysis can be used both to identify wood type and to verify the declared origin as the gene sequences of the wood reveal regional differences. This method can also be used to trace an individual tree back to the place where it was logged.

NIR - Near infrared (species, origin of wood): This method is not yet established for wood, but the WWF has initiated a project to test it with tropical woods. NIR measures the chemical composition of a product, which can then be used to identify the wood species and the origin.

Remote sensing: Illegal logging outside a concession area can be detected by the analysis of satellite images. Remote sensing can also deliver information on the degree of deforestation and the carbon storage.

Paper fibre analysis: This method can detect tropical plantation fibres in paper. In 2009 the WWF discovered tropical fibres in German children's books.⁵²

Zero Gross Deforestation (ZGD)

*The strictest and clearest term in the current debate is **zero gross deforestation**. ZGD is a complete halt in the conversion of all globally existing forestland⁵³ and does not consider either afforestation or reforestation activity elsewhere, or assisted or natural forest regeneration elsewhere as compensation for the conversion of forested area. With ZGD reforestation and afforestation would lead to an increase in total forest cover.⁵⁴ The concept of ZGD is applied at a management unit and company level.*

ZGD is currently only discussed in the context of management units or at company level and is only used by some private stakeholders. Companies that use the term ZGD commit to fully remove deforestation from their supply chains without the option of compensation or offsetting.⁵⁵ Some third-party sustainability standards like the Forest Stewardship Council apply this strict concept to a certain degree. FSC prohibits the conversion of forests to plantations or other land-uses, with a few exceptions (the converted area is a very limited portion of the forest management unit, is not

⁵² WWF (2014): Forensische Methoden zur Verifizierung der deklarierten Holzart und Holzherkunft

⁵³ The Forest Dialog (2014): Understanding 'Deforestation-Free', p. 2

⁵⁴ CIFOR (2015): Deforestation-free commitments, p. 5

⁵⁵ Global Canopy Programme (2015): Achieving Zero (Net) Deforestation: What it means and how to get there, p.8

in a High Conservation Value forest area, or will result in substantial long-term conservation benefits).⁵⁶ The concept is supported by the Rainforest Alliance which advises companies to set targets based on the definition of zero gross deforestation.⁵⁷

To verify ZGD, gross deforestation is calculated using real-time tree cover measurements. One critical aspect of the concept of ZGD is the definition of the baseline, or the cut-off date. At which point in the past or future does ZGD start? Defining the baseline is a crucial factor in implementing ZGD. If the cut-off dates are too far in the past a transparent and reliable verification of land-use can become difficult and declaring products as ZGD products can become problematic without a compensation mechanism. Equally, a baseline that is too far in the future as in some company pledges (ZGD by 2020) could set the wrong incentive to deforest now and claim their products as deforestation-free later.

Zero Net Deforestation (ZND)

*The term **zero net deforestation** is more complex and controversial than ZGD. It is not synonymous with a total prohibition on forest clearing.⁵⁸ ZND means that conversion of a natural forest somewhere can be offset by reforestation or extension of forest cover elsewhere.⁵⁹ In the end there is no change to the sum of the total forested area of a geographic unit or considered landscape.⁶⁰*

The concept can be applied at a local, regional or national landscape level. It leaves room for a change in a landscape under certain circumstances if the clearing of forests contributes to the sustainable development of the wider landscape. The concept renders its best effectiveness if legal and customary rights of indigenous peoples and rural populations to use and manage their territories and resources are taken into account and forests or other natural ecosystems that have high conservation values⁶¹ and/or critical carbon storage functions are maintained and enhanced.⁶²

Zero net deforestation is a landscape approach⁶³, but also the basis for jurisdictional deforestation-free approaches⁶⁴, or large-scale company pledges, that commit to making the company's entire managed forested lands (this can be as much as several million hectares in some countries around the world) "deforestation-free".

In the debate on the concept of ZND, there has been some controversy about which types of new forests to include. According to FAO-FRA and the definition of the government of British Columbia, timber plantations can compensate for converted natural forests.⁶⁵ Contrary to this position, WWF and other environmental stakeholders recommend that new forests should only be

⁵⁶ WWF (2016): Position Paper: Deforestation-free production and Finance, p. 3

⁵⁷ Rainforest Alliance (2015): Halting Deforestation and Achieving Sustainability, p. 2

⁵⁸ WWF (2008): Zero Net Deforestation by 2020 – A WWF briefing paper , p. 3

⁵⁹ CIFOR (2015): Deforestation-free commitments, p. 5

⁶⁰ The Forest Dialog (2014): Understanding 'Deforestation-Free', p. 2

⁶¹ HCV Resource Network (2016): The HCV Resource Network brings HCV users together

⁶² High Carbon Stock Approach (2016): High Carbon Stock Approach

⁶³ A **landscape** is an area that is large enough to support healthy ecological processes and to conserve populations of key species and goes beyond the scope of an individual farm or forest unit. A **landscape approach** aims to integrate the targets and ambitions of different stakeholders at landscape level in order to support long-term sustainability. Applying a **landscape approach** to prevent large-scale deforestation is ultimately about encouraging land-use choices that retain forests for multiple purposes and optimize the productive capacity of the surrounding landscape.

⁶⁴ A **jurisdictional deforestation-free approach** covers entire jurisdictions (e.g. districts or provinces) in a given country for action and commitment regarding deforestation-free supply chains, as opposed to concessions or pieces of private land

⁶⁵ The Forest Dialog (2014): Understanding 'Deforestation-Free', p. 3

included if they exhibit the same net quantity, quality and carbon density as the converted forests. In the opinion of WWF, a ZND approach without strong environmental and social safeguards cannot be achieved if timber plantations can serve to compensate for primary or secondary forest loss, as timber plantations are less environmentally valuable. The WWF definition of ZND thus explicitly excludes plantations in contrast to the FAO-FRA definition of ZND.⁶⁶

The local conditions and national characteristics should be considered in the application of the concept in a landscape. Furthermore the basic parameters (e.g. which type of forest can count for conservation, which type of ecosystem has to be maintained etc.) have to be set by all relevant actors in a dialogue process.

Zero gross deforestation versus zero net deforestation

The prevailing consensus in the scientific community is that zero gross deforestation generally has a better outcome in terms of curbing carbon emissions, conserving biodiversity and protecting hydrological services than zero net deforestation. But this outcome greatly depends on the baseline or cut-off date set for a ZGD commitment (see below). A limitation of ZGD is the relatively small scope of the concept. It can be implemented at a management unit or company level, but would be very difficult to implement on a landscape or jurisdictional level. At this level, the concept of ZND offers more flexibility in terms of development and land-use management.

On the other hand, implementing ZND based on the FAO-FRA definition could have a negative impact on the ground and is vulnerable to greenwashing. With the FAO-FRA method of measuring net deforestation, low or even negative net deforestation could be claimed even when large areas of native forests have been cut down, as long as these losses are offset by increases in young secondary forests or tree plantations even though these have inferior carbon, biodiversity, and hydrological values.

When primary forest is cleared and offset by young secondary forest, the restored area does not provide the same habitats for biodiversity and ecosystem services as the cleared forest.⁶⁷

In terms of **climate change mitigation**, it is important to clarify that zero net deforestation does not equal zero net carbon emissions. If the conversion of an area of native forest with high carbon stocks to agricultural commodity production is compensated for by the reforestation of an equivalent area with secondary forest regrowth or new plantations, the compensated area will remove smaller quantities of carbon than released by the conversion of primary forest.

After being debated for years by the international climate community, the problem of compensating natural forest loss with tree plantations was recognized by the UNFCCC. It has now prohibited the calculation of carbon accumulation in tree plantations to substitute for native forests losses in national voluntary commitments to REDD+.⁶⁸ This international REDD+ requirement therefore diverges from the FAO-FRA method of measuring net deforestation emissions for LULUCF reporting.

To avoid the loss of important ecosystems and minimize all of the negative impacts mentioned above, the development in the concept of ZND currently being discussed by the international

⁶⁶ Brown, Sandra (2014): What Does Zero Deforestation Mean?, p. 806

⁶⁷ Brown, Sandra (2014): What Does Zero Deforestation Mean?, p. 805

⁶⁸ UNFCCC (2010): The Cancun Agreements: Outcome of the work of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention

community is to prohibit the conversion of areas of high conservation value and/or critical carbon storage function. These must be maintained and enhanced.⁶⁹ Degraded secondary forest and degraded land could serve as a potential area for agricultural expansion. Forest monitoring tools like GRAS (For more information on forest monitoring tools see Annex 3) could be used to identify, which areas should be maintained (No Go-areas) and which land could be used for agricultural development (low risk).

For a possible implementation of ZND see the discussion on minimum requirements in the conclusion.

⁶⁹ CIFOR (2015): Deforestation-free commitments

Excuse: Deforestation in regions other than Southeast Asia and South America

Popular political and scientific literature on deforestation mostly focuses on the deforestation of tropical forests in Southeast Asia and South America and commodities sourced from these regions. Parts of Europe such as Norway, Sweden, Romania, Finland, Iceland and Southern Europe with ongoing forest degradation are often disregarded, as are the US, Canada, Russia and Africa. In the context of deforestation-free supply chains, all regions covered by primary or secondary forest should be included and taken into account during implementation.

Examples of deforestation in other regions:

In the US, the wood pellet manufacturing industry harvests natural forests for woody biomass. The industry claims it uses trees that are of low timber value, but this includes mature hardwood trees sourced from wetland and swamp forests and other forest types. These trees are known to have extremely high value to biological and human communities and represent some of the most important carbon reserves in the eastern United States.⁷⁰

Finland is Europe's most heavily-forested country. Forests, as defined by the FAO, cover 22 million hectares or 73.1% of the country's land area.⁷¹ Timber is Finland's number one industry and annual fellings of roundwood average 54 million m³. In its National Forest Programme 2015, Finland increased the use of wood consumption by the forest industry by additional 15 million m³ annually.⁷² In its National Forest Programme 2025 an additional increase is planned.⁷³ This is a serious threat to biodiversity and carbon storage.

Zero Net Deforestation and Forest Degradation (ZNDD)

*The concept of **Zero Net Deforestation and Forest Degradation** by 2020 is a further development of ZND and is advocated by WWF. ZNDD covers not only deforestation but also forest degradation, because the loss of forest quality even without the loss of total forest cover is also a major, though much less documented, problem.⁷⁴ Good forest management is a key strategy in reducing deforestation and degradation, because degradation is a process in which natural forests are converted into degraded land or degraded forests.⁷⁵*

As with ZND, the concept of ZNDD has to be applied at landscape level. It is more flexible than ZGD and leaves room for change in the land-use mosaic, provided there is near zero natural forest loss and no loss of forest quality or quantity. The measurement unit used for ZNDD is hectares, which means that the net change has to be calculated for a defined area of land at a global, national or regional level. ZNDD accommodates peoples' rights to clear some forest for agriculture, new roads or schools, and the value of occasionally "trading off" degraded forests to free up other land and restore important biological corridors.

⁷⁰ The Forest Dialogue (2016): Scoping Dialogue on Sustainable Woody Biomass for Energy

⁷¹ FAO (2015): Global Forest Resources Assessment 2015

⁷² Ministry of Agriculture and Forestry, Finland (2009): Finland's Forest Policy

⁷³ Ministry of Agriculture and Forestry Forests and Bioenergy Unit (2015): Finland's National Forest Strategy 2025

⁷⁴ WWF (2008): Zero Net Deforestation by 2020 – A WWF briefing paper , p. 3

⁷⁵ WWF (2008): Zero Net Deforestation by 2020 – A WWF briefing paper , p. 3

Excuse: What is forest degradation?

A brief definition of the term “forest degradation” is necessary in order to understand the concept of ZNDD and underline the differences between the various concepts of “deforestation-free”.

Forest degradation is the destruction or reduction of the quality of specific aspects of forests. The FAO defines it as: “Changes within the forest which negatively affect the structure or function of the stand or site, and thereby lower the capacity to supply products and/or services”.

The IPCC’s definition focuses on the loss of carbon: Forest degradation is “a direct human-induced loss of forest values (particularly carbon), likely to be characterized by a reduction of tree cover.”⁷⁶

Forest degradation can also be described as the process whereby natural forests are gradually transformed into degraded forests and then possibly into degraded land, or are replaced by other forms of land use. Ongoing forest degradation does not necessarily lead to the loss of forest cover but often results in long-term deforestation and the loss of biodiversity and biological productivity.⁷⁷

Forest degradation can be caused by various natural or man-made factors like forest fires, excessive grazing, changes in climate like droughts or acid rain, pests and diseases and poor forest management.⁷⁸

In the tropics, where soil nutrient levels are low, the loss of vegetation cover increases the incidence of soil erosion, which leads to a significant reduction of the soil quality and results in long-term soil degradation.⁷⁹ The erosion and soil nutrient loss often makes it difficult or impossible to reforest the area and create a second-growth forest.

The situation in Europe is different. At various times in its history, Europe has experienced intensive primary forest loss and forest degradation and has lost many primary forests. There is currently a trend towards reforestation in many EU member states leading to an increase in second-growth forest. In the course of sustainable forest management, the crown cover has the chance to recover and forest degradation can be tackled and prevented.⁸⁰

What differentiates ZNDD from other concepts of deforestation-free?

An important advancement in the concept of ZNDD compared to the other concepts is the wider consideration of environmental habitats. The concentration on forest-only safeguards in the discussion and implementation of deforestation-free concepts could lead to the loss of other natural ecosystems, which also serve as important habitats. ZNDD not only includes no conversion of natural forest but also no conversion of other High Conservation Value areas such as grasslands, wetlands and scrublands.⁸¹ High Conservation Values have to be maintained and enhanced. Furthermore greenhouse gas emissions have to be minimized, especially in areas with high, above or below-ground carbon stocks (HCS).

⁷⁶ FAO (n.d.): Forest degradation

⁷⁷ WWF (2008): Zero Net Deforestation by 2020 – A WWF briefing paper , p. 3

⁷⁸ European Commission (2008): Questions and answers on deforestation and forest degradation

⁷⁹ Kibria/Rahman/Imtiaj/Sunderland (2011): Extent and Consequences of Tropical Forest Degradation: Successive Policy Options for Bangladesh, p. 33

⁸⁰ European Commission (2008): Questions and answers on deforestation and forest degradation

⁸¹ WWF (2016): Position Paper: Deforestation-free production and Finance, p. 6

To avoid the risk of paying less attention to other dimensions of sustainability (such as water stewardship, health and safety, pollution, human rights and social welfare) due to an exclusive focus on deforestation-free production, the concept corresponds to the landscape approach which aims to integrate the targets and ambitions of different stakeholders at landscape level in order to support long-term sustainability.⁸² A landscape is an area that is large enough to support healthy ecological processes and to conserve populations of key species and goes beyond the scope of an individual farm or forest unit.⁸³ The landscape approach tends to establish a balance between the productive uses of land and the environmental and social needs in order to increase production, improve livelihoods and enhance ecosystems⁸⁴. The approach is solution-driven and asks companies and governments to critically look at the impacts of their actions on society and the environment and take responsibility for them.⁸⁵ Applying the landscape approach to prevent large-scale deforestation should result in land-use choices that conserve forests for multiple purposes and optimize sustainable productivity in the surrounding landscape in order to enhance ecological values and secure local livelihoods.⁸⁶

ZNDD is a holistic approach to landscape management that takes account of environmental, social, climate and economic considerations.

ZNDD can be achieved by 2020 by:

- Reducing gross deforestation by 75 % with a focus on primary and natural forests (reducing deforestation of primary and natural forests to near zero (>95 %))
- Socially and environmentally responsible forest restoration, afforestation and reforestation programmes
- Addressing drivers of deforestation and forest degradation, such as agricultural expansion
- Provision of adequate and predictable long-term financing⁸⁷
- Developing an integrated land use concept that provides reliable incomes from sustainable agriculture and other sustainable uses of the land.

The time limit of 2020 was chosen because it is a measurable milestone towards the goal of improving forest cover and quality.⁸⁸ It is also a feasible and realistic time-scale. Regarding that the net annual rate of forest loss has slowed from 0.18 percent in the early 1990s to 0.08 percent during the period 2010-2015,⁸⁹ net zero deforestation can be achieved by 2020. The ultimate target is to end deforestation of natural forests by 2030 (ZND 2030) in line with the New York Declaration on Forests endorsed in September 2014.

⁸² PBL Netherlands Environmental Assessment Agency (2015): The landscape approach, p. 7

⁸³ WWF (2015): Living Forest Report: Chapter 5 – Saving forests at risk, p. 17

⁸⁴ New Generation Plantation (2015): Presentation Annual Meeting 2015, p. 3

⁸⁵ New Generation Plantation (2015): Presentation Annual Meeting 2015, p. 11

⁸⁶ WWF (2015): Living Forest Report: Chapter 5 – Saving forests at risk, p. 17

⁸⁷ WWF (2010): Briefing on Zero Net Deforestation and forest Degradation (ZNDD)

⁸⁸ WWF (2008): Zero Net Deforestation by 2020 – A WWF briefing paper , p. 3

⁸⁹ FAO (2015): Global Forest Resources Assessment 2015

3. BASELINE DATES / CUT-OFF DATES

What are the implications of cut-off dates? How are cut-off dates used? What role can or should they play in the deforestation-free debate? What are the critical aspects of cut-off dates?

A number of certification schemes include criteria to ensure that no forest is cleared for agricultural production. For this purpose, standards set cut-off dates as a baseline in their requirements. A cut-off date is a date after which forest conversion is prohibited (usually the date on which the standard is established). The standards differ regarding the type of landscape they apply to and sometimes the wording is not clear. Another difference between the standards is that some only apply to certain types of forest (primary, HCV, HCS) while other standards also cover other landscapes such as wetlands or biodiversity grassland in their cut-off requirement.⁹⁰

One main controversial topic in a cut-off date framework is the definition of the baseline. The definition of the baseline land use which is needed to measure land use change is a very critical step for all standards and deforestation free concepts – this baseline and the cut-off date defined based on this not only needs to be comprehensive but also verifiable.

Most standards have a fixed and static cut-off date, only a few (such as IFOAM overall organic standard or the conventional coffee 4C standard) have relative cut-off dates that prohibit conversion in the five years prior to certification.⁹¹

Cut-off dates are not only used in sustainability standards but also in carbon credit standards like the Clean Development Mechanism Standard under UNFCCC (CDM)⁹², the verified Carbon Standard (VCS)⁹³ and the Gold Standard⁹⁴. These can have fixed cut-off dates (e.g. CDM) or relative cut-off dates (e.g. VCS projects).

- CDM AR (reforestation) projects are only eligible on sites that were deforested before 1990. This threshold is intended to exclude opportunities to gain from uncontrolled deforestation that might otherwise have been spurred after the greenhouse gas emission baselines were set at 1990 levels under the Kyoto Protocol.⁹⁵
- VCS: Activities that convert native ecosystems to generate carbon credits are not eligible under the VCS Program. Proof needs to be provided in the project description that no ARR, ALM, WRC or ACoGS project areas were cleared of native ecosystems to generate carbon credits (e.g., proof that clearing occurred due to natural disasters such as hurricanes or floods). Such proof is not required for clearing or conversion that took place more than ten years prior to the proposed project start date. The onus is on the project proponent to provide evidence of this, failing which the project is not eligible.

⁹⁰ Iseal Alliance (2016): How Sustainability Standards can contribute to Landscape Approaches and Zero Deforestation Commitments, p. 8

⁹¹ Stanley/ Roe/ Broadheads/ Parker (2015): The Potential of Voluntary Sustainability Initiatives to Reduce Emissions from Deforestation and Forest Degradation

⁹² The CDM allows emission-reduction projects in developing countries to earn certified emission reduction (CER) credits, each equivalent to one tonne of CO₂. These CERs can be traded and sold, and used by industrialized countries to meet a part of their emission reduction targets under the Kyoto Protocol.

⁹³ HCV (2016): Who we are

⁹⁴ Gold Standard (2016): Gold standard

⁹⁵ CDM (2016): What is the CDM

Pros and cons of cut-off dates

There is some discussion on the practice of setting cut-off dates to prevent deforestation. On the one hand, a static cut-off date set some time ago in the past can be a guarantee that forests have not been cleared. Furthermore, producers that have set ambitious targets early on to halt deforestation are rewarded for their pioneering or early mover efforts. On the other hand, producers who have made more recent commitments to forest conservation and areas that are taken in use after the cut-off date are thus excluded from certification. An example here is the cut-off date of 1994 set by FSC that was criticized for being too restrictive, as it excludes a large number of potential participants from certification. Setting a cut-off date may be counter-productive to spreading the standard in regions with dynamic expansion frontiers as they effectively exclude certification as a tool to drive better practices in areas in which land use has changed after the cut-off date.⁹⁶

Very early cut-off dates also make the implementation of standards difficult. A voluntary standard can only be successfully implemented with a very stringent implementation framework. There are many obstacles including data availability, roll out of the standard in different regions globally and corruption. Following three years of debate, for example, the RSPO had to accept that the cut-off date of 2005 set down in the standard had, in the past, not been implemented correctly. The RSPO is now the only standard which allows compensation of more than five hectares for land cleared after the cut-off date without a prior HCV assessment.⁹⁷

A too ambitious cut-off date can lead to only those producers producing far from the forest frontier being certified while those responsible for deforestation are not certified and do not have any incentive to change practices.⁹⁸

Cut-off date versus sourcing date

Furthermore a distinction needs to be made between dates set by standards after which primary forest conversion is prohibited and dates set by company commitments by which to achieve zero deforestation (e.g. zero net deforestation by 2020). These dates are called **sourcing dates** and mean that from that year onwards the whole supply chain for a specific commodity such as paper, soy or palm oil must come from deforestation-free sources. In principle companies committing to deforestation-free sourcing is a favourable development but a sourcing date in the future could also prove problematic, as it means that deforestation can continue until, say, 2020 without consequences and discriminates against the efforts of early movers and pioneers, and reward companies that have not previously taken on any responsibility for their land conversion. However, more than 80% of palm and timber & pulp commitments include certification and thereby ambitious cut-off dates of various sustainability standard's principles and criteria⁹⁹. Therefore, company commitments targeted at 2020 have a retrospective impact and contribute already now to forest protection.

⁹⁶ Stanley/ Roe/ Broadheads/ Parker (2015): The Potential of Voluntary Sustainability Initiatives to Reduce Emissions from Deforestation and Forest Degradation

⁹⁷ RSPO (2014): RSPO Remediation and Compensation Procedures Related to Land Clearance without Prior HCV Assessment

⁹⁸ Stanley/ Roe/ Broadheads/ Parker (2015): The Potential of Voluntary Sustainability Initiatives to Reduce Emissions from Deforestation and Forest Degradation

⁹⁹ Supply Change (2016): Supply Change: Tracking Corporate Commitments to Deforestation-free Supply Chains, 2016

A good example of the direct and indirect effects of a well-defined baseline date is the baseline set down in the European Renewable Energy Directive (28/2009). The baseline for the directive's two conversion criteria is January 2008:

- Biofuels cannot be grown in areas converted from land with previously high carbon stock such as wetlands or forests.
- Biofuels cannot be produced from raw materials obtained from land with high biodiversity such as primary forests or highly biodiverse grasslands.

The EU RED baseline date has a strong direct impact in the producing countries, as only plots for which the land use can be verified and is in accordance with the directive can be used to produce biomass for biofuels. The baseline date has also had strong indirect effects in the producing and various other countries, in which a discussion about land use, land-use management and planning has been initiated and various regional land-use zoning and planning projects have been implemented using this baseline (e.g. Brazil, Indonesia, Malaysia, Colombia ...).

WWF recommendation for a possible deforestation-free baseline date

From WWF Germany's point of view all European and German policy in the deforestation-free framework should be based on the legal requirements already in place. For the European Union this is provided by FLEGT / EUTR and the Renewable Energy Directive (RED 2009/28/EC) with a clearly defined baseline date for land-use change of January 2008. The baseline date of January 2008 is already accepted in most countries affected by deforestation and used as one component in land-use management planning (for example it is used in the GRAS-tool: GRAS assesses risks based on the sustainability criteria set up by the European Commission in the Renewable Energy Directive (RED)). For this reason, WWF recommends a baseline date of 2008. Regarding the implementation of a deforestation-free landscape approach, a baseline date should be negotiated with all relevant stakeholders in a participatory process at a landscape level.

The following table shows an overview of the different cut-off dates set by the various standards:

Standard	Cut-off Date	Explanation/Description
FSC	1994	Plantations established in areas converted from natural forest after November 1994 shall not qualify for certification. ¹⁰⁰
RSPO	2005	New plantings since November 2005 have not replaced primary forest or any area containing one or more High Conservation Values. ¹⁰¹ (Information on compensation mechanism see below)
Rainforest Alliance	2005	No high value ecosystems must have been converted since 1 November 2005 and if HVE have been converted or damaged between 1 November 1999 and 1 November 2005 then there must be a restoration plan in place. ¹⁰²
Bonsucro	2008	No HCV converted into sugarcane after 1 January 2008. No planting on high biodiversity value, HCS or peatland after 1 January 2008. ¹⁰³
RSPO RED	2008	Plantations established after January 2008 can currently not be certified under the RSPO-RED requirements. ¹⁰⁴
ISCC	2008	Production is prohibited from areas with the following designations on or after January 2008: Primary forest and other natural areas covered with native tree species; areas designated by law to serve nature protection; Grassland with high biodiversity. ¹⁰⁵
RTRS	2009	4.4.1 The following areas have not been cleared or converted from May 2009 onwards: 4.4.1.a Where RTRS maps are available: All areas included in Category 1 of the maps. 4.4.1.b Where RTRS maps are not available the following areas: a) native forests, b) riparian vegetation, c) natural wetlands, d) steep slopes,

¹⁰⁰ Forest Stewardship Council (2012): FSC's® engagement with Plantations

¹⁰¹ RSPO (2005): RSPO Principles and Criteria for Sustainable Palm Oil Production

¹⁰² Smit, McNally, Gijzenbergh (2015): Implementing Deforestation-Free Supply Chains – Certification and Beyond, p. 6

¹⁰³ Bonsucro (2014): Guidance for the Production Standard

¹⁰⁴ RSPO (2012): RSPO-RED Requirements for compliance with the EU Renewable Energy Directive requirements

¹⁰⁵ Smit/ McNally/ Gijzenbergh (2015): Implementing Deforestation-Free Supply Chains – Certification and Beyond, p. 7

		<p>e) areas designated by law to serve the purpose of native conservation and/or cultural and social protection.</p> <p>4.4.2 After 3rd June 2016, no conversion is allowed in any natural land (see Glossary), steep slopes and in areas designated by law to serve the purpose of native conservation and/or cultural and social protection.¹⁰⁶</p>
PEFC	2011	The requirement for the “conversion of forests to other types of land use, including conversion of primary forests to forest plantations” means that forest plantations established by a forest conversion after 31 December 2010 [...] do not meet the requirement and are not eligible for certification. ¹⁰⁷
POIG	2014	<p>No new plantings shall take place in HCS forest areas identified for conservation after March 2014.</p> <p>There shall be no development, including drainage, of areas of undeveloped peatland of any depth after March 2014.¹⁰⁸</p>
RSPO Next	2015	<p>There shall be no new development on peat regardless of depth or extent for any new development after Nov 2015.</p> <p>Within 2 years of initial RSPO NEXT verification a system shall be in place to assure that all FFB entering the mill is from known and identified plantation sources which are from land that has not had clearance of HCV or potential HCV areas since November 2005¹⁰⁹</p>
Government		
Brazilian Soy Moratorium	2006	No purchasing of soy grown on lands deforested after July 2006 in the Brazilian Amazon. ¹¹⁰
EU Directive Renewable Energy	2008	Biofuels [...] shall not be made from land with high biodiversity value (primary forest, protected areas, highly biodiverse grassland) in or after January 2008. ¹¹¹

¹⁰⁶ RTRS (2016): RTRS Standard Responsible Soy production Version 3.0

¹⁰⁷ Borges/Balteiro/McDill/Rodriguez (2014): The Management of Industrial Forest Plantations, p. 452;

PEFC (2010): PEFC INTERNATIONAL STANDARD

¹⁰⁸ POIG (2015): Palm Oil Innovation Group Charter Revised Indicators – July 2015

¹⁰⁹ RSPO (2015): RSPO NEXT

¹¹⁰ Gibbs and others (2015): Brazil's Soy Moratorium

¹¹¹ European Union (2009): Renewable energy directive

Company		
The Consumer Goods Forum	2009	The Forum pledges to achieve zero net deforestation by prohibiting production on land with HCV and HCS with a conversion cut-off date not later than 2009. ¹¹²
Nestlé	2013	No sourcing from areas converted from natural forests to other land use. ¹¹³
Safeway	2013 (for PO)	No deforestation has occurred after 20 December 2013 (no clearing or draining of peatland of any depth, no conversion of HCV/ HCS). ¹¹⁴

Excuse: Compensation and offsetting

In the context of zero net deforestation a distinction needs to be made between compensation for past land conversion and offsetting for future land conversion.

Compensation for past land conversion

As already mentioned, most certification schemes include criteria to set prohibitions on the conversion of natural forests. The standards vary in how they define vegetation types that may not be cleared (e.g. all forests or primary forests, only forests or including grassland and other ecosystems with high conservation value). Products from land cleared after the cut-off dates are generally excluded from certification. Producers who are not able to comply with the requirements are also excluded from certification.

RSPO Remediation and Compensation Procedures¹¹⁵

The RSPO is currently the only standard that allows compensation if land clearance occurs after the cut-off date without prior HCV¹¹⁶ assessment. It developed a compensation mechanism to give producers that have breached the cut-off date a possibility to compensate for past conversion. The procedures are structured to allow the producers some flexibility in how they meet their compensation liability.

The producer is required to disclose the non-conformant land clearings and to develop procedures to make sure that all new non-compliant land clearing is avoided in the future. As a next step, the producer can choose between directly fulfilling its whole liability to compensate for the area cleared after 2005 or conducting a land-use change analysis via remote sensing methods in order to identify the vegetation type of the cleared area and to calculate the conservation liability according to the cleared vegetation type. To identify the potential loss of HCV 4-6 (HCV 4 = Critical ecosystem services; HCV 5 = Community needs; HCV 6 = Cultural values), a dialogue needs to be conducted with the affected stakeholders and communities.

¹¹² Stanley/ Roe/ Broadheads/ Parker (2015): The Potential of Voluntary Sustainability Initiatives to Reduce Emissions from Deforestation and Forest Degradation

¹¹³ Nestlé (2013): Nestlé Responsible Sourcing Guideline

¹¹⁴ Safeway (2015): Supplier Sustainability Guidelines and Expectations

¹¹⁵ RSPO (2014): RSPO Remediation and Compensation Procedures Related to Land Clearance without Prior HCV Assessment

¹¹⁶ HCV 1 = Species diversity; HCV 2 = Landscape-level ecosystems and mosaics; HCV 3 = - Ecosystems and habitats; HCV 4 = Critical ecosystem services; HCV 5 = Community needs; HCV 6 = Cultural values

Growers are not only required to compensate for all HCVs lost due to land clearance but also to remediate areas where the planting of oil palms is prohibited by the RSPO (e.g. riparian zones and steep terrain). The remediation requires the ecological functions to be restored.¹¹⁷

After identifying the lost HCVs, the producer needs to develop an adequate social and environmental Remediation and Compensation Plan. For the remediation and compensation of the social impacts of the loss of HCVs 4-6, measures have to be aligned with the interests of the affected stakeholders and can include restoring, substituting, or financial compensation. The compensation liability, calculated using the Land-Use Change Analysis and expressed in hectares, can be compensated in two ways:

- Conserve an area equal to the final liability
- Fund conservation with a budget equal to the number of hectares of final liability multiplied by 2,500 USD/ha¹¹⁸

Biodiversity compensation projects may be allocated within or outside management units, should be adequately resourced, have clearly defined goals, timeframes and responsibilities and can be the following (ranked according to priority):

- off-site, avoided deforestation/degradation projects (highest priority)
- off-site, restoration of degraded forest
- off-site, species-based conservation
- on-site forest/habitat reestablishment (least desirable)¹¹⁹

After implementing the conservation projects, the outcome has to be monitored by the producer. An annual progress report has to be submitted to the RSPO.¹²⁰

Offsetting for future land conversion

In contrast to past conversion, where a retrospective analysis of which type of ecosystem has been lost is difficult as it requires qualitative remote sensing data or well-documented information, offsetting for future land conversion is easier to plan, because the analysis can be done prior to conversion.

In Germany, for example, there is a regulation for offsetting natural areas (*Eingriffs-Ausgleichs-Regelung*), which aims to prevent the deterioration of nature and landscape and avoid the negative impacts of interventions. Prior to conversion, the type of ecosystem needs to be recorded and the potential negative consequences assessed. The converted area has to be offset with an equivalent measure. This can be done

- on-site and in the same functional context (e.g. felling of trees is offset by planting new ones in the same management unit)
- on-site and in a non-functional context, but with an equivalent measure (e.g. felling of trees is offset by restoring a swamp)
- off-site (felling of trees and planting new ones in another location, suitable for conservation)¹²¹

¹¹⁷ RSPO (2014): RSPO Remediation and Compensation Procedures Related to Land Clearance without Prior HCV Assessment

¹¹⁸ RSPO (2015): Remediation and Compensation Procedure public consultation

¹¹⁹ RSPO (2015): Remediation and Compensation Procedure public consultation

¹²⁰ RSPO (2014): RSPO Remediation and Compensation Procedures Related to Land Clearance without Prior HCV Assessment

¹²¹ Bundesamt für Naturschutz (2010): Eingriffsregelung

This regulation is an example of a mechanism for offsetting prior to land conversion. Offsetting can in general be a useful tool for land-use planning and could also be applied in the implementation of zero net deforestation.

4. COMMITMENTS

What are the main differences between the various company commitments? What implementation concepts are being discussed? Why are most commitments unsatisfactory from an environmental perspective?

In response to rising concerns about ongoing deforestation, a number of companies have either made commitments to ban deforestation from their supply chain or implemented “no deforestation” policies.¹²² (An overview of company commitments is provided in Annex 1). The more earnest deforestation commitments are backed up with corporate policies. These usually include more than just a deforestation-free commitment, and do not just address activities related to the clearing of forests. Corporate policies often specify other criteria above and beyond banning deforestation. Most commonly, these policies include:

- No clearing on carbon-rich peat lands
- No use of fires for clearing
- No clearing on High Conservation Value (HCV) areas
- No clearing on High Carbon Stock (HCS) areas
- Respect for indigenous land rights
- Obtaining free, prior and informed consent from local communities
- Production only on legal lands
- No use of forced or slave labour
- A commitment to transparency regarding the company’s production practices

One **major challenge** regarding commitments to deforestation is the verification and monitoring process. For this reason, companies often use existing certification standards to verify their commitment even though these standards do not just address deforestation. By using standards that are already in place, companies understand what they are committing to and are able to measure the status of target achievement. Furthermore, the standards require third-party verification, which is one of the main requirements that NGOs are calling for. It should be noted that while a certification scheme can be a useful instrument, it is not the only solution for implementing deforestation-free supply chains. Certification comes with some barriers (e.g. certification of smallholders, exclusion of producers due to cut-off dates, etc.) and should be combined with other instruments and safeguards esp. with land use planning and land use management.

¹²² CIFOR (2015): Deforestation-free commitments, p. 1

In contrast there is no clear consensus on industry level either on the definition of the whole topic of zero deforestation (see Chapter 2) with all its different levels and divergent concepts and what the indicators should be. It is difficult for a company to measure the status of target achievement without clear key performance indicators (KPIs).¹²³ Nor is public opinion transparent and clearly defined as yet, with inconsistent messages and requirements coming from the different stakeholders including governments, big industry players and NGOs. Consequently, while the list of commitments is long only a few initial attempts have been made to implement the one or other concept of deforestation-free. There are currently four main approaches to corporate implementation:

- a) realign based on existing third-party certification and sustainability standards
- b) online platforms and dashboards
- c) company owned supplier verification schemes
- d) second-party verification schemes

Examples for commodity-specific commitments

Only a few very big players have already started **to implement the concept** in their value chain, among them. Examples:

- Asia Pulp & Paper¹²⁴ – Forest Conservation Asia Pulp & Paper Monitoring Dashboard
- Wilmar¹²⁵ – Wilmar Transparency Dashboard
- Sime Darby – Transparency Supplier Dashboard

These dashboards present and track the company's work on deforestation, are used to publically disclose violations of their policies and outline what they are doing to address them.

While only a few companies have made commitments to zero deforestation as yet, many companies have already made commitments on the sourcing of specific commodities, for example to source 100 % RSPO-certified palm oil or FSC-certified paper. Pledges based on a certification scheme are easier to measure. Companies define various but similar goals for their sustainability commitments as the example show below:

- **Catalyst Paper**, Canada: "We have both Forest Stewardship Council (FSC) and Programme for the Endorsement of Forest Certification (PEFC) chain-of-custody certification at all of our mills."¹²⁶
- **Tetrapak** has committed to source packaging material from 100 % certified sources.¹²⁷
- **Croda International** has committed to have RSPO certification of all its relevant supply chains by the end of 2015.¹²⁸
- The German retailer **REWE Group** already meets its commitment of sourcing 100 % certified palm oil for its own brand products.¹²⁹

¹²³ CIFOR (2015): Deforestation-free commitments, p. 10

¹²⁴ Asia Pulp & Paper (2016): Monitoring Dashboard

¹²⁵ Wilmar (2016): Sustainability Progress

¹²⁶ Catalyst Paper (2016): The steps we take

¹²⁷ Tetra Pak (2016): Rückverfolgbarkeit in jeder Phase

¹²⁸ Croda International (2016): Palm Oil

¹²⁹ REWE Group (2013): Leitlinie für Palmöl- und Palmkernölerzeugnisse

- The multinational company **Henkel**, which operates in the consumer and industrial sector, has committed to covering its demand for palm oil with 100% certified palm oil by 2020.¹³⁰
- **Oriflame** has pledged to source 100% certified physically segregated palm oil by 2020 and 100% of their paper and board packaging and publications from credibly certified or recycled origins by 2020.¹³¹
- **Sodexo** has committed “to source 100% sustainable palm oil, use more sustainable soy, and increase the use of certified sustainable paper products”.¹³²

Unilever launched its own Unilever Sustainable Agriculture Code (SAC) in 2010 and is now implementing it on a global scale. The company has committed to source exclusively from SAC compliant suppliers and farmers according to the Unilever Sustainable Living Plan by 2020. The suppliers are responsible for results and submitting assessments.

Other companies, rather than drawing up their own standards, use second-party consultants such as Tropical Forest Trust (TFT)¹³³ or ProForest¹³⁴ to implement and verify their corporate policies.

- Nestlé started implementation of its “Responsible Sourcing Guidelines”¹³⁵ in 2012
- Lindt & Sprüngli became a TFT cocoa member in 2016
- Mars has been a TFT member since 2014 and is implementing its own palm oil policy

A new method to track and verify company commitments to go deforestation-free are third-party monitoring platforms. This is an emerging sector that is currently undergoing a lot of development. Annex 2 provides a more comprehensive overview on platforms and monitoring tools.

Implementation barriers and challenges

Implementing a deforestation-free supply chains is associated with the following barriers and challenges:

- Traceability and complex supply chains: For commodities and particularly for derivatives, segregated supply chains are physically challenging and costly to monitor and audit.¹³⁶
- Availability of certified raw material: Certification and traceability schemes currently cover only a small percentage of the total production of forest risk commodities.¹³⁷
- Certification of smallholders: Standards have a limited capacity for monitoring and ensure compliance with their criteria, especially regarding the certification of smallholders. Furthermore, certification may be too expensive for smallholders.¹³⁸
- Exclusion of smallholders from global supply chains: There is the risk that smallholders are excluded, due to non-compliance with certification requirements or cut-off dates.¹³⁹
- Government regulation: Regulatory compliance and governance are still seen as weak in many producing countries.¹⁴⁰

¹³⁰ Forum Nachhaltiges Palmöl (2016): Mitglieder

¹³¹ Oriflame (2016): Sustainable Sourcing

¹³² Sodexo (2014): Sodexo Tops Sector for Efforts to Address Deforestation

¹³³ The forest trust (2016)

¹³⁴ Pro Forest (2016)

¹³⁵ The Forest Trust (2016)

¹³⁶ CDP (2014): Deforestation-free supply chains: From commitments to action, p. 24

¹³⁷ Global Canopy Programme (2013): The Little Book of Big Deforestation Drivers, p. 16

¹³⁸ Smit/McNally/Gijsenbergh (2015): Implementing Deforestation-Free Supply Chains – Certification and Beyond, p. 9

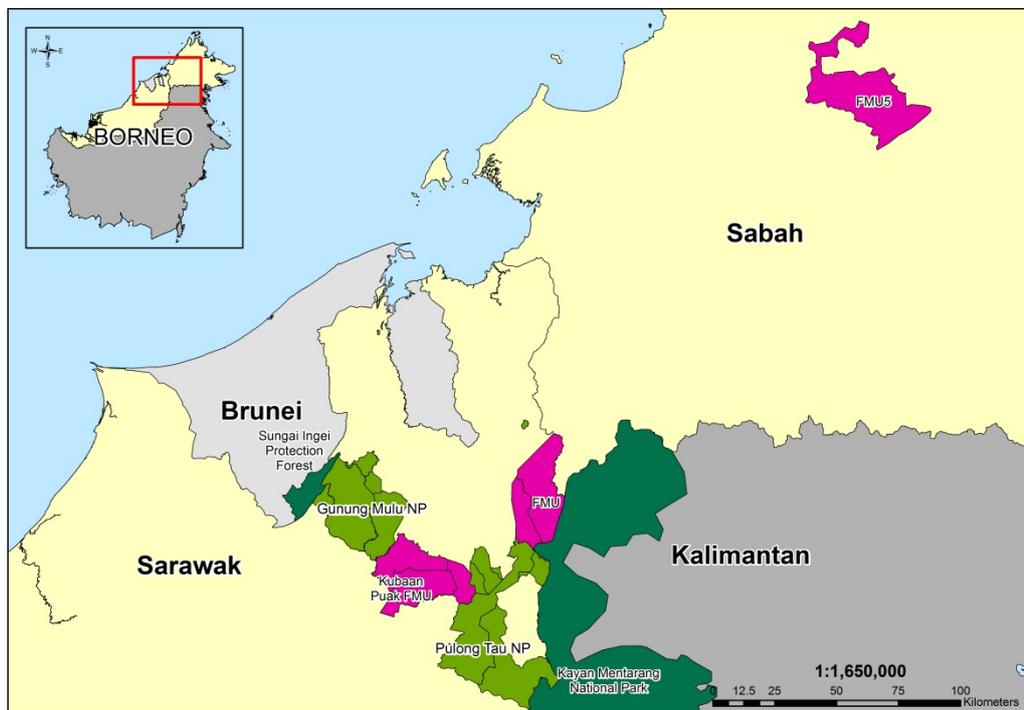
¹³⁹ Smit/McNally/Gijsenbergh (2015): Implementing Deforestation-Free Supply Chains – Certification and Beyond, p. 9

5. CONCLUSION

Why is WWF advocating ZNDD? And what could a framework for the German government's deforestation commitments look like?

WWF has been a very active stakeholder in the debate on deforestation from the very beginning. Since 1980, we have been involved in the development of many concepts and implementation approaches to stop deforestation. Regarding deforestation-free supply chains, WWF calls for zero net deforestation and degradation (ZNDD) by 2020 as a challenging but achievable objective. This will require near zero natural forest loss and no overall loss in forest quantity or quality, but does allow for some flexibility. Degraded forest could, for example, be cleared to meet local needs where necessary and to some extent providing an equivalent area is restored in an important biodiversity corridor.¹⁴¹

In practice this would mean that in a landscape such as the Kubaan Puak corridor between the Mulu National Park and the Pulong Tau National Park in Malaysia, with a geographical scope of 150,000 hectares and very varied forest quality cover including primary forest and degraded secondary forest, some clearance of degraded secondary forest for community needs like housing, substance agriculture, infrastructure would be possible, if 1x1 or better 1 to 2 (1 hectare cleared = 2 hectare reforested) is offset in the landscape. Offsetting measures should include afforestation of already cleared areas like buffer zones on rivers and deep slopes as well as the use of reforestation methods such as planting more and different tree species in degraded secondary forest areas, and transforming tree plantations back to forest.



Source: WWF Germany Project report (2016): Sustainable Forest Management in East-Malaysia

¹⁴⁰ CDP (2014): Deforestation-free supply chains: From commitments to action, p. 24

¹⁴¹ WWF's Living Forest Reports, chapters 1-5, available at: wwf.panda.org/about_our_earth/deforestation/forest_publications_news_and_reports/living_forests_report

This approach achieves the three main targets of ZNDD:

- 1) Zero loss of primary forest
- 2) Maintaining or enhancing forest cover quality and increasing the biodiversity of secondary forest and tree plantations
- 3) Creating opportunities for communities and regions to develop

WWF advocates ZNDD by 2020, and maintaining this thereafter, as a global and regional target that reflects the scale and urgency with which threats to the world's forests and climate need to be tackled. A failure to make substantial progress towards this target will cause huge and irreversible losses in biodiversity and ecosystem services, and lessen our prospects of reducing GHG emissions quickly enough to keep global temperature increases below 2 °C.

However, an overly narrow focus on deforestation also risks drawing attention away from other threats (such as forest degradation and the loss of non-forest habitats) and other dimensions of sustainability (such as soil degradation, water stewardship, health and safety, pollution, human rights and social welfare). **WWF believes that strong environmental and social safeguards need to be implemented in private-sector deforestation-free production, sourcing and finance and at a jurisdictional level.** These should help position deforestation-free as a critical aspect of sustainability, but not a proxy for, or superior trait to, full sustainability. It is important to emphasise that voluntary private sector initiatives alone will not bring deforestation rates down sufficiently. In order to bring deforestation down to near zero and achieve ZNDD by 2020, a broader suite of governance and policy measures will be needed to complement voluntary deforestation-free action.

WWF envisions a future world where humanity lives within the Earth's ecological limits and shares its resources equitably. As we get closer to 2050, assuming population and incomes continue to grow as projected, maintaining ZNDD will require forestry and farming practices to produce more with less land, water and fossil fuel-based inputs, and new consumption patterns that meet the needs of the poor while eliminating waste and over-consumption. With such changes, the quality and area of the world's forests can be maintained and enhanced without creating shortfalls in food, timber, biomaterials or bioenergy.

Commitments to deforestation-free supply chains and financing are a tangible step towards the conservation and sustainable use of forests and other ecosystems. By eliminating activities associated with forest destruction from their supply chains and financing, organizations can contribute to the achievement of ZNDD by 2020. However, while ZNDD can work as a global target or as a target for a specific jurisdiction, it does not easily translate into the system boundaries of production and trade. ZNDD is measured in hectares, which means that net change has to be calculated within a defined area of land at global, national or regional level. A business or product does not provide an easily defined, constant unit within which to measure impacts on forests in net hectares lost or gained. The geographic sources and mix of raw materials entering supply chains are generally complex and dynamic. **Corporations seeking to adopt effective forest safeguards should therefore set their own targets to avoid deforestation based on gross impacts of the management unit rather than net accounting.**

Deforestation-free supply chains alone will also not be sufficient to achieve ZNDD. Pressures on forests related to weak governance, insecure land tenure, rural poverty and new infrastructure

cannot be addressed solely by voluntary safeguards on production, commodity-sourcing and financing. Strong, complementary public policy efforts are needed to strengthen landscape governance and define development pathways that maintain rather than deplete the natural and social capital present in healthy forests. Effective strategies to halt deforestation will involve a range of measures including: Payment for Environmental Services (e.g. through REDD+); land tenure reform; sound land-use policies and planning processes; protection, management and restoration of forests; productivity and sustainability gains in agriculture and plantation forestry to meet rising demand for food, fibre and bioenergy without forest loss and degradation; new policies, cultural change and incentives to reduce high-footprint consumption patterns and waste; and eradication of governance failures that leave room for illegal loggers or for ranchers, planters or settlers to clear-fell or burn forests to acquire land.

WWF recommendations for corporate deforestation-free commitments, policies and action plans

WWF recommends that voluntary initiatives, corporate policies and industry action plans that are supported by Germany cover the aspects and set out the criteria listed below.

- 1) Go beyond forests to safeguard all ecosystems (including grasslands, wetlands and scrublands).
 - WWF calls for safeguards on the conversion of all ecosystems, not just forests.
- 2) Be supported by clear and credible definitions and operating procedures, including:
 - A plausible and comprehensive definition of **what qualifies as deforestation based on the definition of gross deforestation for the management unit**
 - Using the FAO definition of forest and trees
 - Criteria to measure progress of implementation
 - Any circumstances/exceptions in which limited deforestation or conversion is permissible and how the offsets/compensation will be achieved
 - Specification of method that will be used to delineate forests and other ecosystems to be conserved from areas that can be developed. This should include any methodological variations that will be applied to take account of forest type, land-use history or other aspects of local context.
 - Which products, operations or financial transactions are included
 - A glossary of technical terms
- 3) Incorporate, at a minimum, the following safeguards:
 - High conservation values are maintained and enhanced
 - Greenhouse gas emissions are minimized, especially in areas with high above or below-ground carbon stocks (implementation of the HCS approach)
 - Interventions to protect a forest or ecosystem do not simply relocate pressures to other ecosystems or places
- 4) Protect the rights of forest-dependent peoples and communities to:
 - Access forest resources and enjoy a fair share of the benefits from their use or commercial exploitation
 - Give or withhold free prior informed consent to activities affecting their territories, and
 - Receive fair compensation for conservation measures or commercial land uses that impinge on their rights and livelihoods.

WWF recommendation for policies / public procurement / third-party systems for a deforestation-free initiative

Governmental systems and frameworks to define and verify deforestation-free operations and products and other ecosystem conversion safeguards, should ensure that:

- A) Preventing the loss of ecosystems and ecosystem services are seen as a key factor of sustainable production, but not a proxy for, or superior trait to, full sustainability. In this context, production that meets more comprehensive and credible sustainability standards should generally be considered preferential to production that is merely deforestation-free or compliant with ecosystem conversion safeguards.
- B) All forms of embedded deforestation and ecosystem conversion are addressed (e.g. soy in feed for animal products linked to deforestation)
- C) **A net definition of deforestation is used for a landscape or jurisdictional approach** although the regional scope should not be too broad in order to secure a transparent implementation of deforestation policies.
- D) Products from land recently converted from forest do not qualify as “deforestation-free”, except where legacy issues are addressed through restoration of critical areas and ecosystem services, compensatory conservation measures in nearby forests under threat, resolution of historical social conflicts and land claims and compensation of communities whose rights and livelihoods have been impacted by such conversion.
- E) WWF recommends using **the date from the EU Renewable Energy Directive, which is January 2008**, as the **baseline date for the definition of recently converted forested land** because it has a legal basis and is already recognized globally. Excluded from any compensation should be areas specified in the following:
 - a. Deforestation free raw materials cannot be grown in areas converted from land with previously high carbon stock such as wetlands or forests.
 - b. Deforestation products cannot be produced from raw materials obtained from land with high biodiversity such as primary forests or highly biodiverse grasslands.
- F) Claims or labels that mark products, operations or financial transactions as deforestation-free or compliant with ecosystem conversion safeguards are independently verified .
- G) Inclusion of stakeholder participation, transparency, grievance mechanisms and other procedural safeguards are generally present in certification schemes.

6. LIST OF ABBREVIATIONS

ACoGS	Avoided Conversion of Grasslands and Shrublands
ALM	Agricultural Land Management
ARR	Afforestation, Reforestation and Revegetation
BEI	Banking Environment Initiative
CBD	Convention on Biological Diversity
CDM	Clean Development Standard
CGF	Consumer Goods Forum
COP	Conference of the parties
DNA	Deoxyribonucleic acid
EU	European Union
EUTR	EU Timber Regulation
EU RED	EU Renewable Energy Directive
FAO	Food and Agriculture Organization of the United Nations
FFB	Fresh fruit bunches
FLEGT	Forest Law Enforcement, Governance and Trade
FPIC	Free Prior and Informed Consent
FRA	Global Forest Resources Assessment
FSC	Forest Stewardship Council
GCF	Governors' Climate and Forests Task Force
GHG	Greenhouse Gas
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GPP	Green Public Procurement
HCS	High Carbon Stock
HCV	High Conservation Value
HVE	High Value Ecosystems
IFOAM	International Foundation for Organic Agriculture
IPCC	Intergovernmental Panel on Climate Change
ISCC	International Sustainability and Carbon Certification
KPI	Key Performance Indicator
LULUCF	Land Use, Land-Use Change and Forestry
NGO	Non-governmental organization
NIR	Near infrared
PEFC	Programme for the Endorsement of Forest Certification Schemes
POIG	Palm Oil Innovation Group
REDD+	Reducing emissions from deforestation and forest degradation
RSPO	Roundtable on Sustainable Palm Oil
RTRS	Roundtable Responsible Soy
SAC	Sustainable Agriculture Code
SDG	Sustainable Development Goal
TFA	Tropical Forest Alliance
TFT	The Forest Trust
UNCCD	United Nations Convention to Combat Desertification
UNFCCC	UN Framework Convention on Climate Change
UNFF	United Nations Forum on Forests
WWF	World Wildlife Fund
VCS	Verified Carbon Standard
VPA	Voluntary Partnership Agreement
WCR	Wetlands Restoration and Conservation
ZD	Zero Deforestation
ZGD	Zero Gross Deforestation
ZID	Zero Illegal Deforestation
ZND	Zero Net Deforestation
ZNDD	Zero Net Deforestation and Degradation

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Annex 1: Overview Commitments

Name of the organization	Commitment	Date of the commitment	Date of fulfilment	Concept used	Source	Comment
Governments						
Peru	Target of zero net deforestation of primary and natural forests by 2021	21.06.2010	2021	Zero Net Deforestation	Link	
European Union	EU calls for halting global forest cover loss by 2030 at the latest and reducing gross tropical deforestation by at least 50% by 2020 from current levels.	23.04.2009	2020	Zero Gross Deforestation	Link	
British Columbia (Province of Canada)	the Zero Net Deforestation Act (adopted in 2010) mandates that British Columbia achieve ZND by the end of 2015	2010	2015	Zero Net Deforestation	Link	allows timber plantations for compensation for converted natural forests
New York Declaration on Forests	pledges to halve the rate of deforestation by 2020, to end it by 2030, and to restore hundreds of millions of acres of degraded land	23.09.2014	2030	Deforestation	Link	signed by 37 governments, 20 sub-national governments, 53 multi-national companies, 16 groups representing indigenous communities and 63 non-government organisations
UNFCCC (UN Framework Convention on Climate Change)	Acknowledge the need to reduce carbon emissions from deforestation and forest degradation (REDD). Zero net GHG emissions through Zero Net Deforestation by 2020		2020	Zero Net Deforestation	Link	

Name of the organization	Commitment	Date of the commitment	Date of fulfilment	Concept used	Source	Comment
UN	The UN announced new Sustainable Development Goals, which establish the goal of ending deforestation by 2020; SDG 15.2	12.08.2015	2020	Deforestation	Link	
Amsterdam Declaration	Objective to promote “eliminating deforestation” is a political intention and supports the private sector goal of zero net deforestation	07.12.2015	No specific deadline	Zero Net Deforestation	Link	signed by UK, France, Germany, the Netherlands and Denmark
Paraguay	Paraguay’s Atlantic Forest Zero Deforestation Law (implemented in 2004 for an initial two years, has been recently renewed and currently extends until December (2018)) bans forest conversion in eastern part of the country	2004	No specific deadline	Zero Deforestation	Link	
Pará (State of Brazil)	the governor of Pará committed at the Rio+20 conference in 2012 to achieve ZND across the state by 2020	2012	2020	Zero Net Deforestation	Link	
Mato Grosso (state of Brazil)	The government of the state of Mato Grosso unveiled an ambitious plan to reduce carbon emissions, with eliminating illegal deforestation by 2020.	2015	2020	Zero Illegal Deforestation	Link	
Brazil	Pledged to cut gross deforestation in the Legal Amazon by 80% from historic levels (1996-2005) by 2020	29.12.2009	2020	Gross Deforestation	Link	
Columbia	Program on zero net deforestation in the Colombian Amazon	2009	No specific deadline	Zero Net Deforestation	Link	
Mexico	In addition to signing WWF’s call for ZND by 2020, Mexico has passed a climate change law that mandates ZND	2014	2020	Zero Net Deforestation	Link	

Name of the organization	Commitment	Date of the commitment	Date of fulfilment	Concept used	Source	Comment
NGO's & Initiatives						
WWF	advocates Zero Net Deforestation and Forest Degradation by 2020		2020	Zero Net Deforestation and Degradation	Link	
Rainforest Alliance	advises companies to set policies and targets to strongly curtail gross deforestation related to commodity production	Apr 2015	No specific deadline	Zero Gross Deforestation	Link	
Greenpeace	Campaigning for zero deforestation (not specified) globally, by 2020		2020	Zero Deforestation	Link	
Consumer Goods Forum	pledge to mobilise resources within our respective businesses to help achieve zero net deforestation by 2020	Nov 2010	2020	Zero Net Deforestation	Link	
Tropical Forest Alliance	TFA 2020 will contribute to mobilizing and coordinating actions by governments, the private sector and civil society to reduce tropical deforestation related to key agricultural commodities by 2020	2012	2020	Deforestation	Link	
Banking Environment Initiative	In April 2014, BEI entered into a 'Soft Commodities' Compact with CGF. The Compact aims to "lead the banking industry in aligning with the CGF's resolution to help achieve zero net deforestation by 2020," and commits member banks to specific activities toward that end	Apr 2014	2020	Zero Net Deforestation	Link	

Name of the organization	Commitment	Date of the commitment	Date of fulfilment	Concept used	Source	Comment
Sustainable Palm Oil Manifesto	<p>The Manifesto aims to build upon the signatories' existing sustainability commitments to the Roundtable on Sustainable Palm Oil (RSPO)'s principles and criteria with three specific objectives:</p> <ul style="list-style-type: none"> To build traceable and transparent supply chains; To accelerate the journey to no deforestation through the conservation of high carbon stock (HCS) forests and the protection of peat areas regardless of depth; and To increase the focus on driving beneficial economic change and to ensure a positive social impact on people and communities. 	2014	No specific deadline	No Deforestation	Link	

Name of the organization	Commitment	Date of the commitment	Date of fulfilment	Concept used	Source	Comment
Companies						
Nestlé	In its Policy on Environmental Sustainability, Nestlé committed (in May 2010) to “ensure that all its raw materials sourced from forested areas [] have not led to deforestation.” Nestlé’s Responsible Sourcing Guidelines specify that no products will be sourced from areas converted from natural forests after February 1, 2013 or earlier, depending on the material. Further, it commits to protecting HCVs, defined to include areas with HCS, protected areas, and peatland. Nestlé shares the Consumer Goods Forum Commitment to Zero Net Deforestation by 2020.	Feb 2013	2020	Zero Net Deforestation	Link	
Sainsbury’s	By 2020, our own brand products won’t contribute to global deforestation		2020	Deforestation	Link	
L’ORÉAL	commits to source 100% renewable raw materials from sustainable sources by 2020 and confirms its ambition to “Zero Deforestation”	2014	2020	Zero Deforestation	Link	
General Mills	In July, 2014, General Mills released a Policy on Climate, which “aims to achieve zero net deforestation in high-risk supply chains by 2020 ... including palm oil, packaging fiber, beef, soy and sugarcane.” The Policy specifies that risks include loss of HCV and HCS forests, and of peatland.	Jul 2014	2020	Zero Net Deforestation	Link	

Name of the organization	Commitment	Date of the commitment	Date of fulfilment	Concept used	Source	Comment
Asia Pulp & Paper	From 1st February 2013 all natural forest clearance has been suspended.... No further clearance of areas identified as forest will take place. (not specified)	Feb 2013	No specific deadline	Deforestation	Link	
Golden Agri Resources	GAR commits to the target of the New York Declaration to halve the rate of deforestation by 2020, to end it by 2030	2014	2030	Deforestation	Link	
Safeway	Safeway released sustainable sourcing guidelines in August, 2015 that commit it to sourcing (without a time horizon) 100% of its palm oil from plantations and farms that engaged in no conversion of natural forests—both primary and secondary—after December 20, 2013	Aug 2015		Deforestation	Link	
Mc Donald's	Commits to eliminate deforestation from its supply chain. No deforestation of primary forest or HCV areas. No development of HCS forest areas. No development on peatland	21.04.2015	2030	Deforestation	Link	
Kellog	the company's 2012 Corporate Responsibility Report supports the CGF's ZND by 2020 commitment, and lists the actions it is taking to further that commitment in the palm oil, forest and paper products, and soy sector	2012	2020	Zero Net Deforestation	Link	

Name of the organization	Commitment	Date of the commitment	Date of fulfilment	Concept used	Source	Comment
Orkla	Orkla committed to safeguarding rainforests and other natural forests with high conservation value, and is intensifying its efforts to ensure that the Group's products do not contribute to deforestation. Orkla aims to ensure that all important agricultural raw materials are produced in a sustainable manner without causing deforestation by 2020; in the case of palm oil the target date is as early as 2017.	11.11.2015	2020 PO 2017	Deforestation	Link	
Neste Oil	Published on April 4, 2013, the company's No-Deforestation and Responsible Sourcing Guidelines state that it will only purchase biofuel or biofuel feedstock from suppliers that protect HCVs, HCS areas, and peatland	04.04.2013	No specific deadline	Deforestation	Link	
Unilever	have committed to achieving zero net deforestation associated with four commodities – palm oil, soy, paper and board, and beef – no later than 2020 (Tropical Forest Alliance Commitment)	2012	2020	Zero Net Deforestation	Link	
Wilmar	Wilmar's No Deforestation, No Peat, No Exploitation Policy, released in December 2013, obligates its own operations and all suppliers to abide by "[n]o development on peat regardless of depth. No development of HCS/HCV areas	05.12.2013	No specific deadline	No Deforestation	Link	
Cargill	In July 2014, the company announced a commitment—covering the palm oil it produces, trades, and process—to no deforestation of HCS or HCV areas, and no de-	Jul 2014	No specific deadline	No Deforestation	Link	Signatory of Sustainable Palm Oil Manifesto

Name of the organization	Commitment	Date of the commitment	Date of fulfilment	Concept used	Source	Comment
	velopment on peat, regardless of depth					
Proctor & Gamble	Ensuring no deforestation in the palm supply chain to plantations by 2020	08.04.2014	2020	No Deforestation	Link	
PepsiCo	committed to Zero Deforestation. No developments on HCS/HCV. No new conversion of peatland	Sep 2015	2021	Zero Deforestation	Link	
Danone	committed to Zero Deforestation before 2020. No developments on HCS/HCV. No new conversion of peatland	23.05.2014	2020	Zero Deforestation	Link	
Mondelez	pledged to achieve zero net deforestation by 2020	Jan 2014	2020	Zero Net Deforestation	Link	
Colgate	Colgate has joined the Consumer Goods Forum (CGF) in pledging to mobilize resources to help achieve zero net deforestation by 2020	Mar 2014	2020	Zero Net Deforestation	Link	
Delhaize	No Deforestation Policy with full traceability. has committed to ensuring its suppliers use 100% traceable palm oil by the end of 2015, and deforestation - free palm oil for 80% of its products by 2018	Feb 2014	80% by 2018	Deforestation	Link	
Bertin	Signed the G4 Cattle Agreement, which designated a timeline within which to source cattle from ranches that are able to demonstrate zero deforestation	2009	No specific deadline	Zero Deforestation	Link	
JBS	Signed the G4 Cattle Agreement, which designated a timeline within which to source cattle from ranches that are able to demon-	2009	No specific deadline	Zero Deforestation	Link	

Name of the organization	Commitment	Date of the commitment	Date of fulfilment	Concept used	Source	Comment
	strate zero deforestation					
Minerva	Signed the G4 Cattle Agreement, which designated a timeline within which to source cattle from ranches that are able to demonstrate zero deforestation	2009	No specific deadline	Zero Deforestation	Link	
Carrefour	“Zero deforestation” by 2020	Apr 2012	2020	Zero Deforestation	Link	
Johnson & Johnson	Sourcing criteria for palm oil: No developments on HCS/HCV. No new conversion of peatland. No specific deadline	01.05.2014	No specific deadline	/	Link	
Mars	Mars is committed to taking action on deforestation in our supply chains. achieve this by only sourcing beef, palm oil, pulp and paper, and soy from producers and suppliers that demonstrate compliance with the following: No deforestation of primary forest or areas of high conservation value, No development in high carbon stock forest areas, No development on peatlands regardless of depth (No specific deadline)	Mar 2014	No specific deadline	Deforestation	Link	
Marks & Spencer	committed to remove commodity-driven deforestation from our supply chains by 2020		2020	Deforestation	Link	
Bunge	Bunge commits to eliminate deforestation from our agricultural supply chains worldwide, employing tested methodologies that incorporate carbon and biodiversity protections (No specific deadline)		No specific deadline	Deforestation	Link	

Name of the organization	Commitment	Date of the commitment	Date of fulfilment	Concept used	Source	Comment
ADM	No deforestation of HCV/HCS areas. No development on peatland	Mar 2015	No specific deadline	Deforestation	Link	
Ferrero	Commitment to responsibly sourcing of palm oil. Not clearing High Carbon Stock forests. Not planting on peat soils. Maintaining High Conservation Value areas - by the end of 2015	Nov 2013	No specific deadline	/	Link	
We Mean Business Coalition	42 member companies agreed to eliminate commodity-driven deforestation from all supply chains by 2020	Apr 2015	2020	Deforestation	Link	
Campbell	As a CFG member company Campbell has agreed to mobilize their resources to help achieve zero net deforestation by 2020.	Nov 2010	2020	Deforestation-free	Link	
British Airways	100% OF ALL PRODUCTS DEFORESTATION-FREE	2013		Deforestation-free	Link	
Marfrig Global Foods	Has a public commitment known as “Minimum Criteria for Beef Cattle and Product Operations on an Industrial Scale in the Brazilian Amazon Biome” establishes standards for purchasing cattle from properties located in the Amazon biome, requiring the exclusion from supplier lists of farms involved in deforestation after October 2009, based on the official lists issued by the Brazilian Space Research Institute (INPE), the Project for Monitoring Deforestation in the Legal Amazon (Prodes) and the Real-Time System for Detecting Deforestation in the Legal Amazon (Deter)	2009	No specific deadline	Deforestation	Link	

Name of the organization	Commitment	Date of the commitment	Date of fulfilment	Concept used	Source	Comment
Woolworths	Woolworths is committed to reducing and eventually, removing deforestation and forest degradation from our direct operations and supply chain	2015	No specific deadline	Deforestation	Link	
Kao	By 2020, Kao commits to zero deforestation at the source of palm oil through cooperation with plantations, suppliers (mills and refineries) and third-party organizations. Kao will not purchase palm oil that contributes to development of any high conservation value (HCV) forests, high carbon stock (HCS) forests or peat lands, regardless of the depth.	07.07.1905	2020	Zero Deforestation	Link	Japanese company, producing Beauty Care, Human Health Care, Fabric and Home Care, and Chemicals
Kingfisher	None of our products to be sourced from materials that are linked to tropical deforestation	2014	2020	Deforestation	Link	retailing company
Tesco	We have committed, through our work with the Consumer Goods Forum, to achieve zero net deforestation by 2020.	2014	2020	Zero Net Deforestation	Link	
Cérélia	Cérélia is committed to sourcing 100% traceable, No Deforestation palm oil by 2018	2014	2018	No Deforestation	Link	
Daabon Group	is member of the Palm Oil Innovation Group and a signatory of its charta which includes a zero deforestation commitment. Has not separately published a deforestation-free commitment	2015	No specific deadline	Deforestation	Link	
Musim Mas	is member of the Palm Oil Innovation Group and a signatory of its charta which includes a zero deforestation commitment. Has not separately published a deforestation-free	2015	No specific deadline	Deforestation	Link	

Name of the organization	Commitment	Date of the commitment	Date of fulfilment	Concept used	Source	Comment
	commitment					
Kimberly-Clark	pledged to achieve zero net deforestation by 2020 (as a member of The Consumer Goods Forum)	Nov 2010	2020	Zero Net Deforestation	Link	
Sime Darby	No deforestation of primary and virgin forest; zero peat planting; no conversion of HCS	2014	No specific deadline	No Deforestation	Link	Signatory of Sustainable Palm Oil Manifesto

Annex 2: Commodity Tracking Initiatives Analysis

Methodology

This Commodity Tracking Initiatives Analysis includes a comparison of the various initiatives' partnerships/affiliations, ambitions, functionality, the indicators they track, methodology, the reports they can generate, as well as data reliability, accessibility, and frequency of updating. The Indicators are grouped into 7 Criteria: Methodology, Functionality, Corporate Coverage, Third-party Audit, Market Share, Corporate Activities, and Financial Institutions. The Indicators associated with each criteria are a series of closed questions with corresponding notes for expansion and clarification.

There are four initiatives analysed with this methodology:

- Supply Change
- Forest 500
- CDP – Forest Program
- NCD – Soft Commodities Tool

Information was collected through primary desktop research and interviews with initiative representatives. Overviews are provided on each initiative's methodology, audience, donors/supporters/creators, and an analysis of the indicators collected. The analysis section highlights where each initiative differs per indicator response from the other initiatives analysed.

[Supply Change](http://supply-change.org/) (<http://supply-change.org/>)

Objective and background

Supply-Change is a platform that provides real-time information on the extent and value of commitment-driven commodity production and demand. The initiative identifies and tracks several approaches to commitment achievement that are typical across commodity types from promises to source only certified commodities to no expansion into peat lands, to social commitments such as requirement to obtain Free, Prior, and Informed Consent from affected communities.

Methodology

Supply-Change.org is a platform providing transparency on what commitments companies are making to reduce commodity-driven deforestation. It does this by collecting publicly available information and organizing the extent and value of commodity-specific commitments made by companies. Supply-Change.org only tracks publically reported commitments and milestones.

Supply-Change.org collects publically available data on commitments made for commodities of 1) palm oil, 2) soy, 3) timber & pulp, and 4) cattle. The initiative tracks for general policies on Zero Deforestation, Zero Net Deforestation, Zero Gross Deforestation, as well as sustainability and best management practices criteria targeted at no peat land protection, HCV area protection, HCS management/protection, no burning and human rights protection (FPIC). Targets also include commitments to purchasing “sustainable” or “sustainably sourced” commodities.

Collaborators

Donors include the Climate and Land Use Alliance (CLUA), the Global Environment Facility (GEF), JPMorgan Chase & Co., the Norwegian Agency for Development Cooperation (NORAD), and the Program on Forests (PROFOR), while collaborators on the initiative include Forest Trends, Ecosystem Marketplace, Carbon Disclosure Project (CDP), and World Wildlife Fund (WWF).

Analysis

Methodology

- Supply-Change.org does collect data based on publically available sources through CDP, WWF Palm Oil Scorecards, Round Table annual reports, and publically available company websites, reports, press releases, and announcements. Companies do have the opportunity to engage with Supply Change to provide corrections on profiles or direct Supply Change to publically available resources.
- The initiative does track historical performance to 2009 when commitments first started being registered/noted. Performance is measured as percent achievement towards a goal starting from the earliest year a commitment was made by the company.
- Supply Change does explicitly state its desire to improve. The initiative encourages readers to provide feedback, corrections, clarifications and ideas. The Initiative intends to continue to explore new metrics and new markets as supply chain solutions evolve.

Functionality

- Supply Change does have a strategy for the expansion of general functionality. Financial institutions are to be included in subsequent phases.

- Supply-Change.org does link to company websites and external reports. Links are provided to company websites, related activities (i.e. membership in related roundtable and/or platforms), and relevant assessments (i.e. reports from third-party used to provide information on company commitment and participation, such as WWF Scorecards and CDP reports, etc.)
- Supply Change does have a function for reporting discrepancies or omitted information. Discrepancies and missing information can be reported via: info@supply-change.org.

Corporate Coverage

- Companies are not rated and ranked. Filter options include sorting by market capitalization, alphabetically, and by commitment type.

Market Share

- The initiative does rank commitments per sector. The Initiative ranks commitments by number of commitments per industry.
- The initiative does capture market share of value and volumes of commodity under commitment. The Initiative captures market share at the global level by total companies under commitments within a commodity. It also captures export value of the commodity (USD) globally - although not explicitly clear on whether or not the export value is what the companies under commitment comprise.
- Supply Change does track broader sector/industry uptake of deforestation free commitments. The initiative tracks number of commitments made by companies within a specific sector within a commodity.
- Supply Change does rank commitments per commodity by hectares and number. The initiative does keep a total count of commitments per commodity and within a sector. Hectares under certified area is indicated per commodity, but not ranked (although it can be deduced/created through further end-user analysis).

Corporate Activities

- Supply Change does track corporate progress towards commitments. Not all companies have progress to report. But for those that do, progress is self-reported through total % of commitment compliant volume out of total relevant commodity volume.

Financial Institutions

- The initiative does not track financial institutions. Financiers and investors are not yet tracked, but the initiative intends to expand into FIs in subsequent phases.

[Forest500](http://forest500.org/) (<http://forest500.org/>)

Objective and background

Forest500 is the world's first rainforest rating agency. It identifies and ranks the most influential companies, investors and governments ("powerbrokers") in the race toward a deforestation-free global economy. By identifying and ranking the 500 powerbrokers that have large-scale influence over forest risk commodity supply chains, the Forest 500 supports accountability for the actions of companies, investors, and governments. The results and insights indicate shortcomings and gaps in these powerbrokers' commitments, highlighting where greater action is required to achieve overarching deforestation commitments.

Methodology

Forest500 is focused on the key commodity drivers of deforestation in the last ten years, and therefore has narrowed the assessment on 6 commodities: 1) paper, 2) palm oil, 3) soya, 4) timber, 5) beef, and 6) leather. Forest500 tracks for Zero Deforestation and Zero Net Deforestation commitments, as well as for membership in the Consumer Goods Forum. In addition to these general deforestation-free commitments, Forest500 encompasses the extent to which commitments made by powerbrokers include credible sustainability standards for commodities production and procurement such as FSC, RTRS, RSPO, and RAN/Rainforest Alliance and best management practices criteria such as High Conservation Value (HCV) areas; High Carbon Stock (HCS) forests; Free, Prior and Informed Consent (FPIC); and no peatland conversion (of any depth levels).

Collaborators

Donors for Forest500 include UKAid, Climate and Land Use Alliance (CLUA), while endorsing organizations include ZSL, Forest Trends, Code REDD, FERN, Greenpeace, National Wildlife Federation, CDP, Stockholm Environment Institute (SEI). Other supporters are ECOSIA and Althelia.

Analysis

Methodology

- Forest 500 does not collect info by company outreach. Data are collected through research and by gathering information shared on company websites.
- The initiative does track historical performance. The initiative assesses loss of forested areas from 2001 - 2013, and change in rate of deforestation from 2001 - 2009 and 2010 - 2013, to assess for jurisdiction's track record. However, historical performance is not specifically assessed for companies and financial institutions.

Functionality

- Forest 500 does have a function for reporting discrepancies or omitted information. At the bottom of each entity profile is a statement on initiative's intent and openness to receive concerns or feedback about assessment included in the Forest 500.

Corporate Coverage

- Forest 500 does identify bad actors. The initiative doesn't explicitly label low scoring entities as "bad actors" but does provide filtering option to select for entities with lowest scores only.

Market Share

- Forest 500 does rank commitments per sector. The initiative ranks and compares average scores of each commodity under commitment.

Corporate Activities

- Forest 500 does engage with companies pre- or post-analysis. The approach of the initiative is to open direct dialogue only with companies that engage with the initiative post-analysis to discuss the methodology or their score. This has resulted in around 20 one-to-one engagements with companies to discuss ranking in detail, and comments on methodology. These have been incorporated into the methodology as part of the iterative process where appropriate. The initiative also works in close partnership with CDP to explicitly enable entities to more effectively engage their networks of both companies and FIs; and the initiative shares detailed data with several other groups to support their engagement.

Financial Institutions

- Forest 500 does track financial institutions. Investment/lending policies are assessed for any policies to exclude lending to projects/companies sourcing from commodities produced in deforestation-risk areas
- Forest 500 does track banks. Banks in key countries focusing on rural development lending or lending for forest risk commodity related activities have also been included. Multi-lateral Development Banks are identified and included.
- The initiative does evaluate banks for their lending practices or other business beyond asset management. Investors are evaluated for overall sustainable commodity-specific investment/lending policy for environmental considerations.
- Investors are tracked. Investors of companies featured in Forest 500 are tracked.

CDP's Forests Program (<https://www.cdp.net/en-US/Programmes/Pages/forests.aspx>)

Objective and background

CDP's forests program provides a framework for companies to disclose information about deforestation risks in their operations and supply chains. The program acts on behalf of 365 signatory investors with US\$22 trillion in assets who are interested in better understanding deforestation risks in their investment portfolios and how companies are managing their exposure to these risks.

Methodology

CDP sends out information requests annually to over 800 of the world's largest companies whose operations or supply chains are related to one or more of four agricultural commodities: timber, palm oil, soy, and cattle. The questionnaire companies are asked to fill out assesses their exposure to deforestation risks (regulatory, operational or reputational) and the systems they have in place to evaluate and mitigate these risks. As a part of the questionnaire, companies are asked if they have made a commitment to reduce or remove deforestation and forest degradation from their operations and/or supply chains, and whether this commitment includes criteria such as Zero Deforestation and Forest Degradation, Zero Net Deforestation and Forest Degradation, High Conservation Value (HCV) management, High Carbon Stock (HCS) management, no peatland conversion, or Free, Prior and Informed Consent (FPIC).

Upon completing the disclosure request, companies receive a personalized feedback report and are offered feedback sessions to discuss these reports. Companies are scored across four consecutive levels (disclosure, awareness, management, and leadership), however, these scores are not made publically available.

Collaborators

CDP is a UK-based organization that leverages market forces to incentivize companies and cities to measure and disclose their environmental information. The organization holds the world's largest collection of self-reported climate change, water, and forest-risk data. CDP's forests program was first pioneered by the UK-based organization Global Canopy Programme, which remains a prime funder for the program and acts as the principal advisor on forests and forest risk commodities to CDP. The UK Department for International Development is also a core funder of the project.

Analysis

Methodology

- CDP does not collect data from other platforms and assessments. CDP does not collate information from sources other than in the information requested by the questionnaire in order to ensure a consistent scoring process and avoid misrepresenting companies by interpreting on their behalf.
- The initiative does collect data by company outreach. CDP sends information requests to companies that are in the top US\$1 billion adjusted market cap on the MSCI ACWI All Cap Index and can be reasonably assumed to be relevant for commodity-driven deforestation and/or are featured as 'deforestation powerbrokers' by the Forest 500 platform.
- The initiative does explicitly state its desire to improve in the following statement: "To stay relevant and reflect developments in environmental accounting, CDP consults on its questionnaires on an annual basis."

Functionality

- CDP does have a strategy for the expansion of general functionality. While CDP has in the past focused its efforts on creating one main report per year, they are now working on also producing various reports and blogs throughout the year. In 2016, they are piloting public scoring for companies that have made their responses public. The program is also currently being integrated into the CDP supply chain program, which will increase the scope of the initiative's impact and allow it to reach hundreds of companies involved in deforestation that currently fall outside the initiative's sample.
- The initiative does have information available in multiple languages. The CDP webpage is available in English, Portuguese, Spanish, Japanese, and Chinese. Company responses and summary reports are only available in English.

Corporate Activities

- CDP does engage with companies pre- or post-analysis. Companies receive a personalized feedback report, and CDP offers feedback sessions with companies to discuss these reports.

NCD Soft Commodity Forest-risk Assessment (SCFA) Tool
(<http://www.naturalcapitaldeclaration.org/softcommoditytool/>)

Objective and background

NCD Soft Commodity Forest-risk Assessment (SCFA) Tool is an Excel-based self-assessment tool that enables banks, investors, and other financial institutions (FIs) to evaluate their policies to address exposure to deforestation risk in soft commodity value chains. SCFA uses an analytical framework developed by Sustainalytics, based on an existing framework by WWF, with indicators that assess the scope, strength, and implementation, monitoring, and reporting of FIs' policies.

Methodology

The tool is designed to evaluate policies and processes related palm oil, soy, and beef, however, the tool can be extended to other commodities as well. As a part of the policy strength indicators, FIs are asked whether they require clients or investees to, for example, avoid land-use conversion in High Conservation Value (HCV) or High Carbon Stock (HCS) areas, avoid the use of fire to clear land, respect the rights of local communities including Free, Prior and Informed Consent (FPIC), or commit to sourcing certified commodities.

The SCFA framework was used to evaluate the policies of 30 FIs based on desk-based research and interviews with FI representatives conducted by Sustainalytics. The results of this study are presented anonymously in the Excel tool and in a related report, allowing FIs using the tool to compare their policies to an industry benchmark.

Collaborators

The Natural Capital Declaration (NCD) is a worldwide finance sector initiative launched in 2012 by UNEP Finance Initiative and the UK-based organization Global Canopy Programme. The initiative aims to integrate natural capital considerations into loans, equity, fixed income, and insurance products, as well as in accounting, disclosure, and reporting frameworks. The SCFA tool was commissioned and funded by the UN-REDD Programme.

Analysis

Methodology

- NCD does collect info by company outreach. FIs using the self-assessment tool are encouraged to send their results to NCD so that they can be added to their database, however, NCD is not currently actively reaching out to FIs. NCD does have plans to survey financial institutions on their use of the tool.

Corporate Coverage

- The initiative does not track commodity-specific policies as well as overall forest policies. The study scored FIs based on their policies relating to palm oil, soy, and beef. However, the questions in the self-assessment tool are not specific to a particular commodity, so the tool can be applied to any commodities that cause risk from deforestation.

Market Share

- NCD does not rank commitments per sector.

Corporate Activities

- NCD does not track any other corporate sustainability activities. The methodology only assesses FIs' policies related to their lending and investing activities and does not cover other corporate sustainability activities.

Financial Institutions

- The initiative does track financial institutions. The tool only tracks FIs. Different types of FIs were included in the study (20 commercial banks, 3 development banks and 7 fund managers) in an effort to paint a representative picture of FIs worldwide. The FIs include some of the largest banks and fund managers globally.
- NCD does track banks. The majority of FIs included in the study are banks.
- Banks are evaluated for their lending practices or other business beyond asset management. The framework assesses the scope of FIs' policies, including whether they apply to financial services other than asset management such as corporate lending, project finance, and advisory services.
- NCD does track investors. Investors are among the FIs included in the study.
- NCD does track insurers. FIs offering insurance services are included in the study.

Overview Table about the Results

Criteria	Indicators/Questions	Supply-change	For-est500	CDP - Forests Program	NCD - Soft commodities tool
Methodology	How many indicators does the methodology track?		52	56	17
	Is the methodology publically available?	Yes	Yes	Yes	Yes
	Was the methodology developed in a multistakeholder process?	Yes	Yes	Yes	Yes
	Does the tracking initiative collect data from other platforms and assessments?	Yes	Yes	No	Yes
	Does the tracking initiative collect data from direct reporting by companies?	Yes	Yes	Yes	Yes
	Does the initiative collect data by company outreach/engagement?	No	No	Yes	Yes
	Is there clear definition of terms and initiative goals?	Yes	Yes	Yes	Yes
	Does the methodology account for historical performance over time?	Yes	Yes (jurisdictions) No (companies and FIs)	No	No
	How often is the methodology updated?	Not explicitly stated	Annually	Annually	N/A
	Does the methodology explicitly state its desire to improve?	Yes	No	Yes	No
Functionality	Does the initiative have a strategy for the expansion of general functionality, and is there a timeline for implementation?	Yes	Yes	Yes	No
	How often is the initiative data updated?	Varies	Annually	Annually	
	Are the initiatives easily accessible over the internet?	Yes	Yes	Yes	Yes
	Can you download general commitments, commodity, and company status reports and progress?	No	No	No	No
	Does the initiative link to company websites or external reports?	Yes	No	No	No
	Is the information available in multiple languages?	No	No	Yes	No
	Is there a function for reporting discrepancies or omitted information?	Yes	Yes	No	No

Criteria	Indicators/Questions	Supply-change	For-est500	CDP - Forests Program	NCD - Soft commodities tool
Corporate Coverage	How many companies are involved, being tracked?	366	250	180	30
	Are the companies organized by sector?	Yes	Yes	Yes	Yes
	Are the companies rated and ranked?	No	Yes	Yes	Yes
	How are companies chosen?				
	Does the initiative track commodity-specific policies as well as overall forest policies?	Yes	Yes	Yes	No
	Does the initiative look at the specific components of deforestation and sector-level commitments?	Yes	Yes	Yes	Yes
	Does the initiative identify bad actors?	No	Yes	No	No
Third-party audit	Is the initiative audited by an external entity?	No	No	No	No
	(If, yes) Is the "third-party" audit communicated publically?				
Market Share	Does the initiative capture overall commitments per commodity?	Yes	No	No	No
	Does the initiative capture market share of value and volumes of commodity under commitment?	Yes	No	No	No
	Does the initiative track commodity-specific deforestation trends?	No	No	No	No
	Does the initiative track broader sector trends on deforestation?	No	No	No	No
	Does the initiative track broader sector/industry uptake of deforestation free commitments?	Yes	Yes	No	No
	Does the initiative rank commitments per commodity by hectares and number?	No	No	No	No
	Does the initiative rank commitments per sector?	Yes	Yes	No	No
Corporate Activities (Visibility)	Does the initiative track ISEAL membership or other roundtable membership?	Yes	Yes	Yes	Yes
	Does the initiative track any other corporate sustainability activities?	Yes	Yes	Yes	No
	Is information provided on corporate deforestation mitigation efforts (on-the-ground)?	No	No	No	No
	Does the initiative track corporate progress towards their commitments?	Yes	No	No	No
	Does the initiative provide information on available certification instruments to meet commitments?	Yes	Yes	Yes	Yes
	Does the initiative track commitments relating to HCV?	Yes	Yes	Yes	Yes

Criteria	Indicators/Questions	Supply-change	For-est500	CDP - Forests Program	NCD - Soft commodities tool
	Does the initiative track commitments relating to FPIC?	Yes	Yes	Yes	Yes
	Does the initiative track commitments relating to HCS?	Yes	Yes	Yes	Yes
	Does the initiative engage with companies pre- or post-analysis?	No	Yes	Yes	No
Financial Institutions	Are financial institutions (FIs) tracked in ANY way?	No	Yes	No	Yes
	(If, yes) Is there a publically available method for how FIs are selected for tracking?	N/A	Yes	N/A	Yes
	Are FIs an explicit audience for the initiative?	No	Yes	Yes	Yes
	Are banks tracked?	No	Yes	No	Yes
	Are banks evaluated for their lending practices or other business beyond asset management?	No	Yes	No	Yes
	Are investors tracked?	No	Yes	No	Yes
	Are insurers tracked?	No	Yes	No	Yes

Annex 3: Forest Monitoring Tools

This section gives an overview about Forest Monitoring Tools to provide general background information. This is a selection of the most important tools.

[Eyes on the Forest](http://www.eyesontheforest.or.id/) (<http://www.eyesontheforest.or.id/>)

Objective and background

Eyes on the Forest (EoF) is a database and mapping tool that aims to become a clearinghouse for information on forest conservation in Riau Province, Sumatra, Indonesia. The platform makes a large database of land cover, land use, and biodiversity data that has been compiled over more than a decade of work on the ground in Sumatra publically available. The platform focuses on pulpwood and oil palm production, as these are the primary drivers of deforestation in Riau.

EoF serves as a tool for local, national, and international NGOs, companies, governments, and other stakeholders who are working to conserve forests and protect the rights of the local people who depend on them.

Methodology

The mapping tool includes several map layers covering areas such as protected areas, forest cover by year, land cover change, wildlife ranges for multiple species, elephant deaths, eco-floristic sectors, natural carbon stores, and fire and haze detection. Map layers related to pulpwood and oil palm production include pulpwood concessions, pulp mills, and pulpwood transportation corridors, crude palm oil (CPO) mills, oil palm driven deforestation areas, and illegal palm fruit and tainted CPO transportation corridors. The forest change, biodiversity, and protected area layers cover all of Sumatra, though many of the pulpwood and oil palm layers only cover Riau.

Initiatives highlighted by the tool include:

- Roundtable on Sustainable Palm Oil – Map includes layers showing RSPO certified mills
- Reducing palm oil illegality – Tool identifies CPO mills that have purchased illegal palm fruit and refineries and bulking stations that have received tainted CPO

Intended end-user

EoF serves as a tool for local, national, and international NGOs, companies, governments, and other stakeholders who are working to conserve forests and protect the rights of the local people who depend on them.

Collaborators

EoF is a coalition of three local environmental organizations in Riau: WWF Indonesia's Tesso Nilo Programme, Jikalauhari (Forest Rescue Network Riau), and Walhi Riau (Friends of the Earth Indonesia). EoF is sponsored by WWF Japan. It was also one of the first projects to be awarded a grant by the Google Earth Outreach team to use the Google Maps Engine for hosting, storing and managing map data.

[Global Forest Watch Commodities](http://commodities.globalforestwatch.org/) (<http://commodities.globalforestwatch.org/>)

Objective and background

Global Forest Watch (GFW) Commodities is an online forest monitoring and alert platform that uses satellite technology and open data to provide near real-time information about the impacts of key commodities on forests. The platform focuses primarily on oil palm, but also has information on wood fiber, mining, and soy. Built on the flagship GFW platform, GFW Commodities offers specialized features geared for business users, enabling them to assess supply chain risks, identify issues as they happen, and verify and demonstrate compliance with deforestation-free sourcing policies and certification standards.

GFW Commodities is geared towards businesses that are exposed to deforestation-risk in their supply chains, but can be used by anyone interested in seeing how commodity supply chains are affecting forests around the world.

Methodology

In the GFW Commodities map, users can toggle a range of layers including: forest change, forest cover, forest use, conservation, and production sustainability. Layers within these categories provide data on issues such as peat lands, primary forests, legal classifications, protected areas, biodiversity hotspots, and concessions for oil palm, wood fiber, and mining. GFW Commodities also includes a data analysis tool. As the basis for the analysis, users select one or more administrative unit, concession area, certified areas, palm oil mill point, or custom drawn area. These areas can then be assessed in terms of forest change by year (according to variables such as primary forest, forest carbon stocks, legal classification, and protected areas), oil palm suitability (based on WRI's methodology), and current fire activity. Users can also sign up for alerts for clearance activity in concessions or districts of their choice.

Initiatives highlighted by the tool include:

- Round Table on Responsible Soy – The map includes a layer showing the RTRS guidelines for responsible soy expansion in Brazil and Paraguay
- Roundtable on Sustainable Palm Oil – The map includes layers showing RSPO certified mills and production areas, and the analysis tool can assess forest change in certified areas
- Indonesia's Forest Moratorium – The analysis tool can assess deforestation in areas covered by the moratorium

Intended end-user

GFW Commodities is geared towards businesses that are exposed to deforestation-risk in their supply chains, but can be used by anyone interested in seeing how commodity supply chains are affecting forests around the world.

Collaborators

GFW Commodities is built on the flagship GFW platform, which is an initiative convened by the World Resources Institute with a large number of partners and collaborators across the government, non-profit, and private sectors. GFW Commodities is also built on the foundations of the Forest and Landscapes in Indonesia project. Current funders include the Danish International Development Agency, the Global Environment Facility, the Gordon and Betty Moore Foundation, the Norwegian Ministry of Climate and Environment, the UK Department for International Development, and USAID.

Objective and background

The Brazilian Soy Moratorium, established in 2006, is voluntary private sector agreement by major soybean traders to not purchase soy grown on lands deforested after July 2006 in the Brazilian Amazon. The moratorium covers the 73 municipalities responsible for 98% of the soy produced in the Amazon, and 49% of Brazil's territory. The moratorium is set to end on May 31, 2016, as the industry has asserted that Brazil's environmental governance, such as the increased enforcement of the Rural Environmental Registry (CAR) mandated by the Forest Code, will be robust enough to justify ending the agreement.

INPE's monitoring of the Soy Moratorium provides information to the Soy Task Force (GTS), made up of the Brazilian Vegetable Oil Industry Association (ABIOVE) and the Brazilian Grain Exporters Association (ANEC), their member companies, and civil society organizations.

Methodology

The area covered by the Soy Moratorium is monitored by the Brazilian National Institute for Space Research's (INPE) Program for Calculating Deforestation in Brazil's Amazon (PRODES). Analysis of satellite images by INPE make it possible to identify which deforested areas show a high likelihood of agricultural crops. Flyovers and field visits are then made to confirm whether or not soybeans have been planted, and soybean producers not complying with the moratorium are identified. In the most recent monitoring cycles, the experience accumulated through the monitoring program has made it possible identify and map soy acreage with a high degree of certainty, making it possible to eliminate flyovers. This is done through combined use of images by sensors with different temporal and spatial resolutions, taken throughout the entire growth cycle.

The initiative specifically monitors compliance with the Soy Moratorium.

Intended end-user

INPE's monitoring of the Soy Moratorium provides information to the Soy Task Force (GTS), made up of the Brazilian Vegetable Oil Industry Association (ABIOVE) and the Brazilian Grain Exporters Association (ANEC), their member companies, and civil society organizations.

Collaborators

The initiative is implemented by INPE and Agrosatélite. The monitoring utilizes databases from FUNAI (National Native Indians Foundation), IBAMA (Brazilian Environmental & Renewable Natural Resources Institute), IBGE (Brazilian Geographic & Statistical Institute), AMAZON (Institute of the Amazon People & Environment), and INPE.

SIGAPTARU (Spatial Plan Monitoring System) (<http://www.sigaptaru.or.id/en>)

Objective and background

SIGAPTARU is a web-based platform that aims to serve as a communications forum for all parties working to encourage sustainable land use in Indonesia. It supports the Sustainable Regional and Rural Development Forum Indonesia (SRRED-FI), by providing its user community with discussion forums, news, and information dissemination, and enables collaborative mapping of agricultural land use, as well as the monitoring of district level spatial planning. The platform started as a way to integrate the RIMBA corridor into spatial planning in three priority districts in Sumatra and is now being expanded to Heart of Borneo and Meruake, Papua.

SIGAPTARU supports the user community of the Sustainable Regional and Rural Development Forum Indonesia (SRRED-FI), an initiative that works to foster greater transparency in district spatial planning in Indonesia. SIGAPTARU also supports civil servant investigators, central and local government, association planners, companies, universities, NGOs, and the public at large.

Methodology

The mapping tool allows user to visualize several types of geospatial information. The base layers include administrative boundaries, critical species habitat ranges, EU Renewable Energy Directive areas, WWF-Indonesia Vision for Spatial Planning, and district level spatial plans in Sumatra, Kalimantan, and Papua. Editable layers allow stakeholders to contribute to spatial planning and give input to land use decisions by collecting and uploading data from the field. These layers include palm oil concessions, palm oil mills, ports, roads, logging, mining, protected areas, and ground truth (for recording activities that don't fit into other layers).

SIGAPTARU monitors the implementation of spatial planning at the district level. It helps to ensure appropriate licensing for land use allocation and that new development follows government regulations.

Intended end-user

SIGAPTARU supports the user community of the Sustainable Regional and Rural Development Forum Indonesia (SRRED-FI), an initiative that works to foster greater transparency in district spatial planning in Indonesia. SIGAPTARU also supports civil servant investigators, central and local government, association planners, companies, universities, NGOs, and the public at large.

Collaborators

SIGAPTARU is supported by the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety; WWF; the Indonesian Ministry of Public Works; and the Indonesian National Spatial Planning Coordination Board.

[Forest Conservation Asia Pulp & Paper Monitoring Dashboard](https://www.asiapulppaper.com/monitoring-dashboard)
(<https://www.asiapulppaper.com/monitoring-dashboard>)

Objective and background

Asia Pulp and Paper Group (APP) developed the APP Monitoring Dashboard, an online progress reporting system to specifically track progress on meeting its Forest Conservation Policy, which consists of four commitments (listed below). The APP Monitoring Dashboard is a reporting platform.

- Policy Commitment 1: APP and suppliers will only develop areas that are not forested, as identified through High Conservation Value (HCV) and High Carbon Stock (HCS) assessments
- Policy Commitment 2: APP will support the Government of Indonesia's low emission development goal and emissions reductions targets by protecting forested peatland and by implementing best practice management to reduce and avoid GHG emissions on peatland landscape.
- Policy Commitment 3: APP will implement the principles of Free, Prior and Informed Consent of indigenous and local communities.
- Policy Commitment 4: APP fibre sourcing will support responsible forest management

APP Monitoring Dashboard is intended to be used by various groups including customers, NGOs, and media interested in tracking APP's progress in the company's Forest Conservation Policy.

Methodology

APP Monitoring Dashboard monitors and reports the company's progress in its Forest Conservation Policy, and specifically assesses for HCV, HCS, sustainable forest management practices, social indices, peatland management and conservation, and grievance across its 38 suppliers' concessions in Indonesia. All results and recommendations from APP's Monitoring assessments will help inform the development of APP's Integrated Sustainable Forest Management Plan (ISFMP) for its 38 suppliers. The methodology for these assessments depend on those of the organizations and groups commissioned by APP to undertake and review performance.

- HCV assessment is done through field observations, data collection, measurement and stakeholder interviews. Final HCV reports contain recommendation on monitoring and management.
- HCS assessment utilizes the HCS Approach toolkit and follows the HCS Approach methodology. APP's HCS assessment process was carried out in collaboration with Greenpeace, Ekologika, and TFT.
- Peatlands identified through the APP's HCV assessments are protected, with future development plans subject to best practice management prescriptions. Best practices management for peatlands in areas where APP's suppliers operate are developed by APP's Peat Expert Team (PET).

Intended end-user

APP Monitoring Dashboard is intended to be used by various groups including customers, NGOs, and media interested in tracking APP's progress in the company's Forest Conservation Policy.

Collaborators

APP Monitoring Dashboard was developed in consultation with various key stakeholders, including international and Indonesia NGOs.

The Forest Trust: HCS Approach

(<http://highcarbonstock.org/what-is-the-hcs-approach-steering-group/>)

Objective and background

The HCS Approach is a land-use planning tool that identifies areas to conserve by distinguishing forest areas for protection from degraded lands with low carbon and biodiversity values that may be developed. It identifies degraded lands that would be suitable and acceptable for plantations expansion (e.g. palm oil, pulp and paper, rubber) in concessions already designated for new planting. It is a tool that intends to put “no-deforestation” commitments into practice by identifying areas to conserve and areas of low carbon and biodiversity areas where agricultural or plantation development has a lower environmental impact. Thus far, only version 1 of the toolkits on HCS Approach implementation is available. Updates to the methodology are ongoing. Please note that the HCS Approach is not to be confused with the HCS+ Methodology, which is a separate high carbon stocks methodology.

HCS Approach is intended to be used by plantation companies and manufacturers who are determined to remove deforestation from their operations and supply chains. The tool can also be used by governments to help fulfill their commitments to reduce greenhouse gas emissions from deforestation.

Methodology

HCS Approach is a land-use planning tool that includes information on community land rights and uses. HCS Approach intends to integrate with High Conservation Value (HCV) assessments, peatland and streamside (riparian) area identification, and Free Prior and Informed Consent (FPIC) with local customary communities to propose a conservation plan for a concession with areas for protection and areas that can be developed.

HCS Approach methodology uses satellite images (Landsat) and field plot measurements to classify natural vegetation into six different classes: 1) High Density Forest, 2) Medium Density Forest, 3) Low Density Forest, 4) Young Regenerating Forest, 5) Scrub, and 6) Cleared/Open Land. The first 4 classifications are considered High Carbon Stock forests. The HCS Approach Toolkit provides guidelines on identifying HCS forest (but no specific carbon threshold levels) by using satellite images and field plots, and then a Decision Tree to assess the conservation value of the HCS forest patches in landscapes that also ensures communities' rights and livelihoods. The HCS Approach methodology is designed for use in fragmented forest landscapes and mosaics in the humid tropics, and does not currently assess other vegetation types such as tropical savannahs/grasslands, temperate or boreal forests. Although carbon is in the title, the HCS Approach is not meant to focus beyond carbon and more broadly on biodiversity and social elements of sustainability. Various vegetation indices can be applied to the HCS Approach methodology to detect relative abundance of green vegetation.

Intended end-user

HCS Approach is intended to be used by plantation companies and manufacturers who are determined to remove deforestation from their operations and supply chains. The tool can also be used by governments to help fulfill their commitments to reduce greenhouse gas emissions from deforestation.

Collaborators

The creators of the HCS Approach methodology include Greenpeace, TFT, and Golden Agri-Resources. Supporting organizations include Daemeter and Proforest. The High Carbon Stock Steering Group consists of the following groups:

- Commodity companies - Agropalma, APP, Cargill, Gar Agribusiness and Food, Golden Veroleum Liberia, Musim Mas, New Britain Palm Oil Limited, Wilmar
- Consumer goods manufacturers – BASF, Procter & Gamble, Unilever
- NGOs – Forest Peoples Programme, Climate Advisers, Greenpeace, National Wildlife Federation, Rainforest Action Network, Rainforest Alliance, Union of Concerned Scientists, WWF

GRAS – Global Risk Assessment Services
(<https://www.gras-system.org/>)

Objective and background

Global Risk Assessment Services (GRAS) is an online platform that offers information on land use change due to agricultural crop land conversion based on ecological and social sustainability for the purposes of monitoring and providing evidence of compliance with sustainability requirements. GRAS can be applied to implement “no-deforestation” strategies and to support sustainability certification. GRAS assesses these risks based on the sustainability criteria set up by the European Commission in the Renewable Energy Directive (RED), and the sustainability requirements of individual companies in the food, feed and chemical sectors.

GRAS incorporates and displays geospatial data on biodiversity (e.g. protected areas and level of protection), carbon stock, land use change, and social indices. The platform can track land use change due to agricultural production as far back as 2000 to present. GRAS can be used to monitor deforestation and conversion of other ecosystems such as grasslands.

GRAS can be used by agricultural producers, processors, traders, brandowners, retailers and investors – who have committed to “no-deforestation” and sustainability certification. GRAS is intended to provide these end-users with the information to manage their sustainability risks at multiple scales of individual farms, plantations, sourcing regions and even at the country level. NGOs are also a primary audience for this tool. GRAS also serves verification purposes. End-users for verification applications include certification systems, certification bodies and auditors who can apply GRAS for an objective and consistent assessment of sustainability risks, and for verifying land use change levels. Analysis reports are generated for end-users to document final risk assessment.

Methodology

GRAS conducts objective and transparent risk assessments for agricultural production areas or regions. Overall, GRAS assesses area-specific risks to biodiversity, carbon stock, land use change, and social indices. Risk scores are determined by a final GRAS Index, which is generated by adding all of the scores from the aforementioned elements. Low Risk = GRAS Index below 0.2, Medium Risk = between 0.2 and 0.4, High Risk = above 0.4). Risks are not equally weighted across elements. Risk is based on the sustainability criteria as outlined by the European Commission in the Renewable Energy Directive (RED).

- Biodiversity risks primarily use information on primary forests, protected areas and biodiversity hotspots, using various meta databases, from global to country-level. Global and Inter-Regional databases include Intact Forest Landscapes, Ramsar Sites, Globcover, Natura2000 and Nationally Designated Areas (CDDA). National databases include Brazil (SNUC, PROBIO), Argentina (SIFAP, IGN – Land cover map), Indonesia (MoF – Land Cover/Critical Areas), Canada (CARTS, Peatlands of Canada), USA (US Landmarks Dataset), Germany (BfN – Protected Areas). “No Go Areas” are defined as areas with a high conservation priority and are not suitable for biomass production (e.g. overlapping with Ramsar Site; RED-defined No-Go Area; primary forests; IUCN category Ia, Ib, II or III; Protected Areas/National Parks). “Risk Areas” are defined as areas with potential risks and are classified by overlap with IUCN category IV, V, VI; grasslands; peatlands; forested areas; high carbon stock areas
- Carbon Stock risks assesses for both carbon stored in above ground biomass and soil that are calculated from and based on the IPCC 2006.

- Land Use Change risks assesses for whether land was cropped before 2008 or not by detecting land use change from MODIS (250m x 250m resolution) using an Enhanced Vegetation Index (EVI) which differentiates between bare soil and green cover. Deforestation would be register with a drop of the EVI to a value below 0.2.
- Social risks are assessed by a selection of social indices made according to the social sustainability issues mentioned in the Renewable Energy Directive. Social indices include Global Hunger Index, World Governance Indicators, Human Development Index, Global Slavery Index, EPI Agricultural Subsidies, EPI Pesticide Regulation, EPI Water Resources, UNICEF Access to Drinking Water, UNICEF Access to Sanitation. Each index is assigned a score from 0 - 1 (0 as best conditions, and 1 as worst). All values are weighted equally and summed for the calculation of an overall GRAS Social Factor for its impact on the sustainability issues mentioned in the RED.

Intended end-user

GRAS can be used by agricultural producers, processors, traders, brandowners, retailers and investors – who have committed to “no-deforestation” and sustainability certification. GRAS is intended to provide these end-users with the information to manage their sustainability risks at multiple scales of individual farms, plantations, sourcing regions and even at the country level. NGOs are also a primary audience for this tool. GRAS also serves verification purposes. End-users for verification applications include certification systems, certification bodies and auditors who can apply GRAS for an objective and consistent assessment of sustainability risks, and for verifying land use change levels. Analysis reports are generated for end-users to document final risk assessment.

Collaborators

GRAS is developed by Meo Carbon Solutions in cooperation with the German national aeronautics and space research center (DLR), Genscape Inc., the Kiel Institute for the World Economy (IfW), University of Illinois in Chicago, The Nature Conservancy (TNC), the Welthungerhilfe, and other partners. Supporters in the development of GRAS include the German Federal Ministry of Food and Agriculture through its Agency for Renewable Resources (FNR).

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