



## 1.1 Definitions matter: zero deforestation concepts and performance indicators

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### Introduction

Growing concerns with the impact of deforestation on greenhouse gases emissions, climate change, biodiversity, ecosystem services and a range of other sustainability issues has led to a movement towards zero deforestation, peaking with its inclusion in the Sustainable Development Goals framework. There are calls for deforestation free, zero deforestation, zero-gross deforestation, zero-net deforestation and zero-illegal deforestation. These are often treated together as a harmonized appeal for ending the loss of forest cover, but they technically refer to different concepts, entailing different actions to achieve different objectives.

These pledges have created opportunities for improved forest governance by bringing the private sector to the centre of action for reducing deforestation, while raising awareness of deforestation drivers outside the forest sector. The lack of rigour in definitions, however, threatens the effectiveness and credibility of such pledges, creating confusion among those who commit to zero deforestation and those who assess or implement them. Indeed, the specifics of the various concepts have substantial implications for the stringency and feasibility of deforestation targets.

In 2008, the World Wildlife Fund called for zero net deforestation by 2020, and by 2010 the first companies made commitments through the Consumer Goods Forum. In 2014, the New York Declaration on Forests called for halving global natural forest loss by 2020 and zero natural forest loss by 2030. The declaration was endorsed by a broad coalition of stakeholders, including donors, forest countries, businesses and civil society. In 2016, Sustainable Development Goal target 15.2 called for halting deforestation by 2020, without further qualification. Although all these efforts aim at reducing deforestation, they draw on different definitions of forests, measures of forest loss and concepts of zero deforestation.



THERE IS A FINE LINE BETWEEN OVERLY RIGID DEFINITIONS AND JUST CHERRY-PICKING CONVENIENT ASPECTS.

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## Underlying zero deforestation concepts

Forest cover comprises both natural and planted forests. It can be reduced by clearance (cutting, burning) and natural damage (wildfires, flooding, pests, etc.), or increased by planting, restoration, regeneration and regrowth, or some or all of these processes can occur at the same time. Use of terms such as gross or net deforestation, or natural or planted forests, have quite different implications for forest governance. Moreover, some deforestation might be legal in one country and illegal in another, adding further challenges to definitions and reconciliation between national and global governance. This article explores definitional issues surrounding zero deforestation commitments and performance indicators for tracking progress, building on earlier work at FAO on zero deforestation fundamentals, impacts on local forest governance (Neeff and Linhares-Juvenal 2017), and implications for forest sector value chains.

Definitions of “forest” and “deforestation” have temporal, morphological and land-use dimensions. Forest cover might decrease and increase due to natural or anthropogenic events on a permanent or temporary basis. The definition of forest and deforestation is key to understanding zero deforestation pledges and determining the data required to assess progress. Beyond “net” or “gross,” pledges apply either to supply chains or jurisdictional levels as the reference scale, and point toward some level of “acceptable deforestation.” The distinction between net and gross deforestation has received much attention, but other variations in zero deforestation deforestations may be equally important (Table 1).

**Table 1. Overview of variations in the concepts of zero deforestation**

	Net deforestation or gross deforestation?	Reference scale supply chain or jurisdictional level?	What is “acceptable” deforestation?
World Wide Fund for Nature (WWF)	Net deforestation	Originally jurisdictional, but interested in supply chains too	Forests should maintain their “net quantity, quality and carbon density”
Consumer Goods Forum	Net deforestation	Supply chains	Determined by procurement guidelines, drawing on certification
Brazilian Cattle Agreement, Brazilian Soy Moratorium	Gross deforestation	Supply chains, with very broad coverage	Vegetation with certain tree-cover characteristics is off-limits
New York Declaration on Forests	Net deforestation	Jurisdictional level	When regeneration would compensate for mature forest loss
High Carbon Stock Approach	Gross deforestation	Supply chains	Vegetation above a certain carbon stock threshold is off-limits

### Net or gross deforestation?

Zero net deforestation means allowing no change to the total forest area, with new forests — natural or planted — compensating for lost forests. Forest loss can be offset by reforestation (Beckham et al. 2014; Fishman 2014), but important issues for pledges based on this concept are the extent to which new forests are “good enough” to compensate for lost forest, and what is “acceptable deforestation” (Neeff and Linhares-Juvenal 2017). For example, plantations replacing natural forests may or may not be acceptable due to reduced biodiversity, carbon storage and other ecosystem services essential for securing environmental benefits from zero net deforestation.

Zero gross deforestation means putting an end to the loss of forest entirely, and the definition of “forest” is key, including timeframe, area, origin, legal status, morphology, structure, ecosystem value and other characteristics. Commitments that refer to zero gross deforestation include the Brazilian Cattle Agreement, the Brazilian Soy Moratorium and the Indonesia Palm Oil Pledge (related to the High Carbon Stock Approach).

Zero net deforestation is criticized because “replacement” plantation forests are not equivalent to natural forest, while zero gross deforestation is criticized because of the lack of flexibility in land-use planning. The implications of either approach also depend on the scale of adoption; this could constrain future options by requiring that all forest remains untouched irrespective of development needs. Zero net deforestation enjoys a high level of support, being adopted by the Consumer Goods Forum, Tropical Forest Alliance 2020, and the Soft Commodities Compact. In 2014, the Forests Dialogue concluded “the economic heft of the Consumer Goods Forum (whose member companies have combined sales of more than US\$ 3.3 trillion), the WWF’s size and reputation, and the support of 67 countries plus the European Commission, make a strong case that zero net deforestation is the variation with the most backing” (Beckham et al. 2014). Completely eliminating any kind of deforestation is extremely unlikely and, in practice, few verification schemes provide details on what is considered “acceptable” deforestation.

### Reference scales

Reference scales are set in different ways for company pledges that focus on supply chains, and for government pledges at the jurisdictional level. WWF’s original proposal for zero net deforestation did not refer to specific supply chains, but through the Consumer Goods Forum, companies have aligned themselves with WWF although on a different scale. The Brazilian Cattle Agreement, Brazilian Soy Moratorium and Indonesia Palm Oil Pledge (related to the High Carbon Stock Approach) stand out because broad participation equates to almost full coverage of selected commodities in the target region. Governments, however, focus on development issues that are best addressed at jurisdictional levels, and stronger engagement with governments is frequently called for.

## “Acceptable” deforestation”

Rather than aiming at eliminating deforestation altogether, most zero deforestation pledges include a certain degree of “acceptable deforestation,” with clear criteria needed for determining what vegetation is considered forest or can be converted while still upholding zero deforestation claims. Most commonly, forest structure, canopy cover, tree height and area extension are used to determine whether vegetation counts as forest. FAO, for example, considers forests to have a canopy cover greater than 10%, tree height more than 5 m, and an area larger than 0.5 ha, including vegetation with young trees and temporarily unstocked lands, and excluding non-forest land uses. Forest structure has also been suggested as a useful measure, notably in the new high carbon stock standard specifically developed for zero deforestation, which rules out conversion of forests with carbon stocks above certain thresholds.

Approaches for monitoring pledges, definitions and performance indicators fit the context and needs of leading actors and need to be consistent with supply chain efficiency and competitiveness. Companies tend to commit to pledges with performance indicators they can fulfil with minimal disruption to their business practices. For example, the Round Table on Responsible Soy prohibits conversion of forests with a tree height of more than 10 m, although other forest definitions use a threshold of 5 m. This means that soy farming, which occurs frequently in the Brazilian Cerrado woodlands, would be largely off-limits using a different forest definition.



Cut-off dates determine the reference date after which lands cannot have been forested to qualify for conversion, and time scale is a key parameter in most certification standards. Compliance with laws and regulations may also prevent

parts of a company’s supply chain from achieving zero deforestation commitments, e.g., in USA and EU timber import regulations. Although there is broad agreement that forests with high conservation value are off-limits for conversion under any circumstances and must be protected, a key issue is whether converting natural forest to plantations is permissible. According to WWF, new forests should “count” only if they maintain “the net quantity, quality and carbon density” of the forest that was replaced (WWF 2008).

## Performance indicators

Most pledges do not come with precise sets of zero deforestation definitions. Even generic concepts (net/gross, acceptable deforestation, etc.) are often vague, and any definitions that are used are usually derived from implementation guidelines and diverse performance indicators that reflect the realities of the pledge’s leading actors (Table 2). Pledges aligned to international agreements tend to rely on internationally reporting, whereas company pledges use procurement policies, direct monitoring and sourcing from low-risk jurisdictions, often including certification.

**Table 2. Zero deforestation concepts, indicators and implied definitions**

Pledge	Concept	Performance indicators	Elements of implied definitions
World Wide Fund for Nature (WWF)	Zero net deforestation and degradation	Not available	<ul style="list-style-type: none"> <li>▪ No overall loss of forest cover and forest quality</li> </ul>
Consumer Goods Forum	Zero net deforestation	<ul style="list-style-type: none"> <li>▪ Legality certification</li> <li>▪ Chain of custody certification</li> <li>▪ Management certification (FSC, PEFC)</li> <li>▪ Origin from countries with risk profiles</li> </ul>	<ul style="list-style-type: none"> <li>▪ Conservation of carbon stocks</li> <li>▪ Compensation through forest restoration</li> <li>▪ Risk-based through country lists</li> </ul>
New York Declaration on Forests	Zero natural forest cover loss	<ul style="list-style-type: none"> <li>▪ Certification</li> <li>▪ Official country reporting, including under REDD+</li> </ul>	<ul style="list-style-type: none"> <li>▪ Mixes forest cover and conservation of carbon stocks</li> <li>▪ Different performance indicators for companies and countries (REDD+)</li> <li>▪ Countries define natural forests in the context of REDD+</li> <li>▪ Loss of natural forest considered even if replaced by plantations</li> <li>▪ Supports compensation through forest restoration</li> </ul>

### Certified procurement

Certification is an important proxy for adherence to zero deforestation pledges, with four of five companies who pledge to zero deforestation relying on certification (Forest Trends 2015), and procurement guidelines indicating that certification schemes are considered appropriate proxies for low deforestation risk (CGF 2016). Certified procurement, through a range of voluntary certification schemes for forest-risk commodities, has been used for decades (Table 3). However, these schemes were not developed to serve as proof of zero deforestation and may not be relevant as indicators for zero deforestation. PEFC, for example, attracted criticism when it endorsed the Indonesian Forest Certification Cooperation, with Greenpeace stating that “any sustainability claims based on these certification schemes is industry ‘greenwash’” (Greenpeace 2015).

**Table 3. Deforestation and voluntary certification schemes for forest-risk commodities**

Roundtable on Sustainable Palm Oil (RSPO)	Round Table on Responsible Soy (RTRS)	Forest Stewardship Council (FSC)	Programme for the Endorsement of Forest Certification (PEFC)	Global Roundtable for Sustainable Beef (GRSB)
Prohibits conversion of primary forests but not of other forest types	Prohibits conversion of both primary and secondary forests, using a narrow definition of forests	Prohibits forest conversion in all but exceptional cases	Endorses national standards that regulate forest conversion	Calls for the protection of native forests but does not issue certifications
3.4 million ha certified	0.3 million ha certified	185 million ha certified	263 million ha certified	not applicable to areas

### Direct area monitoring

Some zero deforestation initiatives monitor production areas directly. Through the Indonesia Palm Oil Pledge, a group of companies has committed to avoiding high carbon stock areas for new plantations. The Brazilian Soy Moratorium and Brazilian Cattle Agreement are similar schemes set up by groups of manufacturers and business associations who agreed to purchase only from producers who do not deforest the Amazon. Using a specially designed verification system based on remote data collection, verification of these schemes is simpler and less ambiguous than for certification schemes. The system uses just one performance indicator: eligibility of land, determined by defined cut-off dates. These schemes are criticized, however, for not directly considering producers' business practices in relation to complex issues such as legality, forest-based livelihoods, and tenure.

### Procurement from low-risk jurisdictions

Governments and companies have started working together to promote zero deforestation by creating jurisdictions where deforestation risk is kept low, and where forest-risk commodities can be preferentially sourced. Procurement from low-risk jurisdictions allows companies to brand products as "zero deforestation" based on origin, linking closely with government initiatives that are conceptually similar to the EU Forest Law Enforcement, Governance and Trade Action Plan, EU Timber Regulation and USA *Lacey Act*. The degree of zero deforestation assurance provided by preferential sourcing from low-risk jurisdictions is lower than that from individual company-level certification, but some NGOs now offer schemes that verify performance similar to those used for certification. Recent advances in monitoring systems using remote-sensing technology have made this type of verification feasible and it has lower transaction costs than individual management certification.

Local and regional governments have positive experiences with this new kind of public-private partnership, which is formed by collective action and social pressure rather than by individual agreements. The sourcing guidelines of the Consumer Goods Forum make explicit reference to jurisdictions for timber, pulp and paper. For palm oil, the guidelines use a risk-based verification mechanism that could also be used by jurisdictions. Some large companies have recently committed to the preferential sourcing of forest-risk commodities from jurisdictions with ambitious environmental and sustainable development targets, known as “Produce-Protect” (CGF 2015). Whereas it is doubtful that preferential sourcing from low-risk jurisdictions can completely eliminate deforestation, it is a good way for governments and companies to collaborate in mainstreaming sustainable business practices across entire landscapes.

### Choice of performance indicators

The kinds of zero deforestation pledges that companies make depends on their position in the supply chain. Those at the upstream production end can make pledges with tailor-made performance indicators and verify compliance against the pledges themselves. Producers, processors and vertically-integrated companies can control production and have a direct relationship with producers. The high carbon stock approach, Indonesia Palm Oil Pledge, Sustainable Palm Oil Manifesto, Brazilian Cattle Agreement and Brazilian Soy Moratorium are pledges of this sort that were all co-proposed by such companies. However, those at the downstream consumer end rely on certification to guarantee zero deforestation in their supply chains, and being too far removed from production systems are not in a position to advise on performance indicators. The use of the procurement guidelines of the Consumer Goods Forum, which mostly comprises manufacturers and retailers, does suggest that certification standards are perceived as sufficient evidence of compliance with zero deforestation principles.

### Conclusions

Governments, companies and NGOs have all engaged in zero deforestation commitments, but have different interpretations of what this means. Imprecise definitions, vague concepts and a lack of clarity on performance indicators create confusion among those with zero deforestation commitments and those who assess, implement and monitor them. Terms such as deforestation free, zero deforestation, zero gross deforestation, zero net deforestation and zero illegal deforestation are often used interchangeably, although the correct use of these concepts has substantial implications for the stringency and feasibility of deforestation reduction targets. To a certain extent, zero deforestation concepts in pledges reflect the objectives of the organizations that promote them, and clearly need to be adjusted.

WWF recognizes that the conversion of forests in one site may contribute to sustainable development and conservation of the wider landscape, and uses various certification standards as indirect measures of reduced deforestation. Greenpeace has developed its own approach to verifying zero deforestation commitments, using high carbon stock in combination with other indicators. For both organizations, protection of biodiversity and

effective collaboration with local communities are key concerns, whereas the Consumer Goods Forum uses procurement guidelines that equate zero deforestation with procurement of certified products. Different concepts and performance indicators determine the impacts of pledges on local governance and stakeholders along the supply chain, including social equity and leakage risks. But through using a range of approaches, zero deforestation is maturing from a buzzword to a broader concept that will help guide corporate and government decision making.

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